DRAFT OFFER DOCUMENT
Dated December 15, 2016
Book Built Issue

Reliance Infrastructure InvIT Fund

(An irrevocable trust set up under the Indian Trusts Act, 1882, and registered as an infrastructure investment trust with the Securities and Exchange Board of India)

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SPONSOR RELIANCE INFRASTRUCTURE LIMITED	INVESTMENT MANAGER RELIANCE NIPPON LIFE ASSET MANAGEMENT LIMITED

INITIAL PUBLIC OFFER OF UP TO [●] UNITS (THE "UNITS") REPRESENTING AN UNDIVIDED BENEFICIAL INTEREST IN THE RELIANCE INFRASTRUCTURE INVIT FUND (THE "TRUST") BY THE TRUST (THE "ISSUE"), AGGREGATING UP TO RS. 30,000 MILLION. RELIANCE NIPPON LIFE ASSET MANAGEMENT LIMITED (THE "INVESTMENT MANAGER"), IN CONSULTATION WITH THE GLOBAL CO-ORDINATORS AND BOOK RUNNING LEAD MANAGERS (THE "GCBRLMs") AND THE BOOK RUNNING LEAD MANAGERS (THE "BRLMs"), RESERVES THE OPTION TO RETAIN OVERSUBSCRIPTION OF UP TO 25% OF THE ISSUE SIZE IN ACCORDANCE WITH THE INVIT REGULATIONS (AS DEFINED HEREIN). THE ISSUE WILL CONSTITUTE AT LEAST 25% OF THE TOTAL OUTSTANDING UNITS ON A POST-ISSUE BASIS IN TERMS OF REGULATION 14(1A) OF THE INVIT REGULATIONS.

THE PRICE BAND AND THE MINIMUM BID LOT WILL BE DECIDED BY THE INVESTMENT MANAGER IN CONSULTATION WITH THE GCBRLMS AND BRLMS, AND WILL BE ANNOUNCED AT LEAST FIVE WORKING DAYS PRIOR TO THE BID/ISSUE OPENING DATE, ON THE WEBSITE OF THE TRUST, THE SPONSOR AND THE INVESTMENT MANAGER, AND SHALL BE MADE AVAILABLE TO THE BSE LIMITED (THE "BSE") AND THE NATIONAL STOCK EXCHANGE OF INDIA LIMITED (THE "NSE", TOGETHER WITH THE BSE, THE "STOCK EXCHANGES") FOR THE PURPOSE OF UPLOADING ON THEIR RESPECTIVE WEBSITES.

In case of any revision to the Price Band, the Bid/Issue Period will be extended by at least one Working Day, subject to the total Bid/Issue Period not exceeding 30 days, provided that there shall not be more than two revisions to the Price Band during the Bid/Issue Period. Any revision to the Price Band and the revised Bid/Issue Period, if applicable, will be widely disseminated by notification to the Stock Exchanges during the Bid/Issue Period and by indicating the change on the websites of the Trust, the Sponsor, the Investment Manager and Stock Exchanges.

The Issue is being made through the Book Building Process and in compliance with the InvIT Regulations, wherein not more than 75% of the Issue shall be available for allocation on a proportionate basis to Institutional Bidders, provided that the Investment Manager may, in consultation with the GCBRLMs and the BRLMs, allocate up to 60% of the Institutional Bidder Category to Anchor Investors and Strategic Investors on a discretionary basis in accordance with the InvIT Regulations. Further, not less than 25% of the Issue shall be available for allocation on a proportionate basis to Other Bidders, in accordance with the InvIT Regulations, subject to valid Bids being received at or above the Issue Price. For details, see "*Issue Procedure*" on page 537.

RISKS IN RELATION TO THE FIRST ISSUE

This being an initial public offer of the Units, there has been no formal market for the Units. The Issue Price (as defined herein) should not be taken to be indicative of the market price of the Units after the Units are listed. No assurance can be given regarding an active or sustained trading in the Units or regarding the price at which the Units will be traded after listing.

GENERAL RISKS

Investment in Units involves a degree of risk and investors should not invest any funds in the Issue unless they can afford to take the risk of losing their entire investment. Investors are advised to read the risk factors carefully before taking an investment decision in the Issue. For taking an investment decision, investors must rely on their own examination of the Trust Group and the Issue, including the risks involved. The Units have not been recommended or approved by the Securities and Exchange Board of India ("**SEBI**"), nor does SEBI guarantee the accuracy or adequacy of the contents of this Draft Offer Document. Specific attention of the investors is invited to the section entitled "*Risk Factors*" on page 16..

INVESTMENT MANAGER'S AND SPONSOR'S ABSOLUTE RESPONSIBILITY

The Investment Manager and the Sponsor, severally and not jointly, having made all reasonable inquiries, accept responsibility for and confirm that this Draft Offer Document contains all information with regard to the Trust Group (as defined herein) and the Issue, which is material in the context of the Issue, that the information contained in this Draft Offer Document is true and correct in all material aspects and is not misleading in any material respect, that the opinions and intentions expressed herein are honestly held and that there are no other facts, the omission of which makes this Draft Offer Document as a whole or any of such information or the expression of any such opinions or intentions misleading in any material respect.

LISTING

The Units offered through the Offer Document are proposed to be listed on the Stock Exchanges. The 'in-principle' approvals of the BSE and the NSE for the listing of the Units have been received pursuant to their letters dated [●] and [●], respectively. For the purposes of the Issue, the Designated Stock Exchange shall be [●].

GLOBAL CO-ORDINATORS AND BOOK RUNNING LEAD MANAGERS

Axis Capital Limited 1st Floor, Axis House, C 2 Wadia International Centre, Pandurang Budhkar Marg Worli, Mumbai 400 025, India. **Tel:** +91 (22) 4325 2183 **Fax:** +91 (22) 4325 3000 **Email:** rinfrainvit.ipo@axiscap.in **Investor grievance id:** complaints@axiscap.in **Website:** www.axiscapital.co.in **Contact Person:** Ankit Bhatia **SEBI Registration No:** INM000012029	**DSP Merrill Lynch Limited** Ground Floor, "A" Wing, One BKC, "G" Block, Bandra Kurla Complex, Bandra (East) Mumbai 400 051, India **Tel:** +91 (22) 6632 8000 **Fax:** +91 (22) 2204 8518 **E-mail:** dg.relianceinfrastructureinvitfund_ipo@baml.com **Investor Grievance e-mail:** dg.india_merchantbanking@baml.com **Website:** www.dspml.com **Contact Person:** Chirag Jain **SEBI Registration Number:** INM000011625	**UBS Securities India Private Limited** 2/F, 2 North Avenue, Maker Maxity Bandra-Kurla Complex Bandra (East), Mumbai 400 051, India **Tel:** +91 (22) 6155 6000 **Fax:** +91 (22) 6155 6292 **E-mail:** ol-rinfrainvit@ubs.com **Investor Grievance e-mail:** customercare@ubs.com **Website:** www.ubs.com/indianoffers **Contact Person:** Jasmine Kaur **SEBI Registration Number:** INM000010809

BOOK RUNNING LEAD MANAGERS

REGISTRAR TO THE ISSUE

SBI Capital Markets Limited 202, Maker Tower 'E', Cuffe Parade, Mumbai 400 005, India. **Tel:** + 91 (22) 2217 8300 **Fax:** +91 (22) 2218 8332 **E-mail:** RIInvIT.ipo@sbicaps.com **Investor Grievance e-mail:** investor.relations@sbicaps.com **Website:** www.sbicaps.com **Contact Person:** Nikhil Bhiwapurkar / Gitesh Vargantwar **SEBI Registration Number:** INM000003531	**YES Securities (India) Limited** IFC, Tower 1 & 2, Unit No. 602 A, 6th Floor, Senapati Bapat Marg, Elphinstone Road, Mumbai – 400013, Maharashtra, India **Tel:** +91 (22) 3347 9688 **Fax:** +91 (22) 2421 4508 **E-mail:** rinfra.invit@yessecuritiesltd.in **Investor Grievance e-mail:** igc@yessecuritiesltd.in **Website:** www.yesinvest.in **Contact Person:** Mukesh Garg **SEBI Registration Number:** MB/INM000012227	**Karvy Computershare Private Limited** Karvy Selenium Tower B, Plot 31-32, Gachibowli Financial District, Nanakramguda, Hyderabad – 500 032, India **Tel:** +91 40 6716 2222 **Toll Free No.:** 1-800-3454001 **Fax:** +91 40 2343 1551 **E-mail:** reliance.invit@karvy.com **Investor Grievance Email:** support@karvy.com **Website:** https://karisma.karvy.com **Contact Person:** M Murali Krishna **SEBI Registration No:** INR000000221

BID/ ISSUE PROGRAMME

BID/ISSUE OPENS ON*	[●]	BID/ISSUE CLOSES ON**	[●]

**The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors in the Issue. The Anchor Investor and Strategic Investor Bid/Issue Period shall be one day prior to the Bid/Issue Opening Date in accordance with the InvIT Regulations.*

***The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider closing the Bid/Issue Period for Institutional Bidders one day prior to the Bid/Issue Closing Date in accordance with the InvIT Regulations.*

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Notice to Prospective Investors in the European Economic Area

This Draft Offer Document has been prepared on the basis that all offers of the Units will be made pursuant to an exemption under the Prospectus Directive, as implemented in Member States of the European Economic Area ("**EEA**"), from the requirement to produce a prospectus for offers of Units. The expression "Prospectus Directive" means Directive 2003/71/EC of the European Parliament and Council EC (and amendments thereto, including the 2010 PD Amending Directive) and includes any relevant implementing measure in each Relevant Member State (as defined below). Accordingly, any person making or intending to make an offer within the EEA of Units which are the subject of the placement contemplated in this Draft Offer Document should only do so in circumstances in which no obligation arises for the Trust or any of the GCBRLMs or the BRLMs to produce a prospectus for such offer. None of the Trust and the GCBRLMs or the BRLMs have authorized, nor do they authorize, the making of any offer of the Units through any financial intermediary, other than the offers made by the GCBRLMs or the BRLMs which constitute the final placement of the Units contemplated in this Draft Offer Document.

THE TRUST WILL CONSTITUTE AN ALTERNATIVE INVESTMENT FUND FOR THE PURPOSE OF THE EUROPEAN UNION DIRECTIVE ON ALTERNATIVE INVESTMENT FUND MANAGERS (DIRECTIVE 2011/61/EU) ("**AIFMD**"). THE ALTERNATIVE INVESTMENT FUND MANAGER (THE "**AIFM**") OF THE TRUST WILL BE THE INVESTMENT MANAGER.

UNITS MAY ONLY BE MARKETED TO PROSPECTIVE INVESTORS WHICH ARE RESIDENT, DOMICILED OR HAVE A REGISTERED OFFICE IN A EUROPEAN ECONOMIC AREA ("**EEA**") MEMBER STATE ("**EEA MEMBER STATE**") IN WHICH THE MARKETING OF UNITS HAS BEEN REGISTERED OR AUTHORIZED (AS APPLICABLE) UNDER THE RELEVANT NATIONAL IMPLEMENTATION OF ARTICLE 42 OF AIFMD, AND IN SUCH CASES, ONLY TO EEA PERSONS WHICH ARE "PROFESSIONAL INVESTORS" OR ANY OTHER CATEGORY OF PERSON TO WHICH SUCH MARKETING IS PERMITTED UNDER THE NATIONAL LAWS OF SUCH EUROPEAN ECONOMIC AREA MEMBER STATE (EACH AN "**EEA PERSON**"). THIS OFFER DOCUMENT IS NOT INTENDED FOR, SHOULD NOT BE RELIED ON BY AND SHOULD NOT BE CONSTRUED AS AN OFFER (OR ANY OTHER FORM OF MARKETING) TO ANY OTHER EEA PERSON.

A "**PROFESSIONAL INVESTOR**" FOR THE PURPOSES OF AIFMD IS AN INVESTOR WHO IS CONSIDERED TO BE A PROFESSIONAL CLIENT OR WHICH MAY, ON REQUEST, BE TREATED AS A PROFESSIONAL CLIENT WITHIN THE RELEVANT NATIONAL IMPLEMENTATION OF ANNEX II OF DIRECTIVE 2004/39/EC (MARKETS IN FINANCIAL INSTRUMENTS DIRECTIVE).

A LIST OF JURISDICTIONS IN WHICH THE INVESTMENT MANAGER AND/OR THE TRUST HAVE BEEN REGISTERED OR AUTHORIZED (AS APPLICABLE) UNDER ARTICLE 42 OF AIFMD IS AVAILABLE FROM THE INVESTMENT MANAGER ON REQUEST. IF THE INVESTMENT MANAGER HAS NOT BEEN REGISTERED OR APPROVED IN A PARTICULAR EEA MEMBER STATE TO MARKET UNITS, THEN THE TRUST IS NOT BEING MARKETED TO ANY EEA PERSON AT SUCH DATE IN THAT EEA MEMBER STATE. TO THE EXTENT THAT AN AFFILIATE OF THE INVESTMENT MANAGER PROMOTES THE TRUST IN AN EEA MEMBER STATE, THEN SUCH PROMOTION IS BEING UNDERTAKEN FOR AND ON BEHALF OF THE INVESTMENT MANAGER IN SUCH CAPACITY.

SECTION I – GENERAL

DEFINITIONS AND ABBREVIATIONS

This Draft Offer Document uses certain definitions and abbreviations which, unless the context otherwise indicates, implies or requires, shall have the meanings as provided below. References to any legislation, act, regulations, rules, guidelines or policies shall be to such legislation, act, regulations, rules, guidelines or policies as amended from time to time.

General Terms

Term	Description
Trust / Reliance Infrastructure InvIT Fund / Fund	Reliance Infrastructure InvIT Fund, an irrevocable trust set up under the Trusts Act and registered as an infrastructure investment trust under the InvIT Regulations
Trust Group	The Trust and the Project SPVs
We / us / our	Unless the context otherwise requires or implies, the Trust Group

Trust Related Terms

Term	Description
Auditors / Trust's Auditors	The auditors of the Trust, namely Chaturvedi & Shah, Chartered Accountants
Condensed Combined Financial Statements	The condensed combined financial statements of the Project SPVs, prepared in accordance with the requirements of the InvIT Regulations and Ind-AS, and the related notes, schedules and annexures thereto, as of and for the financial years ended March 31, 2014, 2015, 2016, and the six month periods ended September 30, 2015 and September 30, 2016
DA's Financial Information	The standalone financial statements of DA, prepared in accordance with the requirements of the Companies Act and Ind-AS, and the related notes, schedules and annexures thereto, as of and for the financial year ended March 31, 2016, and the six month period ended September 30, 2016
Formation Transactions	The transactions pursuant to which the Trust will acquire the shareholding of the Sponsor in the Project SPVs in consideration for Units to be issued to the Sponsor after the Bid/Issue Closing Date and prior to Allotment in the Issue
Indenture of Trust	The indenture of trust dated September 12, 2016, as executed by the Sponsor and the Trustee to settle the Reliance Infrastructure InvIT Fund
Infrastructure Assets	The infrastructure assets proposed to be held by the Trustee in the name of the Trust for the benefit of the Unitholders, whether directly or through a Project SPV in accordance with the InvIT Regulations, and includes all rights, interests and benefits arising from and incidental to ownership of such assets
Investment Manager	The investment manager, namely Reliance Nippon Life Asset Management Limited
Investment Management Agreement	The investment management agreement dated October 3, 2016, executed between the Trustee (acting on behalf of the Trust) and the Investment Manager for managing and administering the Trust, in accordance with the InvIT Regulations
Initial Road Assets	The toll road assets owned, operated and maintained by the Project SPVs
Parties to the Trust	The Sponsor, the Investment Manager, the Project Manager and the Trustee
Project Implementation Agreement(s)	The project implementation agreements, each dated October 3, 2016, entered into by the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager, with each of the Project SPVs, which set out the obligations of the Project Manager with respect to execution of the project undertaken by such Project SPV, in accordance with the InvIT Regulations
Project Entities	The entities through which the Sponsor operates its various road infrastructure projects
Project Manager	The project manager, namely Reliance Infrastructure Limited

Term	Description
Project SPVs	The Project Entities, which are proposed to form part of the initial portfolio of the Trust, namely the following: i) DS Toll Road Limited; ii) GF Toll Road Private Limited; iii) HK Toll Road Private Limited; iv) JR Toll Road Private Limited; v) KM Toll Road Private Limited; vi) NK Toll Road Limited; vii) PS Toll Road Private Limited; viii) SU Toll Road Private Limited; ix) TD Toll Road Private Limited; and x) TK Roll Road Private Limited.
Revenue, Profit and Cash Flow Projections	The projections of the revenue, operating cash flows and profits of the Trust Group for the financial years ended March 31, 2018, 2019 and 2020, prepared in accordance with the requirements of the InvIT Regulations
Right of First Offer and Future Assets Agreement / ROFO and Future Assets Agreement	The right of first offer and future assets agreement dated [●], among the Sponsor, the Investment Manager and the Trustee (acting on behalf of the Trust).
Securities Purchase Agreement(s)	The securities purchase agreements to be entered into by the Trustee (acting on behalf of the Trust), the Investment Manager and the Sponsor, with each of the Project SPVs, in relation to the transfer of the equity shares and the [●] held by the Sponsor in such Project SPVs, in consideration for Units, after the Bid/Issue Closing Date but before the Allotment of the Units.
Sponsor	The sponsor of the Trust, namely Reliance Infrastructure Limited
Traffic Consultants	GMD Consultants and Systra MVA Consulting (India) Private Limited
Traffic Reports	The reports prepared by the Traffic Consultants with respect to the toll revenues and operation and maintenance cost projections for the underlying road projects operated by the Project SPVs.
Trustee	The trustee, namely IDBI Trusteeship Services Limited
Trust Assets	The assets owned by the Trust, whether directly or indirectly through a Project SPV or any other company, which are held by the Trustee in the name of the Trust for the benefit of the Unitholders, and includes all rights, interests and benefits arising from and incidental to the ownership of such assets
Trust Fund	The aggregate of capital contributions received from the Unitholders and any additions, accretions or reduction, and shall include securities, investments and Trust Assets of any kind whatsoever to which the same may be converted or varied from time to time, unutilized portion of any reserves created out of accretions, but does not include the initial settlement by the Sponsor and accretions thereto.
Trust Documents	The Indenture of Trust, the Investment Management Agreement, the Project Implementation Agreements, the Right of First Offer and the Future Assets Agreement, the Securities Purchase Agreements, any other agreement entered into by the Trustee and/or the Investment Manager with respect to the Trust and/or the Units, the Sponsor, this Draft Offer Document, the Offer Document and the Final Offer Document
Unitholder(s)	Investor(s) who holds Unit(s) of the Trust
Unit(s)	Unit(s) issued by the Trust representing an undivided beneficial interest and rights in the Trust
Valuers	The valuers of the Trust Assets and the Trust, namely Walker Chandiok & Co LLP, Chartered Accountants

Project SPVs

Term	Description
DS	DS Toll Road Limited
GF	GF Toll Road Private Limited
HK	HK Toll Road Private Limited

Term	Description
JR	JR Toll Road Private Limited
KM	KM Toll Road Private Limited
NK	NK Toll Road Limited
PS	PS Toll Road Private Limited
SU	SU Toll Road Private Limited
TD	TD Toll Road Private Limited
TK	TK Roll Road Private Limited

Issue Related Terms

Term	Description
AXIS	Axis Capital Limited
Acknowledgement Slip	The slip or document issued by the Designated Intermediary to a Bidder as proof of registration of the Bid cum Application Form
Allot / Allotment / Allotted	Unless the context otherwise requires, issue and transfer of the Units pursuant to the Issue to the successful Bidders
Allottee	The successful Bidder to whom the Units are Allotted
Allotment Advice	Note or advice or intimation of Allotment sent to each successful Bidder, who has been or is to be Allotted Units after the Basis of Allotment has been finalized by the Investment Manager, the GCBRLMs and the BRLMs, in consultation with the Designated Stock Exchange
Anchor Investor(s)	An Institutional Bidder, applying under the Anchor Investor Portion, with a minimum Bid of Rs. 100 million, in accordance with the requirements specified in the InvIT Regulations and the Offer Document
Anchor Investor and Strategic Investor Allocation Price	Price at which Units will be allocated to Anchor Investors and Strategic Investors in terms of the Offer Document and the Final Offer Document, which will be decided by the Investment Manager in consultation with the GCBRLMs and the BRLMs
Anchor Investor Application Form	Form used by an Anchor Investor to make a Bid in the Anchor Investor Portion and which will be considered as an application for Allotment in terms of the Offer Document and the Final Offer Document
Anchor Investor and Strategic Investor Bid/Issue Period	The day, one day prior to the Bid/Issue Opening Date, on which Bids by Anchor Investors and Strategic Investors shall be submitted and allocation to Anchor Investors and Strategic Investors shall be completed
Anchor Investor Portion	Up to 60% of the Institutional Bidder Category, which may be allocated by the Investment Manager, in consultation with the GCBRLMs and the BRLMs, to Anchor Investors and Strategic Investors on a discretionary basis
Anchor Investor and Strategic Investor Issue Price	Final price at which the Units will be Allotted to Anchor Investors and Strategic Investors in terms of the Offer Document and the Final Offer Document, which price will be equal to or higher than the Issue Price but not higher than the Cap Price. The Anchor Investor and Strategic Investor Issue Price will be decided by the Investment Manager in consultation with the GCBRLMs and the BRLMs.
Application Supported by Blocked Amount / ASBA	An application, whether physical or electronic, used by ASBA Bidders to make a Bid and authorizing an SCSB to block the Bid Amount in the ASBA Account
ASBA Account	A bank account maintained with an SCSB and specified in the ASBA Form submitted by ASBA Bidders for blocking the Bid Amount mentioned in the Bid cum Application Form
ASBA Bid	A Bid made by an ASBA Bidder
ASBA Bidder(s)	Any Bidder in this Issue who submits a Bid through the ASBA process, excluding Anchor Investors and Strategic Investors
ASBA Form	An application form, whether physical or electronic, used by ASBA Bidders which will be considered as the application for Allotment in terms of the Offer Document and the Final Offer Document
Banker(s) to the Issue / Escrow Collection Bank(s)	Banks which are clearing members and registered with SEBI as bankers to an issue and with whom the Escrow Account(s) will be opened, being [●]

Term	Description
Basis of Allotment	Basis on which the Units will be Allotted to successful Bidders under the Issue and which is described in the section "*Issue Procedure*" on page 537
Bid	An indication to make an offer during the Bid/Issue Period by a Bidder (other than an Anchor Investor or a Strategic Investor) pursuant to submission of the Bid cum Application Form, or during the Anchor Investor and Strategic Investor Bid/Issue Period by Anchor Investors or Strategic Investors, pursuant to the submission of Anchor Investor Application Form and Strategic Investor Application Form, to subscribe to the Units at a price within the Price Band, including all revisions and modifications thereto as permitted under the InvIT Regulations in terms of the Offer Document and the Bid cum Application Form. The term "Bidding" shall be construed accordingly.
Bid Amount	The highest value of the optional Bids indicated in the Bid cum Application Form and payable by the Bidder/blocked in the ASBA Account of the ASBA Bidders, as the case may be, upon submission of a Bid in the Issue
Bid cum Application Form	Anchor Investor Application Form or Strategic Investor Application Form or the ASBA Form, as the context requires
Bid/Issue Closing Date	Except in relation to any Bids received from the Anchor Investors and Strategic Investors, the date after which the Designated Intermediaries will not accept any Bids
Bid/Issue Opening Date	Except in relation to Anchor Investors and Strategic Investors, the date on which the Designated Intermediaries will start accepting Bids
Bid/Issue Period	The period between the Bid/Issue Opening Date and the Bid/Issue Closing Date, inclusive of both days
Bid Lot	[●] Units
Bidder(s)	Any prospective investor who makes a Bid pursuant to the terms of the Offer Document and the Bid cum Application Form
Bidding Centres	Centres at which the Designated Intermediaries shall accept the ASBA Forms, i.e. Designated SCSB Branches for SCSBs, Specified Locations for the Syndicate, Broker Centres for Registered Brokers, Designated RTA Locations for RTAs and Designated CDP Locations for CDPs
Book Building Process	The book building process, in terms of which this Issue is being made
BRLMs / Book Running Lead Managers	The book running lead managers to the Issue, namely SBI Capital Markets Limited and YES Securities (India) Limited
CAN / Confirmation of Allocation Note	Notice or intimation of allocation of the Units sent to Anchor Investors and Strategic Investors, who have been allocated Units, after the Anchor Investor and Strategic Investor Bid/Issue Period
Cap Price	The higher end of the Price Band, subject to any revision thereto, above which the Issue Price will not be finalised and above which no Bids will be accepted
Collecting Depository Participant / CDP	A depository participant as defined under the Depositories Act, registered with SEBI and who is eligible to procure Bids at the Designated CDP Locations
Cut-off Price	The Issue Price, finalised by the Investment Manager in consultation with the GCBRLMs and the BRLMs.
Designated Branches	Such branches of the SCSBs which shall collect the ASBA Forms, a list of which is available on the website of SEBI at http://www.sebi.gov.in/sebiweb/home/list/5/33/0/0/Recognised-Intermediaries or at such other website as may be prescribed by SEBI from time to time
Designated CDP Locations	Such locations of the CDPs where Bidders can submit the ASBA Forms. The details of such Designated CDP Locations, along with names and contact details of the Collecting Depository Participants eligible to accept ASBA Forms are available on the websites of the respective Stock Exchanges (www.bseindia.com and www.nseindia.com)

Term	Description
Designated Date	Date on which funds are transferred from the Escrow Account(s) and instructions are given to the SCSBs to unblock the ASBA Accounts and transfer the amounts blocked by the SCSBs, from the ASBA Accounts, to the Public Issue Account or the Refund Account, as appropriate, in terms of the Offer Document and the Final Offer Document. The aforesaid instructions and transfers shall be issued/executed only after finalization of Basis of Allotment in consultation with the Designated Stock Exchange.
Designated Intermediaries	Members of the Syndicate, sub-syndicate members, SCSBs, Registered Brokers, CDPs and RTAs, who are authorized to collect Bid cum Application Forms from the Bidders, in relation to the Issue
Designated RTA Locations	Such locations of the RTAs where Bidders can submit the ASBA Forms to RTAs. The details of such Designated RTA Locations, along with names and contact details of the RTAs eligible to accept ASBA Forms are available on the websites of the respective Stock Exchanges (www.bseindia.com and www.nseindia.com)
Designated Stock Exchange	[●]
Draft Offer Document / DOD	This Draft Offer Document dated December 15, 2016, issued in accordance with the InvIT Regulations, which does not contain complete particulars, including the number of Units, the price at which the Units will be Allotted and the size of the Issue
DSPML	DSP Merrill Lynch Limited
Eligible NRI(s)	NRI(s) from jurisdictions outside India where it is not unlawful to make an offer or invitation under the Issue and in relation to whom the Bid cum Application Form and the Offer Document will constitute an invitation to subscribe to the Units
Escrow Account(s)	Account opened with the Escrow Collection Bank(s) and in whose favour the Anchor Investors and the Strategic Investors will transfer money through NEFT/RTGS/direct credit in respect of the Bid Amount when submitting a Bid
Escrow Agreement	Agreement to be entered into among Trustee (acting on behalf of the Trust), the Investment Manager, the GCBRLMs, the BRLMs, the Registrar to the Issue, the Escrow Collection Bank(s), the Public Issue Account Bank(s) and the Refund Bank(s) for, *inter alia*, the collection of the Bid Amounts from the Anchor Investors and Strategic Investors and where applicable, refunds of the amounts collected from the Bidders (excluding the ASBA Bidders), on the terms and conditions thereof
First Bidder	Bidder whose name appears first in the Bid cum Application Form or the Revision Form and in case of joint Bids, whose name appears as the first holder of the beneficiary account held in joint names
Final Offer Document	The Final Offer Document containing, *inter alia*, the Issue Price that is determined at the end of the Book Building Process, the size of the Issue and certain other information, including any addenda or corrigenda thereto
Floor Price	The lower end of the Price Band, subject to any revision thereto, at or above which the Issue Price and the Anchor Investor and Strategic Investor Issue Price will be finalised and below which no Bids will be accepted
GCBRLMs / Global Co-ordinators and Book Running Lead Managers	The global co-ordinators and book running lead managers to the Issue, namely Axis Capital Limited, DSP Merrill Lynch Limited and UBS Securities India Private Limited
Institutional Bidder Category	Portion of the Issue (including the Anchor Investor Portion) being not more than 75% of the Issue, consisting of [●] Units which shall be available for allocation to Institutional Bidders (including Anchor Investors and Strategic Investors), subject to valid Bids being received at or above the Issue Price

Term	Description
Institutional Investor	Institutional investor, as defined under Regulation 106X of the ICDR Regulations, means (i) Qualified Institutional Buyers (as defined under the ICDR Regulations); (ii) family trusts with a net-worth of more than Rs. 5,000 million, as per their last audited financial statements; (iii) systematically important NBFCs registered with the RBI, with a net-worth of more than Rs. 5,000 million, as per their last audited financial statements; and (iv) intermediaries registered with the SEBI, with a net-worth of more than Rs. 5,000 million, as per their last audited financial statements
Institutional Bidder	An Institutional Investor who makes a Bid pursuant to the terms of the Offer Document and the Bid cum Application Form
Issue	Initial public offer of up to [●] Units, aggregating up to Rs. 30,000 million, with an option to retain oversubscription of up to 25% of the Issue size in accordance with the InvIT Regulations
Issue Agreement	The agreement dated December 15, 2016, among the Trustee (acting on behalf of the Trust), the Investment Manager, the Trustee, the Sponsor, the GCBRLMs and the BRLMs
Issue Price	The final price at which Units will be Allotted to the successful Bidders (except Anchor Investors and Strategic Investors) in terms of the Offer Document. The Issue Price will be decided by the Investment Manager in consultation with the GCBRLMs and the BRLMs on the Pricing Date.
Issue Proceeds	The gross proceeds of the Issue
Listing Agreement	The listing agreement to be entered into by the Trustee (acting on behalf of the Trust) and the Investment Manager with each of the Stock Exchanges
Net Proceeds	Issue Proceeds less the Issue expenses
Other Bidder	All Bidders that are not Institutional Bidders (excluding Strategic Investors that are not Institutional Bidders but are participating in the Anchor Investor Portion)
Other Bidder Category	Portion of the Issue being not less than 25% of the Issue consisting of [●] Units, which shall be available for allocation on a proportionate basis to Other Bidders, subject to valid Bids being received at or above the Issue Price
Non-Resident	A person resident outside India as defined under FEMA and includes NRIs, FIIs and FPIs
Offer Document	The offer document to be issued in accordance with the InvIT Regulations, which will not have complete particulars of the price at which the Units will be offered, including any addenda or corrigenda thereto
Price Band	Price Band of a minimum price of [●] per Unit (Floor Price) and the maximum price of [●] per Unit (Cap Price), including any revisions thereof. The Price Band and the minimum Bid Lot will be decided by the Investment Manager, in consultation with the GCBRLMs and the BRLMs, and will be announced at least five Working Days prior to the Bid/Issue Opening Date, on the website of the Trust, the Sponsor and the Investment Manager, and shall be made available to the Stock Exchanges for the purpose of uploading on their respective websites.
Pricing Date	The date on which the Investment Manager, in consultation with the GCBRLMs and the BRLMs, will finalise the Issue Price
Public Issue Account	Account opened with the Public Issue Account Bank(s) to receive monies from the Escrow Account(s) and the ASBA Accounts on the Designated Date
Public Issue Account Bank(s)	Bank(s) with whom the Public Issue Account for collection of Bid Amounts from the Escrow Accounts and ASBA Accounts will be opened, being [●]

Term	Description
QIB(s) / Qualified Institutional Buyer(s)	Qualified institutional buyer(s), as defined under Regulation 2(1)(zd) of the ICDR Regulations, which currently means: i) a mutual fund, VCF, AIF and FVCI registered with SEBI; ii) an FPI other than Category III FPI registered with SEBI; iii) a public financial institution as defined in section 4A of the Companies Act, 1956; iv) a scheduled commercial bank; v) a multilateral and bilateral development financial institution; vi) a state industrial development corporation; vii) an insurance company registered with the IRDAI; viii) a provident fund with minimum corpus of Rs. 250 million; ix) a pension fund with minimum corpus of Rs. 250 million; x) national investment fund set up by resolution no. F. No. 2/3/2005-DDII dated November 23, 2005 of the Government published in the gazette of India; xi) insurance funds set up and managed by army, navy or air force of the Union of India; and xii) insurance funds set up and managed by the Department of Posts, India.
Refund Account(s)	Account opened with the Refund Bank(s), from which refunds, if any, of the whole or part of the Bid Amount to the Bidders shall be made
Refund Bank(s)	Escrow Collection Bank(s) with whom Refund Account(s) will be opened and from which a refund of the whole or part of the Bid Amount, if any, shall be made, being [●]
Registered Brokers	Stock brokers registered with the stock exchanges having nationwide terminals, other than the Members of the Syndicate and sub-Syndicate members, and eligible to procure Bids in terms of Circular No. CIR/CFD/14/2012 dated October 4, 2012 issued by SEBI
Registrar / Registrar to the Issue	The registrar to the Issue, being Karvy Computershare Private Limited
Registrar Agreement	The agreement dated December 5, 2016, entered into among the Trustee (acting on behalf of the Trust), the Investment Manager and the Registrar to the Issue in relation to the responsibilities and obligations of the Registrar to the Issue pertaining to the Issue
Registrars and Share Transfer Agents or RTAs	Registrars and share transfer agents registered with SEBI and eligible to procure Bids at the Designated RTA Locations
Revision Form	Form used by the Bidders to modify the quantity of the Units or the Bid Amount in any of their Bid cum Application Forms or any previous Revision Form(s). Bidders are not allowed to withdraw or lower their Bid (in terms of number of Units or the Bid Amount) at any stage.
SBICAP	SBI Capital Markets Limited
SCSBs / Self Certified Syndicate Banks	Banks registered with SEBI, offering services in relation to ASBA, a list of which is available on the website of SEBI at http://www.sebi.gov.in/sebiweb/home/list/5/33/0/0/Recognised-Intermediaries and updated from time to time
Specified Locations	Bidding centres where the Syndicate shall accept ASBA Forms from ASBA Bidders
Stock Exchanges	BSE and NSE
Strategic Investor(s)	Strategic investor(s), as defined under Regulation 2(1)(zza) of the InvIT Regulations, which currently means (i) an infrastructure finance company registered with the RBI as a NBFC, (ii) a scheduled commercial bank, (iii) an international multilateral financial institution, (iv) a systemically important NBFC registered with RBI, and (v) FPIs, who together invest not less than five per cent of the total Issue Size or such other amount as may be specified by the SEBI from time to time.
Strategic Investor Application Form	Form used by a Strategic Investor to make a Bid in the Anchor Investor Portion and which will be considered as an application for Allotment in terms of the Offer Document and the Final Offer Document

Term	Description
Syndicate Agreement	The agreement to be entered into among the GCBRLMs, the BRLMs, the Syndicate Members, the Trustee (acting on behalf of the Trust) and the Investment Manager in relation to the collection of Bid cum Application Forms by the Syndicate
Syndicate Members	Intermediaries registered with SEBI who are permitted to carry out activities as an underwriter, being [●]
Syndicate or Members of the Syndicate	Collectively, the GCBRLMs, the BRLMs and the Syndicate Members
UBS	UBS Securities India Private Limited
Underwriters	[●]
Underwriting Agreement	The agreement among the Trustee (acting on behalf of the Trust), the Investment Manager, the Trustee and the Underwriters to be entered into on or after the Pricing Date
Working Day(s)	"Working Day", shall mean all days, other than (i) the second and fourth Saturdays of the month, Sundays, or a public holiday, (ii) on which commercial banks in Mumbai are closed for business, provided that with reference to (a) announcement of Price Band; and (b) Bid/Issue Period, shall mean all days, (excluding Saturdays, Sundays and public holidays), on which commercial banks in Mumbai are open for business; and (c) the time period between the Bid/Issue Closing Date and the listing of the Units on the Stock Exchanges, shall mean all trading days of Stock Exchanges, excluding Sundays and excluding days on which commercial banks in Mumbai are closed for business.
YESSEC	YES Securities (India) Limited

Technical/Industry Related Terms/Abbreviations

Term	Description
BOT	Build-Operate-Transfer
CCEA	Cabinet Committee on Economic Affairs
COD	Commercial Operation Date
DBFOT	Design-Build-Finance-Operate-Transfer
EPC	Engineering Procurement and Construction
ETC	Electronic Toll Collection
HPWD	Haryana Public Works Department
ICRA	ICRA Limited
IRC	Indian Roads Congress
IRR	Internal Rate of Return
LCV	Light Commercial Vehicle
MAV	Multi-Axle Vehicle
MIDC	Maharashtra Industrial Developmental Corporation
MoRTH	Ministry of Road Transport and Highways
NH	National Highway
NHAI	National Highways Authority of India
NHDP	National Highways Development Project
O&M	Operation and Maintenance
PCU	Passenger Car Unit
PPP	Public Private Partnership
PWD(s)	Public Works Department(s)
SPV	Special Purpose Vehicle
WPI	Wholesale Price Index

Conventional Terms/Abbreviations

Term	Description
AGM	Annual General Meeting
AIF(s)	Alternative investment fund(s) as defined in and registered under the AIF Regulations

Term	Description
AIF Regulations	Securities and Exchange Board of India (Alternative Investment Funds) Regulations, 2012
AS	Accounting standards issued by the ICAI
Associate	An associate, as defined under the InvIT Regulations
BSE	BSE Limited
Category III FPIs	FPIs who are registered as "Category III foreign portfolio investors" under the FPI Regulations
CDSL	Central Depository Services (India) Limited
CIN	Corporate Identity Number
Client ID	Client identification number of the Bidder's beneficiary account
Companies Act	Companies Act, 2013 and Companies Act, 1956, as applicable
Companies Act, 1956	Companies Act, 1956 (without reference to the provisions thereof that have ceased to have effect upon notification of the sections of the Companies Act, 2013) along with the relevant rules made thereunder
Companies Act, 2013	Companies Act, 2013, to the extent in force pursuant to the notification of sections of the Companies Act, 2013, along with the relevant rules made thereunder
Competition Act	Competition Act, 2002
Contract Labour Act	Contract Labour (Regulation and Abolition) Act, 1970
DIN	Director Identification Number
DIPP	Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government of India
DP ID	Depository participant identification
DP/ Depository Participant	A depository participant as defined under the Depositories Act
Debenture Trustees Regulations	Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993
Demographic Details	Details of the Bidders including the Bidders' address, name of the Bidders' father / husband, investor status, occupation and bank account details
Depositories	NSDL and CDSL
Depositories Act	Depositories Act, 1996
EGM	Extraordinary General Meeting
EPF Act	Employees' Provident Funds and Miscellaneous Provisions Act, 1952
EPU	Earnings per Unit
FCNR Account	Foreign currency non-resident account
FEMA	Foreign Exchange Management Act, 1999, read with rules and regulations thereunder
FEMA Regulations	Foreign Exchange Management (Transfer or Issue of Security by a Person Resident Outside India) Regulations, 2000
FII(s)	Foreign institutional investors, as defined in and registered under the FPI Regulations
Financial Year / Fiscal / FY	Unless stated otherwise, the period of 12 months ending March 31 of that particular year
FPI(s)	Foreign portfolio investors, as defined in and registered under the FPI Regulations
FPI Regulations	Securities and Exchange Board of India (Foreign Portfolio Investors) Regulations, 2014
FVCI(s)	Foreign venture capital investors, as defined in and registered under the FVCI Regulations
FVCI Regulations	Securities and Exchange Board of India (Foreign Venture Capital Investors) Regulations, 2000
GoI / Government	Government of India
HUF	Hindu Undivided Family
ICAI	The Institute of Chartered Accountants of India
ICDR Regulations	Securities and Exchange Board of India (Issue of Capital and Disclosure Requirements) Regulations, 2009
ICSI	The Institute of Company Secretaries of India
IFRS	International Financial Reporting Standards

Term	Description
Intermediaries Regulations	The Securities and Exchange Board of India (Intermediaries) Regulations, 2008
IRDAI	Insurance Regulatory and Development Authority of India
Income Tax Act/ I.T. Act	The Income Tax Act, 1961
Ind-AS	Indian Accounting Standards
India	The Republic of India
Indian GAAP	Generally Accepted Accounting Principles in India
InvIT Regulations	Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended, and the guidelines issued thereunder, including circulars no. CIR/IMD/DF/55/2016 dated May 11, 2016, CIR/IMD/DF/114/2016 dated October 20, 2016, and CIR/IMD/DF/127/2016 dated November 29, 2016, issued by SEBI and such other amendments or circulars issued by SEBI from time to time
IPO	Initial Public Offering
IST	Indian Standard Time
Km	Kilometres
LLP Act	The Limited Liability Partnership Act, 2008
MAT	Minimum Alternate Tax
Mutual Fund(s)	Mutual fund(s) as defined in and registered under the Securities and Exchange Board of India (Mutual Funds) Regulations, 1996
NAV	Net asset value
NBFC	Non Banking Financial Company
NDCF(s)	Net Distributable Cash Flow(s)
NECS	National Electronic Clearing Service
NEFT	National Electronic Fund Transfer
NRE Account	Non-Resident External Account
NRI	An individual resident outside India who is a citizen of India or is an 'Overseas Citizen of India' cardholder within the meaning of section 7(A) of the Citizenship Act, 1955, and shall have the meaning ascribed to such term in the FEMA Regulations
NRO	Non-Resident Ordinary Account
NSDL	National Securities Depository Limited
NSE	National Stock Exchange of India Limited
p.a.	Per annum
PAN	Permanent Account Number
PAT	Profit after tax
Pension Fund	Pension fund, as defined in and registered under the Pension Fund Regulatory and Development Authority Act, 2013
PF	A provident fund under the EPF Act, and shall have the meaning ascribed to such term in the FEMA Regulations
PFRDA	Pension Fund Regulatory and Development Authority
RBI	Reserve Bank of India
Rs. / Rupees / INR	Indian Rupees
Registration Act	Registration Act, 1908
Regulation S	Regulation S under the U.S. Securities Act
RTGS	Real Time Gross Settlement
Rule 144A	Rule 144A under the U.S. Securities Act
SCRA	Securities Contracts (Regulation) Act, 1956
SCRR	Securities Contracts (Regulation) Rules, 1957
SEBI	The Securities and Exchange Board of India constituted under the SEBI Act
SEBI Act	Securities and Exchange Board of India Act, 1992
State Government	The government of a state in India
STT	Securities transaction tax
Trusts Act	Indian Trusts Act, 1882
UK	United Kingdom
U.S. / United States	United States of America
U.S. GAAP	Generally Accepted Accounting Principles in the United States of America

Term	Description
U.S. QIBs	"qualified institutional buyer" as defined in Rule 144A under the U.S. Securities Act
U.S. Securities Act	U.S. Securities Act of 1933, as amended from time to time, and the rules and regulations promulgated thereunder
USD / US$	United States Dollars
VCF	Venture capital funds, as defined in and registered under the VCF Regulations
VCF Regulations	Securities and Exchange Board of India (Venture Capital Funds) Regulations, 1996

Notwithstanding the foregoing, terms in the sections "Statement of Tax Considerations / Benefits", "Summary of the Concession Agreements" and "Financial Statements" on pages 103, 222 and 355, respectively, shall have the meaning given to such terms in such sections. Page numbers refer to page numbers of this Draft Offer Document, unless otherwise specified.

PRESENTATION OF FINANCIAL, INDUSTRY AND MARKET DATA

Certain Conventions

All references to "India" contained in this Draft Offer Document are to the Republic of India and all references to the "U.S." or the "United States" are to the United States of America.

Financial Data

Unless stated otherwise, the financial data included in this Draft Offer Document is derived from the Condensed Combined Financial Statements, which are prepared in accordance with the requirements of the InvIT Regulations and Ind-AS. The summary consolidated financial statements of the Sponsor and the Investment Manager, which are included in this Draft Offer Document, have been prepared in accordance with Indian GAAP and the Companies Act, as of and for the financial years ended March 31, 2014, 2015 and 2016. The Condensed Combined Financial Statements are included in the section "*Financial Statements*", on page 355. Further, the summary financial statements of the Sponsor and the Investment Manager are included in the section "*Summary Financial Information*", on page 57.

In this Draft Offer Document, any discrepancies in any table between the total and the sums of the amounts listed are due to rounding off. All figures and percentage figures in decimals have been rounded off to two decimals, and accordingly there may be consequential changes in this Draft Offer Document.

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

There are significant differences between Ind-AS, Indian GAAP, U.S. GAAP and IFRS. The reconciliation of the financial information to IFRS or U.S. GAAP financial information has not been provided. Further, no reconciliation of the financial information from Ind-AS to Indian GAAP or from Indian GAAP to Ind-AS has been provided. The Investment Manager has not attempted to explain those differences or quantify their impact on the financial data included in this Draft Offer Document, and it is urged that you consult your own advisors regarding such differences and their impact on our financial data.

Accordingly, the degree to which the financial information included in this Draft Offer Document will provide meaningful information is entirely dependent on the reader's level of familiarity with Indian accounting practices, Ind-AS, Indian GAAP, the Companies Act, and the InvIT Regulations. Any reliance by persons not familiar with Indian accounting practices, Ind-AS, Indian GAAP, the Companies Act, the InvIT Regulations on the financial information presented in this Draft Offer Document should accordingly be limited.

Unless otherwise indicated, any percentage amounts, as set forth in this Draft Offer Document, including in the sections "*Risk Factors*", "*The Trust's Business*", "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" on pages 16, 159 and 463, respectively, have been calculated on the basis of the Condensed Combined Financial Statements, prepared in accordance with the InvIT Regulations and Ind-AS, and the summary financial statements of the Sponsor and the Investment Manager, prepared in accordance with Indian GAAP and the Companies Act.

Historically, the audited standalone financial statements of the Project SPVs have been prepared in accordance with Indian GAAP and the Companies Act by the auditors of the respective Project SPVs. However, for the purposes of the Condensed Combined Financial Statements, such audited standalone financial statements have been converted and prepared in accordance with Ind-AS for the periods commencing from April 1, 2013.

Currency and Units of Presentation

All references to:

i) "Rupees" or "Rs." Or "INR" are to Indian Rupees, the official currency of the Republic of India; and
ii) "US$" or "USD" are to United States Dollars, the official currency of the United States of America.

Certain numerical information in this Draft Offer Document has been presented in "million" and "billion" units. One million represents 1,000,000 and one billion represents 1,000,000,000.

Exchange Rates

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

The following table sets forth, for the periods indicated, information with respect to the exchange rate between the Rupee and the U.S. Dollar (in Rupees per U.S. Dollar):

Period	Period End	Average	High	Low
Fiscal				
2016	66.33	65.46	68.78	62.16
2015	62.59	61.15	63.75	58.43
2014	60.10	60.50	68.36	53.74
2013	54.39	54.45	57.22	50.56
2012	51.16	47.95	54.24	43.95
Month Ended				
November 30, 2016	68.53	67.63	68.72	66.43
October 31, 2016	66.86	66.75	66.89	66.53
September 30, 2016	66.66	66.74	67.06	66.36
August 31, 2016	66.98	66.94	67.19	66.74
July 31, 2016	67.03	67.21	67.50	66.91
June 30, 2016	67.62	67.30	68.01	66.63

Source: www.rbi.org.in

Notes:

i. The above figures are based on the RBI reference rates.

ii. In case the period end is a public holiday, the previous calendar day not being a public holiday has been considered.

Industry and Market Data

Unless stated otherwise, industry and market data used in this Draft Offer Document has been obtained or derived from the reports prepared by GMD Consultants and Systra MVA Consulting (India) Private Limited (the "**Traffic Consultants**") with respect to the toll revenues and operation and maintenance cost projections for the underlying road projects operated by the Project SPVs (the "**Traffic Reports**"), and the "*Indian Road Sector*" report of December 2016 prepared by ICRA Limited (the "**ICRA Report**"), which are commissioned reports, and publicly available information as well as other Government and industry publications and sources. The Investment Manager has commissioned the Traffic Reports, included in this Draft Offer Document as **Annex C**, to provide an independent estimation of the projected traffic volumes with respect to the underlying road projects operated by the Project SPVs, which is based on historical data and certain assumptions. Further, the ICRA Report has been prepared by ICRA Limited at the request of the Investment Manager.

Industry as well as Government publications generally state that information contained in those publications has been obtained from sources believed to be reliable but that their accuracy and completeness are not guaranteed and their reliability cannot be assured. Accordingly, no investment decision should be made on the basis of such information. Although we believe that the industry data used in this Draft Offer Document is reliable, it has not been independently verified by the GCBRLMs, the BRLMs, the Investment Manager and/or the Trustee or any of their respective affiliates/advisors. Such data involves risks, uncertainties and numerous assumptions and is subject to change based on various factors, including those discussed in the section "*Risk Factors*" on page 16. Accordingly, investment decisions should not be based solely on such information.

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

FORWARD-LOOKING STATEMENTS AND FINANCIAL PROJECTIONS

This Draft Offer Document contains certain "forward-looking statements". These forward-looking statements generally can be identified by words or phrases such as "aim", "anticipate", "believe", "expect", "estimate", "intend", "objective", "plan", "project", "will", "will continue", "will pursue", "seek to" or other words or phrases of similar import. Similarly, statements that describe strategies, objectives, plans or goals are also forward-looking statements.

In accordance with the InvIT Regulations, the projections of the revenue, operating cash flows and profits of the Trust Group for the financial years ended March 31, 2018, 2019 and 2020, prepared in accordance with the requirements of the InvIT Regulations (the "**Revenue, Profit and Cash Flow Projections**"), have been included as **Annex B** herewith. The Revenue, Profit and Cash Flow Projections are forward looking statements and should be read together with the underlying assumptions and notes thereto. Further, the Valuation Report, included as **Annex A** herewith, is based on certain projections and accordingly, should be read together with the assumptions and notes thereto. The Traffic Reports, included as **Annex C** herewith, include projections/estimates in relation to O&M expenses and traffic growth, and accordingly, should be read in conjunction with the notes and assumptions thereto.

All forward-looking statements and financial projections are subject to risks, uncertainties and assumptions. Actual results may differ materially from those suggested by forward-looking statements or financial projections due to risks or uncertainties associated without expectations with respect to, but not limited to, regulatory changes pertaining to the infrastructure sector in India and our ability to respond to them, our ability to successfully implement our strategy, our growth and expansion plans, technological changes, our exposure to market risks, general economic and political conditions in India which have an impact on our business activities or investments, the monetary and fiscal policies of India, inflation, deflation, unanticipated turbulence in interest rates, foreign exchange rates, equity prices or other rates or prices, the performance of the financial markets in India and globally, changes in domestic laws, regulations and taxes and changes in competition in the infrastructure sector. Certain important factors that could cause actual results to differ materially from our expectations include, but are not limited to, the following:

(a) our ability to successfully complete the Formation Transactions and debt financing transactions;

(b) the business and investment strategy of the Trust;

(c) expiry or premature termination of the Project SPVs' respective concession agreements;

(d) decline in traffic levels;

(e) extension or early termination of the Project SPVs' concession agreements depending upon the actual levels of traffic, in accordance with the terms of the respective Project SPV's concession agreements;

(f) estimated financial and operational information regarding, and the future development and economic performance of, the Trust;

(g) future earnings, cash flow and liquidity;

(h) potential growth opportunities;

(i) financing plans;

(j) the competitive position and the effects of competition on the Trust's investments (including competition from competing roads);

(k) development of competing roads with respect to the roads where the Project SPVs operate;

(l) the general transportation industry environment and traffic growth; and

(m) regulatory changes and future Government policy relating to the transportation industry in India.

For further discussion on factors that could cause actual results to differ from expectations, see the sections "*Risk Factors*", "*Industry Overview*", "*The Trust's Business*" and "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" on pages 16, 138, 159 and 463, respectively. By their nature, certain market risk disclosures are only estimates and could be materially different from what actually occurs in the future. As a result, actual gains or losses could materially differ from those that have been estimated.

Forward-looking statements and financial projections reflect current views as of the date of this Draft Offer Document and are not a guarantee of future performance or returns to investors. These statements and projections are based on certain beliefs and assumptions, which in turn are based on currently available information. In accordance with the InvIT Regulations, the assumptions underlying the Revenue, Profit and Cash Flow Projections included as **Annex B** herewith have been certified by the Auditors.

Although the Investment Manager believes the assumptions upon which these forward-looking statements and financial projections are based are reasonable, any of these assumptions could prove to be inaccurate, and the forward-looking statements and financial projections based on these assumptions could be incorrect. Neither the Investment Manager, the Trustee, the GCBRLMs, the BRLMs nor any of their affiliates/advisors have any obligation to update or otherwise revise any statements reflecting circumstances arising after the date hereof or to reflect the occurrence of underlying events, even if the underlying assumptions do not come to fruition. The Investment Manager and the Trustee will ensure that the investors in India are informed of material developments until the time of the grant of listing and trading permission by the Stock Exchanges.

There can be no assurance that the expectations reflected in the forward-looking statements and financial information will prove to be correct. Given these uncertainties, Bidders are cautioned not to place undue reliance on such forward-looking statements and financial projections and not to regard such statements to be a guarantee or assurance of the Trust Group's future performance or returns to investors.

SECTION II – RISK FACTORS

An investment in the Units involves risks. Prospective investors should carefully consider all the information in this Draft Offer Document, including the risks and uncertainties described below, before making an investment in the Units. To obtain a complete understanding, prospective investors should read this section in conjunction with the sections headed "The Trust's Business", "Financial Statements" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" on pages 159, 138 and 463, respectively, as well as all other information contained in this Draft Offer Document. The risks and uncertainties described in this section may not be the only risks and uncertainties the Trust currently faces. Additional risks and uncertainties not presently known to the Trustee or the Investment Manager, or that the Trustee or the Investment Manager currently deem immaterial, may arise or may adversely affect our business, financial condition, cash flows and results of operations. If any of the following risks, or other risks that are not currently known or are now deemed immaterial, actually occur, our business prospects, results of operations, cash flows and financial condition could suffer, the price of the Units could decline and prospective investors may lose all or part of their investments. Unless otherwise stated in the relevant risk factors set forth below, the Trustee and the Investment Manager are not in a position to specify or quantify the financial or other risks mentioned herein.

This Draft Offer Document also contains forward-looking statements (including Revenue, Profit and Cash Flow Projections) that involve risks, uncertainties and assumptions. The actual results of the Trust Group could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the considerations described below and elsewhere in this Draft Offer Document.

Investors should be aware that the price of the Units, and the income from them, may be subject to volatility. If any of the risks described below occurs, our business and prospects could be materially and adversely affected, the trading price of the Units could decrease and investors could lose all or part of their original investment.

In making an investment decision, prospective investors must rely upon their own examinations and the terms of the Issue, including the merits and the risks involved. Prospective investors should consult their tax, financial and legal advisors about the particular consequences of investing in the Issue.

In this section, unless the context otherwise requires, a reference to "we", "us" and "our" refers to the Trust Group. Furthermore, unless the context otherwise requires, the financial information used in this section is derived from the Trust's Combined Financial Statements prepared under Ind-AS.

Risks Related to our Organization and the Structure of the Trust

1. ***We have not executed definitive documentation with respect to the Formation Transactions, the debt financing arrangements, the ROFO and Future Assets Agreement. Our completion of the Formation Transactions, pursuant to which we will acquire the Project SPVs, and the transactions contemplated by the debt financing documentation are subject to certain closing and other conditions that may prevent us from acquiring the Project SPVs or providing debt financing to them***

Pursuant to the Formation Transactions, prior to the Allotment of the Units in the Issue, we will acquire the entire equity shareholding of the Sponsor in the Project SPVs and a portion of the subordinated debt certificates held by the Sponsor in the Project SPVs from the Sponsor in exchange for Units. The Securities Purchase Agreements, the ROFO and Future Assets Agreement and the debt financing documentation have not been executed and will be executed only after the Bid/Issue Closing Date. Details of such agreements included in this Draft Offer Document are indicative only and are subject to change.

Our ability to complete the Formation Transactions is subject to certain closing conditions. These conditions include, but are not limited to, obtaining any required consents and the release of pledges with respect to the Sponsor's equity shareholding in the Project SPVs.

Pursuant to the terms of the concession agreements entered into by the Project SPVs, the consent of the Concessioning Authority is required to make additions to, amend or replace any of the financing agreements entered into with the existing lenders of the Project SPVs, if such addition, replacement, or amendment has or may have the effect of imposing or increasing any financial liability of the Concessioning Authority. The Project SPVs intend to refinance a certain portion of their outstanding indebtedness with the Trust. Refinancing is permitted under the concession agreements, and we do not believe that the proposed refinancing of the existing loans of the Project SPVs will increase or impose any additional financial liability on the Concessioning Authority.

The Concessioning Authority, however, has not specifically reviewed or approved the proposed refinancing, and there can be no assurance that the Concessioning Authority will not interpret any change to the terms and conditions of the Project SPVs' outstanding indebtedness that results from the proposed refinancing as increasing or adding to the Concessioning Authority's financial liability towards the Project SPVs.

Furthermore, the concession agreements require the submission to the Concessioning Authority, for its review and comments, all project agreements (including financing arrangements) to which the Project SPVs are a party prior to entry, amendment or replacement of such agreements, even if such agreements do not affect the financial liability or obligation of the Concessioning Authority. The Project SPVs have not yet submitted such drafts to their respective Concessioning Authority. There can be no assurance that the Concessioning Authorities will approve the drafts in time or at all.

The terms and conditions of the subordinated debt certificates held by the Sponsor in the Project SPVs are proposed to be amended prior to the assignment of such subordinated debt certificates to the Trust pursuant to the Formation Transactions. Such amendment will require the consent of the senior lenders of the Project SPVs and their respective Concessioning Authorities. The Sponsor and the Project SPVs have not yet applied for such consent as on date, and intend to do so prior to the filing of the Offer Document with the SEBI. There can be no assurance that such consents will be obtained in time, or at all.

In addition, we have also applied for but not yet received lender consents with respect to the proposed transfer of the shares of the Project SPVs to the Trust and other matters relating to the Issue. There can be no assurance that these lenders will consent to the proposed transfer of the shares or such other matters on the Issue in time or at all. For more details, please see the section headed "*Financial Indebtedness – Consents from the Lenders of the Project SPVs* " in this Draft Offer Document.

Our inability to complete any of the Formation Transactions in the manner described in this Draft Offer Document may materially and adversely impact our ability to complete the Issue within the anticipated time frame or at all. Under the InvIT Regulations, the Trust is prohibited from making an initial public offer of units, unless the value of the assets held by the Trust prior to the Allotment of Units in the Issue equals or exceeds Rs. 5,000 million. If the Trust is unable to complete the acquisition of assets worth at least Rs. 5,000 million, we will not be able to Allot Units to investors pursuant to the Issue. Further, if the Trust is able to complete the purchase of certain Project SPVs such that we hold assets worth at least Rs. 5,000 million, prior to the Allotment of the Units in the Issue, but is nonetheless unable to complete the purchase of all the Project SPVs, the Investment Manager will, in consultation with the GCBRLMs and the BRLMs, and subject to any conditions imposed by the SEBI in this respect, take a decision on whether to proceed with the Issue or to withdraw or reduce the size of the Issue. Further, the utilisation of the Net Proceeds by the Trust is not subject to monitoring by any independent agency.

The Combined Financial Statements, the Revenue, Profit and Cash Flow Projections and the disclosure presented in this Draft Offer Document have been prepared and presented on the basis that the Trust will hold all 10 Project SPVs on or prior to the date of the Allotment of the Units pursuant to the Issue. In the event that the Trust is unable to complete the purchase of the remaining Project SPVs and the Investment Manager decides to proceed with the Issue and complete the Allotment of Units to the investors, you will be unable to rely on the Combined Financial Statements or the Revenue, Profit and Cash Flow Projections presented in this Draft Offer Document. Further, such event may materially and adversely affect the ability of the Trust to make, or prevent the Trust from making, distributions to the Unitholders in the manner described in this Draft Offer Document or at all.

Further, any inability of the Trust to complete the debt financing transactions or the Formation Transactions in the manner described in this Draft Offer Document or the replacement of debt in the manner described in "*Use of Proceeds*" section may adversely impact the ability of the Trust to make distributions to Unitholders in the manner described in this Draft Offer Document or at all. In the event the Trust is unable to complete the debt financing transactions or the Formation Transactions in the manner described in this Draft Offer Document, you will be unable to rely on the Revenue, Profit and Cash Flow Projections or evaluate the manner in which we propose to invest the Net Proceeds on the economic merits of such investments. Such event may materially and adversely affect the ability of the Trust to make distributions to the Unitholders.

2. ***The debt financing proposed to be provided by the Trust to each of the Project SPVs comprises of certain unsecured, interest-free and interest-bearing loans as well as loans that, subject to certain approvals, are proposed to be secured by a pari passu charge on (i) the cash flows deposited in the escrow account and (ii) the escrow account of such Project SPV. The payment obligations of the respective Project SPVs in relation to the Unsecured Trust Financing and, in the event the Project SPVs are unable to obtain such***

approvals, the Secured Trust Financing will be subordinated to all existing and future obligations of the Project SPVs towards any secured senior lenders

The debt financing proposed to be provided by the Trust to each of the Project SPVs comprises certain unsecured, interest-free and interest-bearing loans (the "**Unsecured Trust Financing**"), as well as loans that, subject to certain approvals, may be secured by a charge on (i) the cash flows deposited in the escrow account and (ii) the escrow account of such Project SPV, which shall rank *pari-passu* to the charge created to secure the debt owed to the senior lenders of the respective Project SPVs (the "**Secured Trust Financing**"). The payment obligations of the respective Project SPVs in relation to the Unsecured Trust Financing and, in the event the Project SPVs are unable to obtain such approvals, the Secured Trust Financing, will be subordinated to all existing and future obligations of the Project SPVs towards any secured senior lenders.

All payment obligations of the Project SPVs to the Trust under the Unsecured Trust Financing and, in the event the Project SPVs are unable to obtain requisite approvals from the lenders, the Secured Trust Financing are proposed to be serviced from the balance amounts remaining in the escrow accounts maintained by each Project SPV as mandated under the relevant concession agreements, after the payment of, among other things, all taxes due, all expenses in connection with the construction of the project, operations and maintenance expenses, including fees collection expenses, expenses for repair works, payment of concession fees, debt service payments to senior lenders (as defined under the relevant concession agreements), additional concession fees or premium, negative grants payable to the Concessioning Authority, reimbursement of expenditure incurred by the Concessioning Authority, any payments and damages due and payable and any reserve requirements set forth in the financing agreements, as defined in the relevant concession agreements (the "**Surplus Cash Flows**"). Accordingly, any reduction in the cash flows of the Project SPVs or any unanticipated increase in any of the payments to be made by the Project SPVs from the escrow accounts may result in a decrease in the Surplus Cash Flows, which may materially and adversely impact the ability of the Project SPVs to meet their payment obligations to the Trust in relation to the Unsecured Trust Financing and, in the event the Project SPVs are unable to obtain requisite approvals from the lenders, the Secured Trust Financing. Further, the receivables of each Project SPV (including the Surplus Cash Flows) are secured in favour of the existing senior lenders to the extent of the amounts payable to such senior lender pursuant to the terms of their respective financing arrangements and restrictive covenants under the financing arrangements with such senior lenders and the concession agreements prevent the Project SPVs from opening new bank accounts, and accordingly, the Project SPVs are not permitted to transfer the Surplus Cash Flows (as they arise) to a separate bank account in the name of the Project SPV that can be charged in favour of the Trust. In the event the Project SPVs are unable to obtain approval from the lenders for the creation of a *pari-passu* charge, we expect such receivables to remain secured in favour of the senior lenders until all amounts outstanding under such financing arrangements are paid in their entirety to the senior lenders. If an event were to occur under such financing arrangements such that all amounts outstanding under such financing arrangements were to become immediately due and payable, all, or substantially all, of the Surplus Cash Flows may be utilised in satisfying such payment obligations, thereby materially and adversely affecting the ability of such Project SPVs to meet their payment obligations to the Trust. Any adverse impact on any receivables payable to the Trust under such debt financing will materially and adversely affect the Trust's ability to make distributions to the Unitholders. Further, if the relevant concession agreement is terminated, the Surplus Cash Flows together with the termination payments deposited in the relevant escrow account will be applied towards the payment of the amounts outstanding to the senior lenders prior to the payment of the amounts outstanding under the Unsecured Trust Financing and, in the event the Project SPVs are unable to obtain approval from the lenders and the Concessioning Authority, the Secured Trust Financing. Accordingly, such amounts may be insufficient to repay all amounts outstanding under the Unsecured Trust Financing and the Secured Trust Financing.

Any inability on the part of any of the Project SPVs to meet their payment obligations to the Trust may adversely impact the ability of the Trust to make distributions to the Unitholders in the manner described in this Draft Offer Document or at all.

Further, the Unsecured Trust Financing and the Secured Trust Financing may be classified as "deposits" under the Companies Act, 2013 and the rules and regulations made thereunder, each as amended. If the Unsecured Trust Financing and the Secured Trust Financing are classified as "deposits", the Project SPVs may be required to undertake additional obligations in relation to such deposits, including, among other things, the creation of a cash reserve of not less than 15% of the amount of the deposits maturing during a financial year and the immediately succeeding financial year, the appointment of a security trustee for secured deposits and obtaining deposit related insurance. Compliance with such regulations would require the Project SPVs to incur additional expenditure, and

may adversely impact the Surplus Cash Flows available to the Project SPV to service the Secured Trust Financing and the Unsecured Trust Financing.

3. Any payment by the Project SPVs, including in an event of termination of the relevant concession agreement, is subject to a mandatory escrow arrangement which restricts their flexibility to utilise the available funds

The escrow arrangements mandated under the concession agreements require all monies that are received by each Project SPV, including funds constituting the financing package, the fees collected from the operation of the Initial Road Assets and any termination payments received from the Concessioning Authority, to be deposited in an escrow account and utilised only in accordance with the order prescribed under the escrow agreement. The escrow arrangements typically prioritise the payment of all taxes due, followed by payment of expenses in connection with the construction of the project, operation and maintenance expenses including expenses for repair works, payment of concession fees, debt service payments, negative grant payable to the Concessioning Authority, reimbursement of expenditure incurred by the Concessioning Authority, any payments and damages due and payable and any reserve requirements set forth in any financing agreements. For details of the escrow arrangements, please see the section headed "*Summary of the Concession Agreements*" in this Draft Offer Document.

With respect to withdrawals on termination (on account of default by the concessionnaire), the escrow arrangements typically prioritise the payment of all taxes due, followed by the payment of 90% of debt due to senior lenders (excluding subordinated debt), the payment of any outstanding concession fee (including any negative grant), the payment of damages and other payments such as premium in relation to the concession, retentions and payments arising out of liability for any defects, the remainder of debt due, subordinated debt, operation and maintenance expenses and any other payments under the concession agreement, after which the balance may be withdrawn by the Project SPVs for their own purposes. The Unsecured Trust Financing will be classified as subordinated debt or Equity under the concession agreements. Accordingly, the ability of the Trust to access such termination payments in relation to the Unsecured Trust Financing will be subordinated to the discharge of all obligations towards the senior lenders and the payment of, among other things, any outstanding concession fees, premium or additional concession fees and damages. If the Project SPV is unable to obtain the approval of the Concessioning Authority for the classification of the Trust as a senior lender and the classification of the Secured Trust Financing as debt due to a senior lender, the Secured Trust Debt will also be classified as subordinated debt and the ability of the Trust to access such termination payments in relation to the Secured Trust Financing will be subordinated to the discharge of all obligations towards the senior lenders and the payment of, among other things, any outstanding concession fees and damages. Any shortfall in the termination payments received from the Concessioning Authority may prevent us from recovering our investments or returns in the relevant Project SPVs adequately or at all.

The Trust is currently not a party to, or a third party beneficiary under, the escrow agreements entered into by the Project SPVs and does not currently have any enforceable rights under such escrow agreements, including any right to instruct the escrow agent to make any payments, which may adversely affect the ability of the Trust to recover amounts to it. For details of the escrow arrangements, please see the section headed "*Summary of the Concession Agreements*" in this Draft Offer Document.

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

Pursuant to the InvIT Regulations, we are required to invest not less than 80% of the value of our assets in completed and revenue-generating infrastructure projects, such as the Project SPVs. In addition, we must not invest more than 10% of the value of our assets in under-construction infrastructure projects. As per the InvIT Regulations, if any project is completed in stages, the portion of the project that is under construction is required to be counted towards "under-construction" infrastructure projects. Upon the completion of the Formation Transactions, [●]% of the assets of the Trust will be invested in completed and revenue generating projects. If these conditions are breached on account of market movements of the price of the underlying assets or securities, the Investment Manager must inform the Trustee and ensure that these conditions are satisfied within six months of such breach (or within one year with Unitholder approval). Failure to comply with these conditions may present additional risks to us, including divestment of certain assets, delisting and other penalties and could prevent us from acquiring further assets including pursuant to the ROFO and Future Asset Agreement, including DA, which could have a material adverse effect on our business, financial condition and results of operations.

5. The Sponsor currently holds 74% of the equity share capital of PS, and its ability to acquire the residual

26% of the equity share capital from the other shareholder of PS is subject to obtaining NHAI's consent. In case of any delay or failure to obtain such consent, the Sponsor may be unable to acquire such equity shares in a timely manner or at all and the Trust may be unable to acquire 100% of the shareholding in PS from the Sponsor prior to listing of the Units or at all

As on the date of this Draft Offer Document, the Sponsor holds 74% of the equity share capital of PS. The remaining 26% of the equity share capital of PS is held by Jiangsu Provincial Transportation Engineering Group Company Limited ("**PS's Other Shareholder**" and such equity shares, the "**PS Shares**"). PS's Other Shareholder is not related to the Sponsor. Pursuant to an agreement entered into with the Sponsor, PS's Other Shareholders has agreed to transfer the entire extent of their shareholding in PS to the Sponsor, subject to the receipt of consent from NHAI permitting the divestment by PS's Other Shareholder. PS has applied to the NHAI requesting permission to transfer the PS Shares to the Sponsor. Such consent is yet to be received and there is no assurance that such consent will be received prior to the filing of the Offer Document or at all. In case PS is unable to obtain such consent in a timely manner or at all, or in the event onerous conditions are imposed by the NHAI in relation to such transfer, the Sponsor may be unable to acquire the remainder of PS's equity share capital from PS's Other Shareholder. In case the Sponsor is unable to acquire the PS Shares and to transfer such shares to the Trust, we will be unable to acquire these from the Sponsor as part of the Formation Transactions. The Revenue, Profit and Cash Flow Projections have been prepared and presented on the basis that the Trust will hold all 100% of PS on or prior to the date of the Allotment of the Units pursuant to the Issue. In the event that the Trust is unable to complete such acquisition, you will be unable to rely on the Combined Financial Statements or the Revenue, Profit and Cash Flow Projections presented in this Draft Offer Document, to this extent. For additional details in relation to the Formation Transactions, see the section headed "*Background and Structure of the Trust*" in this Draft Offer Document.

6. Pursuant to the securities purchase agreements, the Project SPVs will be required to transfer any proceeds of certain claims made and proposed to be made against the NHAI after the Acquisition Date to the Sponsor

Pursuant to the securities purchase agreements, the Project SPVs will be required, subject to the receipt of requisite approvals pursuant to the Project Agreements, to transfer any proceeds of certain claims made and proposed to be made against the NHAI after the Acquisition Date to the Sponsor. Such claims relate to causes of action that have arisen prior to the date of the transfer, with respect to the projects that have received provisional completion certificates (and with respect to which no additional construction in pending) and causes of action that have arisen prior to and that may arise subsequent to the date of the transfer, with respect to projects where additional construction is pending. There can be no assurance that the payment of such amounts will not impact the ability of the Project SPVs to make payments to the Trust, and any failure or reduction in the amounts paid by the Project SPVs to the Trust may impact the ability of the Trust to make distributions in the manner described in this Draft Offer Document, or at all. Please see the section "*Background and Structure of the Trust*" for further details with respect to the securities purchase agreement.

7. The Valuation Report and any underlying reports, are not opinions on the commercial merits of the Trust or the Project SPVs, nor are they opinions, expressed or implied, as to the future trading price of the Units or the financial condition of the Trust upon listing, and the valuation contained therein may not be indicative of the true value of the Project SPVs' assets

Walker, Chandiok & Co has been appointed as the independent valuers (the "**Valuers**") to undertake independent appraisals of the Project SPVs. The Valuers have issued a report (the "**Valuation Report**"), included in **Annex A** to this Draft Offer Document, which sets out their opinion as to the fair enterprise value of the Project SPVs as on December 31, 2016. In order to issue their Valuation Report, the Valuers based their assumptions regarding the concession periods, traffic volumes, toll rates, operation and maintenance costs, amortization, debt repayments and non-cash net working capital projections on information provided by and discussions with or on behalf of us, the Sponsor and the Investment Manager, and which reflects current expectations and views regarding future events and, therefore, necessarily involves known and unknown risks and uncertainties. The Valuation Report contains forecasts, projections and other "forward-looking" statements that relate to future events, which are, by their nature, subject to significant risks and uncertainties. The future events referred to in these forward-looking statements involve risks, uncertainties and other factors which may cause the actual results or performance to be materially different from any future results or performance expressed or implied by the forward-looking statements. For example, the valuation of KM assumes that assumes a concession period of 30 years, which is conditional upon the Concessioning Authority requiring KM to undertake the six-laning of the Project, which will only be determined in 2019. In addition, the concession agreements for KM, PS and HK contain clauses relating

to the modification of the concession period, if the actual traffic falls short or exceeds the 'target traffic' specified in the respective concession agreements as of a defined date. For KM and PS, the Valuer has taken into account the respective projected traffic as of the target date, which is lower than the target traffic in both cases and accordingly assumed an extension of the concession period in both cases. Further, in the case of HK, the projected traffic as of the target date is higher than the target traffic. In such a scenario, HK has the option to not reduce the concession period by paying a further premium of 25% of the realisable fee in the respective years in addition to the concession fee. The Valuer has assumed that KM will exercise the option to not reduce the concession period.

The Valuation Report is not an opinion on the commercial merits and structure of the Trust or the Project SPVs, nor is it an opinion, express or implied, as to the future trading price of the Units in or the financial condition of the Trust upon listing. The Valuation Report does not purport to contain all the information that may be necessary or desirable to fully evaluate the Trust or the Project SPVs or an investment in the Trust or the Units. The Valuation Report is not based on a comprehensive review of the business, operational or financial condition of the Project SPVs and, accordingly, makes no representation or warranty, expressed or implied, in this regard. The Valuation Report does not confer rights or remedies upon investors or any other person, and does not constitute and should not be construed as any form of assurance as to the financial condition or future performance of the Trust or as to any other forward-looking statements included therein, including those relating to certain macro-economic factors, by or on behalf of the Sponsor, the Investment Manager, the Project Manager, the Trust or the BRLMs. Further, we cannot assure you that the valuation prepared by the Valuers reflects the true value of the net future revenues of the Project SPVs or that other valuers would arrive at the same valuation. Accordingly, the valuation contained therein may not be indicative of the true value of the Project SPVs' assets. The Valuation Report has not been updated since the date of its issue, does not take into account any subsequent developments and should not be considered as a recommendation by the Sponsor, the Investment Manager, the Project Manager, the Trust or the GCBRLMs or the BRLMs or any other party that any person should take any action based on the Valuation Report. Accordingly, investors should not rely on the Valuation Report in making an investment decision to purchase Units in the Fund.

8. We have referred to the data derived from Traffic Reports commissioned from the Traffic Consultants, which are based on certain bases, estimates and assumptions that are subjective in nature and may not be accurate

We have appointed Systra MVA Consulting (India) Private Limited and GMD Consultants, independent third-party research agencies as our traffic consultants (the "**Traffic Consultants**") to forecast the traffic volumes for the Project SPVs' projects and to prepare traffic reports on the Initial Road Assets, which are set out in **Annex C** to this Draft Offer Document (the "**Traffic Reports**"). The Traffic Reports are subject to various limitations and are based upon certain bases, estimates and assumptions that are subjective in nature and that are based, in part, on information provided by and discussions with or on behalf of us, the Sponsor and the Investment Manager. The Traffic Reports reflect current expectations and views regarding future events, and therefore, necessarily involve known and unknown risks and uncertainties. The Traffic Reports contain forecasts, projections and other "forward-looking" statements that relate to future events, which are, by their nature, subject to significant risks and uncertainties, including population growth, gross domestic product growth, vehicle ownership rates, per capita income, agricultural output and fuel consumption. As a result variation in traffic and revenue forecasts may have a higher range than expected. The future events referred to in the Traffic Reports involve risks, uncertainties and other factors which may cause the actual traffic volumes to be materially different from any future traffic volumes expressed or implied by the Traffic Reports. For example, in the KM report, the concession period of KM assumes that six-laning of the project will occur in the future, which remains uncertain. There can be no assurance that the bases, estimates and assumptions adopted by the Traffic Consultants for the purposes of preparing the Traffic Reports will prove to be accurate. If any of these bases or assumptions is incorrect, future traffic volumes for the Initial Road Assets could be materially different from those that are set forth in the Traffic Reports and this Draft Offer Document.

9. We have not yet received any consents from the lenders in relation to the Formation Transactions. Such consents, once obtained are likely to impose certain obligations on the Trust, including the creation of a pledge over a portion of the equity shares held by the Trust in each Project SPV and the provision of certain guarantees. Any default under the existing financing arrangements by any of the Project SPVs could adversely impact the Trust's ability to continue to own a majority of each of the Project SPVs, its cash flows and its ability to make distributions to Unitholders

We have not yet received any consents from the lenders in relation to the Formation Transactions. Such consents, once obtained are likely to impose certain obligations on the Trust, including the creation of a pledge over a

portion of the equity shares held by the Trust in each Project SPV and the provision of certain guarantees or undertakings by the Trust. Any default under the existing financing arrangements by any of the Project SPVs could adversely impact the Trust's ability to continue to own a majority of each of the Project SPVs, its cash flows and its ability to make distributions to Unitholders.

10. There are risks associated with the potential acquisition of the Delhi Agra Project by the Trust pursuant to the ROFO and Future Assets Agreement

In addition to the toll-road assets that are being transferred by the Sponsor to the Trust pursuant to the Formation Transactions, the Sponsor (through its wholly owned subsidiary DA) also operates the Delhi Agra Project, which is a 179.50 km section of NH 2 between Delhi and Agra. As of September 30, 2016, six-laning of 137 km out of the total project stretch of 179.50 km is completed. The Trust will enter into the Right of First Offer and Future Assets Agreement with the Sponsor, which will enable the Trust to acquire the Delhi Agra Project upon the completion of certain milestones. For details, see the sections headed, "*The Delhi Agra Project*" and "*Related Party Transactions – Details of Related Party Transactions Proposed to be Undertaken - Right of First Offer and Future Assets Agreement*".

As the Delhi Agra Project is currently under construction, it is subject to various construction related risks, including time and costs overruns and delays in obtaining regulatory approvals, which may delay or prevent the Sponsor from selling its shareholding in the DA to the Trust pursuant to the ROFO and Future Assets Agreement.

In addition, under the terms of the Delhi Agra concession agreement with the NHAI, the Sponsor is not permitted to transfer shares for a period of two years from the date of receipt of the provisional completion certificate, without prior approval of the NHAI.

11. Shares of the Project SPVs are pledged in favour of their lenders and the lenders of the Sponsor, who may exercise their rights under the respective share pledge agreements in the event of default under relevant financing agreements.

Shares of the Project SPVs are pledged in favour of the lenders to such Project SPVs to secure loan facilities obtained by the Project SPVs. 51% each of the equity share capital of NK, DS and PS and 49% of the share capital of SU have been pledged in favour of their respective lenders. Pursuant to the draft of the Securities Purchase Agreement, such pledges shall be released immediately prior to the transfer of the equity shares from the Selling Unitholders to the Trust and will be required to be pledged by the Trust in favour of the lenders, immediately after such transfer.

If there are any defaults in payment or any breach under the relevant financing agreements, the lenders may exercise their right to enforce the security interest under the financing agreements, including by taking ownership of the pledged shares, selling the pledged shares to any third-party purchaser, and exercising voting rights in respect of the pledged shares on any matter at any meeting of the members of the relevant Project SPVs. If any such event occurs, we may not be able to fully recognize revenue attributable to these Project SPVs, if at all. In addition, if we lose ownership or control of any of our Project SPVs, our business, results of operations and financial condition, and our ability to make distributions, would be adversely affected.

Further, the Sponsor has also pledged and has entered into non-disposal undertakings in relation to the equity shares of certain Project SPVs as security in connection with its financing agreements. These are as set forth below:

- A pledge of 30% of the equity shares of DS, GK, HK, KM, SU, TD and TK, and a pledge of 23% of the equity shares of JR and PS; and
- A non-disposal undertaking in relation to 19% of the equity shares of DS, GF, HK, KM, SU, TD and TK.

In the event of any default by the Sponsor in its repayment obligations under such financing agreements, the lenders of the Sponsor may exercise the pledge, which may prevent us from acquiring the Project SPVs. Further, in case the Sponsor is unable to obtain a release of the non-disposal undertakings, we may be unable to acquire the Project SPVs. While the Sponsor has applied to its lenders for the release of such pledge and non-disposal undertakings, the consents from such lenders are pending as on date.

12. The regulatory framework governing infrastructure investment trusts in India is untested and the interpretation and enforcement thereof involve uncertainties, which may have a material, adverse effect

on the ability of certain categories of investors to invest in the Units, our business, financial condition and results of operations and our ability to make distributions to Unitholders

The SEBI issued the InvIT Regulations with effect from September 26, 2014. The regulations have been amended pursuant to a notification dated November 30, 2016 and supplemented with additional guidelines on May 11, 2016 and circulars dated October 20, 2016 and November 29, 2016.

Because the regulatory framework governing infrastructure investment trusts in India comprises a relatively new set of regulations and is therefore untested, interpretation and enforcement by regulators and courts involves uncertainties. Furthermore, regulations and processes with respect to certain aspects of infrastructure investment trusts, including, but not limited to, follow-on offers of Units and the dissolution and delisting of infrastructure investment trusts have not yet been issued or adopted or are the subject matter of consultation papers. For example, trust units may not be classified as "securities" under the Securities Contract Regulation Act, 1956, as amended, and infrastructure investment trusts are not "companies" or "bodies corporate" within the meaning of various SEBI regulations. Accordingly, the applicability of several regulations (including regulations relating to intermediaries, underwriters, merchant bankers, takeover, insider trading and fraudulent and unfair trade practices) to the Trust is unclear. Further, it is unclear whether certain categories of investors that are currently permitted to invest in equity shares offered by Indian companies, may also invest in the Units in the Issue.

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

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

Risks Related to Our Business and Industry

13. The Project SPVs' toll-road concessions may be terminated prematurely under certain circumstances

Upon completion of the Formation Transactions, the toll-road concessions will comprise our principal assets. We will be unable to continue the operation of a particular road concession without a continuing concession right from the Concessioning Authority. A concession may be revoked by the Concessioning Authority for certain reasons set forth in the relevant concession agreement, including, but not limited to, one or more of the following:

- any failure by the relevant Project SPV to comply with prescribed minimum shareholding requirements;
- any failure by the relevant Project SPV to participate in, or match the bid of, the successful bidder in the event of any proposed augmentation of capacity of the Initial Road Assets;
- any failure by the relevant Project SPV to augment the capacity of the project if the average daily traffic exceeds the traffic capacity for which the project was designed;
- any failure by the relevant Project SPV to make any payments, including negative grants, concession fees or additional concession fees, to the Concessioning Authority in a timely manner;
- any failure by the relevant Project SPV to comply with operational or maintenance standards;
- any temporary or permanent halt of operations at the relevant Project SPV;
- any occurrence of an event of default under any financing document where the lender has recalled any part of the loan;
- any continuation of a force majeure event, such as an act of God, act of war, expropriation or compulsory acquisition of any project assets by the government, industrial strikes, and civil commotions, boycotts and political agitations, beyond a specified time, usually 180 days; and

- any failure by the relevant Project SPV to comply with any other material terms of the relevant concession agreement.

Certain of the concession agreements also provide that, if the actual traffic volume exceeds the target traffic volume on a defined date, the Concessioning Authority may reduce the concession period according to a formula specified in the concession agreement or perform additional capital expenditures in exchange for compensation agreed in the concession agreement. As per certain of the concession agreements, in the event the actual traffic volume on the target date exceeds the target traffic volume, the concession period may be reduced by 0.75% for every 1% excess in actual traffic volume as compared to the target traffic volume, provided that the aggregate reduction does not exceed 10% of the original concession period.

For each of the Project SPVs, we have assumed that we will continue to operate the relevant project until the last date of the concession period as per the relevant concession agreement and have not made provisions for any reduction in the concession periods in the projections included in this Draft Offer Document.

As per a letter dated July 6, 2016 received by KM from NHAI, the NHAI rejected KM's application for the deferment of premium and requested KM to immediately pay all outstanding overdue premium amounts together with interest. As per the concession agreement entered into by KM, in the event of a failure to make payments of premium, the NHAI can, *inter-alia*, suspend all rights of KM under the concession agreement, terminate the concession agreement and demand the payment of compensation in accordance with the terms of the concession agreement.

If a concession agreement is terminated by the Concessioning Authority due to a default by a Project SPV, or by the Project SPV due to a default by the Concessioning Authority, such Project SPV is entitled to termination payments or otherwise from the Concessioning Authority in accordance with the terms of the relevant concession agreement. The Secured Trust Financing may be for a maturity term that exceeds the maturity term of the original facilities obtained from the senior lenders. There can be no assurance that the Concessioning Authority will recognize such amounts as outstanding after the term of the original facilities obtained by the Project SPVs from their respective senior lenders. There can also be no assurance that the Concessioning Authority will pay the termination payments promptly or at all or that any termination payments will be adequate to enable us to recover our investments or returns in the relevant Project SPVs. The Termination Payments in the event of a termination due to a default by the Project SPV are, as per the terms of the concession agreements, lower than the amounts that would be paid in relation to a termination due to a default by the Concessioning Authority. For further details on the termination of the concession agreements, the termination payments, and the definition of "default" as contemplated under the relevant concession agreements, see the section headed "*The Trust's Business – Summary of the Project SPVs' concession agreements*" in this Draft Offer Document.

Certain of the Project SPVs have entered into supplementary concession agreements with the NHAI pursuant to which the Project SPVs and the NHAI have waived the right to raise claims against each with respect to certain past defaults, including in relation to delays in construction and loss of certain revenue. In the event that such supplementary agreements are set aside, the Project SPVs could face additional claims from the NHAI with respect to past defaults. Further, in the event any of the SPVs seek to raise claims against the NHAI with respect to the breaches listed in the supplementary agreements so having been waived, such SPVs may be in breach of the provisions of such supplementary agreements.

14. The Project SPVs are subject to restrictive covenants under their financing agreements that could limit our flexibility in managing our business or to use cash or other assets. In addition, some of the Project SPVs have not been in compliance with certain covenants prescribed under their financing agreements

Various financing agreements that the Project SPVs have entered into with certain banks and financial institutions contain certain restrictive covenants, including, but not limited to, requirements that they obtain consent from the lenders prior to:

- amending any Project Agreements, including the EPC contract effecting any change in the nature or scope of the project or any change in the financing plan;
- effecting any change in management/management control of the Project SPVs;
- effecting any change in capital structure (including shareholding pattern);
- raising any equity or preference share capital;
- making any capital expenditure other than permitted investments;
- making any dividend payments to the Trust or making any other restricted payments (including

redemption of any shares of any class, prepayment in relation to any indebtedness, payment of interest on unsecured loans, investment in any entity) except as permitted under the financing agreements;
- the premature repayment of certain facilities;
- creating of any security interest in any of the secured property;
- escrow its future cash flows or create any lien or charge of whatsoever nature over the future cash flows for the benefit of anyone other than the lenders;
- incurring any other indebtedness, including the issuance of debentures or acceptance of deposits, other than permitted indebtedness;
- entering into any partnership, profit-sharing or royalty agreement;
- removing any person exercising substantial powers of management over the affairs of the Project SPVs in case of an event of default;
- amending the constitutional documents of the Project SPVs;
- undertaking of any new project or making of any investment or taking any assets on lease;
- providing guarantees, indemnities or similar assurances in respect of indebtedness of any other person, (other than in the ordinary course of business);
- repaying, redeeming or prepaying any subordinated loan or loans brought in as equity or otherwise taken by the Project SPVs from the Sponsor;
- creating any subsidiary or permit the Project SPV to become a subsidiary;
- entering into any agreements that grant rights or options to subscribe to the equity or preference share capital of the SPVs;
- undertaking or permitting any scheme of arrangement or compromise with its creditors or shareholders; and
- changing the composition of the board of directors of any Project SPV.

For more details concerning our lenders' consents, please see the section headed "*Financial Indebtedness – Transaction Consents*" in this Draft Offer Document. In addition, these restrictive covenants may also affect some of the Trust's rights as the shareholder of the Project SPV and the Project SPV's ability to pay dividends if it is in breach of our obligations under the applicable financing agreement.

Certain of the loan agreements entered into by the Project SPVs provide for the conversion by the lenders of their outstanding debt into equity in an event of default. In case of an event of default, some lenders may elect to convert their debt into equity in the Project SPVs, and this may affect the debt to equity ratios maintained by the Project SPVs.

In case of any shortfall in project receivables, the relevant Project SPV may need to make good the shortfall from its own sources and/or arrange for the loan to be repaid through revenue shortfall loans from the relevant concession authority. Such financing agreements also require us to maintain certain financial ratios. In the event of any breach of any covenant contained in these financing agreements, we may be required to immediately repay our borrowings either in whole or in part, together with any related costs. There can be no assurance that we will be able to secure consents from, and/or negotiate revised terms with, the lenders on terms favourable to the Trust or at all.

Further, some of the financing agreements contain mandatory prepayment clauses, which require the utilization of cash surplus towards the prepayment of loans, if the debt service coverage ratio at the Project SPVs is above specified thresholds. The triggering of any such mandatory prepayment clauses will impact the ability of the Project SPVs to make payments to the Trust and accordingly impact the ability of the Trust to make distributions to the Unitholders.

Certain financing agreements also require mandatory prepayment in the event of any receipt of a litigation/arbitration award by the Project from the relevant Concessioning Authority, pursuant to the terms of the relevant concession agreements.

Further, in the past, some of the Project SPVs have not been in compliance with certain covenants under their loan agreements, as set forth below:

- Maintenance of debt service reserve account: TD, TK, GK, NK, DS and KM have failed to maintain debt service reserve accounts, as specified in their respective loan agreements;
- Maintenance of major maintenance reserve account: TD, TK, GF and KM have failed to maintain major maintenance reserve accounts, as specified in their respective loan agreements;

- Maintenance of debt service coverage ratio: GF, TK, TD and KM have not complied with the debt service coverage ratio requirements under their loan agreements; and
- Compliance with construction completion schedule: PS has not been in compliance with the construction completion schedule under its loan agreement.

These covenants are tested at the end of each financial year and the above Project SPVs have not been in compliance for the years ended March 31, 2016, 2015 and 2014. Further, NK and DS were not in compliance with the covenant to maintain major maintenance reserve accounts in the years ended March 31, 2015 and 2014 but are in compliance with this covenant for the year ended March 31, 2016.

Non-compliance with the above covenants may be considered an event of default under the relevant loan agreements. In case of an event of default, the lenders have the right to (a) declare the loan payable immediately; (b) enforce security interest; (c) transfer the assets of the borrower; (d) terminate the right of the borrower to make any withdrawals; (e) enter upon and take possession of the assets mortgaged; and (f) substitute themselves for the borrower under the project agreements and pursue other legal remedies.

Until the date of this Draft Offer Document, the lenders have not declared an event of default, and, at the most recent lender consortium meetings held in October and November 2016, the lenders have confirmed in the minutes of such meetings that there has been no default under the loan agreements as on the date of the respective consortium meetings.

Further, there is no assurance that the Project SPVs will be in compliance with the covenants for future periods. The Project SPVs have not specifically requested for waivers in relation to any past non-compliances and the declaration of an event of default by the Project SPVs' lenders for any earlier or continuing non-compliance of the covenants will have a material adverse effect on our business, financial condition and results of operations.

Furthermore, the financing agreements also contain cross default provisions, which could automatically trigger defaults under other financing agreements. Certain lenders are also entitled to accelerate the repayment of the loans at any time based on the lenders' assessment of the cash flows, subject to any approval required from the concessioning authority.

If the Project SPV is suspended under the concession in relation to any default by such Project SPV, at any time during such suspension, the senior lenders of each Project SPV have the right to request the Concessioning Authority to substitute the concessionaire in accordance with the substitution agreement.

Any downgrading of the credit rating of our Project SPVs by a credit rating agency or any adverse comment from the statutory auditors of such Project SPV may qualify as an event of default under the relevant financing agreements of our Project SPVs. Certain financing agreements also provide the banks and financial institutions with the right to convert amounts due into equity in the event of default, with the approval of the relevant concessioning authority. Certain of these banks and financial institutions also have a right to appoint nominee directors under these financing agreements in the event of default. Pursuant to the provisions of certain loan facilities availed by us, the lenders are entitled to recall the loan at any time on demand or call notice, requiring the borrower to repay (either in full or in part) the amount outstanding on any particular day.

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

15. A decline in traffic volumes would materially and adversely affect our business prospects, financial condition and results of operations and our ability to make distributions to Unitholders

The Project SPVs currently operate the Initial Road Assets. Toll revenues depend on toll receipts, which in turn depend on toll fees and traffic volumes on the toll roads. For the financial years 2014, 2015 and 2016, Passenger Car Unit volumes, or passenger car equivalent volumes, for the Project SPVs was 230,177, 273,403, and 317,132, respectively, representing a CAGR of 17% from financial year 2014 to financial year 2016 (which reflect the impact of partial COD of TK and KM and the commencement of toll operations at these projects). Traffic volumes are directly or indirectly affected by a number of factors, many of which are outside of our control, including:

- toll fees;
- fuel prices in India;
- the frequency of traveller use;

- the number and affordability of automobiles;
- the quality, convenience and travel efficiency of alternative routes outside of our network of toll roads;
- the convenience and extent of a toll road's connections with other parts of the local, state and national highway networks;
- the availability and cost of alternative means of transportation, including rail networks and air transport;
- the level of commercial, industrial and residential development in areas served by the Project SPVs' projects;
- adverse weather conditions; and
- seasonal holidays.

While certain of the Project SPVs' concession agreements provide for an extension in the concession period if the actual traffic volumes are significantly lower than the target traffic volumes set forth in the respective concession agreements, there can be no assurances that the concession period will be actually extended by the Concessioning Authority. In the event that the actual traffic volumes are significantly less than the projected traffic volumes, the revenue generated from toll receipts may be lower than anticipated and our business prospects, financial condition and results of operations and our ability to make distributions to Unitholders may be materially and adversely affected.

16. Our failure to extend applicable concession agreements or our inability to identify and acquire new road assets that generate comparable or higher revenue, profits or cash flows than the Project SPVs may have a material adverse impact on our business, financial condition and results of operations and our ability to make distributions

The concession agreements of the Project SPVs stipulate a limited concession period. Certain concession agreements provide that, if the actual traffic volume falls short of or exceeds the target traffic volume on a defined date, the concession period may be extended or reduced, respectively, by the Concessioning Authority according to a formula specified in the agreement.

As of September 30, 2016, the Project SPVs' concessions had residual periods ranging from approximately 9 years to 21 years. According to the Traffic Consultants' projections, the concession periods of PS and KM may be extended by five years in both cases, which has been assumed in the projections included in this Draft Offer Document. There can be no assurance, however, that such concession periods will be extended, as a formal extension will only be conveyed by the Concessioning Authority closer to the target date as defined in the relevant concession agreement. For further details on the residual concession period of each of the Initial Road Assets, see the section headed "*The Trust's Business*" in this Draft Offer Document.

There can also be no assurance that we will be able to acquire new toll-road assets upon the expiry of the Project SPVs' existing concession agreements or at any time thereafter. Accordingly, the number of assets forming part of our portfolio and the revenue generated by them may vary from time to time. Further, even if new toll-road assets are added to our portfolio, there can be no assurance that such toll-road assets will be able to generate comparable or higher cash flows, revenues and profits than the Project SPVs whose concession periods have expired. If the Project SPVs are unable to extend their concession agreements, or if we are unable to acquire new toll-road assets that generate comparable or higher cash flows, revenue or profits than the Project SPVs, our business, financial condition and results of operations and our ability to make distributions to Unitholders may be materially and adversely affected. For further details on the terms of each of the concession agreements, see the section headed "*The Trust's Business*" in this Draft Offer Document.

17. Changes in the policies adopted by governmental entities or in the relationships of any member of the Trust Group with the Government or State Governments could materially and adversely affect our business, financial performance and results of operations

The Project SPVs derive almost all of their revenue from their respective concession agreements with the Concessioning Authority and must maintain good relationships and strategic alliances with the Concessioning Authority, the Government and State Governments. We expect that, after the conclusion of the Formation Transactions, we will continue to depend on policies relating to the terms of the concessions and other incentives that we will receive from governmental entities in respect of the Project SPVs' existing projects and any future projects. In addition, we expect to benefit from, and depend on, the Concessioning Authority and various Government and State Government entities in terms of policies, incentives, budgetary allocations and other resources provided by these entities for the road industry in general. Any adverse change in any existing governmental policies, incentives, allocations or resources, or any change in our relationships with governmental entities, could materially and adversely affect our business, financial condition and results of operations. For

certain details of these policies, see the sections headed "*About the Trust – Regulations and Policies*" in this Draft Offer Document. The Project SPVs have in the past and expect to continue to file claims against the NHAI in relation to disputes arising out of the concession agreements. For details, see "*Material Litigation and Regulatory Action involving the Project SPVs*" in this Draft Offer Document.

Additionally, the toll roads in which governmental entities participate in may be subject to delays, extensive internal processes, policy changes, changes due to local, national and internal political pressures and changes in governmental or external budgetary allocation and insufficiency of funds. Since governmental entities are responsible for awarding concessions and are a party to the development and operation of the awarded projects, our business will be directly and significantly dependent on their support. Any withdrawal of support or adverse changes in their policies, even if not quantifiable monetarily, may lead to the Project SPVs' agreements being restructured or renegotiated or the concession period being decreased, which could materially and adversely affect the Project SPVs' financing, capital expenditure, revenues, development or operations.

18. Newly constructed roads or existing alternate routes may compete with the Initial Road Assets and result in diversion of the vehicular traffic, resulting in a reduction in our revenue from toll receipts

Under the terms of the concession agreements entered into by each of the Project SPVs and the Concessioning Authority, the Government and State Governments have the right to construct and open additional roads which may serve as alternate routes to the Initial Road Assets after the expiry of between eight and 15 years from the appointed date, depending on terms of the concession. The construction of such alternative roads and highways may result in a diversion of vehicular traffic from the Initial Road Assets and a reduction of revenue from toll receipts. For example, the Mohanur Vangal bridge is an alternative route to the NK Project for vehicles to travel through. While we have applied to the NHAI for compensation for the revenue loss arising as a result of the alternative road, there is no assurance that the NHAI will provide such compensation or, if provided, the compensation will be sufficient to cover our loss of revenue. Further, in relation to KM, there is an alternative rail route to Mundra Port. Therefore, according to the KM Traffic Report, a substantial change in policy and infrastructure, such as rail fares, travel time, and improvement of existing rail services may affect the traffic volume on the project road negatively. There can be no assurance that the construction of any additional roads or any changes in policies that impact existing routes that compete with the Initial Road Assets will not materially and adversely affect our revenues and operations. For further details on the terms of the concession agreements, see the section headed "*The Trust's Business – Summary of the Project SPVs' concession agreements*" in this Draft Offer Document.

Furthermore, local roads and state highways may be improved so as to serve as alternate routes to the Initial Road Assets, and tolls may or may not be charged on such local roads and state highways. The existence or improvement of such alternative roads and highways may also result in a diversion of vehicular traffic from the Initial Road Assets and a reduction of revenue from toll receipts, which may materially and adversely affect our business, financial condition and results of operations. For additional information on alternate routes, please see the Traffic Reports set out in **Annex C** to this Draft Offer Document.

19. Some of our projects have only recently been constructed and some are still partially constructed. We derive construction income from our projects during the periods that they are under construction. Once these projects are constructed, we will no longer derive construction income, which forms a substantial part of our revenue from operations

The Trust comprises ten Project SPVs, two of which are partially complete and four (TK, JR, KM and HK) of which have been completed in the past three financial years. Our results of operations for the past three financial years include construction income from our under-construction projects and those that have recently been completed. Contract revenue associated with the construction of roads is recognized as revenue by reference to the stage of completion of the projects at the balance sheet date. A significant portion of our revenue from operations for the past three financial years is derived from construction revenue. For details, see the section headed "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" in this Draft Offer Document. As our projects are fully completed, the Trust will not receive further construction income which may result in a decrease in the Trust's overall revenue from operations, if such decrease is not offset by our increase in toll income.

20. Our ability to negotiate the standard form of concession agreement may be limited, and the concession agreements contain certain other restrictive terms and conditions which may be subject to varying interpretations

Our concession agreements were entered into with the Concessioning Authority and we have limited ability to negotiate the terms of these contracts. The concession agreements that we have entered into are based on a model concession agreement prescribed by the Concessioning Authority. For example, the toll fees under the concession agreements are fixed, subject to annual adjustments to account for inflation as specified in the concession agreements. In addition, the operation and maintenance standards and specifications require the Project SPVs to incur operation and maintenance costs on a regular and periodic basis. The model concession agreement prescribed by the Concessioning Authority also provides for a fixed term concession and, although some concession agreements provide for an extension or reduction of the concession period based on certain factors, including actual traffic volumes on the target date, the concession agreements do not provide for renewal of the concession agreement after the expiry of the term.

The form of the concession agreement has evolved within the last decade and there is limited guidance available on the interpretation of a number of terms and conditions of such concession agreements. In addition, certain terms of the concession agreements, such as those related to an augmentation in the capacity of the toll roads, substitution of the Concessioning Authority in any or all of the project agreements, termination payments by the Concessioning Authority, construction of additional competing roads by the Concessioning Authority, the Government or State Governments and payment of compensation by the Concessioning Authority for changes in law are subject to interpretation. Accordingly, the interpretation of certain terms and conditions in the concession agreements of the Project SPVs by the Concessioning Authority, the courts or regulators may be different from our interpretation of such terms and conditions.

The terms and conditions of the concession agreements contain restrictive terms and conditions. For example, certain concession agreements contain provisions that mandate substitution clauses in the project agreements. Such substitution clauses allow the Concessioning Authority to step into project agreements in place of the Project SPV in the event of suspension or termination of the concession agreements due to a breach or default by such Project SPV. The concession agreements also provide that the lenders to a Project SPV may substitute the Project SPV with new concessionaires approved by the Concessioning Authority in the event of a default by the Project SPV under the relevant concession agreement, financing agreements or other project agreements. Additionally, pursuant to a circular dated January 29, 2014 issued by the NHAI, the NHAI or lenders may substitute the Project SPV in the event of a "financial default" by such Project SPV, which includes situations in which the NHAI or lenders have reason to believe that the Project SPV is likely to face financial distress and is likely to default in its compliance with the terms of the relevant concession agreement. While approving such substitution, the Concessioning Authority may also impose a penalty on the defaulting Project SPV, subject to a cap of 1% of the total project cost.

Further, the government may, on the occurrence of certain events, suspend toll collection at any of the roads. This has happened in Tamil Nadu for six of our projects due to flooding in the State of Tamil Nadu and for all of our projects in November 2016 due to the decision of the Government to "demonetise" Rs. 500 and Rs. 1,000 notes. In such situations, we have to make claims for loss of revenue and there is no assurance that our claims would be successful.

The terms of the Project SPVs' concession agreements require the Project SPVs to indemnify the Concessioning Authority for losses arising out of the design, engineering, construction, procurement, operation and maintenance of the toll road or arising out of breach of the obligations of the Project SPVs under the concession agreements.

In the event the Concessioning Authority or a lender invokes any restrictive term or condition in the concession agreements, or the Concessioning Authority, a court, or regulator interprets any term or condition in an adverse manner, such invocation or interpretation may materially and adversely affect our business, financial condition and results of operations. For further details on the terms of the concession agreements, see the section headed "*The Trust's Business – Summary of the Project SPVs' Concession Agreements*" in this Draft Offer Document.

21. As the terms and conditions of the concession agreements are generally fixed, we may be subject to increases in costs, including operation and maintenance costs, which we cannot recover by increasing toll fees

The terms and conditions of the concession agreements are fixed and are not negotiable during the concession period. The Project SPVs' operation and maintenance costs were Rs. 1,028.37 million, Rs. 1,404.75 million, Rs. 1,845.71 million and Rs. 1,013.14 million, respectively, representing 6.96%, 12.56%, 12.32% and 15.51% of the Project SPVs' total expenses and 6.56%, 12.65%, 13.72% and 18.68% of the toll revenue collected, in each

case on a combined historical basis for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2016, respectively.

The costs of operating and maintaining the Initial Road Assets may increase due to factors beyond the Project SPVs' control, including, among others things:

- increase in the cost of labour, materials and insurance;
- the Project SPVs being required to restore their project roads in the event of any landslides, floods, road subsidence, other natural disasters, accidents or other events causing structural damage or compromising safety which may not be fully compensated by insurance;
- increase in electricity tariff rates or other fuel costs resulting in an increase in the cost of energy;
- changes in Government policies requiring the reduction or abolition of toll collection;
- adverse weather conditions which may not be fully compensated by insurance;
- unforeseen legal, tax and accounting liabilities relating to acquired assets; and
- other unforeseen operational and maintenance costs.

In the event that our costs increase, we may be unable to offset such increases with higher revenues by increasing toll fees due to the restrictions of the concession agreements. Any significant increase in operation and maintenance costs beyond the amounts budgeted for by us, or any failure to meet quality standards, may reduce our profits, could expose us to penalties imposed by the concessioning authorities and could have a material, adverse effect on our business, financial condition and results of operations. Such events may also impact the ability of the Project SPVs to service the debt obtained from the Trust and our ability to make distributions to Unitholders. As such, the inability to change the terms and conditions, including the toll fees of the concession during the concession period, may materially and adversely affect our operational and financial flexibility. For further details on the terms of the concession agreements, see the section headed "*The Trust's Business – Details of the Project SPVs and the Initial Road Assets*" in this Draft Offer Document.

22. Deflation may materially and adversely affect our results of operations and financial condition

The toll rates specified under the concession agreements for the Project SPVs are subject to revision on account of inflation. In case of deflation, the toll rates may be adjusted downwards. In financial year 2017, tariff rates for NK, DS, TD, SU, TK and HK were adjusted downwards and toll rates were revised with effect from September 1, 2016, to account for negative inflation. For details, see the section titled "*Management's Discussion and Analysis of the Financial Condition and Results of Operations – Results of Operations*" in this Draft Offer Document.

Such downward adjustment may decrease our income from toll collection and our results of operations and financial condition may be materially and adversely affected.

23. Certain actions of the Project SPVs require the prior approval of the Concessioning Authority, and no assurance can be given that the Concessioning Authority will approve such actions in a timely manner or at all

Certain terms and conditions in the Project SPVs' concession agreements, financing agreements, and our other approvals require the Concessioning Authority prior written approval to be obtained for one or more of the following actions, among others:

- amendment, modification or replacement by the Project SPV of any project agreements (including financing agreements and the EPC Contracts) relating to the operation of the Initial Road Assets to which the Project SPV is a party if the amendment, modification or replacement of such agreement increases or imposes any financial liability or obligation on the Concessioning Authority;
- the creation of any encumbrance or security interest over, or transfer of rights and benefits of the Project SPVs under, the concession agreements or any project agreements;
- the selection or replacement of any operation and maintenance contractor and execution of the operation and maintenance agreements; and
- any change in ownership of any Project SPV during the operation of the Trust.

While we have applied for certain required approvals from the Concessioning Authority, such approvals are currently pending. There can be no assurance that the Concessioning Authority will approve such actions in a

timely manner or at all. For more information, see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

Furthermore, Concessioning Authority concession agreements typically require the submission to the Concessioning Authority, for its review and comments, all project agreements to which a Project SPV is a party prior to entry, amendment or replacement of such agreements, even if such agreements do not affect the financial liability or obligations of the Concessioning Authority.

The restrictions described above may impose constraints on our flexibility to conduct our business. Furthermore, if as a result of these restrictions, we are unable to pursue a favourable course of action or to respond to an unfavourable event, condition or circumstance, then our business, financial condition and results of operations may be materially and adversely affected. For further details on the terms of the concession agreements, see the section headed "*The Trust's Business – Summary of the Project SPVs' concession agreements*" in this Draft Offer Document.

24. Leakage of the toll fees on the Project SPVs' roads may materially and adversely affect its revenues and financial condition

The Project SPVs' toll receipts are primarily dependent on the integrity of toll-collection systems and the willingness of road users to pay toll fees. While each of the Project SPVs has an integrated toll-collection system in place, the level of revenues derived from collection of tolls may be reduced by leakage through toll evasion, theft, fraud or technical defaults in the Project SPVs' toll systems or forced violations by users of the Initial Road Assets. Furthermore, Project SPVs may also, at times, need to allow users of the Initial Road Assets to pass through without paying applicable tolls due to heavy traffic build-up, or may be unable to collect tolls due to political protests or other agitations relating to tolling. In addition, in certain circumstances, the governmental authorities or Indian courts could seek to suspend toll-collection for or during certain periods, in full or in part, on the Initial Road Assets, which suspension would result in a reduction in our revenues. Further, toll-collection errors may amount to a loss of revenue as there is an inherent risk of under-collection of toll fees given that most users of toll roads pay in cash. Any significant failure by us to monitor and control leakage in toll-collection systems could have a material, adverse effect on our business, prospects, financial condition and results of operations and our ability to make distributions. See the section headed "*The Trust's Business—Operations*" for further details on measures in place to protect the integrity of toll-collection systems.

In relation to the Kandla Mundra project, pursuant to a notification of the NHAI, KM is entitled to levy penalties on overloaded vehicles plying through the toll road. We may be unable to such penalties on overloaded vehicles, which may lead to leakage of toll revenues.

In addition, we also rely upon third party toll operators to collect tolls. We have in the past faced a situation where our third party toll operator for a certain Project SPV withdrew its services without notice. Any such situation in the future may force us to staff such toll plazas with replacements at short notice and affect our ability to collect toll effectively, which may lead to loss in revenues.

25. The Government of India has recently implemented certain currency measures which may affect the Indian economy and our business, results of operations, financial condition and cash flows

In response to the rising incidence of counterfeit currency notes and money illegally obtained and/or not declared for tax purposes, or black money, the Government of India and the Reserve Bank of India issued notifications stating that currency notes in denominations of Rs.1,000 and Rs.500 ceased to be legal tender with effect from November 9, 2016. Holders of such currency notes have been required to deposit such notes with bank branches and post offices or use them for only specified activities until time periods specified by the Government of India. Limits have also been imposed on the exchange or withdrawal from bank accounts and ATMs of valid currency notes for a specified period of time.

While new currency notes in denominations of Rs.2,000 and Rs.500 have been introduced, the immediate impact of these measures has been a decrease in cash liquidity among the public in India. A decrease in cash liquidity is likely to cause a short term reduction in the consumption of certain goods and services. The effects of these measures in the long term are unclear, but may include a negative impact on the country's growth rate in the fiscal year ending March 31, 2017. We may also be adversely impacted in the short-term although the long term impact is unclear. Any slowdown in the Indian economy may adversely affect our business, results of operations, financial condition and cash flows

The Government of India exempted the public from making any toll payments on specified toll roads in India for the period from November 9, 2016 until December 2, 2016. There can be no assurance that such exemptions will not be reissued. While we are in the process of seeking compensation from the relevant authorities for loss of toll revenue, the amounts that we are able to recover and the timing of such recovery is uncertain.

26. We will depend on certain directors, executive officers and key employees of the Investment Manager, the Project Manager and the Project SPVs, and such entities may be unable to retain such personnel or to replace them with similarly qualified personnel

Our performance will depend, in part, upon the continued service and performance of certain directors, executive officers and key employees of the Investment Manager, the Project Manager and the Project SPVs. The continued operations and growth of our business will be dependent upon the Investment Manager, the Project Manager and the Project SPVs being able to attract and retain personnel who have the necessary and required experience and expertise. Competition for qualified personnel with relevant industry expertise in India is intense due to the scarcity of qualified individuals in the toll-road business, and the aforesaid entities may not be able to retain their executive officers and key employees or attract and retain fresh talent in the future. Any inability by the Investment Manager, the Project Manager and the Project SPVs to retain their directors, executive officers and key employees, or the inability to replace such individuals with similarly qualified personnel, could have a material, adverse effect on the business, financial condition, results of operations and prospects of the Trust Group.

27. There can be no assurance that we will be able to successfully finance or undertake future acquisitions of road assets or efficiently manage the infrastructure road assets we have acquired or may acquire in the future

Our growth strategy in the future may involve strategic acquisitions of toll roads and other road assets, including pursuant to the ROFO and Future Assets Agreement. We may not be able to identify or conclude appropriate or viable acquisitions in a timely manner. The success of our past acquisitions and any future acquisitions will depend upon several factors, including:

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

There can be no assurance that we will be able to achieve the strategic purpose of such acquisitions or operational integration or an acceptable return on such investments, which may materially and adversely affect our profits, financial condition and distributions.

Further, the Trust is required to distribute 90% of its net distributable cash flows to Unitholders. Accordingly, the Trust's ability to undertake any future acquisition will depend on the ability of the Trust to raise further funds from investors through a fresh issue of Units and/or to raise debt financing from banks or other eligible lenders, and will be subject to the leverage ratios construed in the InvIT Regulations and Applicable Laws.

Furthermore, concession agreements for future toll-road projects may also contain terms and conditions that are more restrictive than those under the Project SPVs' concession agreements for the Initial Road Assets. These restrictions may restrict our flexibility in managing our business or projects and could in turn materially and adversely affect our business prospects, financial condition and results of operations.

28. Three Project SPVs (PS, KM and HK) are required to pay annual premiums / negative grants in consideration for being granted the right to build and operate their respective projects. Failure to make such payments could result in the termination of the relevant concession agreement by the Concessioning Authority

The Concession agreements for the Pune-Satara, Kandla-Mundra and Hosur-Krishnagiri Projects require PS, KM and HK to make premium payments to the NHAI for securing the right to build and operate the project. These premium payments are of a fixed amount for the first year of the concession period and have subsequent increments of 5% for each year of the concession period. Due to the slow economic growth in India in recent years, the NHAI adopted a scheme of premium restructuring whereby the premium payable to the NHAI could,

if permitted by the NHAI, be deferred over a few years and would be payable along with interest at the RBI Bank Rate plus 2%. The deferment was limited and fixed by the NHAI based on estimated shortfall after meeting debt obligations and operational expenses. While HK was permitted to defer premium by the NHAI, KM's application for premium deferment was rejected. PS has not applied for premium deferment.

KM is currently in default of its premium payment obligations and the NHAI, pursuant to a letter dated July 6, 2016, the NHAI has rejected KM's request for premium deferment and requested the immediate repayment of all outstanding premium due, together with interest. KM has responded to the NHAI's demand, and subsequently, additional correspondence has been exchanged between the parties in this regard. For additional details, see "*Material Litigation and Regulatory Action*" on page 496 of this Draft Offer Document

The failure of PS, KM and HK to make such payments could result in the imposition of monetary penalties by the Concessioning Authority and/or the termination of the relevant concession agreements, each of which could have a material, adverse effect on our business, financial condition and results of operations.

29. The Project SPVs' concessions are illiquid in nature, which may make it difficult for us to realise, sell or dispose of our shareholdings in the Project SPVs

The Project SPVs' concessions are illiquid in nature, among other reasons, on account of market conditions, the residual periods of the concession agreements, various approvals, consents and confirmations required by the Concessioning Authority as per the concession agreements, and a scarcity of disposal options and/or potential acquirers. As a result, it may be difficult for us to realise, sell or dispose of our shareholdings in the Project SPVs at an attractive price, or at the appropriate time, or at all, and such illiquidity may have a material, adverse effect on our market value, business, prospects, financial condition and results of operations.

30. The Project SPVs may be required to undertake certain development of the Projects (including capital expenditure in relation to certain Projects), which may present additional risks to us

A concession agreement may be revoked by the Concessioning Authority if there is any failure by the relevant Project SPV to comply with a material term of the relevant concession agreement, such as the Project SPVs' failure to receive the final completion certificates. As of the date of this Draft Offer Document, none of the Projects have received their final completion certificates. The Project SPVs' receipt of final completion certificates is subject to the completion of either (i) additional construction as specified in the concession agreements (or supplementary agreements) in the case of four of our Projects; or (ii) completion of all conditions specified in the 'punch lists' under the respective provisional completion certificates of our remaining projects. The projects where additional construction is required under their respective concession agreements are:

- KM: As of the date of this Draft Offer Document, KM has received a provisional completion certificate only with respect to 78% of the project. As per a certificate issued by NHAI, KM has completed 78% of construction (as a percentage of the total cost deployed) as of the date of this Draft Offer Document. In addition, Phase II of this project involves converting the four-lane project to a six-lane project. Under the terms of the concession agreement for this project, the decision relating to converting the project to a six-lane project may be unilaterally decided by KM and NHAI in January 2019. The total estimated cost of the construction remaining to be completed at KM is Rs. 550 million, as of September 30, 2016.
- PS: As of the date of this Draft Offer Document, PS has not yet received a provisional completion certificate. As per a certificate issued by NHAI, PS has completed 78% of its construction (as a percentage of the total cost deployed) as of the date of this Draft Offer Document. Further, a remaining 8 km portion of this project is delayed because of delays in land acquisition by the NHAI for the remaining portions of land and other issues that impact the construction of the remaining portion. Once the land is acquired, PS will be required to construct the additional 8 km portion. The total estimated cost of the construction remaining to be completed of PS is Rs. 2,620 million as of September 30, 2016.
- SU: This project also includes approximately 38 Km of bypass length, which will be converted to a four lane road after 8 years and before 11 years from the COD pursuant to the concession agreement.
- TK: A 18.7 km stretch of the Trichy bypass could not be completed as the required land for widening was not made available. Therefore, a supplementary agreement was entered into between the NHAI and TK in November 2013, in which a total length of 18.7 Km was delinked from the project for COD

purpose. However, once the NHAI is able to hand over the land for the 18.7 km stretch, TK will be required to finance and complete construction within 18 months.

As certain of these activities are subject to the receipt of certain approvals and/or resources from the Concessioning Authority, they may not be completed prior to the date of the acquisition of such Project SPVs by the Trust. Additionally, while the Sponsor will agree to provide support (for details, see "*The Trust's Business - Sponsor Support Undertaking*") in relation to the completion of the construction at the Projects, there is no assurance that the projects will not be subject to time and cost overruns. Further, any failure by the Sponsor to meet its obligations under its Sponsor support undertakings will expose the Project SPVs to time and cost overruns and potential liability under their respective concession agreements.

If the Project SPVs are unable to complete the pending items listed in the provisional certificate or the remaining construction (in the case of the four Projects listed above), the Project SPVs may be subject to a Notice of Default and the concession agreement may be terminated. For more details of the conditions specified in the Project SPVs' provisional completion certificates, please see the section headed "*Legal and Other Information – Governmental and Other Approvals – Approvals in Relation to the Project SPVs*" in this Draft Offer Document. JR, TK and GF have, in the past, faced claims from the relevant Concessioning Authority in relation to delays in the completion of punch list items. For details, please see the section titled "*Material Litigation and Regulatory Action*" in this Draft Offer Document.

In accordance with the terms and conditions of the concession agreements, certain Project SPVs may be required to undertake additional development of the Initial Road Assets after a predetermined period in accordance with their respective concession agreements. Further, these concession agreements may impose penalties or provide for termination of such agreement for late or non-completion of such additional development of the Initial Road Assets.

Our business, financial condition, reputation and results of operations may be materially and adversely affected if the completion of such additional development of the Initial Road Assets and the conditions specified in the provisional completion certificates are delayed or not achieved in the specified manner. Further, any delays in the completion of PS and KM will delay the ability of these Project SPVs to collect toll on the entire length of such projects, and may adversely impact the ability of the Trust to make distributions to Unitholders in the manner described in this Draft Offer Document. Further, with respect to any such delays in completion, that have not been anticipated in the Revenue, Profit and Cash Flow Projections, your ability to rely on such projections may be limited. There can be no assurance that these will be completed in the time expected, or at all. Further, there is no assurance that all potential liabilities that may arise from delays or shortfall in performance of contractors will be accurately estimated as part of the planned costs of the certain development of the Initial Road Assets or conditions specified in the provisional completion certificates, or that the damages that may be claimed from such contractors will be adequate to compensate any loss of revenues or profits resulting from such delays, shortfalls or disruptions. Such risks may increase if completion is delayed for an extended period. If we fail to manage any of the aforesaid risks or any unforeseen risks effectively, our revenues, profitability and results of operations could be materially and adversely affected. For further details on the events that may require the Project SPVs to undertake certain development of the Initial Road Assets as contemplated under the relevant concession agreements, see the section headed "*The Trust's Business – Summary of the Project SPVs' Concession Agreements"* in this Draft Offer Document.

31. The Project SPVs may not be able to comply with their maintenance obligations under the concession agreements, which may result in the termination of the concession agreements, the suspension of the Project SPVs' rights to collect tolls or the requirement that the Project SPVs pay compensation or damages to the Concessioning Authority

The Project SPVs are required to undertake maintenance of the Initial Road Assets within periods as specified in the respective concession agreements. There can be no assurance that the Project SPVs will not breach the maintenance obligations under their respective concession agreements on account of the Project Manager's failure to undertake the stipulated maintenance work in a timely manner, or at all.

If the work is not completed by a Project SPV within the period stipulated under the relevant concession agreement and the Concessioning Authority deems such delay to be a material breach or material default, then the Concessioning Authority has the right to (a) suspend the rights of the Project SPV, including the right to collect tolls and other fees, (b) claim compensation for all direct, additional costs suffered or incurred by the Concessioning Authority arising out of such default, or (c) terminate the relevant concession agreement. GF and

JR have failed to comply with the maintenance requirements for certain past periods in relation to which the relevant Concessioning Authority have raised claims for compensation. For details, please see "*[•]*".

If any of the concession agreements is terminated, the right to collect tolls is suspended or any Project SPV is required to pay compensation or damages, our business, financial condition and results of operations may be materially and adversely affected. For further details of the maintenance obligations, suspension and termination events under the concession agreements, see the section headed "*The Trust's Business – Summary of the Project SPVs' Concession Agreements*" in this Draft Offer Document.

32. Our insurance policies may not provide adequate protection against various risks associated with our operations

Initial Road Assets are subject to various risks, including:

- changes in governmental and regulatory policies;
- design and engineering defects;
- breakdown, failure or substandard performance of the road assets and other equipment;
- improper installation or operation of the road assets and other equipment;
- labour disturbances;
- terrorism and acts of war;
- inclement weather and natural disasters;
- environmental hazards, including earthquakes, flooding, tsunamis and landslides; and
- adverse developments in the overall economic environment in India.

There can be no assurance that all risks are adequately insured against or that we will be able to procure adequate insurance coverage at commercially reasonable rates in the future. Further, we are subject to various risks in the operation of the Initial Road Assets, including on account of accidents on the Initial Road Assets. For further details, please see the section headed "*Legal and other Information – Material Litigation and Regulatory Action*" in this Draft Offer Document. Our insurance may not provide adequate coverage in certain circumstances and is subject to certain deductibles, exclusions and limits on coverage. To the extent we suffer damage or loss which is not covered by insurance, or exceed our insurance coverage, such damage or loss would have to be borne by us. We can make no assurance that material losses in excess of insurance proceeds (if any at all) will not occur in the future, which could materially and adversely affect our financial condition, business and results of operations.

33. The Project SPVs, the Sponsor, the Investment Manager, the Project Manager, their respective Associates and the Trustee are involved in certain legal and other proceedings, which may not be decided in their favour

The Project SPVs, the Sponsor, the Investment Manager, the Project Manager and the Trustee are involved in legal proceedings or claims which are pending at different levels of adjudication before various courts, tribunals and regulatory authorities. For details of certain material outstanding legal proceedings, see the section headed "*Legal and other Information – Material Litigation and Regulatory Action"* in this Draft Offer Document. There is no assurance that these legal proceedings and regulatory matters will be decided in favour of the respective entities. Decisions in any of the aforesaid proceedings adverse to our interests may have a material, adverse effect on our or their business, future financial performance and results of operations. If the courts or tribunals rule against the Project SPVs, the Sponsor, the Investment Manager, the Project Manager, their respective Associates or the Trustee, we or such entities may face monetary and/or reputational losses and may have to make provisions in our financial statements, which could increase expenses and liabilities. Upon completion of the Formation Transaction, we will be responsible for legal proceedings against the Project SPVs. While the Sponsor will provide certain indemnities under the relevant securities purchase agreement, there can be no assurance that the relevant Project SPV or the Trust will be able to successfully bring a claim against the Sponsor under the relevant securities purchase agreements or that such indemnities will be adequate to satisfy all the losses, damages, costs and expenses suffered by the Trust Group arising from such proceedings or the consequences thereof.

34. GF has initiated an arbitration proceeding against HPWD, which is currently pending and may not be decided in GF's favour

GF has initiated arbitration proceedings against the HPWD, and has claimed compensation in relation to losses suffered by non-compliance by the HPWD, *inter alia*, non-compliance by the users of the toll road and lack of

adequate support by HPWD. Subsequently, HPWD has filed a statement of defence in the aforesaid matter and has filed counter-claim against GF. There can be no assurance that the outcome of the aforesaid proceeding will be decided in the favour of GF, nor that any counter-claims will be rejected or required to be set-off against the claims of GF. If the aforesaid proceedings is decided against GF, GF may face monetary losses. Furthermore, if the HPWD is successful in its counter-claim against GF, it may lead to a reduction in our profitability and adversely affect the trading price of the Units. For further details of these claims, see the section headed "*Legal and other Information – Material Litigation and Regulatory Action*" in this Draft Offer Document

35. There are certain ongoing claims and/or disputes between certain Project SPVs and their Concessioning Authorities

Certain Project SPVs have initiated claims against their respective Concessioning Authorities, and have sought compensation from such Concessioning Authorities. For instance, JR has filed a claim before the independent engineer against the NHAI in relation compensation for additional costs incurred during the extended construction period. Further, certain Project SPVs have received claims from their concessioning authorities in relation to alleged defaults. For instance, TK has received claims from NHAI in relation to the alleged failure to complete 'punch list' items in a timely manner. For additional details of the claims and disputes involving the Project SPVs and their respective Concessioning Authorities, see the section headed "*Legal and other Information – Material Litigation and Regulatory Action*" in this Draft Offer Document. There can be no assurance that such claims and/or disputes will be resolved in a timely manner, or at all. Further, in case such claims are not settled or disputes remain unresolved, such Project SPVs and their Concessioning Authorities may be involved in arbitration and/or legal proceedings, which may involve significant costs and take-up management attention. Any failure to successfully resolve such claims and/or disputes in a timely manner, or at all, could have a material adverse effect on our reputation, business, financial condition and results of operations.

36. The Project SPVs may be subject to claims under their contracts with EPC contractors

The Project SPVs have subcontracted construction work at their respective projects to EPC contractors (such contracts, the "**EPC Contracts**") including the Sponsor. For eight of our projects, there have been delays in construction because of reasons such as the failure of the concessioning authority to provide land for the construction of toll roads, floods and other reasons. On account of such delays, there has been an increase in the cost of construction of the relevant projects. In certain cases, the EPC Contractor may have borne such increased costs and may be entitled to claim such increased costs from the relevant Project SPV.

37. Criminal investigations are pending against Reliance Telecom Limited (a subsidiary of Reliance Communications Limited) and executives, the outcome of which may materially and adversely affect our reputation, business and financial condition

On October 22, 2011, the Special Judge, CBI framed charges against Reliance Telecom Limited (a subsidiary of Reliance Communications Limited), three executives of the Reliance Group and certain persons not related to Reliance Group for various offences, including criminal breach of trust, criminal conspiracy, forgery, giving false evidence, abetment of corruption of a public servant and abetment of an offence under various sections of the IPC, or in the alternative, various sections of the Prevention of Corruption Act, 1988, *inter alia*, in relation to award of the Unified Access Services License ("**UASL**") to Swan Telecom Private Limited, now known as Etisalat DB Private Limited ("**Swan**"). It has been alleged by the CBI that Swan was ineligible to be granted a UASL as Reliance Telecom Limited, directly as well as through its associates, was holding equity shares in excess of the limit of 10% prescribed limit under the UASL. Reliance Telecom Limited and three executives of the Reliance Group have contended that Reliance Telecom Limited had held equity shares within the prescribed limits in Swan, when Swan had applied for the UASL. Further, Reliance Telecom Limited sold the equity shares it held in Swan before the grant of UASL by the Department of Telecommunications to Swan in 2008. When Swan acquired the UASL, Reliance Telecom Limited did not hold any stake in Swan. Initially, all of the accused were denied pre-trial bail by the Special Judge, CBI but subsequently by an order of Supreme Court of India were released on bail. The matter is pending adjudication before the Special Judge, CBI.

In the event that there is any adverse decision in the aforesaid litigation, the reputation of the Reliance Group and its business, results of operations, cash flows, prospects and financial condition may be adversely affected, in addition to criminal sanctions against certain employees and officers. Such an event could in turn have a material adverse effect on our reputation, business, financial condition and results of operation, including as a result of any regulatory or other issues in connection therewith.

38. We will depend on various third parties to undertake certain activities in relation to the operation and maintenance of the Initial Road Assets. Any delay, default or unsatisfactory performance by these third parties could materially and adversely affect our ability to effectively operate or maintain the Initial Road Assets

We will depend on the availability and skills of third-party employees and contractors pertaining to the operation and maintenance of the Initial Road Assets. We can make no assurance that the services of such third parties will continue to be available at reasonable rates in the areas in which we conduct our operations. We may also be exposed to risks relating to the ability of such third parties to obtain requisite approvals for the operation and maintenance activities, as well as the quality of their services, equipment and supplies. In particular, failure to ensure the reliability and sustainability of toll collectors who are required to man the toll booths continuously may materially and adversely affect our overall level of net revenue. We may also be exposed to civil and criminal liability in relation to the actions of other third parties, including our employees and contractors. For details of such civil and criminal proceedings, please see the section headed "*Legal and Other Information – Material Litigation and Regulatory Action – Material Litigation and Regulatory Action against the Sponsor*" in this Draft Offer Document. Further, our results of operations could be materially and adversely affected by disruptions caused by strikes, work stoppages, increased wage demands or labour union action by the employees of such third parties. In addition, under certain of the Project SPVs' concession agreements, the consent of the Concessioning Authority is required for any selection or replacement of the Project Manager.

Further, while we may sub-contract our construction work, we may still be liable for accidents on our projects due to defects in design and quality of construction of our projects during their construction and operation. In addition, we can make no assurance that such contractors or their sub-contractors will continue to hold or renew valid registrations under the relevant labour laws in India or be able to obtain the requisite approvals for undertaking such construction and operation. Any delay, default or unsatisfactory performance by these third parties could materially and adversely affect our ability to manage the operation and maintenance of the Initial Road Assets under the concession agreements in a timely manner or at all. Any of the foregoing factors could have a material, adverse effect on our business, financial condition, reputation and results of operations.

39. The Project SPVs may be held liable for the payment of wages to the contract labourers engaged indirectly in our operations.

The Project SPVs appoint independent contractors who, in turn, engage on-site contract labour to perform certain operations. Certain of the Project SPVs has obtained registration as a principal employer under the Contract Labour (Regulation and Abolition) Act, 1970 ("**Contract Labour Act**") for certain locations where workmen are employed through contractors or agencies licensed under the Contract Labour Act. Although the Project SPVs do not engage these labourers directly, in the event of default by any independent contractor, such Project SPV may be held responsible for any wage payments, including statutory health and welfare payments benefits, that must be made to such labourers. Any violation of the provisions of the Contract Labour Act by the contractor or a Project SPV may result in penalties pursuant to the provisions of the Contract Labour Act. If any of the Project SPVs are required to pay the wages of the contracted workmen and subjected to other penalties under the Contract Labour Act, the reputation, results of operations, cash flows and financial condition of the Trust could be adversely affected.

40. Any losses in the future could adversely affect our business, financial condition and results of operations, our ability to make distributions and the trading price of our Units

Under the Companies Act, 2013, companies that do not generate "distributable profits" are not permitted to pay dividends. Accordingly, any Project SPVs that fails to generate such distributable profits will not be permitted to pay dividends to the Trust. Any losses in the future could adversely affect our business, financial condition and results of operations, our ability to make distributions and the trading price of the Units.

41. The Combined Financial Statements presented in this Draft Offer Document may not be indicative of the Trust's future financial condition and results of operations

Upon completion of the Formation Transactions, our only assets will be our shareholding in the Project SPVs and any debt financing provided by the Trust to the Project SPVs. We will rely on cash flows from, interest payments, principal repayment, dividends, buybacks of equity shares of the Project SPVs (net of applicable taxes and expenses) from the entities held by us, which initially will comprise the Trust Group, in order to make distributions to Unitholders. For the purpose of this Draft Offer Document, the Combined Financial Statements have been

prepared so as to present the financial position, results of operations and cash flows of the Project SPVs on a combined historical basis for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016. The Combined Financial Statements have been prepared for the sole purpose of the Issue and may not necessarily represent our consolidated financial position, results of operations and cash flows had the Trust Group been in existence during the periods presented, nor do they give an indication of our financial results, cash flows and financial position in the future. After the Listing Date, there may be certain changes to our cost structure, level of indebtedness and operations. Our cost structure after the Listing Date may differ in certain significant respects from our cost structure as indicated in the Combined Financial Statements.

Further, for the purpose of preparation of our Combined Financial Statements included in this Draft Offer Document and the Revenue, Profit and Cash Flows Projections, the transition date to Ind AS is considered as April 1, 2013 for the Trust Group (for details, see "*Financial Statements – Note 2 – Basis of preparation*"). However, going forward, for the purposes of the preparation of our consolidated financial statements after the listing of the Units, the actual transition date to Ind AS will be April 1, 2015, as applicable to the Project SPVs. Accordingly, our Combined Financial Statements may not be comparable with our consolidated financial statements in future periods.

Furthermore, in connection with our acquisition of the Project SPVs, certain of our assets and liabilities will be fair-valued at the time of exchange (which will be done post-Issue) for the purpose of a purchase price allocation exercise required under Ind-AS for financial reporting purposes. No assurance can be given that material changes to our financial statements in future periods will not be required. For further details, see the section headed "*Financial Statements*" in this Draft Offer Document.

42. Our contingent liabilities could adversely affect our results of operations, cash flows and financial condition

The following table sets forth certain information relating to our contingent liabilities on a combined basis as on September 30, 2016, per the Combined Financial Statements:

Particulars	**(Rs. Millions)**
Income-tax matters: In case of NK – Income tax department under section 156 had levied penalty of Rs. 17.74 million for assessment year 2012-13. NK has appealed against the same and has paid Rs. 8.87 million out of the same under protest.	17.74
In case of TD - As per Assessment order for assessment year 2013-14, a demand of Rs. 1.14 million was raised by IT department. TD had defended the demand and approached to CIT Appeals and an amount of Rs. 0.41 Million was deposited under protest.	1.14
Differences in balances as per bank loan confirmations and books of accounts mainly on account of interest rate resetting are under reconciliation with the bankers. The Project SPVs expect to settle these soon and do not anticipate any further liability on account of interest.	73.03
Total	**91.91**

If any of aforementioned contingent liabilities materialise, it could have an adverse effect on our results of operations, cash flows and financial condition. For further details, see the section titled "*Financial Statements*" in this Draft Offer Documents.

43. Our actual results may be materially different from the expectations expressed or implied in the Revenue, Profit and Cash Flow Projections and the assumptions in the "Revenue, Profit and Cash Flow Projections" in Annex B to this Draft Offer Document are inherently uncertain and are subject to significant business, economic, financial, regulatory and competitive risks and uncertainties that could cause actual results to differ materially from those projected

This Draft Offer Document contains forward-looking statements regarding, among other things, the projections of revenue, profit and cash flows for Projection Years 2017, 2018 and 2019 for the Trust set out in the section headed "*Revenue, Profit and Cash Flow Projections*" in this Draft Offer Document. The Revenue, Profit and Cash Flow Projections are only estimates of possible future operating results and are not guarantees of future performance. The Revenue, Profit and Cash Flow Projections, while presented with numerical specificity, are based on a variety of estimates and assumptions as set out in the section headed "*Revenue, Profit and Cash Flow Projections*" in this Draft Offer Document. The Revenue, Profit and Cash Flow Projections may not be realised

and, because they relate to future events, are inherently subject to significant business, economic, competitive, industry, regulatory, market and financial risks, uncertainties, contingencies and other factors, many of which are beyond our control. Such risks, uncertainties, contingencies and other factors which may cause the actual results or performance of the Trust Group to be materially different from any future results or performance expressed or implied by the Revenue, Profit and Cash Flow Projections. The actual future results or performance of the Trust Group will be affected by numerous factors, including those discussed in the section headed "*Forward-looking Statements and Financial Projections*" and in this "*Risk Factors*" section. Our revenue will be dependent on the cash flows from dividends, buyback of SPV shares, and principal and interest payments (net of applicable taxes and expenses) from the Project SPVs, whose revenue in turn is dependent on a number of factors, including the receipt of toll revenues, which may decrease for a number of reasons including traffic volumes. Accordingly, we cannot assure you that we will be able to achieve the Revenue, Profit and Cash Flow Projections or make the distributions set out in the section headed "*Revenue, Profit and Cash Flow Projections*" in this Draft Offer Document.

If we do not achieve the projected operating results, we may not be able to make the expected distributions, in which case the market price of the Units may decline materially. We will not, and disclaim any obligation to, furnish updated business plans or projections to Unitholders, or to otherwise make public such information. As a result, you should not rely upon the Revenue, Profit and Cash Flow Projections in making an investment decision given the possibility that actual results may differ materially from the underlying estimates and assumptions.

44. Our business will be subject to seasonal fluctuations that may affect our cash flows

Our cash flows will be affected by seasonal factors, which may materially and adversely affect traffic volumes. Traffic volumes tend to decrease during the monsoon season and conversely tend to increase during holiday seasons. The monsoon season may also restrict our ability to carry on activities related to our operation and maintenance of the Initial Road Assets. For example, we were unable to carry out periodic maintenance during monsoon months at the Pune-Satara Project during certain prior periods. Such events may result in delays in periodic maintenance and reduce productivity, thereby materially and adversely affecting our business, financial condition and results of operations.

45. Certain Project SPVs' operations and revenue are, currently, geographically concentrated in Tamil Nadu and consequently we will be exposed to certain risks emanating therefrom

The Project SPVs' operations and revenues are geographically concentrated in Tamil Nadu, as six out of the ten Projects are located in Tamil Nadu. Toll revenue from the Projects located in Tamil Nadu (DS, NK, SU, TD, HK and TK) represented approximately 51.1%, 48.6%, 44.6% and 42.4% of the Project SPVs' toll revenue on a combined historical basis for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2016. Our business therefore will be significantly dependent on the general economic conditions, market conditions and natural disasters in the states in which we operate, in particular Tamil Nadu. Any regional slowdown in economic activity in these areas resulting in a reduction in traffic on the Initial Road Assets could materially and adversely affect our business, financial condition and results of operations.

46. The Initial Road Assets are concentrated in the toll-road industry in India, and our business could be adversely affected by an economic downturn in that sector or industry

Upon completion of the Formation Transactions, the Initial Road Assets will comprise ten operating toll roads in India. Income from toll collection generated by the Initial Road Assets represented approximately 32.2%, 54.4%, 53.2% and 74.6% of the Project SPVs' total income on a combined historical basis for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2016, respectively. This concentration may expose us to the risk of economic downturns in the toll-road industry to a greater extent than if our assets were more diversified across other industries in the infrastructure sector or other sectors of the economy.

47. Political and other agitations against the collection of tolls may affect our ability to collect tolls over prolonged periods, which could have a material, adverse effect on our business, results of operation and financial condition.

Over the past few years, there have been agitations by political parties and local community members against the collection of tolls on local road and state highway projects across Maharashtra. These agitations have often turned violent and resulted in the destruction of toll-collection booths and other related property. If such events spread to the Project SPVs' projects, which are located on the national highways, it may limit our ability to collect tolls over

a prolonged period and may have a material, adverse effect on our business, financial condition and results of operations. Further, the Project SPVs' concession agreements provide that in the event that the Project SPVs' ability to collect tolls is disrupted as a result of political and other agitations over a specified period, either party to the concession agreement may terminate the agreement. While the concession agreements provide for a specified payment mechanism in the case of such termination, there can be no assurance that the Project SPVs will receive such payments from the Concessioning Authority in a timely manner or at all, or that such payments will be adequate to recover our investment or return, which may materially and adversely affect our business, financial condition and results of operations.

48. We may be unable to renew or maintain the statutory and regulatory permits and approvals required to operate the Initial Road Assets

The Project SPVs are required to obtain and maintain certain permits, approvals, licenses, registrations and permissions under various regulations, guidelines, circulars and statutes regulated by various regulatory and governmental authorities for operating the Initial Road Assets. For further details, please see the section headed "*Government and Other Approvals*" in this Draft Offer Document. If the Project SPVs and/or the third-party contractor(s) fail to obtain or maintain them, or if there is any delay in obtaining or renewing them, our business, financial condition and results of operations could be materially and adversely affected. Further, these permits, approvals, licenses, registrations and permissions could be subject to several conditions, and we can make no assurance that we would be able to continuously meet such conditions or be able to prove compliance with such conditions to the statutory authorities. This could lead to the cancellation, revocation or suspension of relevant permits, licenses or approvals, which may result in the interruption of our operations and may materially and adversely affect our business, financial condition and results of operations.

49. We do not own the "Reliance" trademark and logo. Our license to use the "Reliance" trademark and logo may be terminated under certain circumstances and our ability to use the trademark and logo may be impaired

We do not own the "Reliance" trademark, which is registered in the name of, and owned by, Anil Dhirubhai Ambani Ventures Private Limited. However, pursuant to a separate trademark and tradename license, the Sponsor has granted to the Trust, the Investment Manager and the Project Manager, the non-transferable and non-assignable right to use the "Reliance" trademark in connection with their respective businesses, on a non-exclusive basis for an annual royalty payments of Rs. 1, payable by the Investment Manager. The license may be terminated under certain circumstances, including if the Investment Manager on behalf of the Trust defaults in the payment of royalty and fails to cure such default within 30 days, if any of the Trust, the Project SPVs, the Sponsor or Anil Dhirubhai Ambani Ventures Private Limited files for bankruptcy or, if the Sponsor's holding in the Trust falls below 5%. Upon the termination of any license, the Trust or the relevant Project SPV, as the case may be, will be required to cease the use of the Reliance trademark and change its name to remove Reliance from its name within three months from the date of termination, which may have a material adverse effect on the operations of the Project SPVs and require management's time and attention.

50. Compliance with, and changes in, safety, health and environmental laws and regulations in India may materially and adversely affect our business

Our business will be subject to environmental, health and safety laws and regulations and various labour, workplace and related laws and regulations in India and requirements under the concession agreements. For further details, please see the section headed "*About the Trust – Regulations and Policies*" in this Draft Offer Document. Any changes in, or amendments to, these standards or laws and regulations could further regulate our business and could require us to incur additional, unanticipated expenses in order to comply with these changed standards. If we fail to meet safety, health and environmental requirements, we may also be subject to administrative, civil and criminal proceedings by governmental authorities, as well as civil proceedings by environmental groups and other individuals, which could result in substantial fines and penalties against us. Penalties imposed by regulatory authorities on us or third parties upon whom we depend may also disrupt our business and operations.

There can be no assurance that we will not become involved in future litigation or other proceedings or be held responsible in any such future litigation or proceedings relating to safety, health and environmental matters in the future. Clean-up and remediation costs, as well as damages, payment of fines or other penalties, other liabilities and related litigation, could materially and adversely affect our business, prospects, financial condition and results of operations.

51. Many of the Project SPVs' financing agreements entail interest at variable rates, and any increases in interest rates may adversely affect our results of operations, financial condition and cash flows

The Project SPVs are susceptible to changes in interest rates and the risks arising therefrom. We expect that certain of such financing arrangements will remain in place after the listing of the Units. Please see the section headed "*Use of Proceeds*" for details. These financing agreements entail interest at variable rates with a provision for the periodic reset of interest rates. Currently, certain of the Project SPVs' borrowings are at floating rates of interest. Further, under certain of the Project SPVs' financing agreements, the lenders are entitled to change the applicable rate of interest depending upon the policies of the RBI and in the event of an adverse change in the Project SPVs' credit risk rating. Any increase in interest rates may have an adverse effect on our results of operations, financial condition and cash flows.

52. Certain of the Project SPVs have certain external commercial borrowing facilities that are denominated in U.S. dollars and that are currently outstanding. Exchange rate fluctuations in the currencies of such outstanding borrowings could negatively impact our business, financial condition and results of operations and our ability to pay distributions

Certain of the Project SPVs have certain external commercial borrowing facilities that are denominated in U.S. dollars and that are currently outstanding. Such Project SPVs have entered into hedging contracts only in respect of a portion of their external commercial borrowings. Accordingly, exchange rate fluctuations may have an adverse effect on the financial condition of the Project SPVs as a result of variations in the exchange rate compared to exchange rates prevailing in the previous comparative period, which may impact the ability of such Project SPVs to make distributions to the Trust and accordingly affect the ability of the Trust to make distributions to Unitholders.

53. A portion of the investments proposed to be made in the Project SPVs by way of an issue of debt from the proceeds of the Issue, are intended to be used to prepay/repay certain loans and advances taken by the Project SPVs from the Sponsor

A portion of the investments proposed to be made in the Project SPVs by way of an issue of debt from the proceeds of the Issue, are intended to be used to prepay/repay certain unsecured loans and advances provided by the Sponsor to the Project SPVs. For further details of the utilization of the Net Proceeds, see the section "*Use of Proceeds*" on page 79 of this Draft Offer Document. The deployment of the Net Proceeds will be at the discretion of the Investment Manager and is not subject to any monitoring by any independent agency.

54. The cost of implementing new technologies for collection of tolls and monitoring our projects could materially and adversely affect our business, financial condition and results of operations

Our future success will depend in part on our ability to respond to technological advances and emerging standards and practices on a cost-effective and timely basis. In addition, rapid and frequent technology and market-demand changes can often render existing technologies and equipment obsolete, requiring substantial new capital expenditures or write-downs of assets. Any failure by us to successfully adopt such technologies in a cost-effective and timely manner could increase our costs. Additionally, governmental authorities may require adherence with certain technologies in the execution of projects and there can be no assurance that we would be able to implement the same in a timely manner, or at all. Any of the foregoing circumstances could materially and adversely affect our business, financial condition and results of operations.

55. We will enter into related-party transactions. There can be no assurance that we could not have achieved more favourable terms if such transactions had been entered into with third parties

We will enter into transactions with related parties. For example, upon completion of the Formation Transactions, the Trust (acting through the Trustee) and the Investment Manager will have entered into the ROFO and Future Assets Agreement with the Sponsor relating to the potential acquisition of future assets by the Trust. The procedure with respect to such related party transactions is subject to modification by law, which may have a material, adverse effect on the Trust. Further, there can be no assurance that we could not achieve more favourable terms had such transactions been entered into with unrelated parties. The transactions that we will enter into may involve conflicts of interest which may be detrimental to us. See the section headed "*Related Party Transactions*" in this Draft Offer Document. There can be no assurance that such transactions, individually or in the aggregate,

will not have a material, adverse effect on our business, financial condition and results of operations, including because of potential conflicts of interest or otherwise.

56. The Investment Manager may make assumptions about the development of a road project. Such assumptions may be incorrect and may cause delays in completion and/or increase in costs for the Trust

In deciding whether to take up the development of a particular road project, the Investment Manager may make certain assumptions regarding the expected future performance of that road project. The Investment Manager may underestimate the costs necessary to bring the project up to the standards established for its intended market position or may be unable to increase traffic on such project as quickly as expected or at all. Any substantial or unanticipated delays or expenses could adversely affect the investment returns from these projects and impair the Trust's operating results, liquidity and financial conditions. There is also the risk that inadequate supervision over local contractors, architects or engineers may result in poor quality construction or the diversion of funds intended for construction. The quality of construction generally may not be commensurate with international standards.

57. Reliance on professionals and consultants

The toll road sector is subject to local and municipal level laws, taxes and compliances, in addition to the central and state level legal and tax compliances. Exposure to such laws and compliances would vary from project to project and thus the Investment Manager would seek advice from consultants and professionals having relevant experience and rendering services in respect of such matters and rely on decisions taken by members of the investment committee. The performance of the Trust may be impacted by the nature and quality of advice and services rendered by such local consultants and professionals.

58. Compliance with the European Union Directive on Alternative Investment Fund Managers may increase administrative and regulatory burdens on the Investment Manager and the Trust

As used herein, the "AIFMD" refers to Directive 2011/61/EU of the European Parliament and of the Council of June 8 2011 on Alternative Investment Fund Managers, together with EU Commission delegated Regulation (EU) No. 231/2013 of December 19, 2012, supplementary Directive 2011/61/EU of the European Parliament and of the Council, and the national laws transposing Directive 2011/61/EU in any EEA Member State in which the Trust is marketed.

Among other things, the AIFMD regulates and imposes regulatory obligations in respect of the active marketing in the EEA by AIFMs (irrespective of whether they have their registered office in an EEA Member State or elsewhere) of AIFs (whether established in an EEA Member State or elsewhere). The Investment Manager is a Non-EEA AIFM for the purposes of the AIFMD. Non-EEA AIFMs are currently not able to become authorised under the AIFMD. In order to market to investors resident, domiciled or with a registered office in the EEA, non-EEA AIFMs must market AIFs in accordance with the applicable national private placement regimes of the EEA member states in which they wish to market and comply with a sub-set of requirements under the AIFMD (which are much more limited in scope than those applicable to AIFMs that are established in the EEA). Such limited requirements are: (i) "point-of-sale" disclosures (as to which, please see **Annex D**), (ii) ongoing investor disclosures required pursuant to Articles 23(4) and (5) of the AIFMD (as to which, please see below), (iv) provision of information relating to the Trust's investments and its assets under management to the regulators of any EEA Member State into which Units in the Trust are actively marketed, and (v) the "asset-stripping" rules (in the event that the Trust acquires control of an EEA based portfolio company).

The information in respect of the Trust required to be disclosed pursuant to Articles 23(4) and (5) of the AIFMD will be made available to each Unitholder, as follows: (a) the percentage of the Trust's assets which are subject to special arrangements arising from their illiquid nature will be notified to the Unitholders; (b) any new arrangements for managing the liquidity of the Trust will be provided without undue delay in a disclosure notice delivered to each Unitholder; (c) the current risk profile of the Trust and the risk management systems employed by the Investment Manager to manage those risks may be provided in each annual report of the Trust; (d) any changes to the maximum level of leverage which the Investment Manager may employ on behalf of the Trust, as well as any right of the reuse of collateral or any guarantee granted under the leveraging arrangement, will be provided without undue delay in a disclosure notice delivered to each Unitholder; and (e) the total amount of leverage employed by the Trust may be provided in each annual report of the Trust.

In addition, it is possible that some EEA member states will elect in the future to restrict or prohibit the marketing of non-EEA AIFs to investors based in those jurisdictions. Any such restrictions or prohibitions may make it more difficult for the Trust to raise its targeted amount of commitments.

In light of the foregoing, the AIFMD could have an adverse effect on the Investment Manager or the Trust by, among other things, increasing the regulatory burden and costs of doing business in the EEA members states, imposing extensive disclosure obligations on companies located in EEA member states, if any, in which the Trust invests, and potentially disadvantaging the Trust as an investor in portfolio companies located in EEA member states as compared to competitors (e.g., those not in the alternative investment space) that may not be in scope of the AIFMD. ESMA has recently also consulted on the possible extension of the passport for marketing and managing under AIFMD to non-EEA based managers (the marketing and managing passports under AIFMD are currently only available to certain types of EEA based managers).

ESMA provided advice to the European Commission in July 2015 and July 2016 on whether, amongst other things, the passporting regime should be extended to the management and/or marketing of AIFs by non-EEA AIFMs. The European Commission is currently considering whether the passport should be extended. It is currently not clear what the impact would be for the Investment Manager or the Trust of any decision by the European Commission to extend the passporting regime. If the AIFMD national private placement regimes (where implemented) continue to exist in parallel with an extension of the passporting regime, then the Investment Manager may continue to market under AIFMD national private placement regimes, or choose to "opt-in" to rely on the passporting regime (which would likely mean an increase in regulatory and compliance costs to comply with the conditions of the passporting regime). If the AIFMD national private placement regimes are removed, then the Investment Manager would likely need to "opt-in" to the passporting regime for any AIFMD marketing of the Trust (which would likely mean an increase in regulatory and compliance costs for the Trust).

59. This Draft Offer Document contains information from the ICRA Report which we have commissioned

The information in the section entitled "*Industry Overview*" in this Draft Offer Document is based on the ICRA Report and other publically available information. We commissioned the ICRA Report for the purposes of confirming our understanding of the industry in connection with the Issue. Neither we, nor the Trustee, the Sponsor, the lead managers, the Investment Manager nor any other person connected with the Issue has verified the information in the ICRA Report. Further, the ICRA Report has been prepared based on information as of specific dates and may no longer be current or reflect current trends. Opinions in the ICRA Report based on estimates, projections, forecasts and assumptions may prove to be incorrect.

Risks Related to the Trust's Relationships with the Sponsor and the Investment Manager

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

After the completion of the Issue, the Sponsor will own an aggregate of [●]% of the issued and outstanding Units and will be entitled to vote as a Unitholder on all matters other than matters where it is a related party and not permitted to vote under the InvIT Regulations. Although the Investment Manager will have an independent board of directors, the Sponsor will nonetheless be in a position to exercise significant influence in matters which require the approval of Unitholders by virtue of its ownership of Units in the Trust. The Sponsor will also act as the Project Manager to the Project SPVs with respect to the Delhi Agra Project. The Trust may also utilise the services of the Sponsor as an EPC contractor in relation to certain future construction obligations in relation to certain of the Project SPVs. The interests of the Sponsor may conflict with the interests of our other Unitholders and the Sponsor may, for business considerations or otherwise, seek to benefit itself instead of the Trust or the interests of the other Unitholders. The Sponsor will also exercise significant influence over the Investment Manager which is a subsidiary of the Sponsor. Accordingly, the Investment Manager may also be subject to conflicts of interest with respect to the Trust. These conflicts may be harmful to our interests or the interests of our other Unitholders, which may impact our business, financial condition and results of operations.

We will also rely on the Sponsor to comply with its obligations under the various transaction agreements to which it is a party. In addition, we expect to rely on the Sponsor's expertise in executing BOT projects in case of any additional work which we may be required to carry out for any of the Project SPVs or other assets.

61. The ROFO and Future Assets Agreement will terminate in certain circumstances and shall be subject to

the terms of the concession agreement and applicable law

The rights of the Trust under the ROFO and Future Assets Agreement are effective as at the Listing Date, but the ROFO and Future Assets Agreement may be terminated, subject to approval of Unitholders, if any of the following events occur:

- there is mutual consent of the parties to the ROFO and Future Assets Agreement, in writing;
- if the Sponsor and/or any Sponsor Group Entity ceases to hold 10% of the total issued units in the Trust;
- if the Trust ceases to be listed on the BSE, the NSE or any other recognized stock exchanges.

The rights of the Trust (acting through the Trustee and the Investment Manager) and the obligations of the Sponsor under the ROFO and Future Assets Agreement will also be subject to compliance with the terms of the relevant concession agreements (and the consent of the Concessioning Authority, if applicable) and applicable laws. The transfer of the shares in such future toll roads may also require approvals from other governmental authorities, lenders or other relevant third parties. There can be no assurance that such approvals will be granted in time or at all. There can also be no assurance that the laws applicable at the time of the proposed transfer will not require compliance with any additional conditions by the Trust, the Sponsor or such toll road. The Trust will not be able to benefit from the ROFO and Future Assets Agreement if the conditions to the ROFO and the Future Assets Agreement remaining in full force and effect are not satisfied. The termination of the ROFO and Future Assets Agreement will adversely affect the Trust's ability to implement its acquisition growth strategy.

62. The Sponsor is a listed company and operates other road assets and other infrastructure assests, and anything that impacts the business, results of operations and trading price of the Sponsor's equity shares may have a material, adverse effect on the Trust and the trading price of the Units

The Sponsor has been listed on the Stock Exchanges since 1995. Excluding the toll-road assets that are being transferred by the Sponsor to us pursuant to the Formation Transactions, as of the date of this Draft Offer Document, the Sponsor had one more under-construction road project. We propose to enter into the ROFO and Future Assets Agreement with the Sponsor, pursuant to which the Sponsor has agreed to provide us with rights of first offer and first refusal with respect to certain toll-road assets located in India which are owned or which may be acquired or developed by the Sponsor or its existing or future subsidiaries. Because of our relationship with the Sponsor, its existing toll-road assets and its future toll-road assets, anything that impacts the business, results of operations and trading price of the Sponsor's equity shares may have a material, adverse effect on the Trust and the trading price of the Units.

63. The Investment Manager has no operating history in relation to an InvIT or the toll roads business

The Investment Manager has no operating history in relation to an InvIT or the toll roads business and may not be able to successfully implement the relevant strategies to manage the Trust or achieve the investment objectives of the Trust.

64. The Investment Manager may not be able to implement its investment or corporate strategies

The Investment Manager's strategies focus on three main areas:

- managing the underlying assets of the Trust;
- managing the Trust's acquisitions and disposals; and
- managing the Trust's capital structure to maximize distributions.

There is no assurance that the Investment Manager will be able to implement these strategies successfully or that it will be able to expand our portfolio at any specified rate or to any specified size or to maintain distributions at projected levels. The Investment Manager may not be able to make acquisitions or investments on favourable terms or within a desired time frame, and it may not be able to manage the operations of its underlying assets in a profitable manner. Factors that may affect this risk may include, but are not limited to, changes in the regulatory framework in India, competition for assets, partial award of concessions or licenses favouring local or other competitors of the Trust, changes in the Indian regulatory or legal environment or macro-economic conditions. Even if the Investment Manager is able to successfully grow the operating business of the underlying assets and to acquire toll roads and other eligible infrastructure projects in India as desired, there can be no assurance that the Investment Manager will achieve its intended return on such acquisitions or capital investments. Furthermore, the Investment Manager's investment mandate involves a higher level of risk as compared to a portfolio which

has a more diverse range of investments. The Investment Manager may only be removed by a resolution of Unitholders representing at least two-thirds of the outstanding Units (excluding the Sponsor).

65. Parties to the Trust are required to maintain the eligibility conditions specified under Regulation 4 of the InvIT Regulations on an ongoing basis. The Trust may not be able to ensure such ongoing compliance by the Sponsor, the Investment Manager, the Project Manager and the Trustee, which could result in the cancellation of the registration of the Trust

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

66. The Investment Manager is required to comply with certain ongoing reporting and management obligations in relation to the Trust. There can be no assurance that the Investment Manager will be able to comply with such requirements

The Investment Manager is required to comply with certain ongoing reporting and management obligations in relation to the Trust in accordance with the InvIT Regulations. These requirements include, among other things, (a) making investment decisions with respect to the underlying assets or projects of the Trust, (b) overseeing the activities of the Project Manager, (c) investing and declaring distributions in accordance with the InvIT Regulations, (d) submitting reports to the Trustee and (e) ensuring the audit of the Trust's accounts. There can be no assurance that the Investment Manager will be able to comply with such requirements in a timely manner or at all, which could have a material adverse effect on our business, financial condition and results of operations.

67. Reliance on the Investment Manager

The day-to-day operations of the Trust will be managed by the Investment Manager. Investors will have no opportunity to control the day-to-day operations, including investment and disposition decisions, of the Trust (which would be taken by the investment committee constituted by the Investment Manager). Investors must rely entirely on the Investment Manager to conduct and manage the affairs of the Trust. The success of the Trust would depend on the ability of the Investment Manager to effectively implement the strategy of the Trust. If the Investment Manager becomes unable to participate in the performance of services to the Trust, the consequence to the Trust could be material and adverse. The success of the Trust will also depend to a large extent upon the ability of the Investment Manager to source, select, complete and realize appropriate investments. Except to the limited extent as specified in the Trust Documents, the Investors will have no right to participate in the management of the Trust or in decisions made by the Trust or the Investment Manager on its behalf. The monitoring of the investments will be done by the Investment Manager. As a result, Investors will have almost no control over their investments in the Trust or their prospects.

Risks Related to India

68. Changing laws, rules and regulations and legal uncertainties may materially and adversely affect our business, financial condition and results of operations

Our business, financial condition and results of operations could be materially and adversely affected by any change in laws or interpretations of existing, or the promulgation of new, laws, rules and regulations applicable to us and our business. There can be no assurance that the Government or State Governments will not implement new regulations and policies which will require the Trust Group to obtain additional approvals and licenses from governmental and other regulatory bodies or impose onerous requirements and conditions on our operations. The Investment Manager cannot predict the terms of any new policy, and there can be no assurance that such policy will not be onerous. For example, the Government revised the wage ceiling limit for the coverage of employees

under the Employees State Insurance Act, 1948 (which applies to the Project SPVs), which has been challenged by certain companies and is stayed by the courts. There is no assurance that the revised wage ceiling limit will be set aside by the courts.

In addition, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (the "**Land Acquisition Act 2013**") came into force with effect from January 1, 2014. The Land Acquisition Act 2013 provides for certain restrictions on land acquisition and also provides for certain rehabilitation and resettlement benefits to every family affected by an acquisition. The Rights to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules, 2014 were notified by the Ministry of Rural Development on August 8, 2014.

69. Significant increases in the price or shortages in the supply of crude oil and products derived therefrom, including petrol and diesel fuel, could materially and adversely affect the volume of traffic at the projects operated by the Project SPVs and the Indian economy in general, including the infrastructure sector

India imports a significant majority of its requirements of crude oil. Crude oil prices are volatile and are subject to a number of factors, including the level of global production and political factors, such as war and other conflicts, particularly in the Middle East, where a substantial proportion of the world's oil reserves are located. Any significant increase in the price of or shortages in the supply of crude oil could materially and adversely affect the volume of traffic at the projects operated by the Project SPVs and materially and adversely affect the Indian economy in general, including the infrastructure sector, which could have a material, adverse effect on our business, financial condition and results of operations.

70. We may be affected by competition law in India and any adverse application or interpretation of the Competition Act could materially and adversely affect our business

The Competition Act, 2002, as amended (the "**Competition Act**"), regulates practices having an appreciable adverse effect on competition in the relevant market in India. Under the Competition Act, any formal or informal arrangement, understanding or action in concert, which causes or is likely to cause an appreciable adverse effect on competition is considered void and results in the imposition of substantial monetary penalties. Further, any agreement among competitors which directly or indirectly involves the determination of purchase or sale prices, limits or controls production, supply, markets, technical development, investment or provision of services, shares the market or source of production or provision of services by way of allocation of geographical area, type of goods or services or number of customers in the relevant market or directly or indirectly results in bid-rigging or collusive bidding is presumed to have an appreciable adverse effect on competition. The Competition Act also prohibits abuse of a dominant position by any enterprise.

On March 4, 2011, the Government issued and brought into force the combination regulation (merger control) provisions under the Competition Act with effect from June 1, 2011. These provisions require acquisitions of shares, voting rights, assets or control or mergers or amalgamations that cross the prescribed asset-and turnover-based thresholds to be mandatorily notified to and pre-approved by the Competition Commission of India (the "**CCI**"). Additionally, on May 11, 2011, the CCI issued the Competition Commission of India (Procedure in regard to the transaction of business relating to combinations) Regulations, 2011, as amended, which set out the mechanism for implementation of the merger control regime in India. The Competition Act aims to, among other things, prohibit all agreements and transactions which may have an appreciable adverse effect on competition in India. Further, the CCI has extra-territorial powers and can investigate any agreements, abusive conduct or combination occurring outside India if such agreement, conduct or combination has an appreciable adverse effect on competition in India.

In the event any of the Project SPVs or the Trust enters into any agreements or transactions that have an appreciable adverse effect on competition in the relevant market in India, the provisions of the Competition Act will be applicable. Any prohibition or substantial penalties levied under the Competition Act could materially and adversely affect our financial condition and results of operations. Any adverse impact on our financial condition or operations due to the Competition Act may have a material adverse impact on our business, financial condition, results of operations and prospects and our ability to make distributions to the Unitholders.

71. Our business is dependent on economic growth in India and financial stability in Indian markets, and any slowdown in the Indian economy or in Indian financial markets could have a material, adverse effect on our business

The Trust is registered in India, and all of our assets are located in India. As a result, we are highly dependent on the prevailing economic conditions in India and our results of operations are significantly affected by factors influencing the Indian economy. Factors that may adversely affect the Indian economy, and hence our results of operations, may include:

- any increase in interest rates or inflation in India;
- any exchange rate fluctuations;
- any scarcity of credit or other financing in India;
- prevailing income, consumption and saving conditions among consumers and corporations in India;
- volatility in, and actual or perceived trends in trading activity on, India's principal stock exchanges;
- changes in India's tax, trade, fiscal or monetary policies;
- political instability, terrorism or military conflict in India, including increased tensions on the Indian borders, or in countries in the region or globally, including in India's various neighbouring countries;
- the occurrence of natural or man-made disasters;
- prevailing regional or global economic conditions;
- the balance of trade movements, including export demand and movements in key imports, including oil and oil products;
- annual rainfall which affects agricultural production; and
- other significant regulatory or economic developments in or affecting India or its infrastructure sector.

Any slowdown or perceived slowdown in the Indian economy, or in specific sectors of the Indian economy, could have a material, adverse effect on our business, financial condition and results of operations and the price of the Units.

Furthermore, the Indian economy and Indian financial market are influenced by economic and market conditions in other countries, particularly in emerging market in Asian countries. Financial turmoil in Asia, Europe, the United States and elsewhere in the world in recent years has affected the Indian economy. Although economic conditions are different in each country, investors' reactions to developments in one country can have a material, adverse effect on the securities of companies in other countries, including India. A loss in investor confidence in the financial systems of other emerging markets may cause increased volatility in Indian financial markets and, indirectly, in the Indian economy in general. Any global financial instability, including any instability related to the decision of the United Kingdom to exit the European Union, could also have a negative impact on the Indian economy. Financial disruptions may occur again and could harm our results of operations and financial condition.

72. Our performance is linked to the stability of policies and the political situation in India

The Government and State Governments have traditionally exercised, and continue to exercise, significant influence over many aspects of the economy. Our business, and the market price and liquidity of the Units, may be affected by interest rates, changes in governmental policy, taxation, social and civil unrest and other political, economic or other developments in or affecting India.

Since 1991, successive governments have pursued policies of economic liberalisation and financial sector reforms. The current Government continues India's current economic and financial sector liberalisation and deregulation policies. However, there can be no assurance that such policies will be continued and a significant change in the Government's policies in the future could affect business and economic conditions in India and could also materially and adversely affect our business, financial condition and results of operations.

Any political instability in India may materially and adversely affect the Indian securities markets in general, which could also materially and adversely affect the trading price of the Units. Any political instability could delay the reform of the Indian economy and could have a material, adverse effect on the market for the Units. Protests against privatization could slow down the pace of liberalisation and deregulation. The rate of economic liberalisation could change, and specific laws and policies affecting companies in the road infrastructure sector, foreign investment, currency exchange rates and other matters affecting investment in our Units could change as well. A significant change in India's economic liberalisation and deregulation policies could disrupt business and economic conditions in India and thereby affect our business.

73. We may face limitations and risks associated with debt financing and refinancing

We are subject to regulatory restrictions in relation to our debt financing and refinancing. We may from time to time require debt financing and refinancing to carry out the Investment Manager's investment strategy. In the event that we undertake debt financing or refinancing, we may be limited by Indian law as to the form of financing or refinancing that we may undertake. As a trust, we may be unable to access certain debt capital available to companies. For example, as a Trust, we cannot issue debentures under the current regulatory framework.

In the event that we undertake debt financing or refinancing, we may also be subject to risks associated with debt financing and refinancing, including the risk that our cash flow may be insufficient to meet required payments of principal and interest under such financing and to make distributions to Unitholders. Our ability to generate sufficient cash to satisfy our debt obligations will depend on our future operating performance, which may be affected by prevailing economic conditions and financial, business and other factors beyond our control. There is no assurance that we will be able to generate sufficient cash flow to meet all of our debt obligations. If we are unable to make payments due under our debt facilities, the lenders may be able to declare an event of default and initiate enforcement proceedings relating to any security provided in respect of the loan facilities, and/or call upon any guarantees, and this may materially and adversely affect our ability to make distributions to Unitholders. Such default may also result in the termination of certain concession agreements by the concessioning authority.

We may also be subject to certain covenants in connection with any future borrowings that may limit or otherwise materially and adversely affect our operations and our ability to make distributions to Unitholders, such as covenants restricting our ability to acquire assets or undertake other capital expenditure, requirements to set aside funds for maintenance or repayment of security deposits or requirements to maintain certain financial ratios. For further details, please see the section headed "*Financial Indebtedness*" in this Draft Offer Document.

Furthermore, if prevailing interest rates or other factors at the time of financing or refinancing (including changes in market conditions and maturity term imposed by any lenders) result in higher interest rates, the interest expense may be significant and may have a material and adverse effect on our cash flow and the amount of distributions available to Unitholders.

74. Our ability to raise additional debt capital may be constrained by Indian law

Indian entities are subject to regulatory restrictions in relation to borrowing in foreign currencies, including restrictions in relation to eligibility, amount of borrowings which may be incurred, end-use and creation of security, and may require the prior approval of Indian regulatory authorities. Such restrictions could limit our ability to raise financing on competitive terms and refinance existing indebtedness. Additionally, our ability to borrow money against the security of our immovable assets in India is subject to the FEMA and exchange control regulations in India and may require the prior approval of the Indian regulatory authorities. There can be no assurance that any approval required to raise borrowings will be granted without onerous conditions, or at all. Such limitations on debt may have a material, adverse effect on our business growth, financial condition, cash flows and results of operations.

As per the InvIT Regulations, the aggregate consolidated borrowings and deferred payments of an infrastructure investment trust cannot exceed 49% of the value of the assets. Further, as an Indian trust, we are subject to exchange controls that regulate borrowing in foreign currencies. As per the ECB Master Directions, overseas borrowing by an infrastructure investment trust is permitted subject to the conditions and limits contained therein. Such regulatory restrictions limit our financing sources for projects under development and hence could constrain our ability to obtain financing on competitive terms and refinance existing indebtedness. For example, as a Trust, we cannot issue debentures under the current regulatory framework. In addition, there can be no assurance that any required regulatory approvals for borrowing in foreign currencies will be granted to us without onerous conditions, or at all. Limitations on foreign debt may have a material, adverse effect on our business growth, financial condition and results of operations.

75. Any downgrading of India's sovereign debt rating by a domestic or international rating agency could materially and adversely affect our ability to obtain financing and, in turn, our business and financial performance

India's sovereign debt rating could be downgraded due to various factors, including changes in tax or fiscal policy or a decline in India's foreign exchange reserves, which are outside of our control. Any adverse revisions to India's credit ratings for domestic and international debt by domestic or international rating agencies may materially and

adversely impact our ability to raise additional financing, and the interest rates and other commercial terms at which any such additional financing is available. This could have a material, adverse effect on our business and financial performance, ability to obtain financing for capital expenditures and the price of the Units.

76. There could be other external factors that are beyond our control, which may have a material adverse impact on our business, financial condition and results of operations if they materialise

The following external risks may have a material adverse impact on our business, financial condition and results of operations should any of them materialise:

- civil unrest, riots, protests, acts of violence, terrorist attacks, regional conflicts or situations or war involving India or other countries could materially and adversely affect the financial markets, which could impact our business;

- natural disasters in India such as earthquakes, tsunamis, floods and droughts may disrupt or materially and adversely affect the Indian economy, on which our business depends, or cause us to suffer losses arising from damage to the Initial Road Assets; and

- the outbreak, or perception of an outbreak, of an infectious disease in Asia (including in India) and elsewhere, together with any resulting travel restrictions or quarantines, could reduce traffic volumes and materially and adversely affect our business and financial results.

77. It may not be possible for Unitholders to enforce foreign judgements

The Trustee, the Investment Manager and the Sponsor are incorporated in India and the Trust is settled and registered in India. All of our assets are located in India and we may, from time to time, invest in toll roads in India. Where investors wish to enforce foreign judgements in India, where our assets are or will be located, they may face difficulties in enforcing such judgements. India is not a party to any international treaty in relation to the recognition or enforcement of foreign judgements. India exercises reciprocal recognition and enforcement of judgements in civil and commercial matters with a limited number of jurisdictions, including Singapore. In order to be enforceable, a judgement obtained in a jurisdiction which India recognises as a reciprocating territory must meet certain requirements of the Code of Civil Procedure, 1908 ("**Civil Code**"). Furthermore, the Civil Code only permits enforcement of monetary decrees not being in the nature of any amounts payable in respect of taxes, or other charges of a like nature or in respect of a fine or other penalty and does not provide for the enforcement of arbitration awards even if such awards are enforceable as a decree or judgement. Judgements or decrees from jurisdictions not recognised as a reciprocating territory by India cannot be enforced or executed in India except through a fresh suit upon judgement. Even if we or a Unitholder were to obtain a judgement in such a jurisdiction, we or it would be required to institute a fresh suit upon the judgement and would not be able to enforce such judgement by proceedings in execution. In addition, the party which has obtained such judgement must institute the new proceedings within three years of obtaining the judgement. It is unlikely that an Indian court would award damages on the same basis or to the same extent as was awarded in a judgement rendered by a foreign court if the Indian court believed that the amount of damages awarded was excessive or inconsistent with public policy in India. In addition, any person seeking to enforce a foreign judgement in India is required to obtain prior approval of the RBI to repatriate outside India any amount recovered pursuant to the execution of the judgement.

Consequently, it may not be possible to enforce in an Indian court any judgement obtained in a foreign court, or effect service of process outside of India, against Indian companies, their directors and executive officers, and any other parties resident in India. Additionally, there is no assurance that a suit brought in an Indian court in relation to a foreign judgement will be disposed of in a timely manner.

Risks Related to Ownership of the Units

78. Unitholders should consider the impact of U.S. Foreign Account Tax Compliance Act withholding

Pursuant to Sections 1471 to 1474 of the Internal Revenue Code of 1986 and the regulations promulgated thereunder ("**FATCA**") if (i) we become a "participating foreign financial institution" and (ii) our Units are not treated as "regularly traded on an established securities market" within the meaning of FATCA, then we and other financial institutions through which payments are made may be required to withhold tax at the rate of 30% on all or a portion of distributions paid after December 31, 2016 (at the earliest) which are treated as "foreign pass-thru payments" to an investor or any other non-U.S. financial institution through which payment on the Units is made

that is not in compliance with FATCA or does not provide us (or other relevant intermediary) information sufficient to determine whether the investor is subject to withholding under FATCA. Prospective investors are encouraged to consult with their own tax advisors regarding the possible implications of this legislation on their investment in our Units.

79. U.S. holders should consider the impact of the "passive foreign investment company" rules in connection with an investment in the Units

A non-U.S. corporation will be treated as a passive foreign investment company ("**PFIC**"), for U.S. federal income tax purposes for any taxable year in which either: (i) at least 75 percent of its gross income is "passive income" or (ii) at least 50 percent of the value of its gross assets during the taxable year (based on the average of the fair market values of the assets determined at the end of each quarter in such taxable year) are "passive assets", which generally means that they produce passive income or are held for the production of passive income.

Although not free from doubt, we do not believe that we should be treated as, and do not expect us to become, a PFIC for U.S. federal income tax purposes. However, no assurance can be given that we will not be considered a PFIC in the current or future years. The determination whether or not we are a PFIC is a factual determination that is made annually (after the close of each taxable year) based on the types of income we earn and the value of our assets. If we were currently or were to become a PFIC, U.S. holders of Units would be subject to special rules and a variety of potentially adverse tax consequences under the Code.

80. The Trust may be dissolved, and the proceeds from the dissolution thereof may be less than the amount invested by the Unitholders

The Trust is an irrevocable trust registered under the Registration Act and it may only be extinguished (i) if it is impossible to continue with the Trust or if the Trustee, on the advice of the Investment Manager, deems it impracticable to continue with the Trust; (ii) on the written recommendation of the Investment Manager and upon obtaining the prior written consent of such number of the Unitholders as is required under the InvIT Regulations; (iii) if the Units of the Trust are delisted from the Stock Exchanges; (iv) if the SEBI passes a direction for the winding up of the Trust or the delisting of the Units; or (v) in the event the Trust becomes illegal. Under the Indenture of Trust, in the event of dissolution, the net assets of the Trust, remaining after settlement of all liabilities, and the retention of any reserves which the Trustee deems to be necessary to discharge contingent or unforeseen liabilities, shall be paid to the Unitholders. Should the Trust be dissolved, depending on the circumstances and the terms upon which assets of the Trust are disposed of, there is no assurance that a Unitholder will recover all or any part of his investment.

81. The reporting requirements and other obligations of infrastructure investment trusts post-listing are still evolving. Accordingly, the level of ongoing disclosures made to and the protection granted to Unitholders may be more limited than those made to or available to the shareholders of a company that has listed its equity shares upon a recognized stock exchange in India

The InvIT Regulations, along with the guidelines and circulars issued by the SEBI from time to time, govern the affairs of infrastructure investment trusts in India. However, as compared to the statutory and regulatory framework governing companies that have listed their equity shares upon a recognized stock exchanges in India, the regulatory framework applicable to infrastructure investment trusts is relatively nascent and thus, still evolving. While the InvIT Regulations were notified with effect from September 26, 2014, the guidelines and procedures in relation to a public issue of units by an infrastructure investment trust were only notified by SEBI recently (by way of circular no. CIR/IMD/DF/55/2016 dated May 11, 2016). Further, pursuant to a circular dated November 29, 2016, the SEBI has prescribed certain continuous disclosure requirements that will be applicable to the InvIT after Listing.

Accordingly, the ongoing disclosures made to Unitholders under the InvIT Regulations may differ from those made to the shareholders of a company that has listed its equity shares upon a recognized stock exchange in India in accordance with the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015. Further, the rights of the Unitholders may not be as extensive as the rights of the shareholders of a company that has listed its equity shares upon a recognized stock exchange in India, and accordingly, the protection available to the Unitholders may be more limited than those available to such shareholders.

82. We may not be able to make distributions to Unitholders or the level of distributions may fall

The Trust's distributions will be based on the NDCF available for distribution and not on whether the Trust makes an accounting profit or loss. The InvIT Regulations provide that not less than 90% of NDCF of each Project SPV are required to be distributed to the Trust in proportion of its holding in each of the Project SPVs subject to applicable provisions of the Companies Act. Not less than 90% of NDCF of the Trust shall be distributed to the Unitholders. Such distributions shall be declared and made not less than once every six months in every financial year and shall be made not later than fifteen days from the date of such declaration.

The Trust will rely on the receipt of interest, dividends, principal repayments and buy back of shares (net of applicable taxes and expenses) from the Project SPVs in order to make distributions to Unitholders. There can be no assurance that the Trust will have sufficient distributable or realised profits or surplus in any future period to make distributions every six months or at all. The ability of the Project SPVs to pay dividends, make interest payments and repay shareholder loans may be affected by a number of factors including, among other things:

- their respective businesses and financial positions;
- insufficient cash flows received from the assets;
- applicable laws and regulations, which may restrict the payment of dividends by the Project SPVs;
- operating losses incurred by the Project SPVs in any financial year;
- changes in accounting standards, taxation laws and regulations, laws and regulations in respect of foreign exchange repatriation of funds, corporation laws and regulations relating thereto; and
- the terms of agreements, including any concession agreements or financing agreements, to which they are, or may become, a party.

Further, the method of calculation of NDCF is subject to change. Any change in the applicable laws in India or elsewhere (including, for example, tax laws and foreign exchange controls) may limit the Trust's ability to pay or maintain distributions to Unitholders. For example, under current laws and regulations, dividends that may be paid by the Project SPVs to the Trust will be exempt from the dividend distribution tax. No assurance can be given that such dividends will remain exempt from the dividend distribution tax. Furthermore, no assurance can be given that the Trust will be able to pay or maintain the levels of distributions or that the level of distributions will increase over time, or that future acquisitions will increase the Trust's distributable free cash flow to Unitholders. Any reduction in, or elimination or taxation of, payments of distributions could materially and adversely affect the market price of the Units.

In addition, the financing agreements entered into by Project SPVs with certain banks and financial institutions contain certain restrictive covenants, including, but not limited to, requirements that they obtain consent from the lenders prior to making any dividend payments to the Trust. Any failure to obtain such consents in a timely manner or at all would impede our ability to make distributions to Unitholders on a regular basis or at all, which could materially and adversely affect the market price of the Units.

83. Any additional debt financing or issuance of additional Units may have a material, adverse effect on the Trust's distributions, and your ability to participate in future rights offerings may be limited

The Investment Manager may require additional debt financing or the issuance of additional Units in order to support the operating business or to make acquisitions and investments. If obtained, any such additional debt financing may decrease distributable income, and any issuance of additional Units may dilute existing Unitholders' entitlement to distributions. Pursuant to the InvIT Regulations, the Trust is required to obtain a credit rating for further borrowing, if the consolidated borrowings of the Trust (excluding cash and cash equivalents) exceeds 25% of the value of its assets. As on the date of this Draft Offer Document, the Trust has not obtained any such credit rating, and its ability to raise financing after Listing, may be restricted to this extent.

We are not required to offer pre-emptive rights to existing Unitholders when issuing new Units. Compliance with securities laws or other regulatory provisions in some jurisdictions may prevent certain investors from participating in any future rights issuances and thereby result in dilution of their existing holdings in Units.

84. Fluctuations in the exchange rate of the Indian Rupee with respect to the U.S. Dollar or other currencies will affect the foreign currency equivalent of the value of the Units and any distributions

Fluctuations in the exchange rates between the Indian Rupee and other currencies will affect the foreign currency equivalent of the Indian Rupee price of the Units. Such fluctuations will also affect the amount that holders of the Units will receive in foreign currency upon conversion of any cash distributions or other distributions paid in

Indian Rupees by us on the Units, and any proceeds paid in Indian Rupees from any sale of the Units in the secondary trading market.

85. Unitholders are unable to require the redemption of their Units

Unitholders will not have the right to redeem Units or request or require the redemption of Units by the Investment Manager while the Units are listed on the Stock Exchanges, although the Indenture of Trust provides that the Investment Manager may repurchase Units at its sole discretion if it has obtained the prior approval of Unitholders in a general meeting by passing an ordinary resolution in accordance with the Indenture of Trust but subject to other requirements of the relevant laws, regulations and guidelines imposed by authorities in India.

86. There is no guarantee that the Units will be listed on the Stock Exchanges in a timely manner or at all. Accordingly, you may be restricted in your ability to dispose of the Units

In accordance with Indian law, permission for listing and trading of Units will not be granted until after certain actions have been completed in relation to the Issue and until the Allotment of the Units pursuant to this Issue. Further, the Allotment of the Units in the Issue is subject to, *inter alia*, our ability to successfully undertake and complete the Formation Transactions, which are themselves subject to certain closing and other conditions. Pursuant to the InvIT Regulations, the SEBI also has the right to withdraw its observation letter at any time prior to listing. For further details in relation to the Formation Transactions, see the section headed "*Background and Structure of the Trust*" in this Draft Offer Document. While trading in the Units is required to commence within 12 Working Days from the Bid/Issue Closing Date, we cannot assure you that we will be able to list the Units within this timeframe or at all.

Further, upon listing, we expect to be one of the first listed infrastructure investment trust in India. Accordingly, we cannot assure you that the trading in our Units will commence in a timely manner or at all. Any failure or delay in obtaining final listing and trading approvals may restrict your ability to dispose of your Units.

87. The Units have never been publicly traded and the listing of the Units on the Stock Exchanges may not result in an active or liquid market for the Units

There is no public market for the Units prior to the Issue and an active public market for the Units may not develop or be sustained after the Issue. Listing and quotation does not guarantee that a trading market for the Units will develop or, if a market does develop, that there will be liquidity of that market for the Units. Accordingly, prospective Unitholders should view the Units as illiquid and must be prepared to hold their Units for an indefinite length of time.

88. There is no assurance that the Units will remain listed on the Stock Exchanges

Although it is currently intended that the Units will remain listed on the Exchange, there is no guarantee of the continued listing of the Units. Among other factors, we may not continue to satisfy the listing requirements of the Stock Exchanges. Accordingly, Unitholders will not be able to sell their Units through trading on the Exchanges if the Units are no longer listed on the Exchange. While the InvIT Regulations state that we must provide investors with an exit prior to delisting, the specific mechanism of such delisting and related exit offer has not yet been finalized by the SEBI. Further, under the InvIT Regulations, the Trust is required to maintain a minimum of 20 Unitholders (each holding not more than 25% of the Units) at all times after the listing of the Units pursuant to the Issue and certain minimum public holding requirements. Failure to maintain such minimum number of Unitholders or public holding may result in action being taken against the Trust by the SEBI and the Stock Exchanges, including the compulsory delisting of the Units.

89. The price of the Units may decline after the Issue

The Issue Price will be determined by the Investment Manager in consultation with the BRLMs. The Issue Price may not be indicative of the market price of the Units upon completion of the Issue. The market price of the Units may also be highly volatile and could be subject to wide fluctuations. If the market price of the Units declines significantly, investors may be unable to resell their Units at or above their purchase price, if at all. There can be no assurance that the market price of the Units will not fluctuate or decline significantly in the future. The market price of the Units will depend on many factors, including, among others:

- the perceived prospects of our business and investments and the market for toll roads and other

infrastructure projects;
- differences between our actual financial and operating results and those expected by investors and analysts;
- the perceived prospects of future toll roads and other infrastructure projects that may be added to our portfolio in accordance with our investment mandate;
- changes in research analysts' recommendations or projections;
- changes in general economic or market conditions;
- the market value of our assets;
- the perceived attractiveness of the Units against those of other business trusts, equity or debt securities;
- the balance of buyers and sellers of the Units;
- the size and liquidity of the Indian business trusts market;
- any changes to the regulatory system, including the tax system, both generally and specifically in relation to India business trusts;
- the ability of the Investment Manager to implement successfully its investment and growth strategies;
- foreign exchange rates;
- broad market fluctuations, including increases in interest rates and weakness of the equity and debt markets;
- variations in our quarterly operating results;
- difficulty in assessing our performance against either domestic or international benchmarks, as there are few listed comparables;
- publication of research reports about us, other road businesses, the road industry in general or other relevant sectors, or the failure of securities analysts to cover the Units after the Issue;
- additions or departures of key management personnel of the Trust and/or the Trust Group;
- changes in the amounts of our distributions, if any, and changes in the distribution payment policy or failure to execute the existing distribution policy;
- actions by Unitholders;
- changes in market valuations of similar business entities or companies;
- announcements by us or our competitors of significant contracts, acquisitions, disposals, strategic partnerships, joint ventures or capital commitments;
- speculation in the press or investment community; and
- changes or proposed changes in laws or regulations affecting the road industry and infrastructure development in India or enforcement of these laws and regulations, or announcements relating to these matters.

To the extent that we retain operating cash flow for investment purposes, working capital reserves or other purposes, these retained funds, while increasing the value of our underlying assets, may not correspondingly increase the market price of the Units. Our failure to meet market expectations with regard to future earnings and cash distributions may materially and adversely affect the market price of the Units.

Where new Units are issued at less than the market price of the Units, the value of an investment in the Units may be affected. In addition, Unitholders who do not, or are not able to, participate in the new issuance of Units may experience a dilution of their interest in the Trust.

In addition, the Units are not capital-safe products and there is no guarantee that Unitholders can regain the amount invested, in full or in part. If the Trust is extinguished, it is possible that investors may lose a part or all of their investment in the Units.

90. Purchasers of the Units may experience dilution of their interests upon the completion of the DA acquisition

The Trust intents to acquire 100% of the equity shares of DA upon its classification as a qualifying asset, subject to approval from NHAI. Following the consummation of the DA acquisition, purchasers of the Unit may experience immediate dilution as a consequence of the issuance of units as consideration in the DA acquisition.

91. Any future issuance of Units by us or sales of Units by the Sponsor or any of other significant Unitholders may materially and adversely affect the trading price of the Units

Any future issuance of Units by us could dilute investors' holdings of Units. Any such future issuance of Units may also materially and adversely affect the trading price of the Units, and could impact our ability to raise capital

through an offering of our securities. There can be no assurance that we will not issue further Units. In addition, any perception by investors that such issuances might occur could also affect the trading price of the Units.

Upon completion of the Issue, [●] Units (constituting [●]% of the total number of Units expected to be in issue after the completion of the Issue) will be held by the Sponsor. The Sponsor and the other Selling Unitholders have agreed with the BRLMs that they will enter into a lock-up arrangement. For more details, please see the section headed "*About the Trust – Leverage – Lock-in Restrictions*" in this Draft Offer Document.

Units will be tradable on the Stock Exchanges. If the Sponsor (following the lapse of its lock-up arrangements or pursuant to any applicable waivers), directly or indirectly, sells or is perceived as intending to sell a substantial number of its Units, or if a secondary offering of the Units is undertaken, the market price for the Units could be materially and adversely affected. These sales may also make it more difficult for us to raise capital through the issue of new units at a time and at a price we deem appropriate.

92. Our rights and the rights of the Unitholders to recover claims against the Investment Manager or the Trustee are limited

Under the Investment Management Agreement, the Investment Manager is not liable for, among other things, any action or omission, if it has carried out its duties and exercised its powers with reasonable skill and care expected of an investment manager (except in the case of fraud, negligence or wilful misconduct). Pursuant to the Indenture of Trust, the Trustee is not liable for anything done or omitted to be done or suffered by the Trustee in good faith. Further, the Trustee is not liable for any action or omission that results in any depletion in the value of the trust fund and consequent losses of the Unitholder, except in situations where such depletion is a result of the gross negligence or wilful default on the part of the Trustee. The Investment Management Agreement provides that the Investment Manager is entitled to be indemnified out of the Trust Fund against all taxes and other liabilities, claims, costs, losses, damages and expenses (including reasonable attorney's fees and costs) ("**Losses**") incurred in connection with the Trust, unless arising out of gross negligence, dishonest acts or commissions or omissions, wilful misfeasance, reckless disregard of duty or breach of duties under the Investment Management Agreement. As a result, the Trust's rights and the rights of the Unitholders to recover claims against the Investment Manager are limited. Furthermore, recourse to the Trustee may be limited under the Indenture of Trust. The Indenture of Trust provides for the indemnification of the Trustee and the Investment Manager for all Losses, except Losses incurred due to any gross negligence, default, breach of duty or trust, or a failure to show a requisite degree of diligence and care. Accordingly, the liability of the Investment Manager and the Trustee are limited under the terms of these agreements and the Unitholders may not be able to recover claims against the Trustee or the Investment Manager, including claims with respect to any offer documents relating to the Issue.

Further, pursuant to the Indenture of Trust, the Trustee is not under any obligation to institute, acknowledge the service of, appear in, prosecute or defend any action, suit, proceeding or claim, which in its opinion might involve it in expense or liability that exceeds the value of the fund. The Trust (acting through the Trustee) and the Investment Manager intend to apply the proceeds of the Issue towards the objects set out in this Draft Offer Document. Accordingly, the Trust Fund may not be sufficient to recover claims, including claims with respect to any offer documents in relation to the Issue.

93. Information and the other rights of Unitholders under Indian law may differ from such rights available to equity shareholders of an Indian company or under the laws of other jurisdictions

The Indenture of Trust and various provisions of Indian law govern our corporate affairs. Legal principles relating to these matters and the validity of corporate procedures, fiduciary duties and liabilities, and Unitholders' rights may differ from those that would apply to a company in India or a trust in another jurisdiction. Unitholders' rights and disclosure standards under Indian law may also differ from the laws of other countries or jurisdictions. See the section headed "*Rights of Unitholders*" in this Draft Offer Document.

Risks Related to Tax

94. Changes in legislation or the rules relating to tax regimes could materially and adversely affect our business, prospects and results of operations

The Government has proposed a comprehensive national goods and services tax ("**GST**") regime that will combine taxes and levies by the Government and State Governments into a unified rate structure. Given the limited availability of information in the public domain concerning the GST, there can be no assurances as to the tax

regime following implementation of the GST. The implementation of this new structure may be affected by any disagreement between certain State Governments, which could create uncertainty. Any such future amendments may affect our overall tax efficiency, and may result in significant additional taxes becoming payable.

Further, the General Anti-Avoidance Rules ("**GAAR**") are proposed to be effective from April 1, 2017. The tax consequences of the GAAR provisions being applied to an arrangement could result in denial of tax benefit, amongst other consequences, including on the interest paid by the Project SPVs on the debt from the Trust. In the absence of any precedents on the subject, the application of these provisions is uncertain. If the GAAR provisions are made applicable to the Trust or any member of the Trust Group, it may have a material adverse tax impact on the Trust Group.

The Investment Manager has not determined the impact of such proposed legislations on our business. Uncertainty in the applicability, interpretation or implementation of any amendment to, or change in, governing law, regulation or policy, including by reason of an absence, or a limited body, of administrative or judicial precedent, may be time consuming as well as costly for us to resolve and may impact the viability of our current business or restrict our ability to grow our business in the future.

95. Some of our roads assets enjoy certain benefits under Section 80-IA of the Income Tax Act and any change in these tax benefits applicable to us may materially and adversely affect our results of operations

Currently, surface transport infrastructure development projects, including toll-road concession projects, enjoy certain benefits under Section 80-IA of the Income Tax Act. In accordance with and subject to the condition specified in this section, the Project SPVs are entitled to certain benefits for all of the operational infrastructure projects and would be entitled to a deduction of 100% of the profits derived from the development or operation and maintenance or development, operation and maintenance of the toll roads for any 10 consecutive tax assessment years out of 20 years, beginning from the year in which the Project SPV develops and begins to operate the infrastructure facility. The incentives for Section 80-IA of the Income Tax Act are available for a period of 10 consecutive tax years out of a block of 20 years from the year of commencement of operations. However, the Project SPVs would be liable to pay tax on their respective book profits under the MAT Provisions at the rate of 18.5% (plus applicable surcharge and cess). When the tax incentives expire or terminate, our tax liability may increase, thereby impacting our profitability. Further, the India tax authorities may disallow the deduction availed if the conditions specified are not complied with or the computation of the profits and gains of the eligible business is not in accordance with the manner prescribed and there is no assurance that such projects will continue to enjoy the tax benefits. This may affect the overall tax liabilities of the Project SPVs and result in significant additional taxes becoming payable thereby resulting in a material, adverse effect on our business, financial condition, cash flows and results of operations and consequently may have a material, adverse impact on our distributions.

96. Tax laws are subject to changes and differing interpretations, which may materially and adversely affect our operations

Tax laws and regulations are subject to differing interpretations by tax authorities. Differing interpretations of tax and other fiscal laws and regulations may exist within governmental ministries, including tax administrations and appellate authorities, thus creating uncertainty and potential unexpected results. The degree of uncertainty in tax laws and regulations, combined with significant penalties for default and a risk of aggressive action by the governmental or tax authorities, may result in tax risks in the jurisdictions in which we operate being significantly higher than expected. For instance, while the Investment Manager intends to take measures to ensure that it is in compliance with all relevant tax laws, there is no assurance that the tax authorities will not take a position that differs from the position taken by us with regard to our tax treatment of various items. Any of the above events may result in a material, adverse effect on our business, financial condition, results of operations and/or prospects and our ability to make distributions to the Unitholders.

97. Entities operating in India are subject to a variety of Government and State Government tax regimes and surcharges and changes in legislation or the rules relating to such tax regimes and surcharges could materially and adversely affect our business

Tax and other levies imposed by the Government and State Governments that affect our liability include: (i) income tax; (ii) wealth tax (which was withdrawn with effect from January 1, 2016) (iii) excise duty; (iv) value added tax/central sales tax; (v) service tax; (vi) stamp duty; and (vii) other special taxes and surcharges that are introduced on a temporary or permanent basis from time to time. In some cases, these taxes and other levies may be changed from year to year and the Indian courts which interpret tax legislation may apply such interpretations

with retroactive effect. Also, the Government in certain situations has the authority to change tax laws retrospectively. In lieu of certain indirect tax legislation, the GST is proposed to be introduced in India and may have significant but as yet unknown consequences for us.

In addition, the Income Tax Act contains a provision in respect of the GAAR indicating that these rules will be effective from April 1, 2017. GAAR is a broad set of provisions which grant powers to India tax authorities to invalidate any arrangement for tax purposes if the main purpose of entering into the transaction by the tax payer is to obtain a tax benefit. Besides the "tax benefit", the transaction should meet any one of the following specified additional tests:

- creates rights, or obligations, which are not ordinarily created between persons dealing at arm's length;
- results, directly or indirectly, in the misuse, or abuse, of the provisions of the Income Tax Act;
- lacks commercial substance or is deemed to lack commercial substance as prescribed under the Income Tax Act in whole or in part; and
- is entered into, or carried out, by means which are, or in a manner which is, not ordinarily employed for bona fide purposes.

Such transactions are declared as impermissible avoidance arrangements and the consequence in relation to tax arising from such arrangements, including denial of a tax benefit or a benefit under a tax treaty, shall be determined according to the circumstances of the case. The Rules notified with respect to GAAR prescribe that these shall not be applicable to FIIs in accordance with the SEBI (Foreign Investor Regulations) 1995. GAAR, once effective, may have a material adverse tax impact on the Trust Group and the Unitholders.

Any increase in the rates of corporate income tax, dividend distribution tax, withholding tax on payment of interest or MAT, any changes to tax holidays, deductions, tax depreciation and other sections of the Income Tax Act and any introduction of new taxes or withdrawal of any exemption could materially and adversely affect the Project SPVs and may have a material, adverse effect on the business, financial condition, results of operations, and/or prospects of the Project SPV, which may in turn have a significant and material impact on distributions to be made by the Project SPVs. Under the Income Tax Act, no deduction is allowed on expenditure (including interest) which is not incurred for the purpose of a business or earning income, or is incurred for earning a tax-exempt income, in computing the taxable income of the Project SPVs. In the event that any such deduction is not allowed, tax may be levied at the prevailing tax rates on the amount of disallowance, together with interest on the tax payable. Further, with effect from April 1, 2017, the penalty for under-reporting of the income shall be a sum equal to (a) 50% of the amount of tax payable or, (b) in cases where the under-reporting of income is a consequence to any misreporting the penalty is two times the amount of tax payable.

98. Investors may be subject to Indian taxes arising out of capital gains on the sale of Units

Under current Indian tax laws, capital gains arising from the sale of Units in an Indian Trust are generally taxable in India. Any gain realized on the sale of listed Units on a stock exchange held for more than 36 months will not be subject to capital gains tax in India if STT has been paid on the transaction. Further, gains realized on the sale of listed Units on a stock exchange held for less than 36 months will be subject to capital gains tax in India even if STT is paid. STT will be levied on and collected by a domestic stock exchange on which the Units are sold. Any gain realized on the sale of the Units held for more than 36 months to an Indian resident, which are sold other than on a recognized stock exchange and on which no STT has been paid, will be subject to long-term capital gains tax in India. Further, any gain realized on the sale of listed Units held for a period of 36 months or less will be subject to short-term capital gains tax in India. Capital gains arising from the sale of the Units will be exempt from taxation in India in cases where the exemption from taxation in India is provided under a treaty between India and the country of which the seller is resident. Generally, Indian tax treaties do not limit India's ability to impose tax on capital gains. As a result, residents of other countries may be liable for tax in India as well as in their own jurisdiction on a gain upon the sale of the Units. The above statements are based on the current tax laws.

SECTION III – INTRODUCTION

SUMMARY FINANCIAL INFORMATION

The following tables set forth the summary financial information derived from:

a) the Condensed Combined Financial Statements, prepared in accordance with the requirements of the InvIT Regulations and Ind-AS, as of and for the financial years ended March 31, 2014, 2015, 2016, and the six month period ended September 30, 2016;

b) the consolidated financial statements of the Sponsor, prepared in accordance with Indian GAAP and the Companies Act, as of and for the financial years ended March 31, 2014, 2015, 2016; and

c) the consolidated financial statements of the Investment Manager, prepared in accordance with Indian GAAP and the Companies Act, as of and for the financial years ended March 31, 2014, 2015, 2016.

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

The summary financial information derived from the Condensed Combined Financial Statements, as presented herein below, should be read in conjunction with the Condensed Combined Financial Statements, the notes thereto and the sections "*Financial Statements*" and "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" on pages 355 and 463, respectively.

A. Summary Condensed Combined Financial Statements of the Project SPVs

I. Condensed Combined Summary Statement of Assets and Liabilities

Sr. No.	Particulars	As at September 30, 2016 (Rs. in Millions)	As at March 31, 2016 (Rs. in Millions)	As at March 31, 2015 (Rs. in Millions)	As at March 31, 2014 (Rs. in Millions)
	ASSETS				
	Non-current assets				
(a)	Intangible assets	97,723.50	78,809.42	63,851.48	55,818.16
(b)	Intangible Assets under development	7,673.25	25,033.89	28,078.80	29,751.60
(c)	Financial Assets				
	-Other Financial Assets	281.47	506.79	993.60	1,262.77
(d)	Deferred Tax assets (net)	1,486.51	1,099.94	789.04	476.25
(e)	Other non-current assets	905.63	958.53	1,547.30	4,681.57
		1,08,070.36	**1,06,408.57**	**95,260.22**	**91,990.35**
	Current Assets				
(a)	Financial Assets				
	(i) Investments	226.94	166.56	158.34	147.78
	(ii) Cash and cash equivalents	475.20	516.76	331.62	1,182.47
	(iii) Bank balances other that (ii) above	277.30	277.30	198.88	7.50
	(iv) Loans	740.00	740.00	4,904.00	5,049.00
	(v) Other financial assets	659.48	344.39	2,022.33	1,501.03
(b)	Current Tax Assets (Net)	18.62	75.59	93.09	60.90
(c)	Other current assets	413.31	491.81	594.68	490.13
		2,810.85	2,612.41	8,302.94	8,438.81
	Total Assets	**1,10,881.21**	**1,09,020.98**	**1,03,563.16**	**1,00,429.16**
	EQUITY AND LIABILITIES				
	EQUITY				
(a)	Equity share capital	607.02	607.02	607.02	607.02
(b)	Subordinated debt (in nature of Equity)	23,379.79	21,241.54	18,416.14	7,794.12
(c)	Other equity	8,143.98	8,904.70	10,288.53	10555.77
	Total Equity	**32,130.79**	**30,753.26**	**29,311.69**	**18,956.91**
	LIABILITIES				
	Non-current Liabilities				
(a)	Financial Liabilities				
	(i) Borrowings	41,952.58	43,568.37	40,111.89	37,412.62
	(ii) Other financial liabilities	25,063.00	25,619.80	20,257.05	19,762.07
(b)	Provisions	2,414.97	1,880.34	1,462.92	1,054.89
(c)	Deferred tax liabilities (net)	1,647.29	1,702.76	1,665.09	1,483.64
(d)	Other non-current liabilities	-	-	-	5,138.68
		71,077.84	**72,771.27**	**63,496.94**	**64,851.90**
	Current Liabilities				
(a)	Financial Liabilities				
	(i) Borrowings	1,075.00	75.00	-	1,973.00
	(ii) Trade Payables	1,417.83	1,095.85	1,287.07	2,262.09
	(iii) Other Financial liabilities	4,335.61	3,617.05	3,643.36	3,551.71
(b)	Other current liabilities	14.96	64.30	5,381.05	8,804.90
(c)	Provisions	756.59	644.25	443.06	2.23
(d)	Current tax liabilities (net)	72.59	-	-	26.42
		7672.58	**5,496.45**	**10,754.52**	**16,620.35**
		78,750.42	**78,267.72**	**74,251.47**	**81,472.25**
	Total Equity and Liabilities	**1,10,881.21**	**1,09,020.98**	**1,03,563.16**	**1,00,429.16**

II. Condensed Combined Summary Statement of Profit and Loss

Particulars	Half-year ended September 30, 2016 (Rs. in Millions)	Financial Year ended March 31, 2016 (Rs. in Millions)	Financial Year ended March 31, 2015 (Rs. in Millions)	Financial Year ended March 31, 2014 (Rs. in Millions)
Revenue	5,310.37	13,194.25	10,940.98	14,894.85
Other Income	113.90	263.28	871.60	934.45
Total Income	5,424.27	13,457.53	11,812.58	15,829.30
Expenses				
Toll Operation and Maintenance expenses	1,013.14	1,845.71	1,404.75	1,028.37
Construction cost	1,237.87	5,910.64	4,352.78	9,577.53
Employee benefits expense	66.10	146.70	115.93	105.76
Finance cost	3,262.06	5,214.03	4,495.34	2,795.52
Amortisation expenses	807.81	1,440.48	1,088.54	766.29
Other expenses	145.54	426.00	448.16	497.35
Total expenses	6,532.52	1 4,983.56	11,905.50	14,770.82
Profit/ (loss) before tax	**(1,108.25)**	**(1,526.03)**	**(92.92)**	**1 ,058.48**
Tax expense				
Current tax	91.67	129.53	240.07	173.71
Deferred tax charge/(credit)	(440.90)	(272.73)	(130.83)	402.68
Income tax for earlier years	(0.62)	-	-	-
	(349.85)	(143.20)	109.24	5 76.39
Profit/(Loss) after tax	**(758.40)**	**(1,382.83)**	**(202.16)**	**4 82.09**
Other Comprehensive Income				
(i) Items that will not be reclassified to Profit or loss				
Remeasurements of net defined benefit plans :Gains/(loss)	(3.45)	(1.50)	(1.72)	0.75
(ii) Income tax relating to items that will not be reclassified to Profit or loss				
Remeasurements of net defined benefit plans	(1.13)	(0.50)	(0.51)	0.20
Other Comprehensive Income/(Loss)	**(2.32)**	**(1.00)**	**(1.21)**	**0 .55**
Total Comprehensive Income/(Loss)	**(760.72)**	**(1,383.83)**	**(203.37)**	**482.64**
Profit/(Loss) after tax				
Attributable to:				
Equity holders	(758.40)	(1,382.83)	(202.16)	482.09
Total Comprehensive Income				
Attributable to:				
Equity holders	(760.72)	(1,383.83)	(203.37)	482.64

III. Condensed Combined Summary Statement of Cash Flows

Particulars	Half-year ended September 30, 2016 (Rs. in Millions)	Financial year ended March 31, 2016 (Rs. in Millions)	Financial year ended March 31, 2015 (Rs. in Millions)	Financial year ended March 31, 2014 (Rs. in Millions)
A. CASH FLOW FROM OPERATING ACTIVITIES:				
Profit/(loss) before tax	**(1,108.25)**	**(1,526.03)**	**(92.92)**	**1,058.48**
Adjustments for:				
Amortisation expenses	807.81	1,440.48	1,088.54	766.29
Interest income	(107.59)	(242.77)	(848.29)	(904.03)
Dividend income	(5.51)	(17.51)	(22.10)	(20.55)
Net (gain)/loss on sale of current investments	-	-	-	(1.80)
Interest expense	3,262.07	5,214.03	4,495.35	2,795.51
	2,848.53	**4,868.20**	**4,620.58**	**3,693.90**
Cash Generated from Operations before working capital changes				
Adjustments for:				
(Increase)/decrease in financial assets except for investments	4.46	581.49	315.96	885.61
(Increase)/decrease in other current assets	78.50	102.87	(104.55)	(153.82)
(Increase)/decrease in trade payables	321.98	(191.22)	(975.02)	708.48
(Increase)/decrease in other financial liabilities	(16.09)	25.99	(0.55)	(5.14)
(Increase)/decrease in provisions	493.61	437.16	721.64	496.37
(Increase)/decrease in other non-current liabilities	-	-	(5,138.68)	(103.75)
(Increase)/decrease in other current liabilities	(48.71)	(5,316.76)	(3,423.84)	190.17
	833.75	**(4,360.47)**	**(8,605.04)**	**2,017.92**
Cash generated from operations	**3,682.28**	**507.73**	**(3,984.46)**	**5,711.82**
Direct Taxes (paid) net of refunds	37.89	(112.03)	(298.68)	(193.85)
Net Cash generated from operating activities – [A]	**3,720.17**	**395.70**	**(4,283.14)**	**5,517.97**
B CASH FLOW FROM INVESTING ACTIVITIES:				
Purchase/sale proceeds of intangible assets (including intangible assets under development)	(2692.44)	(7,896.01)	(3,605.58)	(7,671.59)
Purchase of current investments (net of proceeds)	(53.50)	(8.56)	(10.11)	26.98
Intercorporate deposits received	-	4 ,904.00	145.00	236.50
Intercorporate deposits given	-	(740.00)	-	-
Interest received	6.42	1,746.49	87.14	92.98
Dividend received	5.51	17.51	22.10	20.55

Particulars	Half-year ended September 30, 2016 (Rs. in Millions)	Financial year ended March 31, 2016 (Rs. in Millions)	Financial year ended March 31, 2015 (Rs. in Millions)	Financial year ended March 31, 2014 (Rs. in Millions)
Net cash (used in) / generated from investing activities - [B]	(2,734.01)	(1,976.57)	(3,361.45)	(7,294.58)
C CASH FLOW FROM FINANCING ACTIVITIES:				
Proceeds from Subordinate debt	2,138.25	2,825.40	10,558.13	4,217.40
Proceeds from short term borrowings (net)	1,000.00	75.00	(1,973.00)	(934.20)
Proceeds from long term borrowings	1,554.45	5,240.43	9,744.92	4,278.56
Repayment of long term borrowings	(3,144.37)	(1,258.13)	(6,695.04)	(455.41)
Interest paid	(2,576.03)	(5,116.69)	(4,841.27)	(4,505.93)
Net cash used in financing activities - [C]	(1,027.70)	1,766.01	6,793.74	2,600.42
Net increase/(decrease) in cash and cash equivalents - [A+B+C]	(41.54)	185.14	(850.85)	823.81
Add: Cash and cash equivalents at the beginning	516.76	331.62	1,182.47	358.66
Cash and cash equivalents at the end	475.20	516.76	331.62	1,182.47
Components of Cash and cash equivalents				
Balances with banks - in Current accounts	319.70	358.90	254.99	975.83
Deposits with maturity of less than three months	117.77	124.65	49.15	151.00
Cash on hand	37.73	33.21	27.48	55.64
Total Cash and cash equivalents	475.20	516.76	331.62	1,182.47

B. Summary Consolidated Financial Information of the Sponsor, namely Reliance Infrastructure Limited

I. Sponsor's Summary Consolidated Balance Sheet as at March 31, 2016, 2015 and 2014

Particulars	As at March 31, 2016 (Rs. in Millions)	As at March 31, 2015 (Rs. in Millions)	As at March 31, 2014 (Rs. in Millions)
EQUITY AND LIABILITIES			
Shareholder's Funds			
Share Capital	2,630.25	2,630.25	2,625.76
Reserves and Surplus	2,74,127.81	2,67,114.42	2,68,808.59
	2,76,758.06	**2,69,744.67**	**2,71,434.35**
Minority Interest	**1,356.72**	**1,923.67**	**2,524.28**
Non-Current Liabilities			
Long Term Borrowings	1,91,401.35	1,61,725.17	1,50,491.24
Deferred Tax Liabilities (Net)	3,653.35	3,100.14	5,067.22
Other Long Term Liabilities	26,663.30	30,538.43	30,396.95
Long Term Provisions	4,083.33	3,998.10	3,960.13
	2,25,801.33	**1,99,361.84**	**1,89,915.54**
Current Liabilities			
Short Term borrowings	30,886.10	78,534.46	81,888.30
Trade Payables			
Total Outstanding dues of micro and small enterprises	38.71	23.02	30.02
Total Outstanding dues of others	87,657.36	73,275.11	65,372.32
Other Current Liabilities	86,918.28	79,203.96	79,135.94
Short Term Provisions	10,104.00	6,358.52	4,829.86
	2,15,604.45	**2,37,395.07**	**2,31,256.44**
Total	**7,19,520.56**	**7,08,425.25**	**6,95,130.61**
ASSETS			
Non-Current Assets			
Fixed Assets			
Tangible Assets	1,31,964.33	1,20,797.08	87,034.00
Intangible Assets	64,874.09	55,582.69	15,387.61
Goodwill on consolidation	588.53	588.53	588.53
Capital Work-in-progress	10,474.00	22,262.23	49,789.16
Intangible assets under development	34,113.59	30,040.06	63,270.64
	2,42,014.54	**2,29,270.59**	**2,16,069.94**
Non Current Investments	1,61,211.97	1,42,476.18	1,41,182.13
Long Term Loans and Advances	12,186.70	9,052.34	24,970.51
Other Non Current Assets	68,942.69	80,742.95	76,373.26
	4,84,355.90	**4,61,542.06**	**4,58,595.84**
Current Assets			
Current Investments	32,892.17	33,703.57	41,622.15
Inventories	6,649.58	6,075.49	5,186.88
Trade Receivables	27,288.58	54,840.65	50,196.71
Cash and Bank Balances	4,710.80	5,333.89	6,523.48
Short Term Loans and Advances	1,37,213.30	1,16,092.46	1,04,714.01
Other Current Assets	26,410.23	30,837.13	28,291.54
	2,35,164.66	**2,46,883.19**	**2,36,534.77**
Total	**7,19,520.56**	**7,08,425.25**	**6,95,130.61**

II. Sponsor's Summary Consolidated Statement of Profit and Loss for the Fiscals 2016, 2015 and 2014

Particulars	Financial year ended March 31, 2016 (Rs. in Millions)	Financial year ended March 31, 2015 (Rs. in Millions)	Financial year ended March 31, 2014 (Rs. in Millions)
Revenue from operations	1,66,554.43	1,72,775.61	1,90,439.02
Less : Excise Duty	1,988.73	790.97	102.21
	1,64,565.70	**1,71,984.64**	**1,90,336.81**
Other Income	19,878.16	17,703.93	13,665.11
Less : Transfer to General Reserve	367.19	1,172.54	1,014.62
	19,510.97	**16,531.39**	**12,650.49**
Total Revenue	**1,84,076.67**	**1,88,516.03**	**2,02,987.30**
Expenses			
Cost of Power Purchased	68,397.79	78,116.24	78,895.24
Cost of Fuel Consumed	16,534.50	15,421.43	19,498.89
Construction Material Consumed and Sub-Contracting Charges	15,715.24	21,342.74	39,262.14
Changes in inventories of finished goods, work-in-progress and stock-in trade	(166.84)	(298.34)	-
Purchase of stock in trade	129.31	236.86	-
Employee Benefits Expense	13,405.94	12,155.58	10,674.40
Finance Costs	30,209.05	25,834.32	20,573.86
Less : Transfer from General Reserve	2,525.00	2,361.11	3,613.20
	27,684.05	**23,473.21**	**16,960.66**
Depreciation and Amortization Expense	9,491.28	7,815.32	5,450.67
Less: Transfer from Revaluation Reserve	-	-	842.89
Less: Transfer from Service Line Contribution	118.33	113.97	110.21
Add: Share in Joint Ventures	636.70	626.99	843.22
	10,009.65	**8,328.34**	**5,340.80**
Other Expenses	20,683.59	16,069.63	14,470.52
Less : Transfer from General Reserve	270.36	165.93	523.00
	20,413.23	**15,903.70**	**13,947.52**
Total Expenses	**1,72,122.87**	**1,74,679.76**	**1,84,579.64**
Profit before Tax, Exceptional Items and Rate Regulated Activities	**11,953.80**	**13,836.27**	**18,407.66**
Exceptional Items			
Income	-	-	-
Expenses	5,404.67	13,176.59	-
Less: Transfer from provision for extra-ordinary and exceptional items	4,995.27	13,176.59	-
	(409.40)	**-**	**-**
Profit before Tax and Rate Regulated Activities	11,544.40	13,836.27	18,407.66
Regulatory Income (Net)	5,946.20	-	-
Profit before tax	**17,490.60**	**13,836.27**	**18,407.66**
Profit from Continuing Operations before Tax	18,865.62	13,836.27	18,407.66
Tax Expenses:	-		
Current Tax	2,781.82	2,505.11	3,262.18
Deferred Tax (Net)	-	(1,184.69)	260.17
Deferred Tax Other than Rate Regulated Activities	1,026.54	-	-
Deferred Tax pertaining to Rate Regulated Activities	332.70	-	-
Less : Net tax to be recovered in future tariff determination	803.84	780.08	843.72
Income-tax for earlier years (Net)	46.61	(0.64)	(1.38)
	3,383.83	**539.70**	**2,677.25**

Particulars	Financial year ended March 31, 2016 (Rs. in Millions)	Financial year ended March 31, 2015 (Rs. in Millions)	Financial year ended March 31, 2014 (Rs. in Millions)
Profit from Continuing Operations after Tax	**15,402.48**	**13,136.55**	**15,664.37**
Profit / (Loss) from Discontinuing Operations before tax			
Tax Expense:	(1,375.02)	-	-
Current Tax	-		
Deferred tax	-	-	-
Profit / (Loss) from Discontinuing Operations after tax	-	-	-
	(1,375.02)	-	-
Profit after tax but before share of associates and minority interest			
Share of Profit in Associates (Net)	14,027.46	13,136.55	15,664.37
Minority Interest (Loss / (Profit))	5,151.09	4,117.42	3,531.10
Profit for the year	**567.03**	**747.78**	**(58.82)**

III. Sponsor's Summary Consolidated Cash Flow Statement for the Fiscals 2016, 2015 and 2014

Particulars	Financial year ended March 31, 2016 (Rs. in Millions)	Financial year ended March 31, 2015 (Rs. in Millions)	Financial year ended March 31, 2014 (Rs. in Millions)
A. Cash Flow from Operating Activities :			
Profit before Taxation	**17,490.60**	**13,836.27**	**18,407.66**
Adjustments for :			
Depreciation (Net of transfer from Reserves)	10,009.65	8,328.34	5,340.84
Interest and finance charges	27,684.05	23,473.21	16,960.66
(Profit) / Loss on sale / disposal of fixed assets (Net)	111.68	26.44	28.69
Provision for Impairment of assets	25.96	66.06	24.94
Provision for / (write back of) diminution in value of investments	0.48	0.47	0.47
Provision for doubtful debts, advances, deposits	172.64	477.72	367.96
Provision for leave encashment & gratuity	923.24	486.69	27.53
Interest income	(15,003.64)	(11,893.04)	(8,420.54)
Dividend Income	(87.46)	(105.67)	(74.59)
Premium on Redeemable Preference Shares	(3,886.62)	(3,876.00)	(3,707.56)
Write Off of capital expenditure as exceptional item	409.42	-	-
Provisions / Liabilities written back	(1,497.62)	-	-
Loss / (Gain) on exchange fluctuation (Net)	(265.06)	239.07	(0.23)
Unrealised (Gain) / Loss on exchange fluctuation (Net)	(0.31)	-	(65.57)
Share Issue Expenses	40.85	-	-
(Profit) / Loss on sale / redemption of investments (net)	(284.40)	(86.71)	(63.86)
Loss on dilution of investment in subsidiaries / joint ventures (net)	-		315.65
Operating Profit before Working Capital Changes	**35,843.46**	**30,972.86**	**29,142.05**
Adjustments for :			
Trade and other receivables	15,249.83	7,170.87	5,068.51
Inventories	(565.71)	(888.58)	(872.25)
Trade and other payables	17,238.39	(2,768.45)	12,754.34
	67,765.97	34,486.70	46,092.65
Income Taxes paid (net of refund)	(105.72)	(1,578.02)	(1,977.14)
Net Cash generated from Operating Activities	**67,660.25**	**32,908.68**	**44,115.51**
B. Cash Flow from Investing Activities :			
Purchase/acquisition of fixed assets	(22,812.71)	(19,771.69)	(36,354.29)
Sale of fixed assets	35.07	184.04	49.39
Purchase of Investments	-	(42,944.21)	(1,81,779.84)
Investments in others	(71,982.65)	-	-
Investments in Subsidiaries / Joint Ventures/Associates	(19,616.71)	-	-
Investment in fixed deposits including margin money (net)	349.46	(779.57)	(50.44)
Advance against Investments in Subsidiaries / Associates	-	63.89	1,006.90
Advance against investments in Others	-	-	(11,999.70)
Sale of Investment in Subsidiaries / Joint Ventures	-	11,068.00	1,68,968.39
Sale/redemption of Investments in Others	74,170.04	38,575.59	-
Inter Corporate Deposits	(34,217.94)	(14,222.60)	(8,047.00)
Dividend Income	87.46	105.67	74.59
Premium on Redeemable Preference Shares	-	-	339.74
Interest Income	16,629.44	10,715.82	8,417.91
Net Cash generated from / (used in) Investing Activities	**(57,358.54)**	**(17,005.06)**	**(59,374.35)**
C. Cash Flow from Financing Activities :			
Share Issue Expenses	(40.85)	-	-
Proceeds of share capital from minority shareholders (including application money)	-	147.16	152.48
Proceeds from borrowings - Long Term	66,370.10	33,126.22	63,349.68

Particulars	Financial year ended March 31, 2016 (Rs. in Millions)	Financial year ended March 31, 2015 (Rs. in Millions)	Financial year ended March 31, 2014 (Rs. in Millions)
Repayment of borrowings - Long Term	(27,251.95)	(14,793.30)	(18,958.31)
Proceeds from borrowings - Short Term (Net)	(18,152.52)	(6,635.58)	(1,023.20)
Realised Gain / (Loss) on derivative instruments (net)	(13.86)	(23.51)	(1,611.61)
Proceeds from Grants / Capital Contribution	-	-	4.94
Interest and finance charges	(29,234.59)	(26,600.85)	(22,437.93)
Dividends paid on equity shares including tax	(2,602.02)	(2,333.91)	(2,265.60)
Net Cash generated from / (used in) Financing Activities	**(10,925.69)**	**(17,113.77)**	**17,210.45**
D. Effect of exchange differences on translation of foreign currency cash and cash equivalent	**37.94**	**(16.82)**	**13.72**
Net Increase/(Decrease) in cash and cash equivalents (A+B+C+D)	**(586.04)**	**(1,226.97)**	**1,965.33**
Cash and cash equivalents as at the commencement of the year (Opening Balance)	3,779.69	5,340.60	2,958.99
Add: Adjustment on Disposal / Dilution of Share Holding in Subsidiaries/Joint Ventures (Net)	-	(0.24)	(293.94)
Add: Shares in Joint Ventures	441.31	314.24	1,024.43
	4,221.00	5,654.60	3,689.48
Cash and cash equivalents as at the end of the year (Closing Balance)*	3,188.35	3,986.32	5,340.60
Add : Share in Joint Ventures	446.61	441.31	314.21
	3,634.96	4,427.63	5,654.81
Net Increase / (Decrease) as disclosed above	**(586.04)**	**(1,226.97)**	**1,965.33**

C. Summary Consolidated Financial Information of the Investment Manager, namely Reliance Nippon Life Asset Management Limited

I. Investment Manager's Summary Consolidated Balance Sheet as at March 31, 2016, 2015 and 2014

Particulars	March 31, 2016 (Rs. in Millions)	March 31, 2015 (Rs. in Millions)	March 31, 2014 (Rs. in Millions)
EQUITY AND LIABILITIES			
Shareholders' Funds			
Share capital	415.20	412.70	112.70
Reserves and surplus	14,309.03	13,218.57	13,337.52
	14,724.23	**13,631.27**	**13,450.22**
Minority Interest	**88.70**	**88.64**	**38.36**
Non Current Liabilities			
Other long-term liabilities	0.51	0.86	0.91
Long - term provisions	74.79	32.30	23.62
	75.30	**33.16**	**24.52**
Current Liabilities			
Trade payables	650.25	933.71	750.67
Other current liabilities	739.44	503.84	389.10
Short - term provisions	3,037.70	1,833.75	2,055.33
	4,427.39	**3,271.31**	**3,195.10**
TOTAL	**19,315.62**	**17,024.37**	**16,708.20**
ASSETS			
Non-current assets			
Fixed assets			
Tangible assets	85.48	44.37	115.46
Intangible assets	33.80	26.79	25.73
Non - current investments	5,271.57	4,029.40	2,886.60
Deferred tax assets (net)	85.62	69.34	81.92
Long - term loans and advances	3,788.62	3,037.09	1,094.39
Other non - current assets	78.65	40.43	44.79
	9,343.73	**7,247.42**	**4,248.89**
Current assets			
Current investments	3,835.94	4,319.55	4,525.34
Trade receivables	594.21	175.36	100.48
Cash and bank balance	795.06	602.28	651.16
Short - term loans and advances	4,601.74	4,508.14	7,047.52
Other current assets	144.94	171.61	134.81
	9,971.89	**9,776.95**	**12,459.31**
TOTAL	**19,315.62**	**17,024.37**	**16,708.20**

II. Investment Manager's Summary Consolidated Statement of Profit and Loss for the Fiscals 2016, 2015 and 2014

Particulars	Fiscal 2016 (Rs. in Millions)	Fiscal 2015 (Rs. in Millions)	Fiscal 2014 (Rs. in Millions)
Income			
Revenue from operations - management fees	12,000.86	8,472.37	6,758.77
Other income	1,137.34	1,078.81	990.39
Total revenue	**13,138.20**	**9,551.19**	**7,749.16**
Expenditure			
Employee benefits expenses	2,122.70	1,612.74	1,509.85
Administrative and other expenses	2,206.79	1,810.43	1,620.05
Marketing and publicity expenses	3,703.86	1,500.78	962.55
Depreciation	43.09	128.50	74.00
Diminution/(Write back) in value of long term investments	37.77	(80.00)	61.30
Total expenses	**8,114.20**	**4,972.44**	**4,227.75**
Profit before tax and exceptional items	**5,024.00**	**4,578.75**	**3,521.41**
Exceptional Items	-	-	-
Profit before tax for the period	**5,024.00**	**4,578.75**	**3,521.41**
Net Expenses of demerged division for 13-14	-	29.14	-
Profit before tax	**5,024.00**	**4,549.61**	**3,521.41**
Income tax expense			
Current tax (Net of MAT credit entitlement)	(1,275.87)	(1,037.59)	(798.46)
Reversal of previous year	-	136.11	(0.91)
MAT credit asset	290.84	418.95	398.58
MAT credit utilised	(290.84)	(418.95)	(398.58)
Deferred tax	16.27	(25.89)	1.18
Profit after tax before share of Minority Interest	**3,764.40**	**3,622.24**	**2,723.22**
Less: Share of Minority Shareholders	0.07	0.27	0.48
Profit after tax	**3,764.34**	**3,621.97**	**2,722.74**

III. Investment Manager's Summary Consolidated Cash Flow Statement for the Fiscals 2016, 2015 and 2014

Particulars	Fiscal 2016 (Rs. in Millions)		Fiscal 2015 (Rs. in Millions)		Fiscal 2014 (Rs. in Millions)	
Cash flow from operating activities						
Profit before tax as per statement of profit and loss for the period		**5,024.00**		**4,578.75**		**3,521.41**
Adjusted for						
Depreciation	43.09		128.50		74.00	
Provision for Wealth Tax	-		0.02		0.02	
Provision for doubtful debts	13.08		-		-	
Dividend Income	(96.87)		(115.76)		(49.80)	
Interest Income	(413.03)		(700.83)		(720.96)	
Amortisation of discount / premium on investments	(8.65)		-		-	
(Profit) / Loss on sale of Investment (Net)	(597.49)		(223.49)		(209.08)	
Net (gain) or Loss on Foreign Currency Transactions & Translations	2.12		8.82		3.36	
Diminution(write back) in Value of long term Investments	37.77		(80.00)		61.30	
Loss on sale of Fixed Assets/write off	(0.54)	(1,020.53)	8.55	(974.18)	10.22	(830.93)
Operating Profit before Working Capital changes		**4,003.46**		**3,604.57**		**2,690.48**
(Increase) / Decrease in Long Term Loans & Advances	(184.19)		(1,504.11)		(219.54)	
(Increase) / Decrease in Other Non Current Assets	14.08		(2.79)		(5.77)	
(Increase) / Decrease in Trade Receivable	(431.92)		(58.20)		52.76	
(Increase) / Decrease in Short Term Loans & Advances	306.41		(1,746.19)		(202.55)	
(Increase) / Decrease in Other Current Assets	(8.74)		(17.13)		(0.22)	
Increase / (Decrease) in Long term provisions	42.50		8.62		(4.64)	
Increase / (Decrease) in Short term provisions	(25.77)		33.61		(2.25)	
Increase / (Decrease) in Other Long-term Liabilities	(0.35)		(0.04)		0.18	
Increase / (Decrease) in Short Term Borrowings	-		-		(3.78)	
Increase / (Decrease) in Trade payables	(283.46)		171.88		208.30	
Increase / (Decrease) in Other Current Liabilities	232.36	(339.09)	105.93	(3,008.44)	(2.31)	(179.81)
Cash generated from Operations		**3,664.37**		**596.14**		**2,510.67**
Taxes Paid		(1,432.20)		(1,011.39)		(805.40)
Refund received (including interest)		-		19.64		13.37
A. Net Cash (used) / generated from operating activities		**2,232.17**		**(395.61)**		**1,718.64**
Cash Flow from Investing Activities						
Purchase of Fixed Assets	(94.47)		(46.91)		(27.65)	
Sale of Fixed Assets	3.80		2.95		1.55	
Inter Corporate Deposit received	-		4,500.00		4,500.00	
Inter Corporate Deposit given	(1,150.00)		(250.00)		(3,750.00)	
Loan repaid by ESOP Trust (net of loan advanced)	601.28		-		-	
Purchase of Investments	(21,933.39)		(17,874.77)		(17,477.06)	
Loan to ESOP Trust (net off repayment)	-		22.41		26.45	
Drawings received from limited liability partnership	0.90		1.63		1.70	
Purchase of additional stake in subsidiary	-		-		-	
Sale of Investments	21,743.21		17,287.78		16,167.61	
Sale of Investments in Subsidiaries	-		-		-	
Interest Received (Paid)	448.44		699.08		608.12	
Dividend Received	96.87		97.84		74.04	
B. Net Cash from / (used in) Investing Activities		**(283.35)**		**4,440.01**		**124.77**
Cash Flow from Financing Activities						
Redemption of Preference Share Capital	-		-		(2.00)	
Interim Dividend paid including dividend distribution tax	-		(2,018.21)		-	
Dividend paid including dividend distribution tax	(1,736.89)		(2,021.67)		(1,886.92)	
C. Net Cash from / (used in) Financing Activities		**(1,736.89)**		**(4,039.88)**		**(1,888.92)**
D. Effect of exchange fluctuation on translation reserve		**33.15**		**(34.98)**		**73.20**

Particulars	Fiscal 2016 (Rs. in Millions)		Fiscal 2015 (Rs. in Millions)		Fiscal 2014 (Rs. in Millions)	
Net increase/(decrease) in cash and cash Equivalents (A+B+C+D)		**245.08**		**(30.47)**		**27.69**
Opening Balance of Cash and Cash Equivalents		**549.98**		**579.42**		**551.74**
Opening Cash and Cash Equivalents of merged division – Azalia		**-**		**1.02**		**-**
Closing Balance of Cash and Cash Equivalents		**795.06**		**549.98**		**579.42**
Cash and cash equivalents comprising of :						
Cash on Hand		0.07		0.09		0.16
Balance with banks in Current Accounts		794.97		533.60		579.21
Cheques in hand		-		16.28		-
Effect of exchange differences on balances with banks in foreign currency		0.02		0.01		0.06
Total		**795.06**		**549.98**		**579.42**

THE ISSUE

The following table summarizes the details of the Issue:

Issue [(1)(2)]	Up to [●] Units, aggregating up to Rs. 30,000 million
of which	
A. Institutional Bidder Category	Not more than [●] Units
of which	
Anchor Investor Portion[(3)]	Up to [●] Units
Balance available for allocation to other Institutional Bidders[(4)]	[●] Units
B. Other Bidder Category	Not less than [●] Units
Details of Outstanding Units	
Units outstanding prior to the Issue (pre-Formation Transactions)	Nil
Units outstanding prior to the Issue (upon completion of the Formation Transactions)[(5)]	[●] Units
Units outstanding after the Issue[(6)]	[●] Units

(1) *The Investment Manager, in consultation with the GCBRLMs and the BRLMs, reserves the option to retain oversubscription of up to 25% of the Issue size in accordance with the InvIT Regulations.*

(2) *The Issue has been authorized by a resolution of the duly authorized committee of the board of directors of the Investment Manager dated November 9, 2016.*

(3) *The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors in the Issue for up to 60% of the Institutional Bidder Category in accordance with the InvIT Regulations.*

(4) *Assuming Anchor Investor Portion is fully subscribed.*

(5) *The Units to be issued to the Sponsor pursuant to the Formation Transactions will be created and issued to the Sponsor post the Bid/Issue Closing Date but prior to Allotment.*

(6) *The Issue will constitute at least 25% of the total outstanding Units on a post-Issue basis in accordance with Regulation 14(1A) of the InvIT Regulations.*

Allocation to Bidders in all categories, except the Anchor Investor Portion, if any, shall be made on a proportionate basis. In case of under-subscription in any category, the unsubscribed portion in either category may be Allotted to Bidders in the other category at the discretion of the Investment Manager, in consultation with the GCBRLMs, the BRLMs and the Designated Stock Exchange.

GENERAL INFORMATION

The Trust has been settled by the Sponsor pursuant to the Indenture of Trust dated September 12, 2016, in Mumbai, India, as an irrevocable trust in accordance with the Trusts Act. The Indenture of Trust is registered under the Registration Act. The Trust is registered with SEBI as an infrastructure investment trust under the InvIT Regulations.

For details of the business of the Trust, see "*The Trust's Business*" on page 159.

Registered Office and Correspondence Address of the Trust:

Reliance Infrastructure InvIT Fund
502, Plot No. 91/94,
Prabhat Colony, Santacruz (East),
Mumbai – 400055.

Tel: +91 22 3303 7000
Fax: +91 22 3303 7664
E-mail: info@relianceiif.com
Website: www.relianceiif.com
SEBI Registration Number: IN/InvIT/16-17/0004
Date of Registration with SEBI: November 24, 2016

Contact Person and Compliance Officer

Mr. Deepak Mukhija has been designated by the Investment Manager as the Compliance Officer with respect to the Trust, and is the relevant contact person with respect to the Trust. His contact details are as follows:

Address

7th Floor, South Wing,
Reliance Centre, Off. Western Express Highway,
Santacruz (East),
Mumbai - 400055,
Maharashtra

Tel: +91 22 3303 7024
Fax: +91 22 3303 7664
E-mail: deepak.mukhija@relianceada.com

Bidders can contact the Compliance Officer or the Registrar to the Issue in case of any pre-Issue or post-Issue related problems such as non-receipt of Allotment Advice/letter of Allotment, non-credit of Allotted Units in the respective beneficiary account, non-receipt of refund orders and non-receipt of funds by electronic mode.

Sponsor

Reliance Infrastructure Limited

Registered Address

H Block, 1st Floor
Dhirubhai Ambani Knowledge City,
Navi Mumbai - 400710,
Maharashtra

Correspondence Address

3rd Floor, North Wing,
Reliance Centre, Santacruz (East),

Mumbai - 400055,
Maharashtra

Tel: +91 22 3303 1000
Fax: +91 22 3303 6664
Email: aashay.khandwala@relianceada.com
Contact Person: Mr. Aashay Khandwala

Trustee

IDBI Trusteeship Services Limited
Asian Building, Ground Floor,
17, R. Kamani Marg,
Ballard Estate, Mumbai - 400 001
Tel: +91 22 4080 7000
Fax: +91 22 6631 1776
Email: sgunware@idbitrustee.com / naresh.sachwani@idbitrustee.com
SEBI Registration No.: IND000000460
Contact Person: Mr. S. Gunware / Mr. Naresh Sachwani

Investment Manager

Reliance Nippon Life Asset Management Limited

Registered Address

H Block, 1st Floor
Dhirubhai Ambani Knowledge City,
Koparkhairane, Navi Mumbai, Thane - 400710,
Maharashtra

Correspondence Address

7th Floor, South Wing,
Reliance Centre, Off. Western Express Highway,
Santacruz (East),
Mumbai - 400055,
Maharashtra

Tel: +91 22 3303 7000
Fax: +91 22 3303 7664
E-mail: customercare.invit@relianceada.com
Contact Person: Mr. Praveen Joshi

Project Manager

The Trustee and the Investment Manager have appointed the Sponsor, namely Reliance Infrastructure Limited, as the Project Manager. For additional details, see "*The Project Manager*" on page 348.

Global Co-ordinators and Book Running Lead Managers

Axis Capital Limited
1st Floor, Axis House, C 2 Wadia
International Centre, Pandurang Budhkar
Marg Worli, Mumbai 400 025, India
Tel: +91 (22) 4325 2183
Fax: +91 (22) 4325 3000
Email: rinfrainvit.ipo@axiscap.in
Investor Grievance e-mail: complaints@axiscap.in
Website: www.axiscapital.co.in

Contact Person: Ankit Bhatia
SEBI Registration No: INM000012029

DSP Merrill Lynch Limited
Ground Floor, "A" Wing, One BKC,
"G" Block, Bandra Kurla Complex,
Bandra (East) Mumbai 400 051, India
Tel: +91 (22) 6632 8000
Fax: +91 (22) 2204 8518
E-mail: dg.relianceinfrastructureinvitfund_ipo@baml.com
Investor Grievance e-mail: dg.india_merchantbanking@baml.com
Website: www.dspml.com
Contact Person: Chirag Jain
SEBI Registration Number: INM000011625

UBS Securities India Private Limited
2/F, 2 North Avenue, Maker Maxity
Bandra-Kurla Complex Bandra (East)
Mumbai 400 051, India
Tel: +91 (22) 6155 6000
Fax: +91 (22) 6155 6292
E-mail: ol-rinfrainvit@ubs.com
Investor Grievance e-mail: customercare@ubs.com
Website: www.ubs.com/indianoffers
Contact Person: Jasmine Kaur
SEBI Registration Number: INM000010809

Book Running Lead Managers

SBI Capital Markets Limited
202, Maker Tower 'E',
Cuffe Parade, Mumbai 400 005, India
Tel: + 91 (22) 2217 8300
Fax: + 91 (22) 2218 8332
E-mail: RIInvIT.ipo@sbicaps.com
Investor Grievance e-mail: investor.relations@sbicaps.com
Website: www.sbicaps.com
Contact Person: Nikhil Bhiwapurkar / Gitesh Vargantwar
SEBI Registration Number: INM000003531

YES Securities (India) Limited
IFC, Tower 1 & 2, Unit No. 602 A, 6th Floor,
Senapati Bapat Marg, Elphinstone Road,
Mumbai – 400013, Maharashtra, India
Tel: +91 (22) 3347 9688
Fax: +91 (22) 2421 4508
E-mail: rinfra.invit@yessecuritiesltd.in
Investor Grievance e-mail: igc@yessecuritiesltd.in
Website: www.yesinvest.in
Contact Person: Mukesh Garg
SEBI Registration Number: MB/INM000012227

Legal Advisors to the Issue

Indian Legal Counsel to the Trust

J. Sagar Associates
Vakils House, 18 Sprott Road
Ballard Estate, Mumbai 400 001
Tel: +91 22 4341 8600
Fax: +91 22 4341 8617

Indian Legal Counsel to the GCBRLMs and the BRLMs

S&R Associates
One Indiabulls Centre, 1403, Tower 2 B
841 Senapati Bapat Marg, Lower Parel
Mumbai 400 013
Tel: +91 22 4302 8000
Fax: +91 22 4302 8001

International Legal Counsel to the GCBRLMs and the BRLMs

Clifford Chance Pte Ltd.
12 Marina Boulevard, 25th Floor
Marina Bay Financial Centre Tower 3,
Singapore 018982
Tel: +(65) 6410 2200
Fax: +(65) 6410 2200

Auditors

Chaturvedi & Shah, Chartered Accountants
714 - 715, Tulsiani Chambers
212, Nariman Point,
Mumbai - 400 021
Tel: +91 22 30218500
Fax: +91 30218595
E-mail: cas@cas.ind.in
Firm Registration No.: 101720W
Peer Review Certificate No.: 009065

Valuers

Walker Chandiok & Co LLP, Chartered Accountants
16th Floor, Tower II, Indiabulls Finance Centre,
S B Marg,
Elphinstone (W),
Mumbai 400 013
Tel: +91 22 6626 2600
Fax: +91 22 6626 2601
E-mail: khushroo.panthaky@in.gt.com
Firm Registration No.: 001076N/N500013

Traffic Consultants

GMD Consultants
2, Park View Society, Sector-17,
Nerul (East), Navi Mumbai – 400 076
Tel: 022-27700991
E-mail: info@gmdconsultants.in

Systra MVA Consulting (India) Private Limited
B-308, Great Eastern Summit, Sector-15,
CBD Belapur, Navi Mumbai – 400 614
Tel: +91 22 27572745
Fax: +91 11 2622 4204
E-mail: mraju@systra.com

Registrar to the Issue

Karvy Computershare Private Limited
Karvy Selenium Tower B, Plot 31-32, Gachibowli,
Financial District, Nanakramguda,
Hyderabad – 500 032, India
Tel: +91 40 6716 2222
Toll Free No.: 1-800-3454001
Fax: +91 40 2343 1551
E-mail: reliance.invit@karvy.com
Investor Grievance Email: support@karvy.com
Website: https://karisma.karvy.com
Contact Person: M Murali Krishna
SEBI Registration No: INR000000221

Syndicate Members

[●]

Escrow Collection Bank(s)

[●]

Public Issue Account Bank(s)

[●]

Refund Bank(s)

[●]

Designated Intermediaries

Self Certified Syndicate Banks

The list of banks that have been notified by SEBI to act as SCSBs for the ASBA process is available at http://www.sebi.gov.in/sebiweb/home/list/5/33/0/0/Recognised-Intermediaries and updated from time to time, or at such other website as may be prescribed by SEBI from time to time. Details relating to the Designated Branches of SCSBs collecting the Bid cum Application Forms used by the ASBA Bidders are available at the abovementioned link.

Registered Brokers

The list of the Registered Brokers, including details such as postal address, telephone number and e-mail address, is provided on the websites of the BSE and the NSE at http://www.bseindia.com/Markets/PublicIssues/brokercentres_new.aspx?expandable=3 and http://www.nseindia.com/products/content/equities/ipos/ipo_mem_terminal.htm, respectively, as updated from time to time.

RTAs

The list of the RTAs eligible to accept ASBA Forms at the Designated RTA Locations, including details such as address, telephone number and e-mail address, is provided on the websites of Stock Exchanges.

Collecting Depository Participants

The list of the CDPs eligible to accept ASBA Forms at the Designated CDP Locations, including details such as name and contact details, is provided on the websites of Stock Exchanges.

Inter-se Allocation of Responsibilities

The following table sets forth the inter-se allocation of responsibilities for various activities among the GCBRLMs and the BRLMs for the Issue:

Activity	Responsibility	Co-ordination
Assist the Investment Manager in selecting the initial portfolio of the Trust and Sponsor non-compete measures; capital structuring, with the relative components and formalities such as type of instruments, etc.	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS
Due diligence of the Trust's operations/management/ business plans/legal, etc., Sponsors / Investment Manager's / Project Manager's experience, the proposed formation transactions, the proposed and future assets arrangements., any other related party transactions (including any name licensing or other arrangements) Drafting and design of offer documents and of statutory advertisement including memorandum containing salient features of the Offering Documents. The Managers shall ensure compliance with stipulated requirements and completion of prescribed formalities with the Stock Exchanges and the SEBI.	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS
Drafting and approval of all publicity material other than statutory advertisement as mentioned above including corporate advertisement, brochure, etc.	AXIS, DSPML, UBS, SBICAP, YESSEC	SBI Caps
Appointment of Registrar to the Issue, Bankers to the Issue and other intermediaries	AXIS, DSPML, UBS, SBICAP, YESSEC	SBI Caps
Appointment of Printers and Advertising Agency	AXIS, DSPML, UBS, SBICAP, YESSEC	SBI Caps
Finalising road show marketing presentation and FAQ; Finalising the Anchor Minutes and Strategic Investor minutes	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS, DSPML & UBS
International and Domestic institutional marketing of the Issue which will cover, inter alia: - Formulating overall institutional marketing strategy; - Finalising the list and division of investors for one-on-one meetings, institutional allocation - Finalizing road show schedule and investor meeting schedules	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS, DSPML & UBS
Non-Institutional marketing strategy which will cover, inter alia: - Formulating marketing strategies, preparation of publicity budget; finalising media, marketing and public relations strategy; finalising centers for holding conferences for brokers, etc.; - Finalising the brokerage & commission for Non-Institutional category for the brokers and sub syndicate - Payment and calculation of the brokerage & commission	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS

Activity	Responsibility	Co-ordination
- Finalising collection centers; - Deciding on the quantum of the Offer material and allocation amongst the printers and coordinating all aspects of distribution of Bid cum Application Forms. - Follow-up on distribution of publicity and Issue material including Bid cum Application Forms, Offer Document, etc.	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS
Coordination with stock exchanges for Book Building software and submitting 1% deposit	AXIS, DSPML, UBS, SBICAP, YESSEC	SBI Caps
Finalizing of Pricing and Allocation in consultation with the Investment Manager	AXIS, DSPML, UBS, SBICAP, YESSEC	Axis, DSPML & UBS
Assisting the Investment Manager in ensuring the completion of the formation transactions and the allotment of Units in consideration thereof	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS
Post bidding activities including management of Escrow Accounts, coordinate non-institutional and institutional allocation, coordination with Registrar and Banks, intimation of allocation and dispatch of refund to Bidders, etc. The post Issue activities of the Issue will involve essential follow up steps, which include finalization of basis of allotment, trading and dealing instruments and dispatch of certificates and demat delivery of Units, with the various agencies connected with the work such as Registrar to the Issue, Banker to the Issue and the bank handling refund business. Release of 1% deposit with Designated Stock Exchange	AXIS, DSPML, UBS, SBICAP, YESSEC	AXIS

USE OF PROCEEDS

The Issue comprises of a initial public offer of up to [●] Units, aggregating to Rs. 30,000 million, with an option to retain oversubscription of up to 25% of the Issue size in accordance with the InvIT Regulations.

The Issue

The object and purpose of the Trust, as described in the Indenture of Trust, is to carry on the activity of an infrastructure investment trust under the InvIT Regulations, to raise resources in accordance with the InvIT Regulations, and to make investments in accordance with the investment strategy of the Trust. The Trustee and the Investment Manager shall ensure that the subscription amounts are kept in a separate bank account in the name of the Trust and are only utilised for adjustment against Allotment of Units or refund of money to the applicants until such Units are listed.

In accordance with the InvIT Regulations, the Investment Manager (on behalf of the Trust) intends to utilize the Issue Proceeds after deducting the Issue related expenses (the "**Net Proceeds**") towards:

1. Investment in the Project SPVs by way of an infusion of debt; and

2. General purposes.

Net Proceeds

The details of the Net Proceeds are set forth in the following table:

Particulars		Estimated Amount (Rs. in Millions)
Issue Proceeds		30,000.00
Less:	Issue related expenses*	([●])
Net Proceeds		**[●]**

** To be finalized upon determination of Issue Price*

Utilization of Net Proceeds

The proposed utilisation of the Net Proceeds is set forth in the table below:

Sr. No.	Particulars	Estimated Amount (Rs. in Millions)
1.	Investment in the Project SPVs by way of an infusion of debt	29,000.00
2.	General purposes*	[●]
Total Net Proceeds		[●]

** To be finalized upon determination of Issue Price.*

The fund requirements mentioned above and the proposed deployment are based on the estimates of the Investment Manager and have not been appraised by any bank, financial institution or any other external agency. They are based on current circumstances of the business of the Trust and the Project SPVs, and the Investment Manager may have to revise its estimates from time to time on account of various factors beyond its control, such as market conditions, competitive environment and interest/exchange rate fluctuations. Consequently, the fund requirements of the Trust Group are subject to revisions in the future at the discretion of the Investment Manager. In the event of any shortfall of funds for the activities proposed to be financed out of the Net Proceeds as stated above, the Investment Manager may re-allocate the Net Proceeds to the activities where such shortfall has arisen, subject to compliance with applicable law. Further, in case of a shortfall in the Net Proceeds or cost overruns, the Investment Manager may explore a range of options including utilising the Trust Group's internal accruals or seeking debt financing, in accordance with the InvIT Regulations. The Investment Manager expects that such alternate arrangements would be available to fund any such shortfall.

Details of Utilization of Net Proceeds

The details of utilization of the Net Proceeds are set forth herein below:

1. Investment in the Project SPVs by way of an infusion of debt

The Investment Manager, on behalf of the Trust, proposes to invest an estimated amount of Rs. 29,000.00 million from the Net Proceeds in the Project SPVs, namely DS, GF, HK, JR, KM, NK, PS, SU, TD and TK, by way of an infusion of debt, in the form of certain secured loans (the "**Secured Trust Financing**") and certain unsecured loans (the "**Unsecured Trust Financing**"). The Project SPVs, in turn, intend to utilize the proceeds of (a) the Secured Trust Financing towards repayment/prepayment, in part or full, of certain loans/facilities availed by the Project SPVs from their respective senior lenders/lenders; and (b) the Unsecured Trust Financing towards prepayment, in part, of the unsecured subordinate debt provided to such Project SPVs by the Sponsor, and the prepayment, in full, of the unsecured loans/advances provided to such Project SPVs by the Sponsor. The aforesaid investments will be made by entering into the debt documentation with each Project SPV (collectively, the "**Debt Documentation**"). For details in relation to the Debt Documentation, including details with respect to the nature and purpose, rate of interest, repayment, security, events of default, ranking and governing law, as applicable, see "*Background and Structure of the Trust*" on page 110.

The Investment Manager believes that such investment in the Project SPVs and the subsequent (i) repayment/prepayment, in part or full, of certain loans/facilities availed by such Project SPVs from their respective senior lenders/lenders, and (ii) prepayment, in part, of the unsecured subordinate debt provided to such Project SPVs by the Sponsor, and the prepayment, in full, of the unsecured loans/advances provided to such Project SPVs by the Sponsor, will help reduce the outstanding indebtedness of the Project SPVs towards their respective senior lenders/lenders and associated debt servicing costs, and will enable the utilization of the internal accruals of the Project SPVs towards distribution to the Unitholders and/or other business requirements.

The amount of Net Proceeds proposed to be utilized, the selection of the borrowings proposed to be repaid/prepaid among the various loans/facilities availed by the Project SPVs from their respective lenders and the extent of such repayment/prepayment, in part or full, will be finalized by the Investment Manager based on a variety of factors, including *inter alia*, (i) any conditions attached to the loans/facilities restricting the respective Project SPV's ability to repay/prepay such loans/facilities and time taken to fulfil, or obtain waivers for fulfilment of, such conditions, (ii) receipt of consents for repayment/prepayment from the respective lenders of the Project SPVs, (iii) terms and conditions of such consents and waivers, (iv) levy of any pre-payment penalties and/or premia and the quantum thereof, (v) provisions of any laws, rules and regulations governing such loans/facilities, and (vi) other commercial considerations including, among others, the interest rates on the loans/facilities, the amounts outstanding and the remaining tenor of the loans/facilities. However, the Investment Manager (on behalf of the Trust) proposes to utilize at least 50% of the Net Proceeds to prepay/repay the aggregate outstanding loans/facilities that have been availed by the Trust Group from its senior lenders/lenders, without any obligation to any particular senior lender/lender, by way of the Secured Trust Financing. The Project SPVs may also be required to provide notice to and obtain consent from some of their respective lenders prior to repayment/prepayment.

The Project SPVs may prepay, repay or refinance certain loans/facilities set out herein below, or avail additional borrowings prior to Allotment. In such a scenario, the Investment Manager (on behalf of the Trust) may utilise the Net Proceeds for the prepayment/repayment, in part or full, of any such borrowings or loans/facilities. Further, the amounts outstanding under the loans identified for repayment/prepayment, in part or full, may vary on account of interim repayments and drawdowns. In the event that outstanding amounts were to vary prior to the filing of the Offer Document, we may revise our utilisation of the Net Proceeds towards prepayment/repayment, in part or full, of the amounts under the identified loans, subject to compliance with the InvIT Regulations and other applicable laws.

As of the date of this Draft Offer Document, the Project SPVs are yet to receive consents from their senior lenders/lenders in connection with, *inter alia*, the proposed transfer of the Sponsor's shareholding in the Project SPVs to the Trust and the repayment/pre-payment of indebtedness availed by the Project SPVs. For additional details, see "*Financial Indebtedness*" on page 489. Further, as on the date of the Draft Offer Document, we are yet to place before NHAI and HPWD, the drafts of the Debt Documentation as required under the terms of the concession agreements entered into by each of the Project SPVs with NHAI and HPWD. Please see "*Risk Factors – We have not executed definitive documentation with respect to the Formation Transactions, the debt financing arrangements, the ROFO and Future Assets Agreement. Our completion of the Formation Transactions, pursuant to which we will acquire the Project SPVs, and the transactions contemplated by the debt financing documentation are subject to certain closing and other conditions that may prevent us from acquiring the Project SPVs or providing debt financing to them*" on page 16.

A. Secured Trust Financing

The following table provides details of certain loans/facilities that have been availed by Project SPVs that are outstanding as on November 30, 2016, out of which the Investment Manager (on behalf of the Trust) may repay/prepay, in part or full, any or all such loans/facilities from the proceeds of the investment made in such Project SPVs by the Trust by way of the Secured Trust Financing, subject to the utilization of at least 50% of the Net Proceeds towards the repayment/prepayment of the aggregate outstanding loans/facilities that have been availed by the Trust Group from its senior lenders/lenders, without any obligation to any particular senior lender/lender:

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
DS								
1.	Infrastructure Development Finance Company Limited ("**IDFC**")	Rupee Loan Agreement dated March 26, 2012 ("**DS Loan Agreement**")	The proceeds of the loan are to be utilised for refinancing of the short term loan of Rs. 3,320 million from IDFCL which was taken for refinancing of an earlier loan which was taken for refinancing the project loans taken for financing the project envisaging the 4 laning of the erstwhile 2 laned Dindigul-Samayanallur section of NH-7 in Tamil Nadu	Rs. 3,320.00	Rs. 2,436.92	11.10%	Repayment will be in quarterly instalments commencing from June 30, 2012 and ending on March 31, 2024.	The prepayment premium to be charged shall be at the rate of 1% of the prepaid amount of the loan, subject to the relevant provisions of the DS Loan Agreement
2.	India Infrastructure Finance Company Limited ("**IIFCL**")	Takeout agreement dated January 13, 2015 ("**DS Takeout agreement**")	Take out financing for the purpose of taking over the part of the outstanding loan amount of IDFC under the DS Loan	Rs. 750.00	Rs. 731.03	10.10%	Repayment will be in 37 quarterly instalments commencing from March 31, 2015 and ending on March 31, 2024.	The prepayment premium to be charged shall be at the rate of 1% of the prepaid amount of the loan, subject to the relevant

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
			Agreement by IIFCL as the Takeout Lender					provisions of the DS Loan agreement
GF								
1.	Allahabad Bank	Common loan agreement dated August 26, 2009 ("**GF Common Loan Agreement**")	The proceeds of all amounts borrowed by GF shall be applied in or towards the construction and development of the GF Project	Rs. 280.00	Rs. 227.07	11.15%	Repayment in 38 unequal quarterly instalments from the period commencing on March 31, 2012 and ending June 30, 2021	The prepayment premium to be charged by the lenders shall be at the rate of 1% of the loan amount being repaid, subject to the relevant provisions of the GF Common Loan Agreement
2.	Axis Bank Limited			Rs. 420.00	Rs. 336.90	11.15%		
3.	Bank of Baroda			Rs. 650.00	Rs. 520.30	11.15%		
4.	Bank of India			Rs. 1,000.00	Rs. 810.49	11.65%		
5.	Corporation Bank			Rs. 720.00	Rs. 580.83	11.15%		
6.	Indian Bank			Rs. 500.00	Rs. 401.20	11.15%		
7.	State Bank of Patiala			Rs. 250.00	Rs. 200.40	11.15%		
8.	UCO Bank			Rs. 950.00	Rs. 762.75	11.15%		
9.	Union Bank of India			Rs. 720.00	Rs. 589.75	11.15%		
10.	United Bank of India			Rs. 350.00	Rs. 281.01	11.15%		
HK								
1.	Canara Bank	Common loan agreement dated February 17, 2012 ("**HK loan agreement**")	Proceeds of the loan shall be utilized solely for the purpose of part financing the Project Cost (as defined in the HK Loan Agreement) in accordance with applicable law and the financing documents.	Rs. 3,100.00	Rs. 3,072.98	11.65%	Repayment will be in 46 unequal quarterly instalments commencing from December 5, 2014 and ending on March 5, 2026.	The maximum prepayment premium to be charged by the lenders shall be at the rate of 1% of the principal amount being repaid, subject to the relevant provisions of the HK loan agreement
2.	Corporation Bank			Rs. 500.00	Rs. 495.46	11.65%		
3.	Oriental Bank of Commerce			Rs. 1,450.00	Rs. 1,437.22	11.65%		
4.	State Bank of Hyderabad			Rs. 500.00	Rs. 495.66	11.65%		
JR								
1.	Yes Bank Limited	Loan agreement dated January	The purpose of all amounts borrowed by JR shall be applied in or	Rs. 3,890.00	Rs. 3,598.22	11.0%	JR shall repay the loan availed under the JR Loan	The prepayment premium to be charged shall be at

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
		25, 2011 ("**JR Loan Agreement**")	towards the construction and development of the JR Project.				Agreement in 42 unequal quarterly instalment, commencing on December 31, 2013 and ending on March 31, 2024.	the rate of 1% of the prepaid amount of the loan, subject to the relevant provisions of the JR Loan Agreement
KM								
1.	DEG – Deutsche Investitions – Und Entwicklungsgesellschaft MBH ("**DEG**")	Term facility agreement dated June 12, 2013 as amended by the first amendment to the term facility agreement dated May 7, 2015 ("**KM DEG ECB**")	KM shall apply the facility for the sole purpose of the enlargement of the existing road from Km. 0.00 to Km. 71.40 on the Gandhidham (Kandla) – Mundra Port section of NH-8A extension in the state of Gujarat by four laning thereof and, if applicable, also the payment of costs and fees incurred in connection with the finance documents as agreed between KM and DEG from time to time.	USD 20.93 (equivalent to Rs. 1,434.25)*	USD 20.51 (equivalent to Rs. 1,405.56)*	3 month LIBOR + 4.30%	KM shall repay the loan availed under the KM DEG ECB in 33 unequal instalments from the period commencing June 15, 2016 to June 15, 2024	KM may prepay the whole or any part of the outstanding amount on payment of the prepayment fee at the rate of 1% on the aggregate amount of the loan to be prepaid, subject to the relevant provisions of the KM DEG ECB. For the KM DEG ECB facility, prepayment of a part of the loan must be in a minimum amount of the US$ 3 million. Prepayment shall be subject to RBI guidelines on

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
								minimum average maturity
2.	Andhra Bank	Common Loan Agreement dated January 25, 2011 as amended by an amendment agreement dated May 19, 2015 ("**KM Common Loan Agreement**")	The proceeds of the amount availed by KM shall be applied only in and towards the construction and development of the Project (as defined under the KM Common Loan Agreement) and in such manner and priority as stipulated in the Escrow Agreement (as defined under the KM Common Loan Agreement).	Term Loan Rs. 1,250.00	Rs. 1,023.62	12.0%	KM shall repay the loan availed under the KM Common Loan Agreement in 44 unequal quarterly instalments, commencing on December 1, 2014 and ending on March 15, 2027.	The maximum prepayment premium to be charged by the lenders shall be at the rate of 1% of the principal amount being repaid, subject to the relevant provisions of the KM Common Loan Agreement.
				Letter of Credit (*Sub-Limit of Term Loan*) Rs. 352.60	Rs. 45.40	0.5%		
3.	Bank of Maharashtra			Rs. 850.00	Rs. 660.95	12.0%		
4.	Corporation Bank			Rs. 1,650.00	Rs. 1,191.41	13.0%		
5.	Karnataka Bank Limited			Rs. 500.00	Rs. 359.18	12.0%		
6.	Punjab and Sind Bank			Rs. 850.00	Rs. 735.38	12.0%		
7.	State Bank of Bikaner and Jaipur			Rs. 850.00	Rs. 728.84	12.0%		
8.	State Bank of Hyderabad			Rs. 850.00	Rs. 607.12	12.0%		
9.	Yes Bank Limited			Rs. 1,090.00	Rs. 335.81	12.0%		
NK								
1.	Infrastructure Development Finance Company Limited	Rupee Loan Agreement dated March 26, 2012 ("**NK Loan Agreement**")	The proceeds of the loan shall be utilized for the part financing of the short term loan of Rs. 2,760.00 million from Infrastructure Development Finance Company Limited which was taken for refinancing an earlier loan which was taken for refinancing of the project loans taken for	Rs. 1,200.00	Rs. 657.95	11.25%	The repayment will be made in unequal quarterly instalments commencing from June 30, 2012 and ending March 31, 2023.	The prepayment premium to be charged shall be at the rate of 1% of the prepaid amount of the loan, subject to the relevant provisions of the NK Loan Agreement.

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
			financing the project for the 4 laning of the erstwhile 2 laned Namakkal-Karur section of NH-7 in Tamil Nadu.					
2.	IDBI Trusteeship Services Limited (Debenture Trustee)	Debenture Trust Deed dated September 24, 2015 ("**NK DTD**")	The proceeds from the issuance of the debentures are proposed to be utilized for partial prepayment of the outstanding senior debt of the rupee lenders under the NK Loan Agreement	Rated, secured, redeemable, non-convertible debentures of face value of Rs. 0.10 million each, aggregating upto Rs. 500.00 million	Rs. 484.93	10.20%	The repayment will be made in unequal quarterly instalments commencing from December 31, 2015, and ending March 31, 2023	The maximum premature redemption premium to be charged shall be at the rate of 1% on the principal amount of the debenture being redeemed prematurely, subject to the relevant provisions of the NK DTD. Any premature redemption to the rupee lender and the debenture holders shall be on a pro rata basis unless such premature redemption is effected on the respective interest reset dates of the rupee lender and/or

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
								the debenture holders.
3.	YES Bank Limited (Issuing and Paying Agent)	Issuing and Paying Agency Agreement dated September 26, 2016	The proceeds received by NK from the issuance of the commercial papers ("**CPs**") shall be applied only for (i) capital expenditure and repayment of existing loans infused by the Sponsor for the purposes of capital expenditure, (ii) advance payment to suppliers and repayment of existing loans infused by the Sponsor for the purposes of advance payment to suppliers, and (iii) working capital and repayment of existing loans infused by the Sponsor for the purposes of working capital.	Rupee denominated rated CPs, aggregating upto Rs. 1,500 million	Rs. 1,500.0	8.37%	For the purposes of redemption, NK is required to deposit the the amount/maturity value payable to the holders of the CPs at least (but not later than) three business days prior to the respective maturity dates, being August 4, 2017, September 5, 2017 and September 29, 2017.	Buyback subject to approval of Investor
PS								
1.	Axis Bank Limited			Rs. 2,750.00	Rs. 2,032.00	11.20%		

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
2.	India Infrastructure Finance Company Limited	Common Loan Agreement dated March 18, 2015 and novation deed dated July 29, 2015 ("**PS Common Loan Agreement**")	The proceeds of the loan are to be utilised for financing the senior debt requirement of Rs. 7,900.00 million for the Project (as defined under the PS Common Loan Agreement).	Rs. 2,000.00	Rs. 1,478.29	11.77%	Repayment shall be made in 42 unequal quarterly instalments commencing from the financial year ending March 31, 2018 and ending in the financial year ending March 31, 2028	The prepayment premium to be charged shall be at the rate of 1% of the loan amount being prepaid, subject to the relevant provisions of the PS Common Loan Agreement
3.	IDFC Bank Limited			Rs. 2,500.0	Rs. 2,046.70	11.77%		
4.	State Bank of Hyderabad			Rs. 650.00	Rs. 479.70	11.50%		
SU								
1.	Dena Bank	Facility Agreement dated June 23, 2014 as supplemented by deeds of accession dated February 19, 2015, March 27, 2015, June 29, 2015 and August 28, 2015 ("**SU Facility Agreement**")	The proceeds of the loan are to be utilised for refinancing the senior debt and other uses as per terms of the SU Facility Agreement.	Facility A (Senior) – Rs. 750.00	Rs. 741.41	11.20%	Facility A - Repayment shall be made in unequal quarterly instalments commencing from June 30, 2014 and ending on March 31, 2029 Facility B - Repayment shall be made in unequal quarterly instalments commencing from June 30, 2023 and ending on March 31, 2030	The prepayment premium to be charged shall be at the rate of 1% of the facility proposed to be repaid in accordance with the terms of the SU Facility Agreement
2.	Oriental Bank of Commerce			Facility A (Senior) – Rs. 1000.00	Rs. 987.94	11.20%		
3.	State Bank of Bikaner & Jaipur			Facility A (Senior) – Rs. 500.00	Rs. 493.97	11.20%		
4.	State Bank of India			Facility A (Senior) – Rs. 1750.00	Rs. 1,726.96	11.20%		
5.	State Bank of Mysore			Facility A (Senior) – Rs. 600.00	Rs. 592.29	11.20%		
				Facility B (Subordinate) –	Rs. 150.00	12.25%		

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
				Rs. 150.0				
6.	L&T Infrastructure Finance Company Limited			Facility A (Senior) – Rs. 680.00	Rs. 641.16	11.20%		
				Facility B (Subordinate) – Rs. 450.00	Rs. 450.0	12.25%		
7.	IDBI Trusteeship Services Limited (Debenture Trustee)	Debenture Trust Deed dated August 12, 2014 ("**SU DTD**")	The proceeds from the issuance of the debentures shall be utilized solely towards part repayment of the outstanding amounts under the existing rupee facilities.	Secured, rated, redeemable, unlisted, non-convertible debentures of face value of Rs. 0.10 million each, aggregating upto Rs. 800.00 million	Rs. 789.60	10.75%	Redemption shall be made in structured quarterly instalments commencing from July 1, 2014 and ending on April 1, 2029	Any premature redemption is required to be made with a 30 day prior notice to the debenture trustee. Any offer to redeem the outstanding debentures is required to be made to all the debenture holders and such offer shall be on a pro rata basis. The requirement of redemption offer being extended to all the relevant debenture holder. Each debenture holder shall be entitled to apply for any amount pro rata to the number of the

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
								debentures held by such debenture holders. The early redemption premium to be payable to the debenture holders shall be at the rate of 1% of the face value of the outstanding debentures, subject to the relevant provisions of the SU DTD
TD								
1.	Bank of India	Common Rupee Loan Agreement dated March 28, 2008 ("**TD Common Loan Agreement**")	The proceeds of all amounts shall be applied in or towards the construction and development of the Project (as defined under the TD Common Loan Agreement). The lenders (at the request of TD) may also issue a financial guarantee within the sanctioned amount of the rupee loan availed under the TD Common Loan Agreement in favour of	Rs. 250.00	Rs. 223.72	10.90%	TD is required to repay in 50 quarterly unequal instalments from the period commencing December 31, 2011 and ending March 30, 2024	The prepayment premium to be charged by the lenders shall be at the rate of 0.5% of the loan amount being prepaid, subject to the relevant provisions of the TD Common Loan Agreement.
2.	Canara Bank			Rs. 854.00	Rs. 764.11	10.90%		
3.	Corporation Bank			Rs. 650.00	Rs. 581.69	10.90%		
4.	IIFCL			Rs. 750.00	Rs. 676.83	10.90%		
5.	Oriental Bank of Commerce			Rs. 320.00	Rs. 287.09	10.90%		
6.	UCO Bank			Rs. 400.00	Rs. 358.21	10.90%		

Sr. No.	Name of Lender	Nature of Borrowing and Details of Facility Agreement	Purpose	Amount sanctioned (in Millions)	Principal Amount Outstanding as on November 30, 2016 (in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment Schedule	Prepayment Provision
			banks and financial institutions (set out in the TD Common Loan Agreement)					
TK								
1.	Bank of India	Common Rupee Loan Agreement dated March 28, 2008 ("**TK Common Loan Agreement**")	The proceeds of all amounts shall be applied in or towards the construction and development of the Project (as defined under the TK Common Loan Agreement).	Rs. 400.00	Rs. 306.63	10.95%	TK is required to repay the principal amount of the Rupee loans to the TK Lenders in 48 quarterly unequal instalments from a period commencing on December 31, 2011 and ending September 30, 2023	The prepayment premium to be charged by the lenders shall be at the rate of 0.5% of the prepaid amount, subject to the relevant provisions of the TK Common Loan Agreement.
2.	Canara Bank			Rs. 990.00	Rs. 759.31	10.95%		
3.	Corporation Bank			Rs. 600.00	Rs. 459.43	10.95%		
4.	IIFCL			Rs. 900.00	Rs. 697.22	10.95%		
5.	Indian Overseas Bank			Rs. 500.00	Rs. 383.84	10.95%		
6.	Oriental Bank of Commerce			Rs. 400.00	Rs. 307.49	10.95%		
7.	UCO Bank			Rs. 600.00	Rs. 459.20	10.95%		

**Source:* *Based on RBI reference rate (of USD/INR – 68.53) as of November 30, 2016.*

B. Unsecured Trust Financing

(i) Repayment/prepayment, in part, of Unsecured Subordinate Debt:

The following table provides details of the outstanding unsecured subordinate debt provided by the Sponsor to the Project SPVs as on November 30, 2016, out of which the Investment Manager (on behalf of the Trust) proposes to prepay, in part, any or all of such outstanding unsecured subordinate debt from the proceeds of the investment made in such Project SPVs by the Trust by way of the Unsecured Trust Financing:

Sr. No.	Name of Lender	Nature of Borrowing	Purpose	Amount sanctioned (Rs. in Millions)	Principal Amount Outstanding as on November 30, 2016 (Rs. in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment / Redemption Provision	Transferability	Prepayment / Repayment Penalty
DS									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Dindigul - Samayanallore Road on NH-7 in the State of Tamil-Nadu and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto Rs. 468.00 million	468.00	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*
GF									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Gurgaon - Faridabad section in the State of Haryana and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto Rs. 1,776.90 million	1,776.90	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*
HK									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Hossur Krishnagiri section of NH-7 in the State of Karnataka and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto Rs. 2,960.60 million	2,960.60	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*
JR									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Jaipur-Reengus section of	Unsecured subordinate debt certificates of	1,285.30	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*

Sr. No.	Name of Lender	Nature of Borrowing	Purpose	Amount sanctioned (Rs. in Millions)	Principal Amount Outstanding as on November 30, 2016 (Rs. in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment / Redemption Provision	Transferability	Prepayment / Repayment Penalty
			National Highway - 11 in the State of Rajasthan and for general corporate purposes.	face value of Re. 1.00 each, aggregating upto Rs. 1,285.30 million					
KM									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Kandla Mundra section in the State of Gujarat and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto Rs. 3,567.00 million	3,567.00	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*
NK									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Namakkal Karur section of NH - 7 in the State of Tamil Nadu and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto Rs. 581.77 million	581.77	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*
PS									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Pune Satara section of NH-4 in the State of Maharashtra and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto	10,785.10	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*

Sr. No.	Name of Lender	Nature of Borrowing	Purpose	Amount sanctioned (Rs. in Millions)	Principal Amount Outstanding as on November 30, 2016 (Rs. in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Repayment / Redemption Provision	Transferability	Prepayment / Repayment Penalty
				Rs. 10,785.10 million					
TD									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Trichy Dindigul section of NH 45 in the State of Tamil Nadu and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto Rs. 152.50 million	152.50	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*
TK									
1.	Reliance Infrastructure Limited	Subordinate Debt	To meet the cost of construction of Trichy Karur section of NH – 67 in the State of Tamil Nadu and for general corporate purposes.	Unsecured subordinate debt certificates of face value of Re. 1.00 each, aggregating upto Rs. 1,627.70 million	1,627.70	*Nil*	See **Note 1** below	See **Note 2** below	*Nil*

Note 1

Each subordinate debt certificate is redeemable at Re. 1 each. Further, the Project SPV has the right to redeem the subordinate debt certificates in part or in full at any time during the tenor of the subordinate debt certificates after approval from its lenders or the holder(s) of the subordinate debt certificates have the right to convert the subordinate debt certificates at any time into equity shares of the Project SPV.

Note: 2

The subordinate debt certificates is non-transferable to any person, company or entity either by endorsement or by instrument of transfer or by delivery. However, with the mutual consent of the parties, the holder of the subordinate debt certificates may assign the subordinate debt certificates to any third party purchaser, and then the subordinate debt certificates will be cancelled, and instead an inter-corporate loan agreement evidencing the debt of the Project SPV will be entered into at mutually agreed terms.

(ii) Prepayment of Unsecured Loans/Advances:

The following table provides details of the outstanding unsecured loans/advances provided by the Sponsor to the Project SPVs as on November 30, 2016, out of which the Investment Manager (on behalf of the Trust) proposes to prepay, in full, all of such unsecured loans/advances from the proceeds of the investment made in such Project SPVs by the Trust by way of the Unsecured Trust Financing:

Sr. No.	Name of Lender	Nature of Borrowing	Amount sanctioned (Rs. in Millions)	Principal Amount Outstanding as on November 30, 2016 (Rs. in Millions)	Rate of Interest as on November 30, 2016 (% per annum)	Prepayment / Repayment Penalty
PS						
1.	Reliance Infrastructure Limited	Unsecured Loan Letter dated November 30, 2016	20.00	20.00	*Nil*	*Nil*
TK						
1.	Reliance Infrastructure Limited	Unsecured Loan Letter dated August 29, 2016	40.00	40.00	*Nil*	*Nil*
2.	Reliance Infrastructure Limited	Unsecured Loan Letter dated March 31, 2016	35.00	35.00	*Nil*	*Nil*

2. General Purposes

The Investment Manager (on behalf of the Trust) proposes to deploy the balance Net Proceeds, aggregating to Rs. [●] million, towards general purposes, subject to such utilization not exceeding 10% of the Net Proceeds in compliance with the InvIT Regulations. The general purposes for which the Investment Manager (on behalf of the Trust) proposes to utilize the Net Proceeds include meeting expenses incurred in the ordinary course of business, meeting any exigencies that the Trust may face, or any other purposes as may be approved by the Investment Manager from time to time, subject to compliance with necessary provisions of the InvIT Regulations. Further, the Investment Manager (on behalf of the Trust), will have flexibility in utilizing surplus amounts, if any.

Retention of Oversubscription in the Issue, if any

The Investment Manager, in consultation with the GCBRLMs and the BRLMs, reserves the right to retain oversubscription of up to 25% of the Issue size in accordance with the InvIT Regulations. In the event that the Investment Manager, in consultation with the GCBRLMs and the BRLMs, exercises the aforesaid right, the proceeds from the Allotment of Units pursuant to such oversubscription shall be utilized in a manner that is proportional to the proposed utilisation of the Net Proceeds and towards the same objects. However, in compliance with the InvIT Regulations, proceeds from the Allotment of Units pursuant to such oversubscription shall not be utilized towards general purposes.

Schedule of Deployment

The Investment Manager proposes to deploy the Net Proceeds towards the aforestated purposes during Fiscal 2017 and/or 2018, depending upon various factors, including the actual timing of completion of the Issue and the receipt of the Net Proceeds. The proposed deployment of funds is based on the estimates of the Investment Manager and has not been appraised by any bank, financial institution or any other external agency. In the event that the Investment Manager is unable to utilize the entire amount that it has currently estimated for use out of Net Proceeds in a particular fiscal year, it will utilize such unutilized amount in the next fiscal year.

Interim use of Net Proceeds

The Investment Manager will have flexibility to deploy the Net Proceeds. Pending utilization of the Net Proceeds for the purposes described above, the Investment Manager will deposit the Net Proceeds only with scheduled commercial banks included in the second schedule of the RBI Act.

Issue Related Expenses

The total Issue related expenses are estimated to be approximately Rs. [●] million. The Issue related expenses consist of listing fees, underwriting fees, selling commission, fees payable to the GCBRLMs and the BRLMs, auditors, valuers, traffic consultant, industry consultants, advisors, legal counsels, Registrar to the Issue, Banker(s) to the Issue, processing fees to the SCSBs for processing ASBA Forms submitted by ASBA Bidders procured by the Syndicate and submitted to SCSBs, printing and stationary expenses, advertising and marketing expenses and all other incidental expenses for listing the Units on the Stock Exchanges.

All expenses in relation to the Issue shall be paid by the Trust. However, for ease of operations, if required, the expenses of the Trust may, at the outset, be borne by the Sponsor on behalf of the Trust, and the Investment Manager (on behalf of the Trust) agrees that it will reimburse the Sponsor for all such expenses. The break-down for the estimated Issue expenses are as follows:

Activity	Estimated expenses* (Rs. in Millions)	As a % of the total estimated Issue expenses*	As a % of the total Issue size*
Expenses in relation to the Formation Transactions (including stamp duty and registration)	[●]	[●]	[●]
Payment to the GCBRLMs and the BRLMs (including underwriting commission, brokerage and selling commission)	[●]	[●]	[●]
Processing fee for SCSBs	[●]	[●]	[●]

Activity	Estimated expenses* (Rs. in Millions)	As a % of the total estimated Issue expenses*	As a % of the total Issue size*
Fees payable to the Registrar to the Issue	[●]	[●]	[●]
Fees payable to other advisors to the Issue	[●]	[●]	[●]
Fees payable to the Valuers	[●]	[●]	[●]
Fees payable to the Traffic Consultant	[●]	[●]	[●]
Fees payable to the Banker(s) to the Issue	[●]	[●]	[●]
Fees payable to the Auditors	[●]	[●]	[●]
Others	[●]	[●]	[●]
- Listing fees, SEBI, BSE and NSE Processing Fees	[●]	[●]	[●]
- Printing and stationary	[●]	[●]	[●]
- Advertising and marketing expenses	[●]	[●]	[●]
- Miscellaneous	[●]	[●]	[●]
Total estimated Issue expenses	[●]	[●]	[●]

**Will be incorporated upon finalization of the Issue Price.*

In case the actual Issue expenses differ from the estimated Issue expenses, the Investment Manager will have the flexibility to utilize such a difference as it deems fit.

TERMS OF THE ISSUE

The following is a summary of the terms and conditions of an investment in the Issue. For additional details, refer to "Issue Structure" on page 533.

This summary is qualified in its entirety by the more detailed information contained in this Draft Offer Document and the information contained in the Indenture of Trust. Prospective investors are encouraged to consult their own professional advisors as to the tax and legal consequences of investing in the Trust. Unless otherwise indicated, all amounts are expressed in Indian Rupees.

Trust	Reliance Infrastructure InvIT Fund
Sponsor	Reliance Infrastructure Limited
Investment Manager	Reliance Nippon Life Asset Management Limited
Project Manager	Reliance Infrastructure Limited
Trustee	IDBI Trusteeship Services Limited
Issue	Initial public offer of up to [●] Units, aggregating to Rs. 30,000 million, with an option to retain oversubscription of up to 25% of the Issue size in accordance with the InvIT Regulations
Issue Size	[●] Units, aggregating to Rs. [●] million
Option to Retain Oversubscription	Up to 25% of the Issue Size in accordance with the InvIT Regulations
Face Value	Not applicable
Issue Price	Rs. [●] per Unit
Bid/Issue Opening Date	[●]
Bid/Issue Closing Date	[●]*
Anchor Investor and Strategic Investor Bid/Issue Period	[●]**
Commitment received from Strategic Investors, if any	[●]
Lock-in on the Sponsor (*Regulatory*)	In accordance with Regulation 12 of the InvIT Regulations, the Sponsor shall hold not less than 15% of the total Units of the Trust after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units, subject to the following: (i) the Sponsor would be resposible for all acts, omissions and representations/covenants of the Trust related to the formation of the Trust, the sale/transfer of the Project SPVs to the Trust; (ii) the Trust/Trustee of the Trust shall also have recourse against the Sponsor for any breach in this regard; (iii) the Project Manager shall be the Sponsor or an Associate of the Sponsor and shall continue to act in such capacity for a period of not less than three years from the date of listing of the Units unless a suitable replacement is appointed by the Unitholders through the Trustee. Provided that the condition specified in (iii) herein above shall not be applicable where the Sponsor holds not less than 25% of the total Units of the Trust after the Issue, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units. Further, any Units in excess of 15% of the total Units after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, held by the Sponsor, shall be locked-in for a period of not less than one year from the date of listing of the Units, in accordance with Regulation 12 of the InvIT Regulations and applicable law.

Lock-in on the Sponsor (*Contractual*)	The Sponsor shall not, without the prior written consent of the GCBRLMs and the BRLMs, during the period commencing from the date of filing of the Draft Offer Document and ending 180 calendar days from the listing of the Units, directly or indirectly: (i) in relation to any Units or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Units other than pursuant to the Issue, issue, offer, transfer, lend, pledge, sell, contract to sell or issue, sell any option or contract to sell or issue, grant any option, right or warrant to purchase, lend, or otherwise transfer, dispose of or create any encumbrances; ii) except as disclosed in the Draft Offer Document, enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of Units or any securities convertible into or exercisable as or exchangeable for Units; or (iii) publicly announce any intention to enter into any transaction described in (i) or (ii) above; whether any such transaction described in (i) or (ii) above is to be settled by delivery of Units or securities, in cash or otherwise. The aforesaid restrictions shall not apply to any bank financing or refinancing proposed to be undertaken by any of the Project SPVs and any pledge of the equity shares held by the Sponsor in the Project SPV in relation to such bank financing or refinancing taken by the Project SPVs, provided that the overall bank debt of such Project SPV shall not be increased and that the Sponsor ensures the release of such pledge for the transfer of such equity shares to the Trust pursuant to the relevant Securities Purchase Agreement.
Lock-up on the Sponsor (*Contractual*)	The Sponsor shall not, without the prior written consent of the GCBRLMs BRLMs, during the periods (i) commencing from the date of filing of the Draft Offer Document and ending 180 calendar days from the date of filing the Draft Offer Document (which period shall be extendable by the mutual consent of the GCBRLMs and BRLMs and the Sponsor) and (ii) commencing from the listing of the Units and ending 180 calendar days thereafter, directly or indirectly undertake any offering of debt, equity, units of an infrastructure investment trust that proposes to invest in the road infrastructure sector in India or any other jurisdiction. Further, none of the Sponsor or any of its Associates shall set up any infrastructure investment trust that proposes to invest in the road infrastructure sector in India or in any other jurisdiction subsequent to the filing of the Draft Offer Document by the Trust and until a period of 180 calendar days from the listing of the Units.
Lock-up on the Trust and the Investment Manager (*Contractual*)	The Trust (acting through the Trustee) and the Investment Manager shall not, without the prior written consent of the Managers, during the period commencing from the date of the Draft Offer Document and ending 180 calendar days after the listing of the Units, directly or indirectly: (i) issue, offer, transfer, lend, pledge, sell, encumber, contract to sell or issue, sell any option or contract to purchase, purchase any option or contract to sell or issue, grant any option, right or warrant to purchase, lend, or otherwise transfer, dispose of directly or indirectly any Units or any securities convertible into or exercisable or exchangeable for Units, other than pursuant to the Securities Purchase Agreements or the Issue (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of Units or any other securities convertible into or exercisable as or exchangeable for Units, or (iii) publicly announce any intention to enter into any transaction described in (i) or (ii) above; whether any such transaction described in (i) or (ii) above is to be settled by delivery of Units or such other securities, in cash or otherwise. However, the aforesaid restrictions shall not apply to (i) an issue of Units made as consideration with respect to an acquisition made by the Trust pursuant to the right of first offer and future assets agreement; and (ii) any buy-back of Units made by the Trust.
Use of Proceeds	Please see "*Use of Proceeds*" on page 79
Distribution Policy	Please see "*Distribution Policy*" on page 326
Rights of Unitholders	Please see "*Rights of Unitholders*" on page 330

Taxation	Please see "*Statement of Tax Benefits*" on page 103
Brief description of the assets under the Trust (including details of the capital structure of such assets)	Please see "*Background and Structure of the Trust*" on page 110
Brief description of the valuation of each asset	Please see "*Valuation*" on page 324
Relevant financial ratios	Please see "*Basis of Issue Price*" on page 101
Brief details of the fees and expenses charged or chargeable to the Trust	Please see "*Background and Structure of the Trust*" on page 110
Brief description of any ROFR	Please see "*Background and Structure of the Trust*" on page 110
Alteration of terms of the Issue	In case of any alteration of the terms of the Units, including the terms of the Issue, which may adversely affect the interest of the Unitholders, an approval from the Unitholders shall be required where the votes cast in favour of the resolution shall not be less than one and a half times the votes cast against the resolution.
Minimum Unitholding	In accordance with the InvIT Regulations, at all times post-listing of the Units, other than the Sponsor, its related parties and Associates, the Trust is required to have, and maintain, a minimum of 20 Unitholders forming part of the 'public', each holding not more than 25% of the aggregate amount of the Units on a post-Issue basis, failing which action may be taken as may be specified by the SEBI and the Stock Exchanges, including delisting of the Units under the InvIT Regulations. In accordance with the InvIT Regulations, 'public' means any person other person other than a related party of the Trust or any other person as may be specified by the SEBI, provided however that if any related party of the Trust is a qualified institutional buyer, such person shall be included in the term 'public'.
Depositories	NSDL and CDSL
Listing	
a) Stock Exchanges	BSE and NSE
b) Designated Stock Exchange	[●]
c) Timelines for Listing	[●]
d) ISIN	[●]

**The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors. The Anchor Investor and Strategic Investor Bid/Issue Period shall be one day prior to the Bid/Issue Opening Date in accordance with the InvIT Regulations.*

***The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider closing the Bid/Issue Period for Institutional Bidders one day prior to the Bid/Issue Closing Date in accordance with the InvIT Regulations.*

Notes

1. The Issue shall constitute at least 25% of the total outstanding Units on a post-Issue basis in accordance with the Regulation 14(1A) of the InvIT Regulations.

2. The 'in-principle' approvals of the BSE and the NSE for the listing of the Units have been received pursuant to their letters dated [●] and [●], respectively

BASIS OF ISSUE PRICE

The Issue Price will be determined by the Investment Manager, in consultation with the GCBRLMs and the BRLMs, on the basis of assessment of market demand for the Units offered through the Book Building Process and on the basis of quantitative and qualitative factors as described below. Investors should also refer to the sections "*Risk Factors*", "*The Trust's Business*", and "*Financial Statements*" on pages 16, 159 and 355, respectively.

Qualitative Factors

Some of the qualitative factors which form the basis for the Issue Price are:

- Portfolio of income generating assets in key growth markets;
- Diversified, urban-focused road project portfolio and revenue base;
- Experienced Sponsor, Investment Manager and Project Manager with consistent track records in operating and maintaining projects in the roads and highways sector in India;
- Low leverage upon Listing, providing debt capacity to finance future growth;
- Growth opportunities and access to Sponsor's portfolio; and
- Attractive sector with strong underlying fundamentals.

For further details, see section titled "*The Trust's Business - Competitive Strengths*" on page 162.

Quantitative Factors

The information presented below is based on the Condensed Combined Financial Statements, prepared in accordance with the requirements of the InvIT Regulations and Ind-AS. For details, see "*Financial Statements*" on page 355.

Some of the quantitative factors which may form the basis for computing the Issue Price are as follows:

I. Valuation provided by the Valuers

The Valuers have used the following basis for Valuation:

i. Discounted Cash Flows (DCF) of all Trust Assets; and

ii. The assumptions used by the Valuers have been disclosed in **Annex A** of the Draft Offer Document.

Valuation of the Trust Assets as on [●] as per the Valuers is Rs. [●].

The Price Band is [●] to [●].

Number of Units to be issued by the Trust to acquire the Project SPV shares from the Sponsor is as follows

Particulars	At Floor Price (Rs. in Million)	At Cap Price (Rs. in Million)	At Issue Price (Rs. in Million)
Equity Valuation	[●]	[●]	[●]
Enterprise Valuation*	[●]	[●]	[●]

**Net Debt of Rs. [●] as on [●] has been considered for calculating Enterprise Value.*

II. The Investment Manager has given Revenue, Profit and Cash Flow Projections for the Next Three Financial Years.

For details of Revenue, Profit and Cash Flow Projections and notes thereto, please refer to **Annex B**.

III. Enterprise Value / EBITDA (EV/EBITDA) ratio in relation to Issue Price:

Particulars	At Floor Price (Rs in Million)	At Cap Price (Rs in Million)	At Issue Price (Rs in Million)
Enterprise Valuation*	[●]	[●]	[●]

**Net Debt of Rs. [●] as on [●] has been considered for calculating Enterprise Valuation.*

Particulars	Amount (Rs. in Million)	EV/EBITDA Ratio		
		At Floor Price	At Cap Price	At Issue Price
EBIDTA of Fiscal 16 as per Condensed Combined Financial Statements	5,128.48	[●]	[●]	[●]
EBIDTA of Fiscal 18#	8,290.79	[●]	[●]	[●]
EBIDTA of Fiscal 19#	9,555.84	[●]	[●]	[●]
EBIDTA of Fiscal 20#	10,981.05	[●]	[●]	[●]

#As per the Revenue, Profit and Cash Flow Projections

IV. Comparison with Industry Peers

Currently there are no listed infrastructure investment trusts in India. Accordingly, it is not possible to provide an industry comparison in relation to the Trust.

STATEMENT OF TAX CONSIDERATIONS / BENEFITS

Statement of possible tax consideration / benefits available to the Trust and its Unitholders under applicable laws in India

IDBI TRUSTEESHIP SERVICES LIMITED (Trustee of Reliance Infrastructure InvIT Fund)
Asian Building, Ground Floor,
17, R. Kamani Marg,
Ballard Estate, Mumbai - 400 001

Reliance Nippon Life Asset Management Limited (As the Investment Manager of the Reliance Infrastructure InvIT Fund)
'H' Block, 1st Floor
Dhirubhai Ambani Knowledge City
Koparkhairne, Navi Mumbai
Thane - 400 710, India

Dear Sirs,

Sub: Statement of possible tax considerations / benefits available to the Reliance Infrastructure InvIT Fund and its Unitholders under the Income Tax Act, 1961.

We refer to the proposed initial public offer of Units of Reliance Infrastructure InvIT Fund ("the Trust") and enclose the statement showing the current position of tax considerations / benefits available to the Trust and to its Unit Holders as per the provisions of the Income-tax Act, 1961 ('the IT Act') presently in force in India (i.e. applicable for the financial year ending 31 March 2017 relevant to the assessment year 2017-18) for inclusion in the letter of offer.

This statement is provided for general information purposes only and each investor is advised to consult its own tax consultant with respect to specific income tax implications arising out of participation in the issue.

Unless otherwise specified, sections referred below are sections of the IT Act. The benefits set out below are subject to conditions specified therein read with the Income-tax Rules, 1962 presently in force. The Wealth-tax Act, 1957 has been abolished w.e.f. April 1, 2015 and as such we have not commented on the same.

The benefits outlined in the enclosed statement based on the information and particulars provided by the Trust are neither exhaustive nor conclusive.

We do not express any opinion or provide any assurance as to whether:

- the Trust or its Unit Holders will continue to obtain these benefits in future;
- the conditions prescribed for availing the benefits have been/would be met with; and
- the revenue authorities/courts will concur with the views expressed herein.

We hereby give our consent to include the enclosed statement regarding tax benefits available to the Trust and to its Unit Holders in the letter for the proposed initial public offer of Units which the Trust intends to submit to the Securities and Exchange Board of India, the Registrar of Companies and the Stock Exchange(s).

Limitations

Our views expressed in the statement enclosed are based on the facts and assumptions indicated above. No assurance is given that the revenue authorities/courts will concur with the views expressed herein. Our views are based on the existing provisions of law and its interpretation, which are subject to change from time to time. We do not assume responsibility to update the views consequent to such changes. The views are exclusively for the use of Trust and shall not, without our prior written consent, be disclosed to any other person.

For **Chaturvedi & Shah**
Chartered Accountants
Firm's Registration No: 101720W

Vijay Napawaliya
Partner
Membership No.109859
Place: Mumbai
Date: December 15, 2016

TAX CONSIDERATIONS / BENEFITS

Prospective Investors interested in purchasing Units of the InvIT Fund ('the Trust') must consider the following summary of certain taxation aspects affecting the Trust, its proposed operations, and the Investors in the Trust. This information does not purport to be a complete analysis of all relevant tax considerations; nor does it purport to be a complete description of all potential tax costs, incidence and risks inherent in purchasing or holding units of the Trust. Prospective Investors are urged to consult their own tax advisors in this regard. The information contained herein is based on an interpretation of prevailing tax legislation ('the Income-tax Act, 1961' or the "IT Act") and could therefore change or be adversely affected if alternative interpretations are adopted. The information below is based on the current applicable Indian tax law, as applicable to the Trust, or to prospective Investors in the Trust all of which are subject to any future amendments of Indian tax law.

Please note that the tax rates provided in this Chapter are excluding applicable surcharge and education cess.

GENERAL

The Finance Minister vide the Finance No. (2) Act, 2014, introduced the tax regime for Infrastructure Investment Trusts ('InvIT') and the unit holders of the InvIT under Chapter XII-FA of the Income-tax Act, 1961 (the "IT Act"). Further, certain clarifications / amendments were made to the aforesaid provisions vide Finance Act, 2015 and Finance Act, 2016.

As per the IT Act, 'business trust' means a trust registered, inter alia, as an Infrastructure Investment Trust under the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014 made under the Securities and Exchange Board of India Act, 1992 (15 of 1992), the units of which are required to be listed on recognised stock exchange in accordance with the aforesaid regulations.

CHAPTER XII-FA – SPECIAL PROVISIONS RELATING TO BUSINESS TRUST OR InvIT

We have summarised below some of the relevant sections of the IT Act in relation to taxability of business trusts and the unit holders:

- Residential Status

  For the purpose of the IT Act, an individual is considered to be a resident of India during any previous year (generally the financial year)::

  - if he or she is in India in that previous year for a period or periods amounting to 182 days or more; or
  - if he or she is in India in that previous year for 60 days or more and within the four preceding years he / she has been in India for a period or periods amounting to 365 days or more. However, the period of 60 days is increased to 182 days in the case of citizen of India or a person of Indian origin being outside India, comes on a visit to India. Further, the period of 60 days is increased to 182 days, in the case of citizen of India who leaves India for the purposes of employment outside India in any previous year.

    A company is resident in India in any previous year, if it is an Indian company or if its place of effective management, in that year, is in India. Here, 'place of effective management' means a place where key management and commercial decisions that are necessary for the conduct of business of an entity as a whole are, in substance made.

    A firm or other association of persons or every other person is resident in India in every case except where the control and management of its affairs is situated wholly outside India.

    For the purposes of IT Act, "non-resident" means a person who is not a resident in India.

- *Section 115UA of the IT Act*

(1) Notwithstanding anything contained in any other provisions of the Act, any income distributed by a business trust to its unit holders shall be deemed to be of the same nature and in the same proportion in the hands of the unit holders as it had been received by, or accrued to, the business trust.

(2) Subject to the provisions of section 111A and section 112, the total income of a business trust shall be charged to tax at the maximum marginal rate.

(3) If in any previous year, the distributed income or any part thereof, received by a unit holder from the business trust is of the nature referred to in sub-clause (a) of clause (23FC) or clause (23FCA) of section 10, then, such distributed income or any part thereof shall be deemed to be income of such unit holder and shall be charged to tax as income of the previous year.

(4) Any person responsible for making payment of the income distributed on behalf of a business trust to a unit holder shall furnish a statement to the unit holder and the prescribed authority, within such time and in such form and manner as may be prescribed, giving the details of the nature of the income paid during the previous year and such other details as may be prescribed.

- *Section 10*

In computing the total income of a previous year of any person, any income falling within any of the following clauses shall not be included –

10 (23FC): any income of a business trust by way of -

(a) interest received or receivable from a special purpose vehicle; or
(b) dividend referred to in sub-section (7) of section 115O

Explanation – For the purpose of this clause, the expression "special purpose vehicle" means an Indian company in which the business trust holds controlling interest and any specific percentage of shareholding or interest, as may be required by the regulations under which such trust is granted registration.

10 (23FD) : any distributed income, referred to in section 115UA, received by a unit holder from the business trust, not being that proportion of the income which is of the same nature as the income referred to in sub-clause (a) of clause (23FC) or clause (23FCA).

- **Section 115O(7)**

No tax on distributed profits shall be chargeable under this section in respect of any amount declared, distributed or paid by the specified domestic company by way of dividends (whether interim or otherwise) to a business trust out of its current income on or after the specified date:

Provided nothing contained in this sub-section shall apply in respect of any amount declared, distributed or paid, at any time, by the specified domestic company by way of dividends (whether interim or otherwise) out of its accumulated profits and current profits up to the specified date.

Explanation – For the purpose of this sub-section –

(a) "specified domestic company" means a domestic company in which a business trust has become the holder of whole of the nominal value of equity share capital of the company (excluding the equity share capital required to be held mandatorily by any other person in accordance with any law for the time being in force or any directions of Government or any regulatory authority, or equity share capital held by any Government or Government body);

(b) "specified date" means the date of acquisition by the business trust of such holding as is referred to in clause (a).

TAX REGIME FOR BUSINESS TRUST AND UNIT HOLDERS

Based on the aforesaid provisions and other related sections of the IT Act, the taxability of the income in the hands of the business trust and unit holders is specified below. It may be noted that the business trust referred to in the provisions is the InvIT Fund and hereinafter is referred to as the Trust.

1. Taxability of the income in the hands of the Trust

- The income by way of interest received by the Trust from Special Purpose Vehicle ('SPV') is accorded 'pass through' treatment i.e. there is no taxation of such interest income in the hands of the Trust and there are no withholding tax obligations at the level of SPV while remitting the money to the Trust [Section 10(23FC) and Section 194A(3)(xi)].

- The dividend received by the Trust from the 'specified domestic company' on which no Dividend Distribution Tax ('DDT') is chargeable will be exempt in the hands of the Trust. As per the Finance Act 2016, no DDT shall be payable on dividend declared, distributed or paid by the specified domestic company to the Trust after the 'specified date'. Accordingly, in a scenario, where dividend is distributed by other than 'specified domestic company', DDT will be applicable at 15% under section 115-O of the IT Act (effective rate being 20.92% including surcharge and cess). [Section 115-O(7) and Section 10(23FC)].

  Thus, dividend distributed by SPV to Trust is exempt from the levy of DDT where:
  - Trust either holds 100 percent of the share capital of the SPV or holds all of the share capital (except where the equity share capital in such SPV is mandatorily required to be held by any other person in accordance with any law for the time being in force or any directions of Government or any regulatory authority, or equity share capital held by any Government or Government body)
  - Exemption is available only for dividends distributed out of the current income earned by the Trust after the Trust acquires the requisite shareholding.

  Dividends paid out of accumulated profits or current profits upto the date of acquisition of shares in SPV will be subject to DDT as and when distribution takes place.

- Capital gains on sale of unlisted shares of the SPV is taxable in the hands of the Trust at 20% with an indexation benefit, where the shares are held for a period of 2 years or more, else at maximum marginal rate ('MMR') i.e., 30%. Capital gains on the sale of assets (other than unlisted shares) is taxable in the hands of the Trust at 20% with an indexation benefit, where such assets are held for a period of 3 years or more, else at MMR i.e., at 30%. Any other income of the Trust shall be taxable at the MMR (i.e., at 30%). [Section 111A, Section 112 and Section 115UA].

- The Trust is required to furnish its return of income. The necessary reporting and withholding tax compliance requirements are required to be met by the Trust.

2. Taxability of the income in the hands of the unit holders (investors)

- Interest income received or receivable by the Trust shall be exempt in the hands of the Trust and shall only be taxable in the hands of Investors (including sponsor) as if they have received the interest directly from the SPV. The interest income is taxable at the applicable rates for resident unit holders and at the rate of 5% for non-resident unit holders or offshore investors [plus applicable surcharge and education cess]. In case of non-resident unit holders, beneficial tax regime under a Double Taxation Avoidance Agreement ('DTAA') entered into between India and the country in which the offshore Investor is resident, if any, shall be available. [Section 115A and Section 115UA].

- Dividend income distributed by the Trust to the unit holders is exempt in the hands of the unit holders. [sub-clause (b) of Section 10(23FC)] .

- Tax on capital gains will be levied when units held by investors are transferred. Capital gains earned by the investors shall be taxable depending on the period of holding of units.

- Short-term capital gains (held for 3 years or less than 3 years) on sale of units would be subject to tax at 15% provided STT has been paid on sale of such units of the Trust. In case of non-resident investors, beneficial tax regime under a DTAA, if any, shall be available; and
- Long term capital gains (held for more than 3 years) would be exempt from tax provided STT has been paid on sale of such units of the Trust. [Section 10(38) and Section 111A].

➢ Any distributed income referred to in section 115UA, other than interest income referred to in sub-clause (a) of section 10(23FC), received by a unit holder from the Trust shall be exempt in the hands of the unit holder. [Section 10(23FD)]

➢ Thus, the income distributed by the Trust (except interest income) shall be exempt in the hands of the unit holder.

3. Buy-back of Units by the Trust

The tax treatment of the gains arising on the buy-back would be as under:

➢ Under section 115QA of the IT Act, a domestic company distributing any income on buy-back of shares is charged to tax and such domestic company shall be liable to pay additional income-tax @20% on the distributed income.

The Trust is a Trust registered in accordance with the SEBI Regulations and would not be covered within the definition of domestic company. Accordingly, buy-back of units by the Trust would not have any tax implications in the hands of the Trust.

The capital gains, if any, arising to the unit holder on the buy-back of units shall be taxed as under:

- Long-term Capital Gains (LTCG) – 20%
- Short-term Capital Gains (STCG) – 30%

The units should be held by the unit holder for more than 36 months to qualify as long term capital asset.

The above tax treatment is without considering the tax benefits as may be available under the DTAA entered into between India and the host country of the offshore Unit Holder.

4. Withholding tax implications

➢ Where the Trust has borrowed monies under the External Commercial Borrowings Regulations ('ECB Regulations'), the Trust would be required to withhold taxes at the time of credit of such income to the account of lender or at the time of making interest payment to the Lender, whichever is earlier. It may be noted that the withholding would be at the reduced rate of 5% on interest payments to non-resident lenders subject to the conditions and for such period as is provided in section 194LC of the IT Act.

➢ With regards to the interest payment for loans availed by the Trust from the resident lenders, the Trust shall withhold taxes at the rate of 10% as per Section 194A of the IT Act.

➢ Where the Trust distributes the interest income received by it to the unit holders, the Trust would be required to withhold taxes at the rate of 5% in case of non-resident unit holders and at the rate of 10% in case of resident unit holders.[Section 194LBA]

➢ There are no withholding tax obligations on the Trust in respect of the dividend income / capital gains / any other income earned by the Trust and distributed to the unit holders.

➢ As per section 206AA of the IT Act, where a tax payer does not possess a Permanent Account Number ('PAN'), taxes have to be withheld on payment of income to the tax payer (where chargeable to tax) at higher of the following:

- at the rate specified in the IT Act; or
- at the rate or rates in force; or
- at the rate of twenty per cent

The Finance Act, 2016 amended the aforementioned provision to provide an exemption to non-residents, subject to compliance of such conditions as may be prescribed by the CBDT. In furtherance of the amended provision, CBDT issued a notification prescribing the rules for relaxation from withholding of tax at higher rates in the absence of PAN in the case of non-resident deductees and laid down the information and alternative documents required to claim such relaxation.

The exemption from reporting of PAN would be available to non-residents in respect of payments of the following nature:-

a. Interest;
b. Royalty;
c. Fees for technical services; and
d. Payments on transfer of any capital asset

The new rules require submission of the following information and documents by the non- resident to the deductor to avail the exemption, namely –

i. Name, e-mail id, contact number;
ii. Address in the country or specified territory outside India of which the deductee is a resident;
iii. A certificate of his being resident (i.e. Tax Residency Certificate or TRC) in any country or specified territory outside India from the Government of that country or specified territory if the law of that country or specified territory provides for issuance of such certificate;
iv. TIN of the deductee in the country or specified territory of his residence and in case no such number is available, then a unique number on the basis of which the deductee is identified by the Government of that country or the specified territory of which he claims to be a resident.

5. Income accrual to the Investors

- The income of a unit holder which is of the nature as referred to in section 10(23FC)(a) out of investments made in the Trust, is chargeable to tax in the same manner as if it were income of the unit holder from investments made directly.

- Further, the income distributed to the unit holders by the Trust would be deemed to be of the same nature and in the same proportion in the hands of the unit holders as it had been received by or accrued to the Trust.

6. Alternate Minimum Tax ('AMT') or Minimum Alternative Tax ('MAT')

- The provisions of Alternate Minimum Tax ('AMT') would not be applicable on the income received by the Trust, as the Trust would not be claiming any tax incentive under Chapter VIA or Section 10AA or Section 35AD.

- Where the unit holder or sponsor is an Indian company, the MAT provisions would apply in case of the interest income / capital gains arising to such unit holder / sponsor and the unit holder / sponsor would be liable to pay MAT, in case, the tax liability under the MAT provisions is higher than the tax liability under the normal provisions.

- As per Finance Act 2016, MAT provisions will not be applicable to foreign companies in the following circumstances:

  Where the foreign company is resident of a country with which India has entered into a DTAA and such foreign company does not create a permanent establishment in India as per the provisions of the relevant DTAA.

  Where the foreign company is resident of a country with which India has not entered into a DTAA and such foreign company is not obliged to seek registration under the relevant provision of the Companies Act, 1956 or the Companies Act, 2013.

- MAT provisions are not applicable to non-corporate investors.

7. Rate of tax, surcharge, and education cess

The income-tax rates specified in this note are as applicable for the financial year 2016-17, and are exclusive of applicable surcharge and education cess, unless specified otherwise. Rate of surcharge and cess are provided below:

Surcharge:

Domestic companies

- If the net income does not exceed INR 10 million – Nil
- If the net income exceeds INR 10 million but does not exceed INR 100 million - 7 per cent
- If the net income exceeds INR 100 million - 12 per cent

Foreign companies

- If the net income does not exceed INR 10 million - Nil
- If the net income exceeds INR 10 million but does not exceed INR 100 million - 2 per cent
- If the net income exceeds INR 100 million - 5 per cent

For individuals, surcharge at the rate of 15% and for other assessees surcharge at the rate of 12% shall be applicable if the total income exceeds INR 10 million. Surcharge on dividend distribution tax shall be at the rate of 12%.

Education cess:

In all cases, education cess will be levied at the rate of 3 per cent of income-tax and surcharge.

SECTION IV – ABOUT THE TRUST

BACKGROUND AND STRUCTURE OF THE TRUST

Background of the Trust

The Trust has been settled by Reliance Infrastructure Limited (the "**Sponsor**") pursuant to the Indenture of Trust dated September 12, 2016, in Mumbai, India, as an irrevocable trust in accordance with the Trusts Act. The Trust was settled with an initial settlement amount of Rs. 10,000 by the Sponsor. The Indenture of Trust is registered under the Registration Act. The Trust has been registered with SEBI as an infrastructure investment trust under the InvIT Regulations (Registration Number: IN/InvIT/16-17/0004).

The object and purpose of the Trust, as described in the Indenture of Trust, is to carry on the activity of an infrastructure investment trust under the InvIT Regulations, to raise resources in accordance with the InvIT Regulations, and to make investments in accordance with its investment strategy. For additional details in relation to the business and investment strategy of the Trust, see "*The Trust's Business*" on page 159.

The Trust is required to make distributions to the Unitholders in accordance with the InvIT Regulations. For details in relation to the distribution policy of the Trust, see "*Distribution Policy*" on page 326.

Parties to the Trust

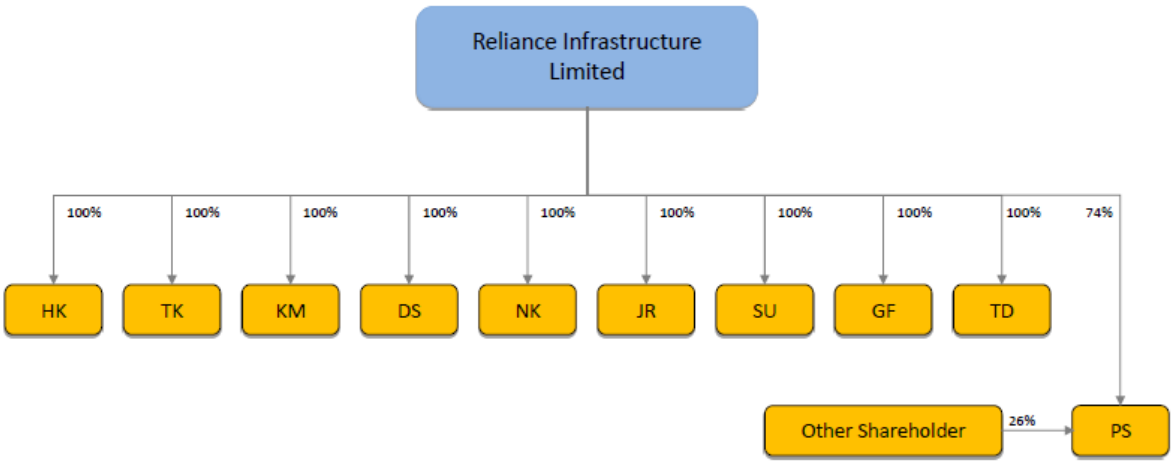
In accordance with the InvIT Regulations, the Parties to the Trust are:

Sr. No.	Name of the Party	Role/Responsibility	Description
1.	Reliance Infrastructure Limited	Sponsor	Reliance Infrastructure Limited (the Sponsor) is a public limited company incorporated under the Indian Companies Act, 1913, having CIN L75100MH1929PLC001530. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai - 400710, Maharashtra. The equity shares of the Sponsor are listed on the Stock Exchanges. For further details in relation to the Sponsor, see "*The Sponsor*" on page 336.
2.	Reliance Nippon Life Asset Management Limited	Investment Manager	Reliance Nippon Life Asset Management Limited (formerly Reliance Capital Asset Management Limited) is a public limited company incorporated under the Companies Act, 1956, having CIN U65910MH1995PLC220793. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Koparkhairane, Navi Mumbai, Thane - 400710, Maharashtra. The Investment Manager is a subsidiary of Reliance Capital Limited. Further, the Investment Manager is registered with SEBI as a portfolio manager under the Securities and Exchange Board of India (Portfolio Managers) Regulations, 1993. For further details in relation to the Investment Manager, see "*The Investment Manager*" on page 339.
3.	Reliance Infrastructure Limited	Project Manager	The Trustee and the Investment Manager have appointed the Sponsor, namely Reliance Infrastructure Limited, as the Project Manager. For additional details, see "*The Project Manager*" on page 348.

Sr. No.	Name of the Party	Role/Responsibility	Description
4.	IDBI Trusteeship Services Limited	Trustee	IDBI Trusteeship Services Limited is a company incorporated under the Companies Act, 1956, having CIN U65991MH2001GOI131154. It is registered with SEBI as a debenture trustee under the Debenture Trustees Regulations, having SEBI registration number IND000000460. Its registered office is situated at Asian Building, Ground Floor, 17 R. Kamani Marg, Ballard Estate, Mumbai - 400 001. For further details in relation to the Trustee, see "*The Trustee*" on page 349.

Sponsor's Holdings in the Project SPVs pre-Formation Transactions

The following diagram illustrates the shareholding structure of the Project SPVs as on the date of this Draft Offer Document and before the completion of the Formation Transactions:



Details of the Project SPVs

1. DS Toll Road Limited ("DS")

Corporate Information

DS was incorporated on June 29, 2005, as 'Reliance Fuel Management Limited' a public limited company under the Companies Act, 1956, having CIN U23300MH2005PLC154360. Subsequently, its name was changed from 'Reliance Fuel Management Limited' to 'Kangaroo Corporate Services Limited' and then to 'DS Toll Road Limited' on November 9, 2005. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of DS, is as follows:

" *1. To carry on the business of finance, design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, rest and recreation structures, buildings and other infrastructures, acquire equipment by purchase, lease, sale, exchange, sub-lease, rent or otherwise, or sell or let equipment on lease or hire, or otherwise or services in connection therewith, provide arboriculture and landscaping, provide advertising, hoardings, displays, lighting and any other amenities and collect toll, fees or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Reconstruction, Strengthening, Widening and Rehabilitation on National Highway No. 7 from Dindigul to Samayanallur as per the tender floated by National Highway Authority of India.*

2. To design, build, erect, construct, operate on construction contract, EPC contract, Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), Built-Own-Lease-Transfer (BOLT) basis or any such variants thereof, repair, execute, develop infrastructure facility project including roadways, bridges, road over-bridges, underpasses, canals or any kind of work for and on behalf of government, NGOs or bodies corporate or individual.

3. To provide consultancy, toll collection, traffic management, survey and investigation services in relation to roadways, bridges, flyover, road over-bridges, underpasses and other infrastructure facilities.

4. To acquire by purchase, lease, sale, exchange, sub-lease, rent or otherwise and to deal anywhere in India, property of any description and any estate or interest therein and any rights over or connected with lands so situated and to build own, operate and transfer or to build own operate and to turn the same to account as may seem expedient and in particular by laying out, developing or assist in developing and preparing building sites and by constructing, pulling down, altering, improving, decoration, furnishing and maintaining offices, flats, houses, restaurants, bungalows, chawls, factories, warehouses, shops, amusements parks, technology parks, building works and conveniences and by sublet all or any contract from time to time by leasing, letting, renting, selling (by installments, ownership, hire basis or otherwise) and to disposing off the same on any other terms or conditions and entering into contract and arrangement of any types with builders, tenants, occupiers, governments, semi-government, municipal and local authorities. "

Capital Structure

The capital structure of DS is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	100,000,000
Issued, subscribed and paid-up capital	5,210,000

In accordance with DS' MoA, it is required to have a minimum paid-up capital of Rs. 500,000.

Shareholding Pattern

The shareholding pattern of DS is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	5,209,940	100.00
2.	Abhijit Benerjee*	10	0.00
3.	Harshada Dhavale*	10	0.00
4.	Praksash Khedekar*	10	0.00
5.	Srilatha Gopal*	10	0.00
6.	Prachi Potnis*	10	0.00
7.	Madan Biyani*	10	0.00
	Total	**5,210,000**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

2. GF Toll Road Private Limited ("GF")

Corporate Information

GF was incorporated on December 23, 2008, as a private limited company under the Companies Act, 1956, having CIN U74990MH2008PTC189112. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of GF, is as follows:

" *1. To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Design, Engineering, Finance, Construction, Operation and Maintenance of Gurgaon to Faridabad and Ballabgarh to Sohna Roads in Faridabad and Gurgaon districts in Haryana.*

2. To design, build, erect, construct, operate on construction contract, EPC contract, Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), Built-Own-Lease-Transfer (BOLT) basis or any such variants thereof, repair, execute, develop infrastructure facility project including roadways, bridges, road over-bridges, underpasses, canals or any kind of work for and on behalf of government, NGOs or bodies corporate or individual. "

Capital Structure

The capital structure of GF is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	20,000,000
Issued, subscribed and paid-up capital	1,961,100

In accordance with GF's MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of GF is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	1,961,099	100.00
2.	Ms. Prachi Potnis*	1	0.00
	Total	**1,961,100**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

3. HK Toll Road Private Limited ("HK")

Corporate Information

HK was incorporated on May 19, 2010, as a private limited company under the Companies Act, 1956, having CIN U45203MH2010PTC203370. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of HK, is as follows:

" *To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain infrastructural facilities of all types including roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the company on Design, Build, Finance, Operate and Transfer basis for Design, Finance, Engineering, Construction, Operation and Maintenance for Six laning of Hosur to Krishnagiri section of National Highway –7 (km 33.130 to km 93.000) in the state of Tamil Nadu.* "

Capital Structure

The capital structure of HK is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	5,000,000
Issued, subscribed and paid-up capital	3,711,000

In accordance with HK's MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of HK is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	3,710,999	100.00
2.	Ms. Prachi Potnis*	1	0.00
	Total	**3,711,000**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

4. JR Toll Road Private Limited ("JR")

Corporate Information

JR was incorporated on December 9, 2009, as a private limited company under the Companies Act, 1956, having CIN U45203MH2009PTC197721. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of JR, is as follows:

" *To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Design, Engineering, Construction, Operation and Maintenance for 4/6 laning of Jaipur to Reengus section of National Highway -11 in the state of Rajasthan.* "

Capital Structure

The capital structure of JR is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	6,400,000
Issued, subscribed and paid-up capital	10,704

In accordance with JR's MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of JR is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	10,703	100.00
2.	Ms. Prachi Potnis*	1	0.00
	Total	**10,704**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

5. KM Toll Road Private Limited ("KM")

Corporate Information

KM was incorporated on February 4, 2010, as a private limited company under the Companies Act, 1956, having CIN U45203MH2010PTC199705. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of KM, is as follows:

" *To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Design, Build, Operate and Transfer basis for Design, Finance, Engineering, Construction, Operation and Maintenance for 4/6 laning of Gandhidham (Kandla) to Mundra Port section of National Highway-8A in the state of Gujarat.* "

Capital Structure

The capital structure of KM is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	10,000,000
Issued, subscribed and paid-up capital	3,409,000

In accordance with KM's MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of KM is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	3,408,999	100.00
2.	Ms. Prachi Potnis*	1	0.00
	Total	**3,409,000**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

6. NK Toll Road Limited ("NK")

Corporate Information

NK was incorporated on June 29, 2005, as 'Reliance Communication Ventures Limited' a public limited company under the Companies Act, 1956, having CIN U67190MH2005PLC154359. Subsequently, its name was changed from 'Reliance Communication Ventures Limited' to 'Elephant Consultants Limited and then to 'NK Toll Road Limited' on November 9, 2005. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of NK, is as follows:

" *1. To carry on the business of finance, design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, rest and recreation structures, buildings and other infrastructures, acquire equipment by purchase, lease, sale, exchange, sub-lease, rent or otherwise, or sell or let equipment on lease or hire, or otherwise or services in connection therewith, provide arboriculture and landscaping, provide advertising, hoardings, displays, lighting and any other amenities and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Reconstruction, Strengthening, Widening and Rehabilitation on National Highway No. 7 from Namakkal Bypass to Karur Bypass as per tender floated by National Highway Authority of India.*

2. To design, build, erect, construct, operate on construction contract, EPC contract, Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), Built-Own-Lease-Transfer (BOLT) basis or any such variants thereof, repair, execute, develop infrastructure facility project including roadways, bridges, road over-bridges, underpasses, canals or any kind of work for and on behalf of government, NGOs or bodies corporate or individual.

3. To provide consultancy, toll collection, traffic management, survey and investigation services in relation to roadways, bridges, flyover, road over-bridges, underpasses and other infrastructure facilities.

4. To acquire by purchase, lease, sale, exchange, sub-lease, rent or otherwise and to deal anywhere in India, property of any description and any estate or interest therein and any rights over or connected with lands so situated and to build own, operate and transfer or to build own operate and to turn the "

same to account as may seem expedient and in particular by laying out, developing or assist in developing and preparing building sites and by constructing, pulling down, altering, improving, decoration, furnishing and maintaining offices, flats, houses, restaurants, bungalows, chawls, factories, warehouses, shops, amusements parks, technology parks, building works and conveniences and by sublet all or any contract from time to time by leasing, letting, renting, selling (by installments, ownership, hire basis or otherwise) and to disposing off the same on any other terms or conditions and entering into contract and arrnagement of any types with builders, tenants, occupiers, governments, semi-government, municipal and local authorities.

Capital Structure

The capital structure of NK is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	100,000,000
Issued, subscribed and paid-up capital	4,477,000

In accordance with NK's MoA, it is required to have a minimum paid-up capital of Rs. 500,000.

Shareholding Pattern

The shareholding pattern of NK is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	4,476,940	100.00
2.	Abhijit Banerjee*	10	0.00
3.	Harshada Dhavale*	10	0.00
4.	Prakash Khedekar*	10	0.00
5.	Srilatha Gopal*	10	0.00
6.	Prachi Potnis*	10	0.00
7.	Madan Biyani*	10	0.00
	Total	**4,477,000**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

7. PS Toll Road Private Limited ("PS")

Corporate Information

PS was incorporated on February 9, 2010, as a private limited company under the Companies Act, 1956, having CIN U45203MH2010PTC199879. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of PS, is as follows:

" *To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Design, Engineering, Construction, Operation and Maintenance for 6 laning of Pune to Satara from Km 725.000 to Km 865.350 section of National Highway 4 in the state of Maharashtra.* "

Capital Structure

The capital structure of PS is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	100,000
Issued, subscribed and paid-up capital	10,724

In accordance with PS' MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of PS is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	7,935	74.00
2.	Jiangsu Provincial Transportation Engineering Group Company Limited.	2,788	26.00
3.	Ms. Prachi Potnis*	1	0.00
	Total	**10,724**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

8. SU Toll Road Private Limited ("SU")

Corporate Information

SU was incorporated on March 24, 2007, as a private limited company under the Companies Act, 1956, having CIN U74999MH2007PTC169145. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of SU, is as follows:

" *1. To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Reconstruction, Strengthening, Widening and Rehabilitation on National Highway No. 68 from Salem to Ulundurpet as per tender floated by National Highway Authority of India.*

2. To design, build, erect, construct, operate on construction contract, EPC contract, Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), Built-Own-Lease-Transfer (BOLT) basis or any such variants thereof, repair, execute, develop infrastructure facility project including roadways, bridges, road over-bridges, underpasses, canals or any kind of work for and on behalf of government, NGOs or bodies corporate or individual. "

Capital Structure

The capital structure of SU is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	23,000,000
Issued, subscribed and paid-up capital	18,412,260

In accordance with SU's MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of SU is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	18,412,259	100.00
2.	Ms. Prachi Potnis*	1	0.00
	Total	**18,412,260**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

9. TD Toll Road Private Limited ("TD")

Corporate Information

TD was incorporated on March 24, 2007, as a private limited company under the Companies Act, 1956, having CIN U45400MH2007PTC169141. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of TD, is as follows:

" *1. To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures, collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Reconstruction, Strengthening, Widening and Rehabilitation on National Highway No. 45 from Trichy to Dindigul as per tender floated by National Highway Authority of India.*

2. To design, build, erect, construct, operate on construction contract, EPC contract, Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), Built-Own-Lease-Transfer (BOLT) basis or any such variants thereof, repair, execute, develop infrastructure facility project including roadways, bridges, road over-bridges, underpasses, canals or any kind of work for and on behalf of government, NGOs or bodies corporate or individual. "

Capital Structure

The capital structure of TD is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	12,000,000
Issued, subscribed and paid-up capital	10,744,920

In accordance with TD's MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of TD is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	10,744,919	100.00

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
2.	Ms. Prachi Potnis*	1	0.00
	Total	**10,744,920**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

10. TK Roll Road Private Limited ("TK")

Corporate Information

TK was incorporated on March 26, 2007, as a private limited company under the Companies Act, 1956, having CIN U45203MH2007PTC169208. Its registered office is situated at H Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai- 400710, Maharashtra.

Main Object

The main object, as contained in the memorandum of association of TK, is as follows:

" *1. To design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures, collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Build, Operate and Transfer basis for Reconstruction, Strengthening, Widening and Rehabilitation on National Highway No. 67 from Trichy to Karur as per tender floated by National Highway Authority of India.*

2. To design, build, erect, construct, operate on construction contract, EPC contract, Build-Operate-Transfer (BOT), Build-Own-Operate-Transfer (BOOT), Built-Own-Lease-Transfer (BOLT) basis or any such variants thereof, repair, execute, develop infrastructure facility project including roadways, bridges, road over-bridges, underpasses, canals or any kind of work for and on behalf of government, NGOs or bodies corporate or individual. "

Capital Structure

The capital structure of TK is as follows:

Particulars	No. of equity shares of Rs. 10 each
Authorised capital	16,000,000
Issued, subscribed and paid-up capital	12,755,650

In accordance with TK's MoA, it is required to have a minimum paid-up capital of Rs. 100,000.

Shareholding Pattern

The shareholding pattern of TK is as follows:

Sr. No.	Name of the shareholder	No. of equity shares of Rs. 10 each	Percentage of the issued, paid-up and subscribed capital (%)
1.	Reliance Infrastructure Limited	12,755,649	100.00
2.	Ms. Prachi Potnis*	1	0.00
	Total	**12,755,650**	**100.00**

** Held jointly with Reliance Infrastructure Limited*

Formation Transactions

Prior to the Allotment of the Units in the Issue, the Trust intends to acquire an initial portfolio of ten SPVs, namely, DS, GF, HK, JR, KM, NK, PS, SU, TD and TK, all of which are currently either wholly or majority owned by the Sponsor (together, the "**Formation Transactions**").

The Trustee (on behalf of the Trust) intends to acquire the equity shares of the Project SPVs after the Bid/Issue Closing Date and prior to the Allotment in the Issue (for each such Project SPV, the "**Acquisition Date**"). Subject to the receipt of requisite approvals, the Trust intends to acquire 100% of the equity shares in each of DS, GF, HK, JR, KM, NK, PS, SU, TD and TK. However, the Sponsor currently holds only 74% of the equity shares of PS and its ability to acquire the residual 26% of the equity shares from the other shareholder of PS, and consequently, its ability to transfer any additional equity shares of PS (post-acquisition from the other shareholder of PS) to the Trust, is subject to the approval of NHAI. Further, along with the equity shares of the Project SPVs, the Trustee (on behalf of the Trust) simultaneously intends to acquire, all or part, of the subordinate debt certificates issued by certain Project SPVs to the Sponsor pursuant to the Securities Purchase Agreements. As consideration for the acquisition of the equity shares of, and the subordinate debt certificates issued by, the Project SPVs, the Trust will issue Units to the Sponsor on or around the Acquisition Date. The Securities Purchase Agreements for each Project SPV are in draft form and will be executed after the Bid/Issue Closing Date and on or before the Acquisition Date.

The purchase price for the equity shares and the subordinate debt certificates of each Project SPV will be mutually agreed between the Investment Manager (in consultation with the Trustee) and the Sponsor on the date of the acquisition of such equity shares. The number of Units to be issued to the Sponsor pursuant to the securities purchase agreements will depend upon such purchase price and the Issue Price of Units determined in accordance with the Book Building Process pursuant to the Issue.

The Trustee (on behalf of the Trust) will acquire the securities of the Project SPVs, which are held by the Sponsor, by entering into the following securities purchase agreements:

1. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and DS (the "**DS SPA**") for the transfer of an aggregate of 5,210,000 equity shares in DS (representing 100% of the equity shares of DS on a fully diluted basis) and [●] subordinate debt certificates issued by DS, held by the Sponsor, in consideration of [●] Units to the Sponsor;

2. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and GF (the "**GF SPA**") for the transfer of an aggregate of 1,961,100 equity shares in GF (representing 100% of the equity shares of GF on a fully diluted basis) and [●] subordinate debt certificates issued by GF, held by the Sponsor, in consideration of [●] Units to the Sponsor;

3. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and HK (the "**HK SPA**") for the transfer of an aggregate of 3,711,000 equity shares in HK (representing 100% of the equity shares of HK on a fully diluted basis) and [●] subordinate debt certificates issued by HK, held by the Sponsor, in consideration of [●] Units to the Sponsor;

4. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and JR (the "**JR SPA**") for the transfer of an aggregate of 10,704 equity shares in JR (representing 100% of the equity shares of JR on a fully diluted basis) and [●] subordinate debt certificates issued by JR, held by the Sponsor, in consideration of [●] Units to the Sponsor;

5. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and KM (the "**KM SPA**") for the transfer of an aggregate of 3,409,000 equity shares in KM (representing 100% of the equity shares of KM on a fully diluted basis) and [●] subordinate debt certificates issued by KM, held by the Sponsor, in consideration of [●] Units to the Sponsor;

6. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and NK (the "**NK SPA**") for the transfer of an aggregate of 4,477,000

equity shares in NK (representing 100% of the equity shares of NK on a fully diluted basis) and [●] subordinate debt certificates issued by NK, held by the Sponsor, in consideration of [●] Units to the Sponsor;

7. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and PS (the "**PS SPA**") for the transfer of the entire extent of the Sponsor's equity shareholding in PS and [●] subordinate debt certificates issued by PS to the Sponsor, in consideration of [●] Units to the Sponsor. The Sponsor currently owns 7,936 equity shares in PS (representing 74% of the equity shares of PS on a fully diluted basis), and proposes to acquire an additional 2,788 equity shares in PS (representing 26% of PS's equity share capital on a fully diluted basis) from PS' other shareholder, namely Jiangsu Provincial Transportation Engineering Group Company Limited, subject to the receipt of NHAI's approval for the same. If such consent is obtained and the Sponsor consequently acquires the aforesaid additional equity shares in PS prior to the date of the Offer Document, the Sponsor shall transfer the entire extent of its shareholding in PS, aggregating to 10,724 equity shares (representing 100% of the equity shares of PS on a fully diluted basis) and [●] subordinate debt certificates issued by PS, to the Trust in consideration of [●] Units to the Sponsor. However, in case the aforesaid consent from NHAI is not obtained prior to the date of the Offer Document or at all, the Sponsor shall transfer the entire extent of its current shareholding in PS, aggregating to 7,936 equity shares (representing 74% of the equity shares of PS on a fully diluted basis) and [●] subordinate debt certificates issued by PS, to the Trust in consideration for [●] Units to the Sponsor.

   Further, in case the Sponsor is unable to acquire the additional 2,788 equity shares in PS (representing 26% of PS's equity share capital on a fully diluted basis) from PS' other shareholder, and consequently unable to transfer 100% of the equity shareholding of PS to the Trust, the Trustee (acting on behalf of the Trust) and the Investment Manager will be required to enter into an agreement with PS' other shareholder prior to entering into the PS SPA in accordance with Regulation 18(3)(a) of the InvIT Regulations;

8. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and SU (the "**SU SPA**") for the transfer of an aggregate of 18,412,260 equity shares in SU (representing 100% of the equity shares of SU on a fully diluted basis), held by the Sponsor, in consideration of [●] Units to the Sponsor;

9. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and TD (the "**TD SPA**") for the transfer of an aggregate of 10,744,920 equity shares in TD (representing 100% of the equity shares of TD on a fully diluted basis) and [●] subordinate debt certificates issued by TD, held by the Sponsor, in consideration of [●] Units to the Sponsor; and

10. Securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and TK (the "**TK SPA**") for the transfer of an aggregate of 12,755,650 equity shares in TK (representing 100% of the equity shares of TK on a fully diluted basis) and [●] subordinate debt certificates issued by TK, held by the Sponsor, in consideration of [●] Units to the Sponsor.

    (individually, a "**Securities Purchase Agreement**" and collectively, the "**Securities Purchase Agreements**").

Terms of the Securities Purchase Agreements

The Investment Manager and the Trustee (on behalf of the Trust) propose to enter into the aforesaid Securities Purchase Agreements with the Sponsor and the respective Project SPVs, after the Bid/Issue Closing Date but before the Allotment of the Units. For additional details, see "*Issue Structure*" on page 533.
Certain relevant definitions in the Securities Purchase Agreements:

"Applicable Law" shall mean any statute, law, regulation, ordinance, rule, judgment, order, arbitral award, decree, bye-law, approval of any government authority, directive, guideline, policy, requirement or other government restriction or any similar form of decision of or determination by, or any final interpretation having the force of law of any of the foregoing by any government authority (including the NHAI) the Republic of India having jurisdiction, applicable to any Party, in force from time to time;

"**Closing**" shall mean completion of the transactions contemplated by the Securities Purchase Agreement;

"**Concessioning Authority**" shall mean the National Highways Authority of India or the Haryana Public Works Department;

"**Charter Documents**" mean the Memorandum of Association and the Articles of Association of the Project SPV as amended from to time;

"**Encumbrance**" shall mean any (i) encumbrance including without limitation any security interest, claim, mortgage, pledge, non- disposal undertaking, charge, hypothecation, lien (including negative lien), lease, assignment, deed of trust, title retention, deposit by way of security, beneficial ownership (including usufruct and similar entitlements), or any other interest held by a third person; (ii) security interest or other encumbrance of any kind securing, or conferring any priority of payment in respect of, any obligation of any person, including without limitation any right granted by a transaction which, in legal terms, is not the granting of security but which has an economic or financial effect similar to the granting of security under Applicable Law; (iii) power of attorney in relation to the shares, voting trust agreement, interest, option or right of pre-emption, right of first offer, or refusal or transfer restriction in favour of any person; and/or (iv) any adverse claim as to title, possession or use; but shall not cover the pledge of Equity Shares of the Project SPVs in favour of the lenders under their respective financing documents;

"**Equity Shares**" shall mean equity shares of the Project SPV, with a par value of [Rs.10 /Rs. 100 (Rupees Hundred)] each;

"**Existing Project**" shall mean project(s) of the Project SPV, as described in Securities Purchase Agreement;

"**Lenders**" shall mean the banks, financial institutions, funds and agents or trustees of debenture holders, non-banking financial companies or other major lending agencies approved by Reserve Bank of India including their successors and assignees, who have provided or have agreed to provide finance to the Project SPV under any form of the financing arrangements (including the senior debt, subordinate debt and funded interest term loan) for meeting costs of all or any part of the Existing Project, and who hold any form of charge over any assets, rights or interests of the Project SPV;

"**Material Adverse Effect**" shall mean any of the following in the opinion of the Trustee (acting on behalf of the Trust) (a) event, occurrence, fact, condition, change, development or effect (including without limitation any action of any governmental authority or the act of nature) that affects the validity or enforceability of the Securities Purchase Agreement or which may be materially adverse to the business, or operations, condition (financial or otherwise), properties, prospects or assets (whether tangible or intangible) or liabilities of the Project SPV; (b) material impairment of the ability of the Project SPV or the Sponsor, as the case may be, to perform their respective obligations hereunder; or any other agreement or document contemplated thereby to which it is a party; or (c) material impairment of the ability of the Trust to exercise or enjoy the benefits of any right or privilege, in each case under the Securities Purchase Agreement, or any other agreement or document contemplated thereby to which it is a party;

"**Project Approval Parties**" shall mean the Lenders and the Concessioning Authority;

"**Project Documents**" shall mean the concession agreement executed by the Project SPV with the Concessioning Authority for the execution of the Existing Project along with other agreements incidental thereto, the financing documents with the senior lenders and sub-ordinate lenders executed by the Project SPV in relation to the financing of the Existing Project, and the undertakings given to lenders;

"Sale Securities" shall mean the Sale Shares and the Subordinated Debt;

"**Sale Shares**" shall mean [●] Equity Shares comprising of 100% of the issued, subscribed and paid-up share capital of the Project SPV to be purchased by the Trustee (acting on behalf of the Trust) which would comprise of the Equity Shares of the Sponsor;

"Sponsor Claims" means the claims (including any administrative, legal or other similar proceedings) made or intended to be made by the Project SPV against NHAI or HPWD, as the case may be, in relation to events pertaining to the period prior to the Reference Date, and excluding the TK Future Claims (as defined under the Securities Purchase Agreement); and

"**Subordinated Debt**" shall mean [●] number of subordinate debts for a face value of Re 1 each aggregating to [●] issued on a private placement basis by the Project SPV to the Sponsor, evidenced by a certificate held by the Sponsor, the terms and conditions of which are detailed in Schedule 2 of the Securities Purchase Agreement.

Sale and Purchase of Sale Shares

Upon the terms and subject to the conditions set forth in the Securities Purchase Agreement, in consideration of the mutual rights and obligations of the Sponsor and the Trustee (acting on behalf of the Trust) and relying on the mutual warranties of the Sponsor and the Trustee (acting on behalf of the Trust) as set out in the Securities Purchase Agreement, the Trustee (acting on behalf of the Trust) agrees to acquire from the Sponsor and the Sponsor agrees to Transfer the Sale Securities, to the Trustee (acting on behalf of the Trust) on the Closing Date (as defined under the Securities Purchase Agreement), free and clear from all Encumbrances, in consideration for the issue of Units of the Trust to the Sponsor ("**Consideration Units**"). The number of Consideration Units which the Trustee (acting on behalf of the Trust) will issue to the Sponsor shall be as set out in the Securities Purchase Agreement.

Representations and Warranties

Under the respective Securities Purchase Agreements, the Sponsor, on its behalf and on behalf of the respective Project SPVs, will provide certain representations and warranties to the Trust, which, *inter alia*, are as follows:

(i) the sale of the Sale Securities contemplated under the Securities Purchase Agreement is and shall remain in compliance with Applicable Law, the Charter Documents and the Project Documents (as applicable). The Project SPV has approved the transfer of Sale Securities and in compliance with the Companies Act and its Charter Documents;

(ii) except as disclosed in the disclosure letter, there are no legal suits, complaints, proceedings or actions that are pending, threatened or undertaken against the Sponsor or its respective assets, which are either continuing or have been undertaken, that may have a Material Adverse Effect on the performance of its obligations under the Securities Purchase Agreement;

(iii) the Subordinate Debt certificates when novated in favour of the Trustee (acting on behalf of the Trustee) (i) will be duly authorised, validly issued, and free and clear of all Encumbrances; (ii) shall provide clear title to the Trustee (acting on behalf of the Trustee) in respect thereof; (iii) shall have all the rights attached to Subordinated Debt as set out in the Securities Purchase Agreement;

(iv) the Sale Shares, when purchased (i) will be duly authorized, validly issued, fully paid up and free and clear of all Encumbrances; (ii) shall provide clear and marketable title to the Trust in respect thereof; (iii) shall be free of restrictions on transfer, pre-emptive rights, rights of first refusal or other rights; and (iv) shall have all the rights attached to Sale Shares as set out in the Securities Purchase Agreement;

(v) the books, accounts and records of the respective Project SPV have been maintained in accordance with the Applicable Law and the Indian GAAP and from April 1, 2016, they have been maintained in accordance with Ind-AS on a proper and consistent basis and comprise complete and accurate records of all information required to be recorded. All such books, accounts and records are free from misstatements or omissions;

(vi) since the Accounts Date (as defined under the Securities Purchase Agreement), there has not been (a) to the best of the knowledge of the Sponsor, any damage, destruction or loss, whether or not covered by insurance, materially and adversely affecting the assets owned or used by the Project SPV for the conduct of its business; (b) to the best of the knowledge of the Sponsor, any waiver by the Project SPV of a valuable right or of a material debt owed to it or factoring of any of its debts; (c) to the best of the knowledge of the Sponsor, any change or amendment to any contract(s) with any related party except in the Ordinary Course of Business (as defined under the Securities Purchase Agreement) or in respect of employment terms of the officers/directors of the Project SPV; (d) any purchase, sale, transfer or other disposition of any of the immovable properties of or by the Project SPV other than in the Ordinary Course of Business; (e) any declaration, setting aside or, save as provided for in the Financial Statements (as defined under the Securities Purchase Agreement), payment of any dividend on, or the making of any other distribution in

respect of, the share capital of the Project SPV, or any direct or indirect redemption, purchase or reduction by the Project SPV of its own shares; (f) any debt, obligation or contingent or other liability incurred, assumed or guaranteed by the Project SPV; (g) any payment or discharge of an Encumbrance of the Project SPV; (h) no obligation or liability incurred or assumed or loan or advances made by the Project SPV to any employees, directors or shareholders;

(vii) except as disclosed in the disclosure letter the Project SPV has obtained all governmental approvals required under Applicable Law and other approvals under the Project Documents for carrying on its business effectively in the places and in the manner, in which such businesses are carried on. All such governmental approvals are in full force and effect under the Applicable Law and Project Documents and, are not subject to any unusual or onerous conditions and have been complied with in all respects;

(viii) the Project SPV's assets and properties are adequately insured and the Project SPV has obtained all insurance policies that it is required to obtain under any contracts with third parties as well as under Applicable Law and the Project Documents. The Project SPV is in compliance with all its obligations under such insurance policies and such insurance policies are legal, valid, binding, enforceable and in full force and effect and will continue to be legal, valid, binding, enforceable, and in full force and effect on the same terms following the consummation of the transactions contemplated hereby. The Project SPV is not in material breach or default (including with respect to the payment of premiums or the giving of notices), and no event has occurred that, with notice or the lapse of time, would constitute such a material breach or default, or permit termination, modification, or acceleration, under the insurance policies and no party to the policy has repudiated any provision thereof;

(ix) the Project SPV has not disposed off, leased or licensed any equipment or assets (including real property) that are used in its business, except in accordance with the Applicable Law and the Project Documents. Where any such assets are used in the business of the Project SPV but not owned by the Project SPV, or any facilities or services are provided to the Project SPV by any third party, there has not occurred any event of default or any other event or circumstance (other than the expiry of any agreement in the normal course) which may entitle any third party to terminate any agreement or license in respect of the provision of such assets, facilities or services (or any event or circumstance which with the giving of notice and/or the lapse of time and/or a relevant determination would constitute such an event or circumstance);

(x) the Project SPV is not in default under any arrangement or agreement including the Project Documents to which it is a party nor has it received any notices of default or termination under any such arrangement or agreements including the Project Documents and no such notices of default or termination are threatened or anticipated;

(xi) except for the litigation proceedings specified in the disclosure letter, there have been no material (i) actions, suits, proceedings or (ii) investigations against the Project SPV prior to the date of the Securities Purchase Agreement. Except as disclosed in the disclosure letter, the Project SPV is not a claimant or defendant in or otherwise a party to any material (i) product liability claims, (ii) litigation, arbitration or administrative proceedings, which are in progress or pending, by or against or concerning the Project SPV or any of its assets or intellectual property rights. No investigation or inquiry by any governmental authority concerning the Project SPV or its business is in progress or pending;

(xii) the Project SPV does not have any outstanding borrowings in the nature of borrowing, other than as specified in the disclosure letter. The change in the level of borrowings since the Accounts Date has been in the Ordinary Course of Business and any new borrowings have been used exclusively for the business of the Project SPV;

(xiii) Except as disclosed in the disclosure letter no material claim has been made or threatened against the Project SPV or its directors, employees, agents, officers or consultants that involves a potential liability of or against the Project SPV;

(xiv) no dispute has arisen between the Project SPV and any of its employees (or his or her heirs), trade union, or contract workers or other body representing employees;

(xv) all related party transactions between the Sponsor, as the case may be, and their respective affiliates have been entered into in compliance with Applicable Law and all the related party transactions are incompliance with Applicable Law and Ind-AS;

(xvi) the Project SPV conducts and has always conducted its business in a normal and prudent manner and in compliance in all respects with the Applicable Law and in accordance with its Charter Documents and Project Documents; and

(xvii) Project Documents are valid and existing and will continue to remain as such in accordance with the terms of each of such Project Documents thereof.

Indemnification

The Sponsor ("**Indemnifying Party**") shall indemnify, defend and hold harmless, the Trust, the Trustee (acting on behalf of the Trust), the Investment Manager on behalf of the Trust, their respective affiliates and (as applicable) all of their respective directors, officers employees, representatives and advisors (collectively the "**Indemnified Parties**") at all times, from and against any and all losses, costs, damages, expenses and fees (including legal fees) ("**Loss**") suffered or incurred by the Indemnified Parties relating to or arising out of or in connection with claim, notice, action, proceeding or suit by or against the Indemnified Party arising out of or in connection with (collectively referred to as "**Indemnification Events**"):

(i) any material inaccuracy, misrepresentation or any breach of any representation and warranty of the Sponsor;

(ii) any material breach of any covenant or obligation of the Sponsor or of the Project SPV contained under the Securities Purchase Agreement;

(iii) any pending claims against the Project SPV or any claims which may be made against the Project SPV and which relate to or arise out of, the period prior to the Closing Date;

(iv) the Trustee (acting on behalf of the Trust) and/or the Investment Manager on behalf of the Trust being called upon to pay any liabilities in respect of the Project SPV and in respect of or pertaining to a period up to and including the Closing Date, which liability is not contested by such party;

(v) any and all costs and expenses incurred by the Trustee (acting on behalf of the Trust) in respect of a claim under this indemnity;

(vi) any failure of the Sponsor to obtain applicable consents from the Project Approval Parties and which relate to or arise out of, the period prior to the Closing Date; and

(vii) except as disclosed in the Offer Document any actual or alleged breach by the Sponsor of any covenant or agreement contained in the Project Documents pertaining to a period prior to the Closing Date.

Treatment of Sponsor Claims

Subject to the terms of the Securities Purchase Agreement, the parties have agreed, that any payments received in cash in a full and final settlement (with no further appeals) of the Sponsor Claims by the Project SPV that pertains to a period prior to the Reference Date (as defined under the Securities Purchase Agreement), will be to the account of the Sponsor. Provided however that, in the event any payments are received by the Project SPV in cash towards Sponsor Claims prior to full and final settlement of such Sponsor Claims, then such amounts would be on account of the Sponsor, if the Sponsor has provided a bank guarantee to the relevant authority in lieu of such Sponsor Claims. The Project SPV and/or the Trust shall provide such authorisations as may be necessary for the Sponsor to take actions in relation to the Sponsor Claims.

The Sponsor hereby agrees to fully indemnify and hold harmless the Trust and the Project SPV and their respective officers, directors, employees, representatives and agents at all times from and against any claims, losses, costs,

taxes, damages, expenses and fees (including legal fees) suffered or incurred directly or indirectly in connection with the Sponsor Claims.

The Trust and/or the Project SPV will, forthwith upon receiving the amounts aforementioned, notify the Sponsor in writing and transfer the amounts to the Sponsor without any requirement of a demand from the Sponsor, within 7 (Seven) business days of the receipt by the Trust or the Project SPV from the Sponsor/ relevant authority copies of all requisite authorizations and approvals as required below. The Sponsor would obtain all approvals and authorisations required from NHAI/HPWD and/or any of the senior lenders of the Project SPV prior to any such payment of the Sponsor Claims to the Sponsor. Any such transfer will be strictly in accordance with the terms of such approvals and all such payments shall be made net of applicable taxes.

The Sponsor hereby (on its behalf and on behalf of its affiliates) expressly waives the right to make any further claims or initiate any action against the Trust and/or the Project SPV with respect to any matter (known or unknown, whether in law, equity or any agreement or document) in relation to the Sponsor Claims arising prior to the Reference Date.

Sponsor Undertaking

Punch List Items

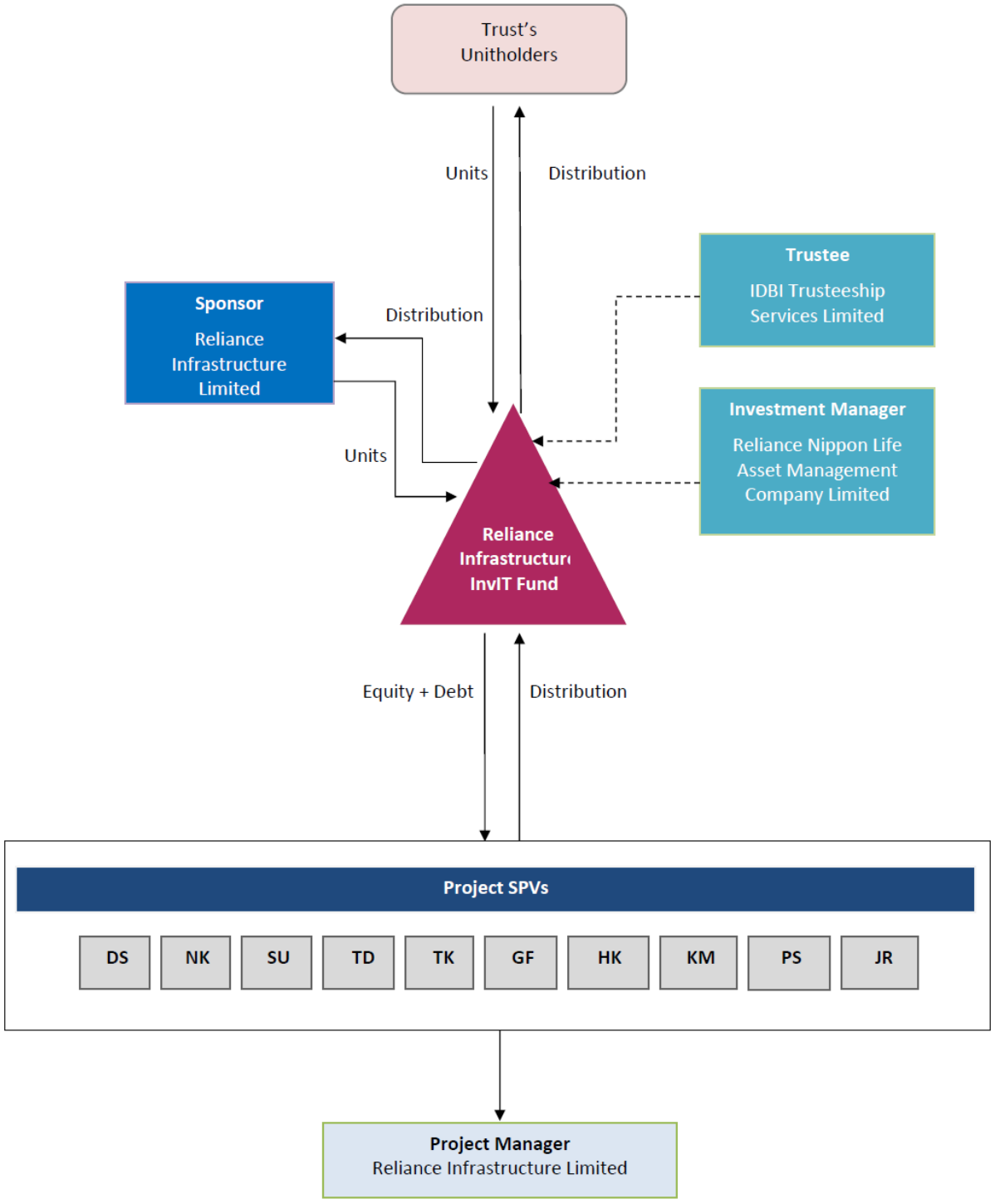
The Sponsor hereby undertakes that in the event that the final completion certificate with respect to the Existing Project of the Project SPV is not obtained on or prior to Closing Date, it will be solely responsible at its own cost for funding and completing all outstanding activities listed in the punch list to the provisional completion certificate obtained by the Project SPV with respect to the Existing Project, (except to the extent of any amount which has already been provided for towards such outstanding activities in the books of accounts of the Project SPV) as and when such activities are required to be completed.

Projects with Ongoing Capex

Subject to each of the Project SPV and NHAI duly meeting their respective obligations under the Project Documents (including the appointment of a suitable contractor by the Project SPV, in consultation with the Sponsor), the Sponsor has estimated certain reasonable cost of completion of the Existing Project (the "Estimated Completion Cost"), and has undertaken that in the event the actual cost of completion of the Existing Project exceeds the Estimated Completion Cost, the Sponsor shall be solely responsible for funding any amounts in excess of such Estimated Completion Cost.

Structure of the Trust

The following diagram illustrates the proposed structure of the Trust after completion of the Formation Transactions:



Initial Road Assets

As of September 30, 2016, the Project SPVs owned, operated and maintained the following toll road assets comprising 723.09 km of constructed and operational roads and 45.95 km of roads under construction:

- the Dindigul Samayanallore Project: an approximately 53.05 km section of NH 7 between Dindigul and Samayanallore in Tamil Nadu, which is held by DS;
- the Namakkal Karur Project: an approximately 41.37 km section of NH 7 between Namakkal and Karur in Tamil Nadu, which is held by NK;
- the Salem Ulundurpet Project: an approximately 136.36 km section of NH 68 between Salem and Ulundurpet in Tamil Nadu, which is held by SU;
- the Trichy Dindigul Project: an approximately 87.27 km section of NH 45 between Trichy and Dindigul in Tamil Nadu, which is held by TD;
- the Hosur Krishnagiri Project: an approximately 59.87 km section of NH 7 between Hosur and Krishnagiri in Tamil Nadu, which is held by HK;
- the Trichy Karur Project: an approximately 61.35 km section of NH 67 between Trichy and Karur in Tamil Nadu, which is held by TK;
- the Jaipur Reengus Project: an approximately 51.84 km section of NH 11 between Jaipur and Reengus in Rajasthan, which is held by JR;
- the Gurgaon Faridabad Project: an approximately 66.19 km section in Gurgaon and Faridabad in Haryana, including stretches of Crusher Zone Road, Pali-Bhakri Road, Ballabgarh-Lukhawas junction Road and MCF road, which is held by GF;
- the Kandla Mundra Port Project: an approximately 71.40 km section of NH-8A (Extension) between Gandhidham (Kandla) and Mundra Port in Gujarat, which is held by KM and of which 55.80 km is operational; and
- the Pune Satara Project: an approximately 140.35 km section of NH 4 between Pune and Satara in Maharashtra, which is held by PS and of which 110.0 km is operational.

Investment in the Project SPVs by way of an infusion of debt

The Investment Manager, on behalf of the Trust, proposes to invest almost all of the Net Proceeds in the Project SPVs, namely DS, GF, HK, JR, KM, NK, PS, SU, TD and TK, by way of an infusion of debt, in the form of the Secured Trust Financing and the Unsecured Trust Financing.

The Project SPVs, in turn, intend to utilize the proceeds of (a) the Secured Trust Financing towards repayment/prepayment, in part or full, of certain loans/facilities availed by the Project SPVs from their respective senior lenders/lenders; and (b) the Unsecured Trust Financing towards prepayment, in part, of the unsecured subordinate debt provided to such Project SPVs by the Sponsor, and the prepayment, in full, of the unsecured loans/advances provided to such Project SPVs by the Sponsor. For additional details in relation to the utilization of the Net Proceeds, see "*Use of Proceeds*" on page 79.

The aforesaid investments will be made by entering into certain debt financing agreements with each of the Project SPVs (the "**Debt Documentation**"). Each of the Project SPVs has applied for the consent of their respective senior lenders/lenders in relation to the Secured Trust Financing and the Unsecured Trust Financing. For more

details, please see the section headed "*Financial Indebtedness – Consents from the Lenders of the Project SPVs*" in this Draft Offer Document.

Terms of the Debt Documentation

Subsequent to the Bid/Issue Closing Date but prior to the Allotment of Units pursuant to the Issue, the Trustee (on behalf of the Trust) and the Project SPVs propose to enter into the Debt Documentation. For additional details, see "*Issue Structure*" on page 533.

Salient feature of the Secured Trust Financing

Nature and Purpose

The Secured Trust Financing shall be utilized solely for the purpose of repayment/prepayment, in part or full, of certain loans/facilities (including principal amounts, interest thereon and any other fees or charges payable in connection thereto) availed by the Project SPVs from their respective senior lenders/lenders;

Interest

Each issue of debt in relation to the Secured Trust Financing to each of the relevant Project SPVs shall carry an interest rate in the range of [●] % to [●] % per annum. The rate of interest may be revised by the Trust and the relevant Project SPV, with monthly rests.

Repayment/Redemption

The Secured Trust Financing given to each Project SPV shall be repayable/redeemable in accordance with the relevant Debt Documentation.

Security

The Secured Trust Financing, subject to receipt of consent from the existing senior lenders of the Project SPV, shall be secured by a first ranking *pari passu* charge over (a) all cash flows deposited in the relevant escrow account of the respective Project SPV established pursuant to the escrow agreement executed *inter alia* among the relevant Project SPV's, the lenders' representative and the NHAI; and (b) the relevant escrow account of such Project SPVs, which shall at all times be subordinated to the charge created in favour of the existing senior lenders of the respective Project SPVs.

Events of Default

The occurrence of the certain events under the Debt Documentation in relation the Secured Trust Financing after the expiry of the cure period of 30 days or such other time period as may be specified, from the date of occurrence of the same, shall result in an event of default under such Debt Documentation, including:

(a) Failure of the Project SPV to pay any repayment instalment, interest due, or any other payment to be made under the Debt Documentation on the relevant payment date or otherwise within a period of 30 (Thirty) days when such payment falls due.

(b) Breach of a covenant, undertaking, condition or any other obligation by the relevant Project SPV under the transaction documents and the same has not been remedied within 30 (thirty) days from the date of receipt of notice of default issued by the Lender to the Project SPV and the same results in a material adverse change.

(c) Any representation or statement made by the Project SPV in any transaction documents or any other document delivered by or on behalf of the Borrower under or in connection with any transaction document is or proves to have been incorrect or misleading in any material respect when made or results in a material adverse change.

(d) Appointment of a liquidator, receiver, administrative receiver, administrator, compulsory manager or other similar officer in respect of the Project SPV and results in a material adverse change and the same is not set aside within 90 (ninety) days.

(e) Failure by the Project SPV in obtaining any material licenses or clearances necessary for the project or any material licenses or clearances necessary for the Project SPV to carry on its business that is required at such particular time or if any of material licenses or clearances necessary for the project or necessary for the Project SPV to carry on its business required at a particular time are modified, amended, revoked, refused, not renewed before its expiry, withheld or does not remain in full force and effect, which results in a material adverse change;

(f) If the relevant Project SPV becomes subject of (i) any voluntary winding-up proceedings; or (ii) any involuntary proceedings under any law relating to winding up or bankruptcy or insolvency law and the Project SPV is unable to or has admitted in writing its inability to pay any of its financial indebtedness as they mature or when due or the proceedings taken against it have been commenced. Provided that, any such corporate action, legal proceedings or other procedure or step shall not constitute an event of default, if the Project SPV can establish to the satisfaction of the lender that such proceedings relate to a frivolous or vexatious claim which has already been dealt with, disposed of, discharged or otherwise withdrawn to the satisfaction of the lender, within 90 (ninety) days from the date of commencement of such proceedings and the same results in a material adverse change;

(g) Any corporate action, legal proceedings or other procedure or step is taken by any person in relation to (i) the suspension of payments, a moratorium of any indebtedness, insolvency, winding-up, dissolution or reorganisation (by way of voluntary arrangement, scheme of arrangement or otherwise) of the Project SPV, (ii) a composition, compromise, assignment or arrangement with any creditor of the Project SPV, including any corporate debt restructuring, or (iii) the appointment of a liquidator (other than in respect of a solvent liquidation of the Project SPV), receiver, administrator, compulsory manager or other similar officer in respect of the Project SPV or any of its assets, and such appointment is results in a material adverse change and has not been set aside within 90 (ninety) days;

(h) Any governmental agency or the Government of India, the NHAI or any related agency, instrumentality or department thereof has taken or has threatened to take any action to expropriate, condemn, nationalize or seize the project or whole or part of the assets of the Project SPV or the whole or substantially whole or part the project, resulting in the Project SPV being deprived or threatened to deprive to carry on its business or which will have a material adverse change on the operation of the business of the Project SPV; and

(i) Any litigation, arbitration, investigative or administrative proceeding is current or pending to restrain the Project SPV's entry into, the exercise of the Project SPV's material rights under, or compliance by the Project SPV with any of its material obligations under, the transaction documents or the Project SPV fails to comply with or pay any sum due from it under any final judgment or any final order made or given by a court of competent jurisdiction, and such litigation, arbitration, investigative or administrative proceeding results in a material adverse change.

(j) Any transaction document or any provision therein is or becomes invalid, illegal or unenforceable or is declared to be illegal or unenforceable or has been repudiated, revoked, cancelled, terminated, suspended or withdrawn any of the parties thereto have taken any action to challenge the validity or enforceability of such document or any extra-ordinary circumstances have occurred that may reasonably be construed to have made it improbable or unlawful for the Project SPV to perform any of its obligations under the transaction documents or any obligation under any transaction document is not or ceases to be a valid and binding obligation of the Project SPV or becomes void, illegal, unenforceable or is repudiated by the Project SPV, and such events result in a material adverse change.

(k) The relevant concession agreement being terminated by the Project SPV or the NHAI, in accordance with the terms of such concession agreement.

(l) The Project SPV suspends or ceases (or threatens to suspend or cease) to carry on all or a material part of its business and/or the project or the business of the Project SPV and/or the project is in jeopardy and/or

the authority of the Project SPV to conduct its business is wholly or partially curtailed, and the same results in a material adverse change.

(m) There is abandonment of the project by the relevant Project SPV and the same results in a material adverse change.

(n) Failure to create security within the time period specified in relevant Debt Documentation or such other extended period as acceptable to the Trust (acting in accordance with the Debt Documentation).

(o) If in the opinion of the Trust (acting in accordance with the Debt Documentation), the security is in jeopardy or ceases to have effect or if any transaction document including any security document executed or furnished by or on behalf of the relevant Project SPV becomes illegal, invalid, unenforceable or otherwise fails or ceases to be in effect or fails or ceases to provide the benefit of the security interests purported or sought to be created thereby or if any such transaction document shall be assigned or otherwise transferred, amended or terminated, repudiated or revoked without the approval of the Trust.

(p) If, in the opinion of the Trust (acting in accordance with the Debt Documentation), the value of the security depreciates to such an extent that the security does not provide adequate security for the secured obligations, and such depreciation in value is not remedied within 30 (thirty) days to the satisfaction of the Trust (acting in accordance with the Debt Documentation).

(q) The Project SPV defaults in the payment of any principal, interest, premium or other amount due (whether by scheduled maturity, mandatory prepayment, acceleration or demand) under any loan or credit agreement and/or defaults in the payments due under the any existing facility agreement or the occurrence of an event of default under the existing facility agreements of the Project SPV.

Upon the occurrence of any of the events above, the Trust may accelerate the Secured Trust Financing and declare all or any part of amounts outstanding under such Secured Trust Financing (including any interest accrued thereupon) due and payable, whereupon such amounts will become due and payable by the relevant Project SPV. In the event the Trust does not accelerate the repayment of the debt, the relevant Project SPV is required to continue to perform all its obligations under the relevant Debt Documentation and any such amounts would continue to accrue until repayment is made by the relevant Project SPV, when it has adequate resources to do so.

Ranking

The issue of debt by the Trust in relation to the Unsecured Trust Financing shall at all times remain subordinate to the debt owed by the relevant Project SPVs to the existing senior lenders of the Project SPV.

Governing Law

The Debt Documentation shall be subject to the laws of India.

Salient feature of the Unsecured Trust Financing

Purpose

The Unsecured Trust Financing shall be utilized solely for towards prepayment, in part, of the unsecured subordinate debt provided to such Project SPVs by the Sponsor, and the prepayment, in full, of the unsecured loans/advances provided to such Project SPVs by the Sponsor.

Interest

Each issue of debt in relation to the Unsecured Trust Financing to each of the relevant Project SPVs shall carry an interest rate in the range of [●] % to [●] % per annum. The rate of interest may be revised by the Trust and the relevant Project SPV.

Repayment/Redemption

The Unsecured Trust Financing given to each Project SPV shall be repayable in accordance with the relevant Debt Documentation in relation to the Unsecured Trust Financing.

Security

The Unsecured Trust Financing will be unsecured.

Events of Default

The occurrence of the certain events under the Debt Documentation in relation the Unsecured Trust Financing after the expiry of the cure period of 30 days or such other time period as may be specified, from the date of occurrence of the same, shall result in an event of default under such Debt Documentation, including:

(r) Failure of the Project SPV to pay Interest due, or any other payment to be made pursuant to these terms on the relevant date on which such amount is due and payable or otherwise within a period of 30 (Thirty) days when such payment falls due.

(s) Any representation or statement made by the Project SPV in any Transaction Documents or any other document delivered by or on behalf of the Project SPV under or in connection with the [*not complete*] is or proves to have been incorrect or misleading in any material respect when made or results in a material adverse effect on the Project SPV or the Project.

(t) Any representation or statement made by the Project SPV in any Transaction Documents or any other document delivered by or on behalf of the Project SPV under or in connection with this certificate is or proves to have been incorrect or misleading in any material respect when made or results in a material adverse effect on the or the Project.

(u) Appointment of a liquidator, receiver, administrative receiver, administrator, compulsory manager or other similar officer in respect of the Project SPV or a material part of its assets or undertakings and results in a material adverse effect on the Project SPV or the Project and the same is not set aside within 90 (ninety) days.

(v) If the Project SPV has become subject of: (i) any voluntary winding-up proceedings; or (ii) any involuntary proceedings under any law relating to winding up or bankruptcy or insolvency law and the Project SPV is unable to or has admitted in writing its inability to pay any of its Financial Indebtedness as they mature or when due or the proceedings taken against it have been commenced. Provided that, any such corporate action, legal proceedings or other procedure or step shall not constitute and Event of Default, if the Project SPV can establish to the satisfaction of the Holder that such proceedings relate to a frivolous or vexatious claim which has already been dealt with, disposed of, discharged or otherwise withdrawn to the satisfaction of the Holder, within 90 (ninety) days from the date of commencement of such proceedings and the same results in a material adverse effect on the Project SPV or the Project.

(w) The Debt Documentation for the Unsecured Trust Financing or any provision therein is or becomes invalid, illegal or unenforceable or is declared to be illegal or unenforceable or has been repudiated, revoked, cancelled, terminated, suspended or withdrawn any of the parties thereto have taken any action to challenge the validity or enforceability of such document or any extra-ordinary circumstances have occurred that may reasonably be construed to have made it improbable or unlawful for the Project SPV to perform any of its obligations under the finance or any obligation under the Debt Documentation for Unsecured Trust Financing is not or ceases to be a valid and binding obligation of the Project SPV or becomes void, illegal, unenforceable or is repudiated by the Project SPV, and such events result in a material adverse effect on the Project SPV or the Project.

(x) The Concession Agreement being terminated by the Project SPV or the NHAI, in accordance with the terms of the Concession Agreement.

(y) The Project SPV defaults in the payment of any principal, interest, premium or other amount due (whether by scheduled maturity, mandatory prepayment, acceleration or demand) under any loan or credit agreement and/or defaults in the payments due under the any existing facility agreement or the occurrence of an event of default under the existing facility agreements of the Project SPV.

Upon the occurrence of any of the events above, the Trust may accelerate the Unsecured Trust Financing and declare all or any part of the amounts outstanding under such Unsecured Trust Financing (including any interest accrued thereupon) due and payable, whereupon such amounts will become due and payable by the relevant Project SPV. In the event the Trust does not accelerate the repayment of the debt, the relevant Project SPV is required to continue to perform all its obligations under the relevant Debt Documentation and any such amounts would continue to accrue until repayment is made by the relevant Project SPV, when it has adequate resources to do so.

Governing Law

The Debt Documentation shall be subject to the laws of India.

Unit Holding Structure of the Trust

The table below provides details of the Unit holding structure of the Trust:

Sr. No.	Name of Unitholder	Pre-Issue Unit Holding[(1)] (Pre-Formation Transaction)		Pre-Issue Unit Holding (Upon-Formation Transaction)[(2)]		Units To Be Allotted in the Issue[(4)]		Post-Issue Unit Holding	
		No. of Units	As a % of the total outstanding Units	No. of Units	As a % of the total outstanding Units	No. of Units	As a % of the total outstanding Units[(3)]	No. of Units	As a % of the total outstanding Units[(3)]
1.	Reliance Infrastructure Limited	*Nil*	-	[●]	[●]	*Nil*	-	[●]	[●]
2.	Reliance Nippon Life Asset Management Limited	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
3.	IDBI Trusteeship Services Limited	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
4.	Public[#]	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
TOTAL		***Nil***	**-**	[●]	**100.00**	[●]	[●]	[●]	**100.00**

[(1)] As on the date of the Draft Offer Document

[(2)]The Units issued to the Sponsor pursuant to the Formation Transactions will be created post Bid/Issue Closing Date

[(3)]On a post-Issue basis

[(4)]To be updated after finalization of the Issue Price

Fees and Expenses

1. Fees and Expenses Payable to the Investment Manager

The proposed fee of the Investment Manager shall be equivalent to 1% per annum (plus applicable taxes) of the consolidated net toll revenue (after revenue share and premium payment to the concessioning authority) of the underlying projects in which the Trust, directly or indirectly, makes investments. In accordance with the terms of appointment of the Investment Manager, the amount payable to the Investment Manager per annum as management fee, exclusive of taxes, shall not exceed Rs. 250.00 million.

2. Fees and Expenses Paid or Payable to the Trustee

The trusteeship remuneration for the Trustee is as follows:

Particulars	Description
Acceptance Fee	Rs. 5.00 million plus applicable taxes (one-time payment, paid upfront, non-refundable)
Service Charges	Rs. 5.50 million p.a. plus applicable taxes pro rata service charges would become payable on the date of execution of the Indenture of Trust (September 12, 2016) for the pro-rata period from the date of execution of the Indenture of Trust till March 31, 2017; thereafter service charges are payable annually in advance on April 1 each year till full and final redemption/repayment of the funds to the Unitholders and the winding up of the Trust and termination of the Trusteeship arrangement
Delayed Payment Charges	In case the payment of service charges is not received within a period of 30 days from the date of the bill, the Trustee reserves the right to charge delayed payment charges of 12% p.a. on the outstanding amount
Reset Clause	The Trustee has the right to reset the service charges after expiry of two years from the date of execution of the Indenture of Trust
Out of Pocket Expenses	To be claimed by the Trustee on an actual basis
Invocation and Enforcement	Any other work relating to invocation and enforcement of the Trust Assets, in case of default, would attract separate expenses and fees

In case of late payment of the above fees, penal interest on the outstanding amount would be payable in accordance with the terms of the Indenture of Trust.

3. Fees and Expenses Payable to the Project Manager

In accordance with the Project Implementation Agreements, the fees and remuneration payable by the Project SPVs to the Project Manager shall be worked out and agreed upon for the duration of each financial year, between the Project Manager, Investment Manager and the respective Project SPV, on an arm's length basis, after taking into account the extent of work to be done in respect of maintenance and other services to be provided by the Project Manager to such Project SPV. Such fees shall be decided at least one month before the commencement of every financial year. Payments shall be released on a monthly basis, after deduction of applicable income taxes and after due certification for payment by the Project Manager. No additional charges will be paid by any Project SPV to the Project Manager for performing its duties under the Project Implementation Agreements.

4. Fees and Expenses Paid or Payable to the Valuers, Auditors and Any Third Party

The following table provides the fees and expenses payable by the Investment Manager and the Trustee (on behalf of the Trust) to the Valuers, Auditors and the Traffic Consultants:

Sr. No.	Particulars	Amount (Rs. in Millions)
1.	Fees payable to the Valuers in relation to the Valuation Report	4.50*
2.	Fees payable to the Auditors	5.00*
3.	Fees payable to the Traffic Consultants	9.70*

** Plus applicable taxes*

Set-up Costs

In connection with the establishment and registration of the Trust, the Sponsor has incurred Rs. 1.10 million in expenses. The Trust shall reimburse the Sponsor the aforesaid set-up costs incurred in relation to the establishment and registration of the Trust from the Net Proceeds.

INDUSTRY OVERVIEW

The information contained in this section is derived from various government and other industry sources. Neither we nor any other person connected with the Issue has independently verified this information. Industry sources and publications generally state that the information contained therein has been obtained from sources generally believed to be reliable, but that their accuracy, completeness and underlying assumptions are not guaranteed and their reliability cannot be assured. Industry publications are also prepared on information as of specific dates and may no longer be current or reflect current trends. Accordingly, investment decisions should not be based on such information. All references to years refer to calendar years except as otherwise stated.

- **Overview of the Indian Economy**

In 2015, India's population was approximately 1.25 billion, second only to China. India had an estimated GDP of approximately US$ 7.965 trillion in 2015, which made it the fourth largest national economy in the world after China, the European Union and the United States of America, in purchasing power parity terms *(Source: CIA World Factbook)*. In 2014, 2015 and 2016, India's gross domestic product ("**GDP**") based on purchasing power parity per capita was estimated at US$ 5,351.3, US$ 5,765.8 and US$ 6,187.2, respectively. *(Source: International Monetary Fund, World Economic Outlook, October 2016 ("**IMF Report**")).*

Overview of GDP Growth in India

India is one of the fastest-growing large economies worldwide. The Indian macroeconomic situation has improved appreciably in the recent years, with increased pace in economic expansion, moderation in retail inflation and narrowing of the current account and fiscal deficits. The pace of Indian GDP growth has recovered from a modest 5.6% in FY 2013 to 7.6% in FY 2016, led by fast-growing sectors such as industries with mixed trends across various states. *(Source: ICRA Report)*

Global Growth Trends

The global economic growth eased to 3.2% in 2015 from 3.4% in 2014, with similar trend expected to persist in 2016 followed by modest improvement in 2017. *(Source: IMF Report)* Specifically, the rate of expansion of economic activity in China, the Euro Area, the United States and the United Kingdom is expected to moderate in 2016 relative to the previous year, whereas the rate in India, the ASEAN-5 countries and Japan is expected to remain steady. *(Source: ICRA Report)*

The table below sets forth a comparison among various economies of their real GDP growth rate and projected GDP growth rate for the periods indicated:

	Real GDP growth rate					Projected GDP growth rate	
	2011	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
	(in percentage)						
India[1]	6.6	5.6	6.6	**7.2**	**7.6**	**7.6**	**7.6**
China	9.5	7.9	7.8	7.3	6.9	6.6	6.2
ASEAN-5[2]	4.7	6.2	5.1	4.6	4.8	4.8	5.1
Euro Area	1.5	(0.9)	(0.3)	1.1	2.0	1.7	1.5
Japan	(0.5)	1.7	1.4	0.0	0.5	0.5	0.6
United Kingdom	1.5	1.3	1.9	3.1	2.2	1.8	1.1
United States	1.6	2.2	1.7	2.4	2.6	1.6	2.2
World	4.2	3.5	3.3	3.4	3.2	3.1	3.4

Source: IMF Report

Note:

1 Actual and forecasts for India are on a fiscal basis.
2 Includes Indonesia, Thailand, Malaysia, the Philippines and Vietnam.

Growth Trends in India

In FY 2016, the growth of India's GDP and gross value added ("**GVA**") at basic prices rose to 7.6% and 7.2%, respectively, from 7.2% and 7.1%, respectively, in FY 2015. Subsequently, the growth of India's GDP (at constant FY 2012 prices) moderated to 7.1% in Q1 FY 2017 in year-on-year ("**YoY**") terms from 7.5% in Q1 FY 2016. *(Source: ICRA Report)*

The table below sets forth the growth in India's real GDP per certain component in percentage terms (at constant FY 2012 prices, YoY):

Components	Q1 FY 2016	Q2 FY 2016	Q3 FY 2016	Q4 FY 2016	Q1 FY 2017	FY 2015	FY 2016
			(in percentage)				
PFCE	6.9	6.3	8.2	8.3	6.7	6.2	7.4
GFCE	(0.2)	3.3	3	2.9	18.8	12.8	2.2
Exports	(5.7)	(4.3)	(8.9)	(1.9)	3.2	1.7	(5.2)
less Imports	(2.4)	(0.6)	(6.4)	(1.6)	(5.8)	0.8	(2.8)
GFCF	7.1	9.7	1.2	(1.9)	(3.1)	4.9	3.9
GDP	**7.5**	**7.6**	**7.2**	**7.9**	**7.1**	**7.2**	**7.6**

*Source: Central Statistics Office ("**CSO**"); ICRA Research*

The slowdown in Q1 FY 2017 was led by the contraction in gross fixed capital formation ("**GFCF**") in Q1 FY 2017, which reflects the de-growth in the output of capital goods and the capital expenditure of the government of India (the "**Government**") in Q1 FY 2017, as well as the sluggish investment activity by the private sector. Additionally, the growth of private final consumption expenditure ("**PFCE**") eased in Q1 FY 2017. In contrast, the government final consumption expenditure ("**GFCE**") expanded by 18.8% in Q1 FY 2017 on account of 27.9% growth of the Government's non-interest revenue expenditure, a turnaround relative to the contraction of 0.2% in Q1 FY 2016. Additionally, the increase in exports and contraction of imports in Q1 FY 2017 further curtailed the drag exerted on the pace of GDP expansion. *(Source: ICRA Report)*

The table below sets forth the growth in India's real GDP per sector in percentage terms (at constant FY 2012 prices, YoY):

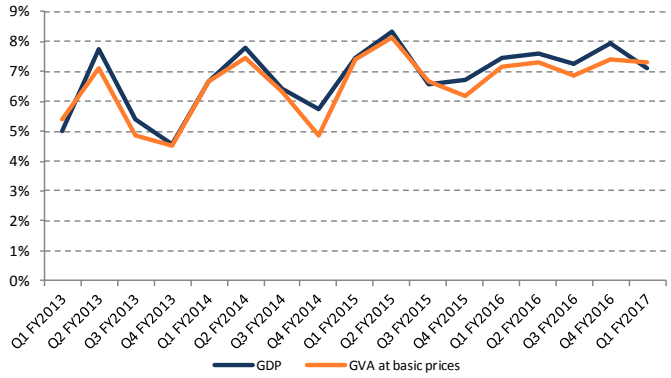
Components	Q1 FY 2016	Q2 FY 2016	Q3 FY 2016	Q4 FY 2016	Q1 FY 2017	FY 2015	FY 2016
			(in percentage)				
Agriculture, Forestry & Fishing	2.6	2.0	(1.0)	2.3	1.8	(0.2)	1.2
Industry	6.7	6.3	8.6	7.9	6.0	5.9	7.4
Services	8.8	9.0	9.1	8.7	9.6	10.3	8.9
GVA at basic prices	7.2	7.3	6.9	7.4	7.3	7.1	7.2
GVA ex-Agri	8.0	8.1	8.9	8.4	8.2	8.6	8.3

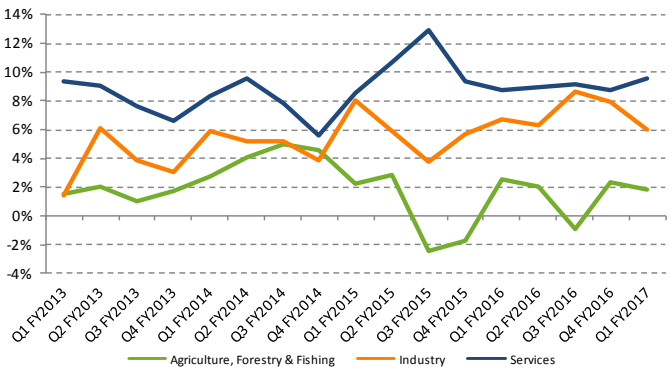
*Source: Central Statistics Office ("**CSO**"); ICRA Research*

- The growth of GVA at basic prices on YoY basis rose to 7.3% in Q1 FY 2017 from 7.2% in Q1 FY 2016, which was led by a pickup in growth in services to 9.6% from 8.8%, despite drop in growth in industry (to +6.0% from +6.7%) and agriculture, forestry and fishing (to +1.8% from +2.6%). The rise in service sector growth in Q1 FY 2017 compared to Q1 FY 2016 was led by the sharp growth in public administration, defence and other services and a marginal increase in growth of financial, real estate and professional services, which offset the correction in growth of trade, hotels, transport, communication and services related to broadcasting. The drop in

industry sector growth was due to poor performance of mining and quarrying and construction, despite an uptick in growth of manufacturing and electricity, gas, water supply and other utility services. *(Source: ICRA Report)*

The charts below illustrate (i) the growth in GDP and GVA at basic prices (at constant FY 2012 prices, YoY) and (ii) the growth in agriculture, industry and services sectors (at constant FY 2012 prices, YoY), respectively:





(Source: CSO; ICRA Research)

Growth Trends among the States in India

Economic growth varied among states, with a number of states showing a rise in growth from FY 2013 to FY 2015. A few of the smaller states have displayed the fastest growth during the period, the five fastest growing states being Mizoram, Tripura, Gujarat, Jharkhand and Karnataka. Based on the early estimates for FY 2016, the following 8 states are expected to display growth greater than 8%: Andhra Pradesh, Arunachal Pradesh, Jharkhand, Madhya Pradesh, Meghalaya, Tamil Nadu, Telangana and Uttarakhand. *(Source: ICRA Report)* For more information relating to the states where the Projects are implemented, please see "*— Overview of Project States*".

- **Overview of the Road Sector in India**

Transportation sector accounts for around 6.5% of India's GDP. Road transportation, dominant of the transportation sector, accounts for approximately 4.7% of India's GDP and has deep linkages with the rest of the economy. *(Source: ICRA Report)*

Road Networks in India

India has the second largest road networks in the world, with approximately 5.23 million km of roads comprising (i) national highways, (ii) state highways and (iii) major district roads and rural roads. *(Source: ICRA Report)* As at March 2016, the Indian road network by category is as set forth below:

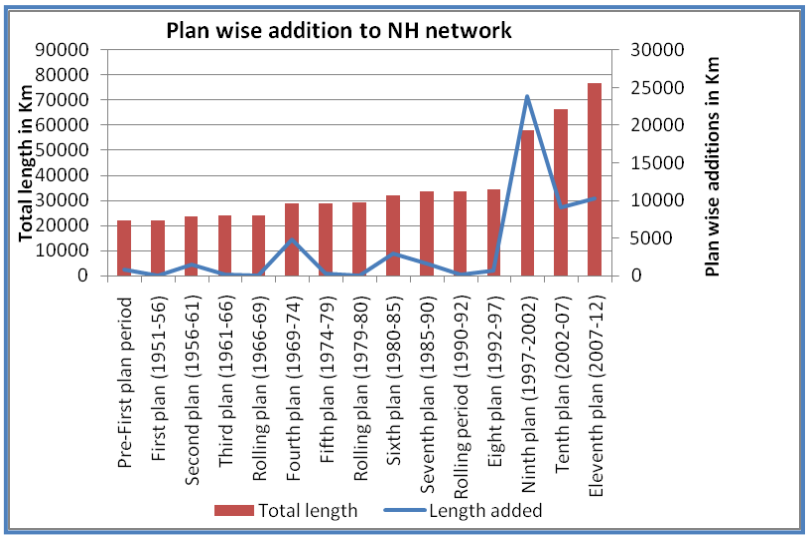
Type of Road	Length (in km)	% of total Indian road network
National highways	100,475	1.9%
State highways	148,256	2.8%
Major district roads and rural roads	4,980,000	95.2%
Total	**5,230,000**	**100.0%**

*Source: Ministry of Road Transport and Highways ("**MoRTH**")*

- ***National highways***: India's national highways carry approximately 40% of the total road-based traffic despite constituting only 1.9% of the total road network. They have grown considerably to address rapid expansion of passenger and freight traffic under the national highways development programme ("**NHDP**"). *(Source: Twelfth Five Year Plan)* During the first 50-year period between 1947 and 1997,

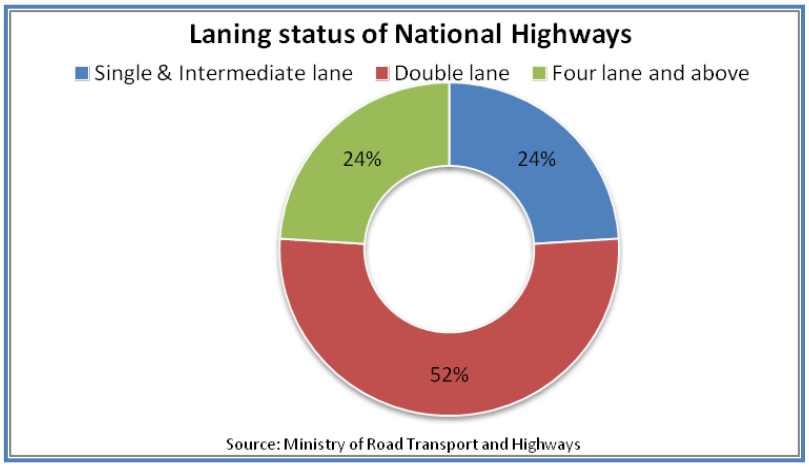
the network experienced a slow growth with a low CAGR of 0.99%. The largest expansion of the network was during the Ninth Five Year Plan period (1997 to 2002) at 23,814 km. Over the last 15 years, there has been considerable growth in the national highways network. *(Source: ICRA Report)*

The table below sets forth the addition to the road network per plan:



(Source: MoRTH)

The laning status of the national highways in India as of March 2013 is as set below:



(Source: MoRTH)

As approximately 76% of India's national highways have less than four lanes which cause heavy congestion and poor riding quality, transporters continue bearing additional costs. *(Source: ICRA Report)*

- **State highways and major district roads**: India's state highways and major district roads together constitute a secondary system of road transportation and contribute significantly to the development of India's rural economy and industrial growth. *(Source: ICRA Report)* They carry about 40% of the total road traffic in India. . (*Source: Twelfth Five Year Plan (2012-2017), Economic Sectors, Volume II ("**Twelfth Five Year Plan**") and the NHAI website at www.nhai.org/roadnetwork.htm*) The state highways connect national highways, district headquarters of the states and major towns, tourist centres and minor ports. Approximately 65% of the state highways have less than two lanes. The major district roads connect to the national highways and state highways, the districts, areas of production with markets, and rural areas to the district headquarters. Approximately 90% of the major district roads have less than two lanes. *(Source: ICRA Report)*

Regulatory Framework

The Ministry of Road Transport and Highways ("**MoRTH**") is generally responsible for construction and maintenance of national highways in India, with the National Highways Authority ("**NHAI**") responsible for development, maintenance and management of certain national highways and related matters. Any roads in India other than national highways are governed by their respective state governments.

Ministry of Road Transport and Highways

The MoRTH (previously the Ministry of Shipping, Road Transport and Highways) is responsible for (i) construction and maintenance of national highways; (ii) administration of the Motor Vehicles Act, 1988 and the Central Motor Vehicles Rules, 1989; (iii) formulation of policies relating to road transport; and (iv) making arrangements for cross-border movement of vehicular traffic with neighbouring countries. *(Source: ICRA Report)*

A majority of the national highways projects are implemented under the NHDP, while the MoRTH also runs other programmes such as the National Highway Interconnectivity Improvement Programme. In addition, in order to assist the State Governments in the development of state roads, the MoRTH provides financial assistance out of the Central Road Fund and Inter State Connectivity and Economic Importance scheme. The MoRTH also runs programmes which cover national highways as well as certain state roads, such as the special accelerated road development programme for North-East ("**SARDP-NE**"), Arunachal Pradesh programme and Left Wing Extremism programme. *(Source: ICRA Report)*

- ***National Highways Authority of India***

- Constituted by the National Highways Authority of India Act, 1988, the NHAI is responsible for the development, maintenance and management of national highways entrusted to it and for any related matters. NHAI is in charge of the implementation of the NHDP. *(Source: ICRA Report)*

- **National Highways Development Programme**

To address rapid expansion of passenger and freight traffic in India, the Government has launched the NHDP in 1998 as one of the initiatives to upgrade and strengthen national highways. *(Source: Twelfth Five Year Plan)*

The table below illustrates the details and the latest status of each phase under the NHDP and other NHAI projects as of July 31, 2016:

NHDP	Total Length	Already 4 or 6-laned	Under Implementation	Contracts Under Implementation	Balance length for award
	(km)	*(km)*	*(km)*	*(No.)*	*(km)*
Golden Quadrilateral (GQ)[1]	5,846	5,846	-	-	-
NS-EW Phases I & II[2]	7,142	6,465	420	35	257
Port Connectivity	435	379	56	6	-
NHDP Phase III	11,809	7,032	3,135	75	1,642
NHDP Phase IV[3]	13,203	2,550	5,581	82	5,072
NHDP Phase V	6,500	2,439	721	24	3,340
NHDP Phase VI	1,000	0	165	8	835
NHDP Phase VII	700	22	98	4	580
NHDP Total.....	46,200	24,354	10,120	228	11,726
Others NHs	1,844	1,690	155	9	-
SARDP –NE	110	105	5	1	-
Total.....	**48,589**	**26,528**	**10,336**	**245**	**11,726**

*Source: National Highways Authority of India ("**NHAI**"), ICRA research, as of July 31, 2016*

Notes:

[1] The Golden Quadrilateral connects four metropolitan cities Delhi, Mumbai, Chennai and Kolkata.

[2] The North South corridor connects Srinagar to Kanniakumari whereas the East West corridor connects Porbandar to Silchar.

[3] A total of 20,000 km was approved under NHDP Phase IV of which 14,799 km are assigned to NHAI with the remaining length with MoRTH.

The NHDP is implemented in the following seven phases with an estimated expenditure of Rs. 6,000 billion covering approximately 54,500 km:

- *NHDP Phase I (completed)*: With estimated cost of Rs. 303 billion (at 1999 prices), Phase I involves four-laning of 7,522 km in total of national highways in India, constituting 5,846 km of the Golden Quadrilateral ("**GQ**"), 981 km of NS-EW corridors, 380 km of Port Connectivity and 315 km of other national highways. Approximately 88% of the projects under Phase I have been awarded on a cash contract basis and the remaining 12% on Build-Operate-Transfer ("**BOT**") basis. Phase I was completed during FY 2014.

- *NHDP Phase II (90% complete, 6% under implementation, 4% (257km) to be awarded)*: With an estimated cost of Rs. 343 billion (at 2002 prices), Phase II involves a total length of 6,647 km of national highways in India, constituting mostly of North-South and East-West ("**NS-EW**") corridor (6,161 km) and other national highways of 486 km. Approximately 67% of the projects under phase II have been awarded on cash contract basis and remaining 33% on BOT basis.

- *NHDP Phase III (60% complete, 27% under implementation, 13% (1,642 km) to be awarded)*: With an estimated cost of Rs. 806 billion (at 2006 prices), Phase III aims to (i) provide connectivity of state capitals with NHDP Phase I and II and (ii) connect centres of tourism and places of economic importance. Phase III involves four- and six-laning of 11,809 km in total of national highways in India. Most of the projects under phase III have been awarded on BOT (toll) basis and to a less extent on BOT (annuity) and cash contracts basis. Specifically, 8,716 km (86%) were awarded on BOT basis, of which 7,198 km (83%) were on BOT (toll) basis, 1,364 km (16%) on BOT (annuity) basis and the remaining 154 km (1%) on a BOT (Hybrid Annuity Mode ("**HAM**")) basis.

- *NHDP Phase IV (19% complete, 42% under implementation, 39% (5,072 km) to be awarded)*: With an estimated cost of Rs. 278 billion (at 2006 prices), Phase IV involves two-laning of 20,000 km in total of national highways in India and aims to upgrade them with paved shoulders on public private partnership ("**PPP**") basis. The projects under phase IV are mostly awarded on BOT basis. Specifically, approximately 3,896 km (48%) out of 8,131 km awarded were on a BOT basis of which 2,794 km (72%) were on BOT (toll), 676 km (17%) on BOT (HAM) and remaining 426 km (11%) on BOT (annuity) basis. Due to lower traffic volumes, the projects under Phase IV are less attractive compared to those under Phase III and V.

- *NHDP Phase V (28% complete, 35% under implementation, 51% (3,340 km) to be awarded)*: With an estimated cost of Rs. 412 billion (at 2006 prices), Phase V involves six-laning of 6,500 km in total of national highways in India of existing four-lane highways, including 5,700km of GQ and 1,800 km of other national highways. Most of the projects under phase V have been awarded on a design, build, finance and operate ("**DBFO**") basis. As it covers high traffic density areas with tolling during construction, the projects under Phase V are the most attractive for developers.

- *NHDP Phase VI (0% complete, 16.5% under implementation, 83.5% (835 km) to be awarded)*: With an estimated cost of Rs. 167 billion (at 2006 prices), Phase VI involves development of 1,000 km fully access controlled expressways on PPP basis, including those connecting Valdodara-Mumbai (400 km), Bangalore-Chennai (334 km), Delhi-Meerut (66 km) and Kolkata-Dhanbad (277 km). Most projects under phase VI have been awarded on DBFO basis.

- *NHDP Phase VII (3% complete, 14% under implementation, 83% (580 km) to be awarded)*:With an estimated cost of Rs. 167 billion (at 2007 prices), Phase VII involves construction of standalone ring roads, bypasses, grade separators, flyovers, elevated roads, tunnels, road over-bridges, underpasses and service roads. Most projects under phase VII have been awarded on BOT (toll) basis.

(Source: ICRA Report)

- ***Financing of NHDP***

The NHDP is financed through various channels, such as by the following:

- Government of India's Gross Budgetary Support ("**GBS**") and Additional Budgetary Support ("**ABS**");
- Dedicated accruals under the Central Road Fund (share in the levy of cess on fuel) allocated through Union Budget;
- Toll revenue and premium, including toll collection, negative grant, premium and revenue share deposited by NHAI into Consolidated Fund of India and equivalent amount released to the NHAI for development, maintenance and management of the National Highways entrusted to it;
- Private financing under PPP frameworks via BOT (toll), BOT (annuity) or SPV, with equity participation by the NHAI;
- Market Borrowings by the NHAI as authorised by the GOI to bridge the gap between the available resources and funds required; and
- External Assistance in respect of international institutions (e.g., World Bank; ADB; JBIC) funded projects allocated through the Union Budget.

The total fund allocation to NHDP under the Twelfth Five Year Plan is estimated at Rs. 3,238 billion of which share of private sector is expected to be Rs. 1,667 billion (51%), with remaining Rs. 1,571 billion (49%) through budgetary allocations. *(Source: ICRA Report)*

Other Road Development Programmes

Investments in state highways and major district roads

During the Twelfth Five Year Plan, for the state highways, (i) 10,000 km are proposed to be upgraded to four or six lanes; (ii) 30,000 km to be upgraded to two lanes; and (iii) 35,000 km to undergo quality improvement and (iv) 8,500 km new state highways will be added. The total investment requirements towards development of the state highways during the period is estimated at Rs. 3,135 billion, of which Rs. 2,168 billion (69% of the total investment) is proposed to be funded through budgetary allocations and the remaining Rs. 967 billion (31%) through private sector participation. *(Source: ICRA Report)*

For the major district roads, at least 50% of the major district roads that have fewer than two lanes (approximately a total length of 238,049 km) are proposed to be widened to two lanes in the next 20 years. During the Twelfth Five Year Plan, for the major district roads, (i) 25,000 km are proposed to be upgraded to two lanes and (ii) 70,000 km to undergo quality improvement. The total investment requirements towards development of the major district roads during the period are estimated at Rs. 1,500 billion, all of which will be funded by budgetary allocations. *(Source: ICRA Report)*

The table below sets forth the investments in state highways and major district roads during the Twelfth Five Year Plan for the periods indicated:

Mode	Investments between 2012 and 2017
	(*in Rs. billions*)
Total (state highways).....	**3,135**
Budgetary allocation	2,168
Private sector investment	967
Total (major district roads).....	**1,500**
Budgetary allocation	1,500
Total (state highways and major district roads)	**4,635**
Total (budgetary allocation)	3,668 (79%)
Total (private sector investments)	967 (21%)

Source: Working group report, Planning commission; ICRA research

Pradhan Mantri Gram Sadak Yojana ("PMGSY")

During the Twelfth Five Year Plan, approximately Rs. 1,450 to 1,530 billion will be invested to complete the remaining projects under PMGSY. During the Tenth and Eleventh Five Year Plans, more than Rs. 1,000 billion was invested to expand the rural road network. During the Twelfth Five Year Plan, a total of 50,000 km has been approved for upgrades under the second phase of PMGSY ("**PMGSY-II**"), which aims to connect smaller habitations ranging from 100 to 250 in population. Unlike the first phase of PMGSY, which was sponsored by the Government in entirety, the investments under PMGSY-II will be sponsored by the Government and the state, each contributing 50%. *(Source: ICRA Report)*

Special Accelerated Road Development Programme ("SARDP-NE") for North-East and Arunachal Pradesh Package of Roads and Highways ("APPRH")

Road development initiatives in the Northeast region of India are covered under the SARDP-NE. The total length of the national highways in the Northeast region is 9,613 km. *(Source: ICRA Report)*

Phase A of SARDP-NE targets improvement of approximately 4,099 km of the roads in the region, including the national highways (2,041 km) and state highways and other roads (2,058 km), out of which 892 km (22%) was completed during the previous periods. Remaining 3,207 km is expected to be completed by March 2017. *(Source: ICRA Report)*

Phase B of SARDP-NE covers 3,723 km of the roads and will be implemented during the Twelfth Five Year Plan. The APPRH involves development of approximately 2,319 km of roads, including the national highways (1,472 km) and state highways and other roads (847 km). *(Source: ICRA Report)*

The funding requirement for the completion of 9,249 km as part of the above programmes from GBS (including estimated annuity payments to be made to the concessionaires) is estimated at Rs. 612.09 billion. A majority of the funding requirement will be through budgetary allocations, of which the public investments account for 92% and private sector investments account for the remaining 8%. *(Source: ICRA Report)*

The table below sets forth the investments in SARDP-NE (including APPRH) during the Twelfth Five Year Plan for the periods indicated:

Mode	Investments between 2012 and 2017
	(*in Rs. billions*)
Phase A (including APPRH)	343.83
Phase B	269.26
Total Investments under SARDP-NE (including APPRH) ...	**612.09**
Private investments	51.35 (8%)
Public investments.....	560.74 (92%)

Source: ICRA research

Bharatmala Project

Under the Bharatmala project, the Government plans to construct approximately 23,000 km of roads. The project aims to connect coastal and border areas in India. The funding requirement under the Bharatmala project is expected to be over Rs. 2 trillion, the majority of which is expected to be funded by the Government. *(Source: ICRA Report)*

PPP Framework and Various Modes of National Highways Awards

The NHAI generally relies on outsourcing of developmental activities including design, construction, supervision, operation and maintenance of highways. The common modes of project implementation adopted by the NHAI are as follows:

- ***Engineering Procurement and Construction ("EPC") Mode***: Under EPC mode, the project activities, including design and construction, are awarded to private sector concessionaires for a lump sum price through competitive bidding process.

- ***BOT mode on toll basis ("BOT (toll)")***: Under BOT (toll) mode, the project activities are awarded to the private sector concessionaires through competitive bidding process on the basis that they construct and upgrade the project stretch and in return are entitled to collect and retain toll revenues for a certain concession period.

- ***BOT mode on Annuity basis ("BOT (annuity)")***: Under the BOT (annuity) mode, the project activities are awarded to the private sector concessionaires through competitive bidding process on the basis that they construct and upgrade the project stretch and in return are entitled to receive fixed periodic annuity payments, which are generally paid semi-annually.

- ***Operate, Maintain and Transfer ("OMT")***: Under the OMT mode, which was introduced by the NHAI in 2009 to address budgetary restraints for hiring separate agencies for (i) operation and management and (ii) tolling, the private sector concessionaires are responsible for (i) operation and maintenance of the project stretch; (ii) toll collection, (iii) construction of other project facilities (e.g., toll plaza); and (iv) any other major maintenance work on need basis.

- ***Hybrid Annuity Model ("BOT (HAM)")***: Under BOT (HAM) mode, which is a hybrid of BOT (annuity) and EPC mode, the private sector concessionaires will receive funding support in the form of 40% of the project cost during construction and subsequently in form of semi-annual annuities during the remaining tenure of the concession. The traffic risk will be borne by the Government.

(Source: ICRA Report)

The table below sets forth the risk allocation framework for various modes of the PPP:

Mode	Development Risk	Financing Risk	Traffic Risk	Burden on government
EPC.....	Concessionaire	Government	Government	Yes
BOT (toll).....	Concessionaire	Concessionaire	Concessionaire	Yes (in case of grant-based projects); No (in case of premium-based projects)
BOT (annuity).	Concessionaire	Concessionaire	Government	Yes[1]
OMT.....	No development except for minor project facilities (e.g., toll plaza)	Concessionaire	Concessionaire	No
BOT (HAM).....	Concessionaire	Concessionaire	Government	Yes[2]

Source: ICRA research

Notes:

1 Some of the stretches are tolled by NHAI, but annuity payments generally exceed the toll collections.
2 40% of the project cost determined by the developer.

Tolling Policy

In India, levying toll on national highways was launched by the Government in 2000 expanding with the implementation of NHDP. Tolling in India differs from the other developed economies in the following points:

- Under the "closed system", toll is charged on the basis of the distance travelled with toll plaza at every entry and exit of the tolled road. India has adopted an "open system" instead whereby fee payable is a fixed amount, calculated for the entire stretch being tolled but not on the basis of the distance actually travelled.

- Alternative road (generally toll free) is oftentimes available in many countries whereas in India, such option is generally not available.

- The toll rates in India are relatively lower than those of other countries in terms of actual value (Rs./km) but higher when viewed in the context of per capita income.

(Source: ICRA Report)

At present, the toll on national highways is being levied and collected in accordance with the provisions of the National Highways Act, 1956 and National Highway Fee Rules, 2008 ("**Fee Rules 2008**"). The first toll policy was announced in 1997 ("**Fee Rules 1997**") and after a decade, following a review, after which a new toll policy was announced in 2008. *(Source: ICRA Report)*

The comparison between these two toll policies is given below:

Mode	National Highway Fee Rules, 1997	National Highway Fee Rules, 2008
Tollable stretches	All sections of the National Highways having four or more lanes, bridges and newly constructed bypasses.	Two-lane highways[1] with paved shoulders, under NHDP Phase-IV were also classified under tollable stretches.
Vehicle classification	Type 1 Car/Jeep/Van Type 2 Light Commercial Vehicles Type 3 Truck or Bus Type 4 Heavy Construction Machinery ("**HCM**") and Earthmoving Equipment ("**EME**") Note: Multi axle vehicles were not separately classified. Instead, they were tolled under Type 3 in case of public funded projects and at rates higher than Type 3 in case of BOTs.	Type 1 Car/Jeep/Van Type 2 LCV/Mini Bus Type 3 Truck or Bus Type 4 HCM/EME/multi axle vehicles (three to six axles) Type 5 Oversized vehicles (seven or more axles)
Base rate of fee (in Rs./km)	Type 1 0.40 Type 2 0.70 Type 3 1.40 Type 4 3.00	Type 1 0.65 Type 2 1.05 Type 3 2.20 Type 4 3.45 Type 5 4.20 (For two-lane roads with paved shoulders on which investment for up-gradation exceeded Rs. 10,000,000 per km, the rate is fixed at 60% of base rate given above.)
Toll rate capping	A ceiling for fee rate per km has been prescribed (as given above) for public-funded projects giving rise to demand by various stakeholders to levy toll at a rate less than the capping rate	Instead of capping rates, the toll rate is fixed for each category.

Mode	National Highway Fee Rules, 1997	National Highway Fee Rules, 2008
	resulting in differential rates for different stretches.	
Revision in toll rate	Linked to wholesale price index.	Fixed and variable components for revision were introduced. Base toll rate increased by 3% every year, without compounding. Additionally, to neutralise the impact of the variable cost of operation and maintenance, 40% of annual increase in wholesale price index ("**WPI**") has been provided.
Frequency of revision	Annually for BOT projects and once in five years for public-funded[2] projects.	Annual revision for both BOT and public-funded projects.
Variation between BOT and public-funded projects	High variation in rates, concessions and exemptions.	BOT and public funded projects were synchronised in terms of rates, concessions and exemptions.

Source: ICRA research

Notes:

1 On which investment for up gradation exceeded Rs. 10,000,000 per km.
2 Funded by NHAI.

Further in December 2013 and January 2014, the following key amendments were made to the Fee Rules 2008:

- In case of a section of a four-lane highway which has been taken up for an upgrade to six-laning, the increase in rate of fee shall be limited to 75% of the fee rate under the Fee Rules 2008, calculated on and from the date of commencement of the work relating to the upgrade, till the date of completion of the project according to the agreement entered into with the concessionaire without any annual revision. No user fee shall be levied for the delayed period between the date of completion as per the agreement entered into with the concessionaire and the date of actual completion of the project. For the purposes of this rule, any provisional completion of the project shall not be treated as completion of the project;

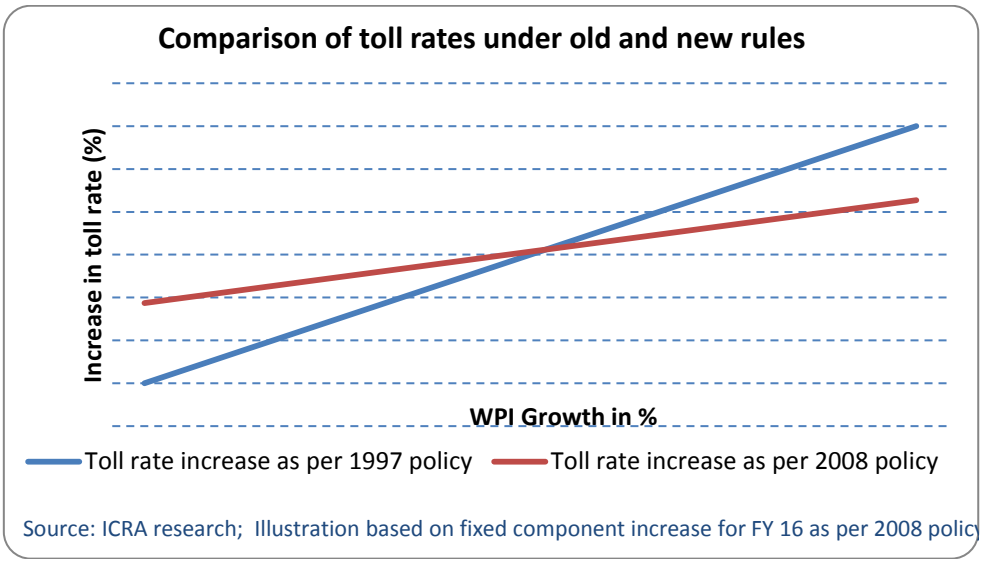
- The base rate of fee for use of an expressway shall be 1.25 times the base rate under the Fee Rules 2008;

- The rate of fee for use of standalone structure as well as any structure forming part of a linear highway or expressway shall be calculated by converting the length of structure into an equivalent length of highway or expressway by multiplying by ten. Provided the length of the structure is less than or equal to 60 metres, it will be considered as a part of the normal length of a highway or expressway; and

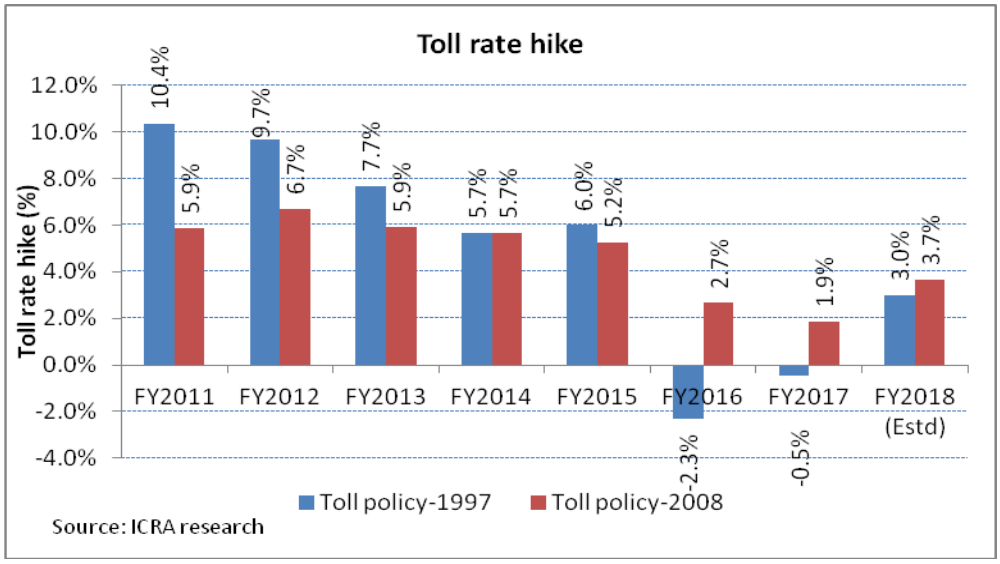
- The base rate of fee for use of a section of a national highway, having two lanes with paved shoulders and above but below four-lane on which substantial improvement has been made by widening carriageway by three metres or more, shall be 60% of the base rate under the Fee Rules 2008.

(Source: ICRA Report)

The chart below illustrates the comparison of the increase in toll rates under the Fee Rules 1997 and the Fee Rules 2008, respectively:



The chart below illustrates the comparison of toll rate hike under the Fee Rules 1997 and the Fee Rules 2008, respectively, for the periods indicated:



The toll fee payable by each category of vehicles is specified in the concession agreement between NHAI and the developer in line with the toll policy applicable at that point in time. The toll fees are revised annually to adjust for inflation, as determined by the movement in the WPI, which links the revenues of developers to movements in the WPI. *(Source: ICRA Report)*

The revision in the rate for projects that were bid prior to 2008 is fully linked with the WPI, whereas for the projects that were after post 2008, the rate hike is calculated as 3% (fixed increase every year on base toll rate) plus 40% of the WPI. While the benefit of high inflation are not fully reflected for the latter, in case of a low

inflation (i.e., WPI growth less than 5%), such projects are better off due to the fixed rate of 3%. *(Source: ICRA Report)*

Negative WPI had an impact on the projects during FY 2016 and FY 2017. For the projects of which toll rates are linked fully with the WPI, the toll rates were revised downwards as a result. For other projects, the increases in the toll rates were 2.7% and 1.9% in FY 2016 and FY 2017, respectively. Under low inflation case, the profitability of the toll road projects is adversely affected. *(Source: ICRA Report)*

Modes of Funding for NHAI

The NHAI receives its funding from the Government in the form of capital base, cess fund, additional budgetary support, capital grant, maintenance grant and toll revenue. In addition, it also raises funds and loans from the Government, multilateral agencies and market borrowings by the following channels:

- ***GBS and ABS***;

- ***Dedicated accruals under the Central Road Fund***: The share from cess on fuel is one of the major contributors of funding for the NHAI. The Government has, under the Central Road Fund Act, 2000, created a non-lapsable dedicated fund for the NHDP by levying cess on high-speed diesel and petrol at the rate of Rs. 6.00 per litre (increased from Rs. 2.00 per litre in FY 2016 budget) out of which a part is allocated for national highways. However, the allocation from the Central Road Fund to the NHAI was at Rs. 121.53 billion in FY 2017 lower than Rs. 229.20 billion in FY 2016.

- ***Ploughing back of toll revenue and negative grant***: The NHAI has completed projects funded through toll revenues from the contractors. It also receives negative grant, i.e., an upfront payment payable by successful bidder to NHAI, and revenue share and premium in projects with higher traffic volumes. The revenues collected from projects are provided to the Government, which ploughs them back for the development and maintenance of the national highways. In FY 2016, the total amount ploughed back is estimated at approximately Rs. 65.00 billion.

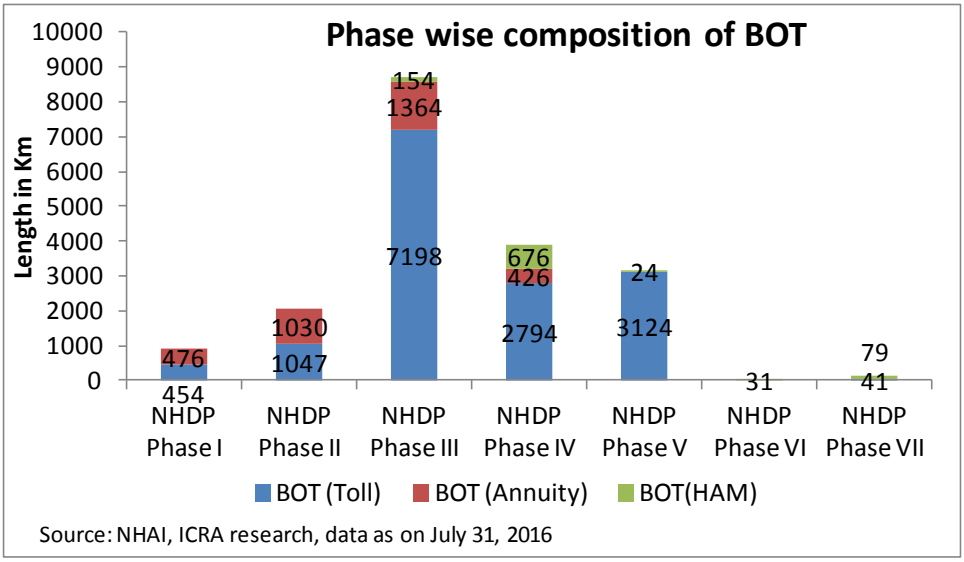
- ***Market borrowing, including (i) funds raised through capital gain tax exemption bonds under section 54EC and (ii) long-term tax free bonds***: In accordance with Section 54 EC of the Income-Tax Act, 1961, the NHAI is authorised to issue capital gain exemption bonds wherein eligible investors can claim exemption by investing the component of long term capital gains, either wholly or in part in these bonds, within six months of the transfer of the asset. The funds are mobilised on a tap basis, which have a maximum investment limit of Rs. 5 million in one financial year for each eligible investor with a lock-in of three years from the deemed date of allotment. Under this option, the NHAI can raise up to Rs. 50.00 billion every year. The NHAI is also authorised to issue long term tax-free bonds wherein eligible investors can claim exemption of coupon earned on the bonds. The NHAI had previously issued Rs. 100.00 billion worth of tax-free bonds in January 2012 and Rs. 50.00 billion in January 2014. The NHAI has recently received approval to raise funds of up to Rs. 240.00 billion through tax-free bonds in FY 2016.

- ***Lending by international institutions***: the NHAI may also raise funds by borrowing from international institutions such as World Bank, Asian Development Bank and Japan Bank for International Cooperation.

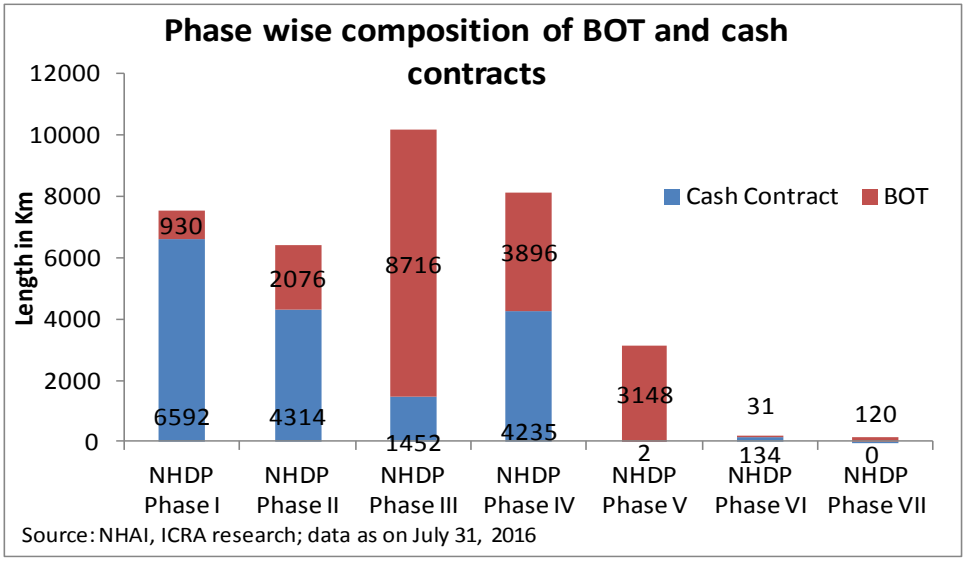
  (Source: ICRA Report)

NHAI Award Mix

The charts below set forth the distribution of the projects per phase by length (i) on BOT (toll), BOT (annuity) and BOT (HAM) basis and (ii) on BOT and cash contracts basis, respectively:

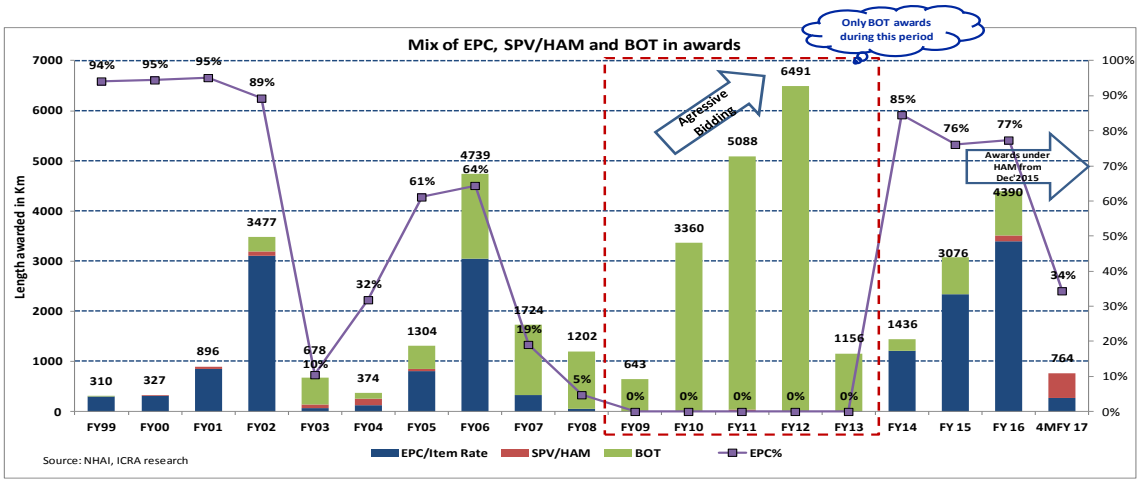


(Source: NHAI, ICRA research, as of July 31, 2016)



(Source: NHAI, ICRA research, as of July 31, 2016)

The chart below sets forth the distribution of the projects by length on EPC, BOT (HAM) or special purpose vehicle ("**SPV**") and BOT (toll and annuity) basis for the periods indicated:



(Source: NHAI, ICRA research, as of July 31, 2016)

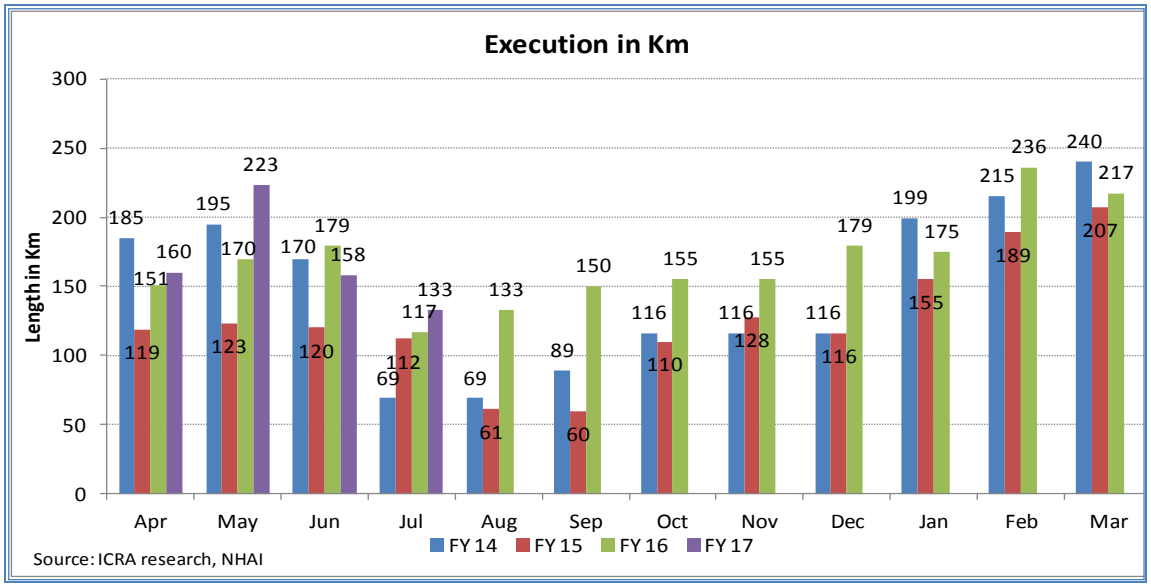
A majority of the projects awarded under the NHDP phase I and II were under the EPC mode with very few projects awarded under PPP. From FY 1998 to FY 2005, only 10% of the total awards were through BOT mode. Starting from phase III in FY 2006, a large number of projects were awarded under BOT mode. From FY 2009 to FY 2012, the projects under BOT mode in the road sector received aggressive participation by private players. However, the aggressive bidding, coupled with highly leveraged balance sheets and strained profitability of the road developers had made it difficult for the developers to achieve financial closure for them. Further, weak capital markets and stressed valuations had made raising equity capital extremely difficult for most of the developers. In addition, most of the awards were made without securing the requisite right of way, resulting in an inordinate delay in execution which adversely affected the execution and developers' profitability. As a result, participation in the BOT segment witnessed a significant slowdown. Consequently, the award rate declined from FY 2013 followed by an increase in projects awarded on EPC basis. More than 70% of the total awards by the NHAI between FY 2014 and FY 2016 were awarded on EPC basis. *(Source: ICRA Report)*

NHAI Award and Execution

Since 2014, the Government focused on addressing execution bottlenecks, such as: (i) awarding projects after securing 80% right of way; (ii) speedy resolution of stuck projects, (iii) delegating the powers for grant of forest clearances to the regional offices; (iii) allowing online filing for clearances to construct road over bridges (ROB) and road under bridges (RUB); and (iv) and increasing limits on sand mining. To make encumbrance-free land available more speedily, the NHAI has delegated powers to regional officers to demolish structures on right of way and shifting of utilities.

These efforts have yielded positive results, including an increase of 43% in the pace of the execution rate to 5.53 km per day in FY 2016 from 4.11 km per day in FY 2015. More recently, the pace of execution increased by 9% in 4M FY 2017 to 5.52 km per day from 5.06 km per day in 4M FY 2016. *(Source: ICRA Report)*

The chart below sets forth the pace of execution in km per day for the periods indicated:



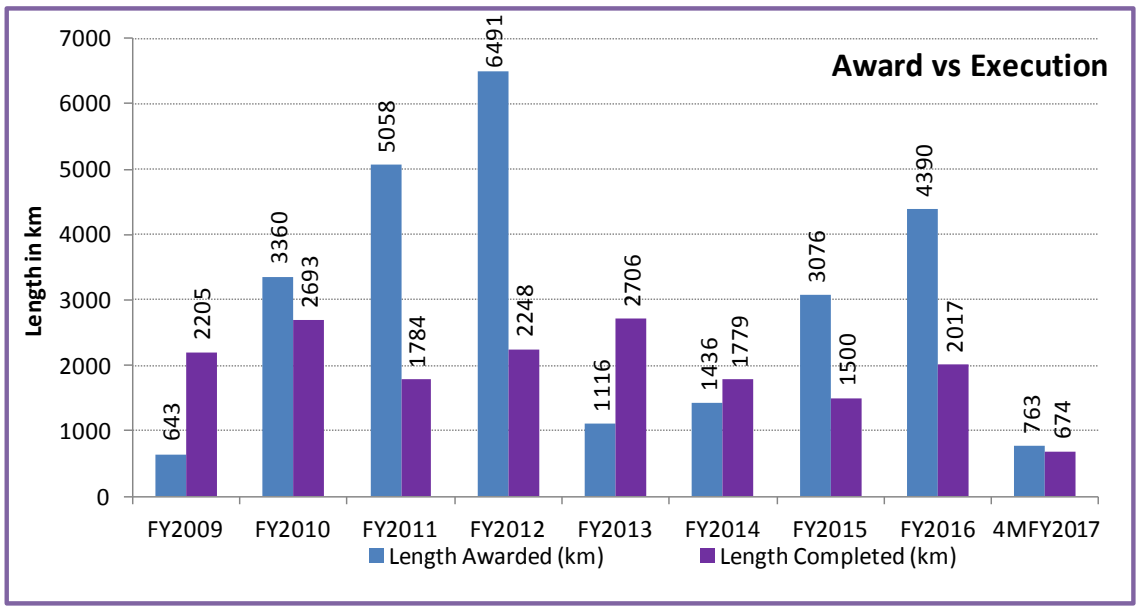
(Source: NHAI, ICRA research, as of July 31, 2016)

Until FY 2014, the mode of project award was determined based on the waterfall mechanism, at the sequence of the BOT (toll), followed by the BOT (annuity) and then the EPC, depending on the traffic density along the project stretch. This process slowed down the awards due to weak private sector participation. *(Source: ICRA Report)*

Currently, the committee headed by the Secretary of the MoRTH may decide on the mode of project awards. Further, upfront land acquisition and clearance from the Ministry of Environment and Forests and larger proportion of EPC contracts have increased the interest of developers and contractors in road projects. As a result, the awards by the NHAI during FY 2016 have increased by 43% to 4,390 km from 3,076 km in FY 2015. *(Source: ICRA Report)*

During FY 2016, the percentages of awards on EPC, BOT (toll), BOT (HAM) and SPV basis were 77%, 20%, 2% and 1%, respectively. *(Source: ICRA Report)*

The chart below sets forth the comparison between the projects awarded by length and the projects completed by length for the periods indicated:



(Source: ICRA Report)

During FY 2016, the percentages of the awards on EPC, BOT (toll/annuity), BOT (HAM) and SPV basis were 77%, 20%, 2% and 1%, respectively. A sizeable portion of the awards in FY 2017 are expected to be made through the HAM mode, which could garner a favorable response from contractors and developers in the private sector. *(Source: ICRA Report)*

The table below sets forth the percentages of awards per mode for the periods indicated:

Mode	FY 2014	FY 2015	FY 2016
	(%)	*(%)*	*(%)*
EPC	85%	76%	77%
BOT (toll/annuity)	15%	24%	20%
BOT (HAM)	-	-	2%
Others (SPV)	-	-	1%

Source: ICRA research

During 4M FY 2017, 15 projects totalling 764 km were awarded, compared to 1,541 km during 4M FY 2016. Out of the 15, 10 projects totalling 501.2 km, which constitute 66% of the total awards, were awarded on BOT (HAM) basis and the remaining five projects totalling 262.7 km (34% of total awards) were awarded on EPC basis. As of July 31, 2016, 19 projects worth Rs. 156.62 billion and totaling 846.54 km were awarded through the BOT (HAM) mode. *(Source: ICRA Report)*

The table below sets forth the number of projects, length and costs per mode as of July 31, 2016:

Mode	Length in km	Number of projects	Costs in billion Rs.
EPC	2,485	39	231.31
BOT (toll)	1,003	10	109.02
BOT (HAM)	3,127	47	489.08
Total	**6,615**	**96**	**829.41**

Source: ICRA research

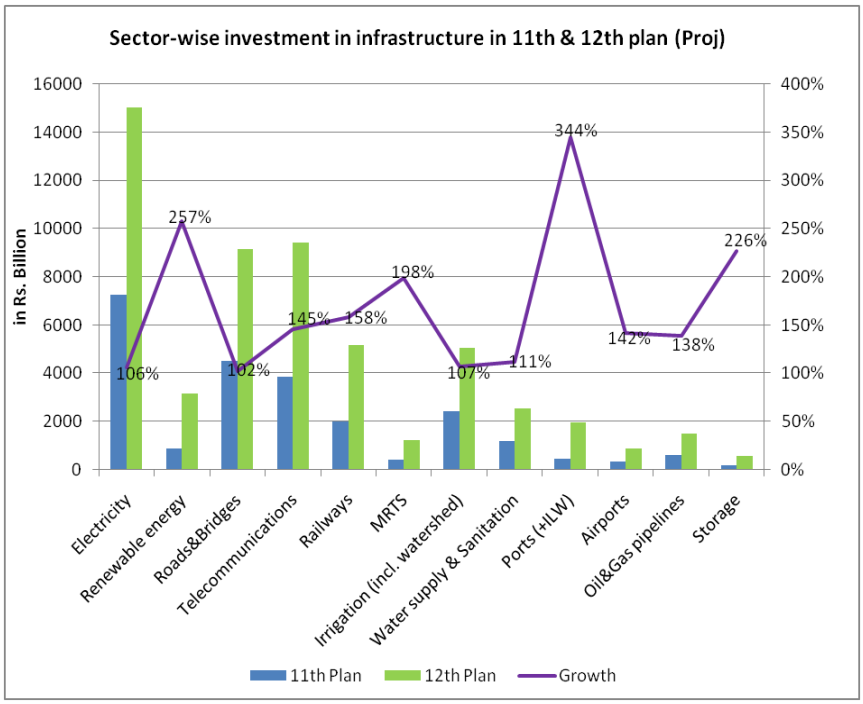
The Twelfth Five Year Plan

With regard to the road sector, the main targets of the Twelfth Five Year Plan include (i) completing (x) Phase III of the NHDP for inter-district roads and other roads under the programme and (y) Phase IV of the NHDP that aims to convert single-lane roads to double lane roads; (ii) setting specific targets for Phase V of the NHDP, which involves the conversion of the Golden Quadrilateral to a six-lane road; (iii) upgrading the national and state highways to a minimum two-lane standard; and (iv) connecting all villages by all-weather roads. *(Source: Twelve Five Year Plan)*

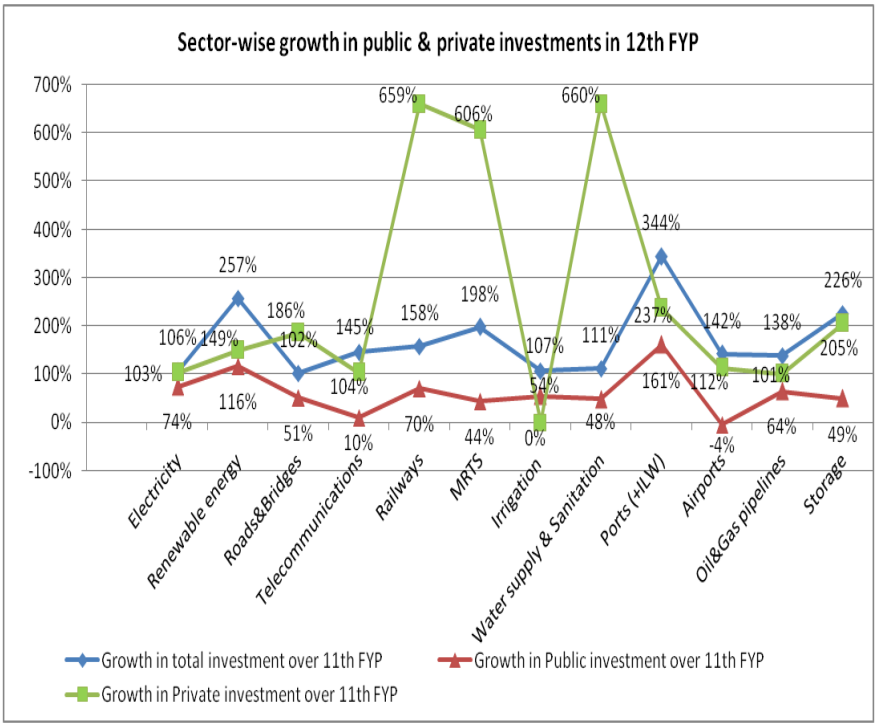
The total investments in infrastructure during the Twelfth Five Year Plan are targeted at Rs. 55,750 billion, which are more than twice the size of investments made during the Eleventh Five Year Plan. The investments in roads and bridges during the Twelfth Five Year Plan (16%) are the third largest only after electricity and telecommunications, which constitute 27% and 17% of the total investments, respectively. Although the share of the investments in the road and bridges sector has a percentage of total infrastructure has decreased to 16% as against 19% in the Eleventh Five Year Plan, the size of the investments nearly doubled during the Twelfth Five Year Plan. *(Source: ICRA Report)*

The total investment in roads and bridges under the Twelfth Five Year Plan is expected at Rs. 9,200 billion, of which public sector and private sector contributions are expected at approximately 68% and 32%, respectively. *(Source: ICRA Report)*

The amounts and percentages of the investments in infrastructure per sector in the Eleventh and Twelfth Five Year Plan and the growth in public and private investments in infrastructure per sector in the Twelfth Five Year Plan are as set forth below, respectively:



(Source: ICRA Report)



(Source: ICRA Report)

Distribution of Investments in the Road Sector

The total planned investments during the Twelfth Five Year Plan for national highways, state highways, major district roads and village roads (to be developed under the PMGSY) are approximately 36%, 34%, 16% and 14%, respectively. *(Source: ICRA Report)*

For private sector investments, PPP for national highways is expected to be high, which is expected to constitute approximately 51% of the total investment. For state highways, PPP is estimated to be approximately 31%. There is no PPP for major district roads and PMGSY. *(Source: ICRA Report)*

For government investments, national highways are predominantly funded by the Centre. Major district roads and PMGSY are proposed to be funded by the respective state governments. PMGSY is solely funded by the Centre. *(Source: ICRA Report)*

Key policy Changes and Recent Initiatives

In the recent years, the Government has enacted several policy reforms to boost investment in the infrastructure by addressing execution delays, project cancellations, stuck projects, loss of lenders' confidence, leveraged balance sheets of developers and sluggish traffic growth. In addition, the Government has taken initiatives to further revive languishing projects. *(Source: ICRA Report)*

For example, in November 2015, the Cabinet Committee on Economic Affairs ("**CCEA**") authorised NHAI to pay compensation to concessionaires in cases of delays not attributable to them which aimed to revive certain languishing BOT toll and annuity projects. Also, CCEA allowed segregation of civil construction cost from capital cost of national highways projects for appraisal and approval, allowing MoRTH to clear a number of projects without having to seek approval of the CCEA. In October 2015, the NHAI made approximately Rs. 37 billion of one-time funding available, for which 18 projects covering 1,428 km were eligible. In September 2015, the NHAI modified Circular No. NHAI/11033/CGM (FA)/4/2015 to permit 100% equity divestment after two years of construction completion for all BOT projects, irrespective of the year of award. During the same period, certain clauses of the Model Concession Agreement have been amended to promote BOT and EPC projects. *(Source: ICRA Report)*

Overview of Project States

Detailed information in relation to the economy and road sector of the states where the Projects are located is set out as below:

States	Economy and Road Sector Information
Gujarat	Gujarat's economy[1] grew at a CAGR of 13.1% from FY 2005 to FY 2015, exceeding the national average of 12.6%. The average contributions of the industry, services and agriculture sectors to the Gujarat economy[1] from FY 2005 to FY 2015 were approximately 42%, 43% and 15%, respectively. Motor vehicles registered in Gujarat increased at a CAGR of 9.0% from FY 2006 to FY 2013, lower than the national average of 10.7%. Total road length in Gujarat grew by 27.1%, which is less than half of the national average of 60.9%. The proportion of surfaced roads remained relatively unchanged, at approximately 90% of the total road length in Gujarat. The road density in FY 2012 (832.3 km per 1,000 square km) was significantly lower than the national average (1,480.1 km per 1,000 square km) on account of stretches of desert and marshland in Gujarat.
Haryana	Haryana's economy[1] grew at a CAGR of 13.4% from FY 2005 to FY 2015, exceeding the national average of 12.6%. The average contributions of the industry, services and agriculture sectors to the Haryana economy[1] from FY 2005 to FY 2015 were approximately 31%, 49% and 20%, respectively. Motor vehicles registered in Haryana increased at a CAGR of 11.5% from FY 2006 to FY 2013, higher than the national average of 10.7%. Total road length in Haryana grew by 61.5% which was in line with the national average of 60.9%. The proportion of surfaced roads was 93.4% in 2015, improving from 90.5% in 2005. The road density in FY 2012 (964.4 km per 1,000 square km) remained lower than the national average

States	Economy and Road Sector Information
	(1,480.1 km per 1,000 square km), on account of large tracts of farmland in Haryana.
Maharashtra.....	Maharashtra's economy[1] grew at a CAGR of 12.5% from FY 2005 to FY 2015, in line with the national average of 12.6%. The average contributions of the industry, services and agriculture sectors to the Maharashtra economy[1] from FY 2005 to FY 2015 were approximately 32%, 58% and 10%, respectively. Motor vehicles registered in Maharashtra increased at a CAGR of 10.1% from FY 2006 to FY 2013, slightly lower than the national average of 10.7%. Total road length in Maharashtra in contrast nearly tripled between 2005 and 2015, which exceeds the national average of 60.9%. The proportion of surfaced roads was 77.5% in 2015, deteriorating from 79.4% in 2005. The road density in FY 2012 (1,289.4 km per 1,000 square km) remained lower than the national average (1,480.1 km per 1,000 square km).
Rajasthan.....	Rajasthan being the largest state in India, Rajasthan's economy[1] grew at a CAGR of 14.3% from FY 2005 to FY 2015, exceeding the national average of 12.6%. The average contributions of the industry, services and agriculture sectors to the Rajasthan economy[1] from FY 2005 to FY 2015 were approximately 31%, 45% and 24%, with a relatively higher share of agriculture and lower contribution of services sector than national average, respectively. Motor vehicles registered in Rajasthan increased at a CAGR of 11.3% from FY 2006 to FY 2013, higher than the national average of 10.7%. Total road length in Rajasthan grew by 65.7% between 2005 and 2015, which exceeds the national average of 60.9%. The proportion of surfaced roads was 78.5% in 2015, enhanced from 67.3% in 2005. The road density in FY 2012 (726.4 km per 1,000 square km) remained lower than the national average (1,480.1 km per 1,000 square km) on account of the large stretches of desert and low population density in Rajasthan.
Tamil Nadu	Tamil Nadu's economy[1] grew at a CAGR of 14.7% from FY 2005 to FY 2015, exceeding the national average of 12.6%. The average contributions of the industry, services and agriculture sectors to the Tamil Nadu economy[1] from FY 2005 to FY 2015 were 32%, 58% and 10%. Motor vehicles registered in Tamil Nadu increased at a CAGR of 9.7% from FY 2006 to FY 2013, lower than the national average of 10.7%. Total road length in Tamil Nadu grew by 48.2% between 2005 and 2015, which was less than the national average of 60.9%. The proportion of surfaced roads was 80.5% in 2015, enhanced from 78.7% in 2005. The road density in FY 2012 (1,770.0 km per 1,000 square km) was significantly higher than the national average (1,480.1 km per 1,000 square km).

Source: NHAI website at www.nhai.org/roadnetwork.htm

- Note:

[1] Economic growth is measured in terms of gross state domestic product divided by the gross domestic product at factor cost for FY 2005 to FY 2012 and gross state value added divided by gross value added at basic prices for FY 2013 to FY 2015.

THE TRUST'S BUSINESS

This chapter should be read in conjunction with, and is qualified in its entirety by, the more detailed information about us, our Financial Information, including the notes thereto, in the chapters "Risk Factors", "Financial Statements", "Industry Overview" and "Management's Discussion and Analysis of Financial Condition and Results of Operation" on pages 16, 355, 138 and 463, respectively.

Overview

We are a registered infrastructure investment trust under the InvIT Regulations. We primarily intend to own, operate and maintain a portfolio of ten toll-road assets in the Indian states of Maharashtra, Karnataka, Gujarat, Rajasthan, Haryana and Tamil Nadu. These toll roads are operated and maintained pursuant to concessions granted by either the NHAI or, in the case of the Gurgaon Faridabad Project, the HPWD.

Our Sponsor is Reliance Infrastructure Limited, a private sector infrastructure development and construction company with a market capitalization of over Rs.127,077.00 million as of December 12, 2016 (*Source: www.bseindia.com*). The Sponsor has been listed on the Stock Exchanges since 1995. Excluding the toll-road assets that are being transferred by the Sponsor to us pursuant to the Formation Transactions (as described below), the Sponsor has one more toll-road asset, DA, which is currently under construction. For more information, please see the section headed "- *The Delhi-Agra Project*" and "*Parties to the Trust – The Sponsor*" in this Draft Offer Document.

We will acquire an initial portfolio comprising the Project SPVs, all of which are currently either wholly or majority owned by the Sponsor, subject to the receipt of requisite approvals.

The Formation Transactions

The Trustee (on behalf of the Trust) intends to acquire the equity shares of the Project SPVs after the Bid/Issue Closing Date and prior to the Allotment in the Issue (for each such Project SPV, the "**Acquisition Date**"). Subject to the receipt of requisite approvals, the Trust intends to acquire 100% of the equity shares in each of DS, GF, HK, JR, KM, NK, PS, SU, TD and TK. However, the Sponsor currently holds only 74% of the equity shares of PS and its ability to acquire the residual 26% of the equity shares from the other shareholder of PS, and consequently, its ability to transfer any additional equity shares of PS (post-acquisition from the other shareholder of PS) to the Trust, is subject to the approval of NHAI.

As consideration for the acquisition of the equity shares of the Project SPVs, the Trust will issue Units to the Sponsor on or around the Acquisition Date. The Securities Purchase Agreements for each Project SPV will be executed after the Bid/Issue Closing Date and prior to the Acquisition Date. Pursuant to the Securities Purchase Agreements, the Sponsor has undertaken to complete the construction works remaining in respect of certain Project SPVs. For additional information about the Formation Transactions, please see the section headed "*About the Trust – Background and Structure of the Trust – Formation Transactions*" in this Draft Offer Document.

There are certain other agreements that the Trustee on behalf of the Trust intends to enter into with the Sponsor and other parties, such as the ROFO and Future Assets Agreement. These will be executed on or about the Acquisition Date. For further information on the ROFO and Future Assets Agreement, see the sections headed "- *The Delhi-Agra Project*" and "*Related Party Transactions – Details of Related Party Transactions Proposed to be Undertaken* - ROFO and Future Assets Agreement" in this Draft Offer Document.

As of September 30, 2016, the Project SPVs owned, operated and maintained the following toll road assets comprising 723.09 km of constructed and operational roads and 45.95 km of roads under construction:

- the Dindigul Samayanallore Project: an approximately 53.05 km section of NH 7 between Dindigul and Samayanallore in Tamil Nadu, which is held by DS;

- the Namakkal Karur Project: an approximately 41.37 km section of NH 7 between Namakkal and Karur in Tamil Nadu, which is held by NK;

- the Salem Ulundurpet Project: an approximately 136.36 km section of NH 68 between Salem and Ulundurpet in Tamil Nadu, which is held by SU;

- the Trichy Dindigul Project: an approximately 87.27 km section of NH 45 between Trichy and Dindigul in Tamil Nadu, which is held by TD;

- the Hosur Krishnagiri Project: an approximately 59.87 km section of NH 7 between Hosur and Krishnagiri in Tamil Nadu, which is held by HK;

- the Trichy Karur Project: an approximately 61.35 km section of NH 67 between Trichy and Karur in Tamil Nadu, which is held by TK;

- the Jaipur Reengus Project: an approximately 51.84 km section of NH 11 between Jaipur and Reengus in Rajasthan, which is held by JR;

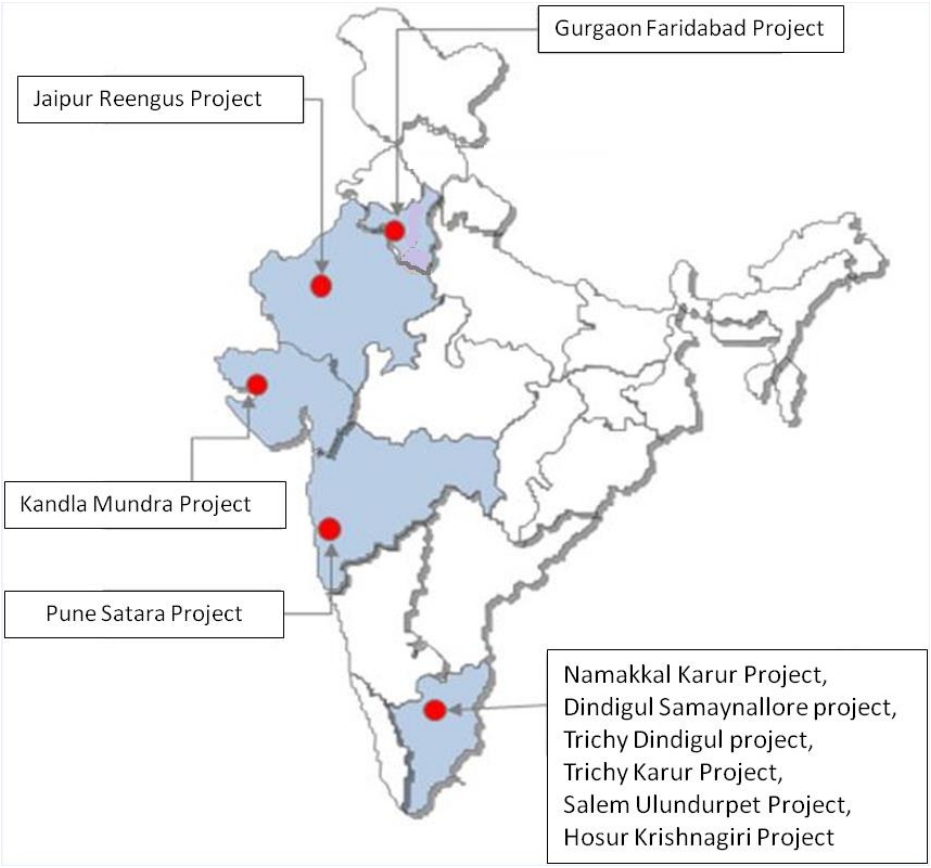
- the Gurgaon Faridabad Project: an approximately 66.19 km section in Gurgaon and Faridabad in Haryana, including stretches of Crusher Zone Road, Pali-Bhakri Road, Ballabgarh-Lukhawas junction Road and MCF road, which is held by GF;

- the Kandla Mundra Port Project: an approximately 71.40 km section of NH-8A (Extension) between Gandhidham (Kandla) and Mundra Port in Gujarat, which is held by KM and of which 55.80 km is operational; and

- the Pune Satara Project: an approximately 140.35 km section of NH 4 between Pune and Satara in Maharashtra, which is held by PS and of which 110.0 km is operational.

The Project SPVs' total income on a combined historical basis for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and September 30, 2016 was Rs. 15,829.30 million, Rs. 11,812.58 million, Rs. 13,457.53 million and Rs. 7,177.07 million and Rs. 5,424.27 million, respectively. For more information about the Combined Financial Statements of the Project SPVs, please see the sections headed "*Financial Statements*" and "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" in this Draft Offer Document.

The following map depicts the location of the Initial Road Assets:



Our Investment Manager is Reliance Nippon Life Asset Management Limited, a subsidiary of Reliance Capital Limited. The Investment Manager meets the prerequisite experience under the InvIT Regulations. The Investment Manager's investment strategy for the Trust Group is to maintain and operate the Initial Road Assets, generate returns to unit holders on a regular and long term basis, achieve long-term growth in the net asset value per Unit and diversify the risk across different geographies and assets. For more information about the Investment Manager, please see the section headed "*Parties to the Trust – The Investment Manager*" in this Draft Offer Document.

The Trustee, the Investment Manager and the respective Project SPVs have appointed the Sponsor to act as the Project Manager for each Project SPV. The Sponsor has experience in constructing, operating and maintaining road projects in accordance with the terms of concession agreements. For more information about the Project Manager, please see the section headed "*Parties to the Trust – The Project Manager*" in this Draft Offer Document.

The Sponsor has appointed IDBI Trusteeship Services Limited to act as the sole trustee of the Trust. The Trustee is registered with the SEBI as a debenture trustee under the Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993. For more information about the Trustee, please see the section headed "*Parties to the Trust – The Trustee*" in this Draft Offer Document.

In addition to the Initial Road Assets that are being transferred by the Sponsor to the Trust pursuant to the Formation Transactions, the Sponsor (through its wholly owned subsidiary DA) also operates the Delhi-Agra Project, which is an approximately 179.50 km section of NH 2 between Delhi and Agra, in the state of Haryana/Uttar Pradesh. As of September 30, 2016, six-laning of 137 km out of a total project stretch of 179.50 km has been completed. The Trust (acting through the Trustee) will enter into the ROFO and Future Assets Agreement with the Sponsor to enable the Trust to acquire the Delhi-Agra Project upon the completion of certain milestones. For further information on the ROFO and Future Assets Agreement, see the section headed "- *The Delhi-Agra Project*" and "*Related Party Transactions – Details of Related Party Transactions Proposed to be Undertaken* - ROFO and Future Assets Agreement" in this Draft Offer Document.

Further, pursuant to the ROFO and Future Assets Agreement, the Sponsor has agreed to provide us with a right of first offer with respect to Future Assets and a right of first refusal with respect to Future Mature Assets located

in India which may be set up, acquired or developed by the Sponsor or its existing or future subsidiaries, limited liability partnerships or other entities that are controlled by or under common control with the Sponsor. For a more detailed description of these rights, please see the section headed "*Related Party Transactions*" in this Draft Offer Document.

In addition, the Trust (acting through the Trustee) intends to enter into the Debt Documentation with the Project SPVs after the Bid/Issue Closing Date and prior to Allotment. For more information, please see the section headed "*Use of Proceeds*" on page 79 in this Draft Offer Document.

Competitive Strengths

We believe that our competitive strengths are as follows:

Portfolio of income generating assets in key growth markets

Upon completion of the Formation Transactions, we will own 100% of the equity shareholding of DS, GF, JR KM, NK, HK, SU, TK and TD and 74% of the equity shareholding in PS. PS has applied for, but has not yet received approval from the NHAI for the transfer of 26% of its shareholding held by Jiangsu Provincial Transportation Engineering Group Company Limited. If the NHAI grants such approval, 100% of the shareholding of PS will be transferred to the Trust. Each of these Project SPVs owns, operates and maintains a toll-road project in India.

The following table sets forth the Project SPVs' income from toll collection on historical basis for the periods indicated:

(Rs. millions)

	For the six months ended September 30,		For the financial year ended March 31,		
Project	**2015**	**2016**	**2014**	**2015**	**2016**
Dindigul Samayanallore Project	303.25	314.66	521.74	568.94	586.78
Namakkal Karur Project	163.85	164.61	279.46	324.45	319.60
Salem Ulundurpet Project	416.93	449.78	569.04	772.60	824.65
Trichy Dindigul Project	151.22	165.16	280.63	285.70	290.04
Hosur Krishnagiri Project	592.53	622.96	958.55	1,168.20	1,173.02
Trichy Karur Project	264.17	271.72	48.32	460.44	506.42
Jaipur Reengus Project	209.51	222.44	253.55	410.57	438.54
Gurgaon Faridabad Project	289.27	323.77	463.99	507.08	604.07
Kandla Mundra Project	Nil	389.84	Nil	Nil	296.58
Pune Satara Project	1,045.61	1,122.00	1,728.28	1,923.64	2,123.86

We believe that the Initial Road Assets have growth potential due to expected growth in traffic volumes as a result of regional growth and expected increases in toll fees as a result of inflation adjustments. For more information, please see the "Traffic Reports" included in Annex C and the "*Revenue, Profit and Cash Flow Projections*" included in Annex A to this Draft Offer Document. For a discussion of the historic financial performance of each of the Initial Road Assets, please see the section headed "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" on page 463 in this Draft Offer Document.

Diversified, urban-focused road project portfolio and revenue base

The Initial Road Assets consist of a mix of operational road projects that connect urban areas across several states in India. We believe that the geographic diversity of the Initial Road Assets will play a significant role in developing our experience and expertise, including our ability to evaluate, acquire, operate and maintain new projects.

The Initial Road Assets are generally located near or connect cities and urban areas in India. For example, the Pune Satara Project in Maharashtra, which was our largest Initial Road Asset based on toll revenue for the financial year 2016, forms part of the Mumbai to Bengalaru to Chennai segment of the "golden quadrilateral" on NH 4. The Hosur Krishnagiri Project also forms part of the "golden quadrilateral". Further, the Kandla-Mundra Port Project connects two major ports in west India. The project caters to traffic generated and destined for the Kandla and Mundra Ports. Mundra Port is the largest commercial port of India by total throughput and has strong operational capabilities, according to the ICRA report, facilitating smooth operations in all environments at the port. According to the KM Traffic Report, both the Kandla and Mundra ports have development plans to expand and enhance the infrastructure facilities and the growth in port traffic is expected to lead to natural growth of traffic on the Kandla Mundra Port Project where 70% of the traffic along this project corridor is MAV in nature, which is significantly higher than most other NH stretches.

The Project SPVs' concession agreements are also temporally diverse in that they commenced and are expected to expire at different times. The concession agreements' residual terms range between approximately nine and 21 years as of September 30, 2016.

We believe that our geographically and temporally diverse project portfolio and our expertise leveraged from existing projects provides us with an advantage in capitalizing on new opportunities available in the roads and highways sector. We believe that this diversification strengthens our business by reducing our reliance on any specific project and reducing the potential impact on our business of any economic slowdown or force majeure event or with respect to any particular project.

Further, all of our projects are located near or connect cities and urban areas. The expected economic growth in various states in India, particularly where our projects are located is expected to increase traffic volumes in these areas. Further, the NHAI has launched initiatives to upgrade and improve the quality of and upgrade national highways in order to address the expansion of passenger and freight traffic in India. The Investment Manager expects that these increases in traffic volume will provide us with a stable toll income base going forward. For more information, please see "*Traffic Reports*" included in Annex C and "*Revenue, Profit and Cash Flow Projections*" included in Annex A and the section "*Industry*" on page 110 in this Draft Offer Document.

Experienced Sponsor, Investment Manager and Project Manager with consistent track records in operating and maintaining projects in the roads and highways sector in India

Our Sponsor is a infrastructure development and construction company in India with a market capitalization of over Rs. 127,077.00 million as of December 12, 2016 (*Source: www.bseindia.com*). Our Sponsor has interests in energy, metro rail, infrastructure, EPC and defence projects. In the energy sector, our Sponsor, along with its associates and subsidiaries, engages in power generation, transmission, trading and distribution. Our Sponsor, along with its subsidiary, also bids for and implements airport projects and has won lease rights to develop and operate five brown-field regional airports in Maharashtra. Our Sponsor has received various industry recognitions, such as the "Best Infrastructure Brand" in 2016 by the Economic Times and the "Best Metro of India" for Mumbai metro in 2016 by the Indian Merchant Chambers.

The Investment Manager is a subsidiary of Reliance Capital Limited, which is an Associate of the Sponsor. The Investment Manager is one of the largest asset managers in India. The Investment Manager's average assets under management for the quarter ended September 30, 2016 was Rs. 1,831,288.56 million, according to the website of the Association of Mutual Funds in India *(Source: https://www.amfiindia.com/research-information/aum-*

data/average-aum). The Investment Manager possesses more than 20 years of experience in fund management and advisory services, where it has a diversified business that includes mutual funds, portfolio management services and investment advisory services. Its clients include retail investors and large institutional clients.

Our Sponsor is also our Project Manager. It has experience in the execution of construction work for roads, highways, and other relevant structures. Our Sponsor had a team of 42 persons to support its roads operations as of September 30, 2016.

Low leverage upon Listing, providing debt capacity to finance future growth

We expect to use the Net Proceeds to repay and replace a portion of the Project SPVs' existing indebtedness. We believe that the resulting low leverage will provide us with debt capacity to grow our business, including by financing future acquisitions. We intend to finance future development and acquisitions through the issuance of additional Units, as well as through bank borrowings and other indebtedness, subject to the borrowing limits contained in the InvIT Regulations. We believe that our low leverage will provide us with a significant advantage over our competitors in developing and acquiring projects that meet our investment objectives.

Experienced management team with industry experience

We will be managed by qualified personnel of the Investment Manager who have management and operational experience in the fund management or advisory services, as well as personnel with experience in the roads and highways sector. In addition, our projects will be managed by qualified personnel of the Project Manager. For further details, see the sections headed "*Parties to the Trust – The Investment Manager*" and "*Parties to the Trust – The Project Manager*" in this Draft Offer Document. We believe that the experience and leadership of these teams will contribute to our growth and success and will position the Initial Road Assets to be operated and managed in an efficient manner.

Growth opportunities and access to Sponsor's portfolio

Through our relationship with the Sponsor, we will have access to a pipeline of potential acquisitions. In addition to the toll-road assets that are being transferred by the Sponsor to the Trust pursuant to the Formation Transactions, the Sponsor (through its wholly owned subsidiary DA) also operates the Delhi-Agra Project, which is a 179.50 km section of NH 2 between Delhi and Agra. As of September 30, 2016, the six-laning of 137 km out of the total project stretch of 179.50 km has been completed. The Trust will enter into the ROFO and Future Assets Agreement with the Sponsor to enable the Trust to acquire the Delhi-Agra Project upon the completion of certain milestones. For further information on the ROFO and Future Assets Agreement, see the sections headed "- *The Delhi-Agra Project*" and "*Related Party Transactions – Details of Related Party Transactions Proposed to be Undertaken* - ROFO and Future Assets Agreement" in this Draft Offer Document. Further, pursuant to the ROFO and Future Assets Agreement, the Sponsor has also agreed to provide us with a right of first offer in relation to Future Assets and a right of first refusal with respect to Future Mature Assets located in India which acquired or developed by the Sponsor or its existing or future subsidiaries, limited liability partnerships or other entities that are controlled by or under common control with the Sponsor. The valuation for the toll-road assets under the Future Assets Agreement will be based on the valuations provided by the Valuer in accordance with the terms of the ROFO and Future Assets Agreement.

Attractive sector with strong underlying fundamentals

Roads are the dominant mode of transportation within India. The road transport sector alone accounted for 4.7% of India's GDP in 2009-2010. Road transport has gained importance over the years despite significant barriers to inter-state freight and passenger movement compared to inland waterways, railways and air, which do not face the same rigorous en route checks and barriers *(Source: ICRA Report, Twelfth Five Year Plan (2012-2017), Economic Sectors, Volume II* and *Ministry of Road Transport and Highways, Government of India, Outcome Budget 2014-15 available at morth.nic.in/showfile.asp?lid=1634&key=outcome%20budget&n=1 as of December 7, 2016).*

Over the last five years, the number of vehicles on Indian roads has grown at an average rate of approximately 10.2% per year *(Source: National Highways Authority of India, available at: http://www.nhai.org/roadnetwork.htm)*. The share of road traffic in total traffic movement by roads and railways has grown from 13.8% of freight traffic and 15.4% of passenger traffic in the financial year 1951 to an estimated 65% of freight and 90% of passenger traffic in the financial year 2014, according to the National Transport Development Policy Committee *(Source: Ministry of Road Transport and Highways, Government of India,*

Outcome Budget 2014-15). In the financial year 2014, India transported approximately 57% of all goods by road, as compared to 22% in China and 37% in the United States of America *(Source: Twelfth Five Year Plan).*

India has the second largest road networks in the world, with approximately 5.23 million km of roads comprising (i) national highways, (ii) state highways and (iii) major district roads and rural roads. *(Source: ICRA Report)* There are currently approximately 96,260 kilometres of national highways in India, constituting less than 1.7% of India's entire road network but carrying approximately 40% of India's total road traffic *(Source: National Highways Authority of India, available at: http://www.nhai.org/roadnetwork.htm).* Going forward, an increase in traffic is expected to drive investment in the roads and highways sector. Increases in two wheeler and four wheeler vehicles, freight traffic, trade and interstate tourism are all expected to drive growth *(Source: Make In India, available at: http://www.makeinindia.com/sector/roads-and-highways).*

India's National Transport Development Policy Committee estimates that road freight traffic in India will grow at approximately 9% per annum and road passenger traffic will grow at approximately 17% per annum over the next 20 years *(Source: National Transport Development Policy Committee, India Transport Report: Moving India to 2032 available at http://planningcommission.nic.in/sectors/NTDPC/volume3_p1/roads_v3_p1.pdf).* The rapid expansion and strengthening of the road network, therefore, is imperative, for managing both present and future traffic *(Source: Ministry of Road Transport and Highways, Government of India, Outcome Budget 2014-15).*

Investment Strategy and Risk and Capital Management Strategy

Our principal business strategies (implemented by the Investment Manager) are set out below:

Organic growth through proactive management

Our principal investment strategy is to acquire the Project SPVs and proactively manage the Initial Road Assets to support growth. In particular, the Investment Manager will seek to maintain or improve the Project SPVs' net incomes by, among other initiatives, curbing leakages, conducting proper due diligence, formulating and adopting policies and procedures and structuring investments to address tax or regulatory considerations. The Project Manager will assist the Investment Manager by carrying out the operations, management and maintenance of the project in accordance with the relevant concession agreement and the Project Implementation Agreements and by procuring, operating and maintaining the project's toll management systems, including but not limited to, employing staff for toll collection, monitoring toll collection and providing security arrangements at toll plazas.

The Investment Manager will also focus on minimizing project operating expenses. The roads and highways sector is a highly competitive sector that is capital intensive and requires significant expenditure. Our ability to efficiently manage the costs associated with the Initial Road Assets is critical to maintaining the Project SPVs' profit margins. The Investment Manager intends to focus on increasing the margins of the Project SPVs by strengthening internal processes and systems so as to improve utilization of resources and reduce costs. As part of our operations and maintenance systems and processes, the Investment Manager intends to work closely with the Project Manager to promote best practices, to minimize downtime or defects with respect to the Initial Road Assets and to monitor performance of toll booth operators and maintenance contractors. The Investment Manager also intends to work with the Project Manager and the Project SPVs to upgrade technology as needed, to manage any leakages in toll collections and to streamline collection, route and maintenance operations. With this focus on proactive asset management and operating expense minimization, the Investment Manager hopes to increase our profit margins and achieve long-term growth.

Acquisition and opportunistic divestment of toll road projects

The Investment Manager intends to expand our initial portfolio by identifying and selectively acquiring additional toll road projects that meet our investment criteria described below. The Investment Manager intends to capitalize on opportunities to acquire road projects in India that provide attractive cash flows and yields. While evaluating acquisition opportunities, the Investment Manager intends to focus on, among other things, the following investment criteria in order to make asset selections:

- *Yield thresholds.* The Investment Manager will seek to acquire assets with yields that are estimated to be above our cost of capital so as to maintain or enhance returns to the Unitholders;

- *Traffic characteristics*. The Investment Manager will seek to acquire assets with potential for traffic growth;

- *Residual concession period*. The Investment Manager will actively seek projects with residual concession periods of sufficient duration to meet the investment objectives of the Trust to generate stable returns and ensure long-term growth;

- *Geographic diversity*. The Investment Manager will seek projects in a variety of geographical locations in India to mitigate concentration risk and to take advantage of regional growth; and

- *Other*. In addition, the Investment Manager will also take into account factors such as estimated maintenance costs based on technical assessments of projects under evaluation, the impact of acquisitions on our expected distributions, and the requirements under the InvIT Regulations that with respect to the proportion of completed and revenue generating projects and under-construction projects.

On an opportunistic basis and with a view to providing increased returns to unitholders, the Investment Manager may also consider divestment of certain toll road assets, depending on the maturity and profile of the relevant asset.

Optimization of capital structure

The Investment Manager will seek to employ appropriate financing policies and diversify its sources of financing with the objective of minimizing our overall cost of capital. The Investment Manager will operate within the InvIT Regulations for borrowing, whereby the aggregate consolidated borrowings and deferred payments of the Trust, net of cash and cash equivalents shall never exceed 49% of the value of the Trust Assets. If it is in the interests of the Unitholders, the Investment Manager may also pursue growth opportunities that require raising additional capital through the issuance of new Units.

Description of the Project SPVs and the Initial Road Assets

The Project SPVs have undertaken or are undertaking their respective projects on a BOT or DBFOT basis, pursuant to which they design, build, finance, operate and maintain the Initial Road Assets pursuant to concession agreements with the NHAI or the HPWD, as the case may be. After provisional certificates with respect to construction of either the entire or a partial stretch of the relevant toll roads were issued, certain of the Project SPVs, began operating these roads for the time periods specified in the respective concession agreements and collecting tolls from users of their respective toll roads. HK and PS commenced toll collection on the date as specified in the respective concession agreements and continued construction on the toll roads in parallel.

BOT and DBFOT project model

Each of the Project SPVs (other than GF) operates under a BOT or DBFOT concession agreement with the NHAI. GF operates under a BOT concession agreement with the HPWD. Government authorities in India typically award highway infrastructure development projects under BOT concessions, which are characterized by three distinct phases:

- *Build*: upon successfully securing a project concession through a competitive bid, a concessionaire secures financing for, and completes construction and/or improvement, of a road;

- *Operate*: during the agreed concession period, the concessionaire operates, manages and maintains the road at its own expense and earns revenues by collecting tolls, either itself or through a tolling contractor, from vehicles using the road; and

- *Transfer*: at the end of the agreed concession period, the ownership of the road, the obligation to maintain the road and the right to collect tolls from the vehicles using the road reverts to the government entity that granted the concession.

DBFOT infrastructure development projects, a category of BOT projects, have become increasingly prevalent in India. A DBFOT project involves, in addition to the activities required under a BOT project, the provision of engineering design and financing for such project.

Selection criteria for our initial portfolio

Our investment objectives are to increase our margins and achieve long-term growth of the Trust.

Our initial portfolio of assets will comprise the ten Project SPVs, each of which operates and maintains a toll-road asset. The following selection criteria were applied to each road asset of the Sponsor to determine their suitability for inclusion in our initial portfolio:

- assets that have already achieved COD, as per the terms of the relevant concession agreements and are generating toll revenue;
- assets with a concession period of sufficient duration to meet the investment objectives of the Trust to generate returns and to ensure long-term growth outstanding;
- assets that have potential for traffic growth; and
- assets which will be wholly or majority owned or are capable of being wholly or majority owned by the Trust, subject to applicable law and consents from the relevant regulatory authorities, including the InvIT Regulations.

Each of the Initial Road Assets is "completed and revenue generating" within the meaning of Regulation 2(1)(i) of the InvIT Regulations, meaning that each of the Project SPVs has achieved COD as defined under the relevant concession agreement and each of the Project SPVs has been generating revenue from operations fro a period of not less than one year. Further, provisional completion certificate has been issued by the relevant concessioning authority and/or the relevant Project SPV has begun realizing toll revenue. For nine of the ten projects, provisional completion certificates have been issued, for all or part of their respective project lengths.

Summary of the Project SPVs' concession agreements

Each of the Project SPVs has entered into a concession agreement with the NHAI (or the HPWD in the case of GF) with respect to its Initial Road Asset. The Project SPVs build, finance, operate and maintain their respective Initial Road Assets pursuant to the requirements set forth in their respective concession agreements. For details of such agreements, please see the section headed "*Summary of the Concession Agreements*" on page 222 in this Draft Offer Document.

General

Bids for projects are invited and evaluated by the concessioning authority on the basis of the lowest financial grant required for implementing the project or the highest premium / negative grant offered to be paid in the form of an annual concession fee, revenue share or upfront payment, as the case may be, to the concessioning authority. A bidder must meet the conditions precedent under the concession agreements, including, among other things, obtaining the necessary government approvals and providing bid security.

Under the concession agreements, during the construction phase of a project, contract revenue associated with the construction of roads is recognized by the relevant Project SPV as revenue, by reference to the stage of completion of the project at the balance sheet date. For further details, please see the section headed "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" in this Draft Offer Document. The Project SPVs are entitled to receive tolls from the users of their respective toll road during the concession period. The Project SPVs are required to operate and maintain the project facilities in accordance with the terms and conditions under the relevant concession agreement. Further, they are required to maintain an escrow account and requisite insurance during the concession period. In the event of any deviations or non-compliance in relation to the concession agreements, the concessioning authority may enforce its rights under the agreement, including suspension or termination of the agreement. The Project SPVs may need to take remedial measures within the cure periods referred to in the respective concession agreements at their cost and may be obligated to pay a percentage of the cost additionally as penalties. For more information, see the section headed "*Risk Factors – Risks Related to Our Business and Industry – The Project SPVs' toll-road concessions may be terminated prematurely under certain circumstances*" in this Draft Offer Document.

During the concession period, the Project SPVs build, operate and maintain the road asset and earn revenues through charges, fees or tolls generated from the asset. The amount of charges, fees or tolls that they may collect are notified by the relevant government agency, which are usually revised annually as specified in the relevant concessions and toll notifications. The revision typically is linked to the extent of variation in the Wholesale Price

Index for all commodities as published by the Ministry of Industry (the "**WPI**") or, in the case of JR, PS, KM and HK, comprises a fixed component, which is three percent and a component linked to variation in the WPI, which is fixed at 40% of the variation in the WPI. However, in the case of GF, the revision is at predetermined rates once every three years, in accordance with its concession agreement. As a result, the prevailing toll rates may not reflect changes in the operational environment from the time that the Project SPVs start to operate the project.

The scope of the Project SPV's responsibilities is usually set out in the relevant concession agreement, where they are required to undertake routine maintenance, periodic preventive maintenance and major maintenance of the project road, maintain and comply with safety standards to ensure traffic worthiness and safety of the project road, deploy adequate human resources for incident management, maintain proper medical and sanitary arrangements for personnel deployed at the site and prevent any unauthorized use and encroachment with the assistance of the concerned law enforcement agencies. The concessioning authority may use one or more firms of engineers to carry out periodic tests to assess the quality of the road and related maintenance. If the Project SPV is determined to have failed to carry out its maintenance obligations, the concessioning authority may, following the issuance of notices and the expiry of cure periods, terminate the relevant concession agreement. Certain of the concession agreements also provide for award of penalty points in the event of notified breaches of safety standards specified in the concession agreements in the event that the concessionaire is unable to cure the breach within the prescribed time period and or total of fine penalty points in any continuous period of 365 days would constitute a material breach under the concession agreement.

Escrow arrangements

The escrow arrangements mandated under the concession agreements, and the corresponding financing agreements, require all receivables and monies that are received by each Project SPV, including funds constituting the financing package and the fees collected from the operation of the Initial Road Assets, to be deposited in an escrow account and utilised only in the order prescribed in the relevant escrow agreement. The consent of the concessioning authority and Project SPV's lenders is required to amend the order of outflow of payments from such escrow account. The escrow arrangements typically prioritise the payment of all taxes due, followed by payment of expenses in connection with the construction of the project, operation and maintenance expenses including expenses for repair works, payment of concession fees (including any negative grant), debt service payments, payment of premiums, reimbursement of expenditure incurred by the concessioning authority, any payments and damages due and payable and any reserve requirements set forth in any financing agreements. For more details, see the section headed "*Summary of the Concession Agreements*" in this Draft Offer Document.

Suspension and termination

The concessioning authority may suspend the rights of the Project SPV, including its right to collect toll, or terminate the concession agreement with a Project SPV upon the occurrence of a default by such Project SPV, which includes, but is not limited to, the following:

- the Project SPV is in breach of its maintenance or safety requirements;
- the Project SPV has failed to make any payment to the concessioning authority within the specified period;
- the Project SPV commits a default under the escrow arrangement and fails to cure such defaults within the cure period under the relevant escrow agreement;
- the Project SPV creates an encumbrance on its Initial Road Asset in breach of the concession agreement;
- the Project SPV repudiates the concession agreement;
- the Project SPV undertakes or permits a change in ownership without the prior approval of the concessioning authority;
- the Project SPV materially breaches the representations and warranties contained in the concession agreement;

- the Project SPV fails to fulfil any obligation, for which failure termination is a remedy under the concession agreement;

- any act or event which has a material adverse effect on the ability of either the concessioning authority or the Project SPV to perform their obligations under the concession agreement and which causes a material financial burden or loss to either party to the concession agreement; and

- certain insolvency events including liquidation, winding-up or bankruptcy of the Project SPV.

In the event of a concessionaire default, the concessionaire is given a cure period to remedy the default, which varies depending on the event of default.

If a concession agreement is terminated by the concessioning authority due to a default by a Project SPV or a default by the concessioning authority, such Project SPV is entitled to termination payments (only payable post the appointed date) from the concessioning authority in accordance with the terms of the relevant concession agreement. The termination payment is linked to the total debt raised for the project and adjusted equity, as applicable. In case of termination on account of the default by a Project SPV, such Project SPV is entitled to a certain percentage of the debt due, while in the case of a termination on account of a default by the concessioning authority, such Project SPV is typically entitled to the entire extent of the debt due, a percentage of the subordinate debt and a percentage of the adjusted equity/equity support.

The concession agreements contain provisions that mandate substitution clauses in the project agreements. The concession agreements provide that the senior lenders to a Project SPV may substitute the Project SPV with new concessionaires approved by the concessioning authority in the event of a default by the Project SPV under the relevant concession agreement, financing agreements or other project agreements.

In case of a force majeure event (as defined under the relevant concession agreement) subsisting for such period as prescribed under the concession agreement, either party may terminate the concession agreement by giving a written notice to the other. In such cases, the concessioning authority will make a termination payment to the Project SPV in varying amounts, depending on the type of force majeure event.

Prior approval of the concessioning authority

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

- amendment, modification or replacement by the Project SPV of any financing agreements relating to the operation of the Initial Road Assets to which the Project SPV is a party if the amendment, modification or replacement of such agreement has or may have the effect of increasing or imposing any financial liability or obligation on the concessioning authority. In the event that such amendment, modification or replacement is effected without the necessary consent, the Project SPV will not enforce or permit the enforcement of the modification, replacement or amendment against the concessioning authority;

- the creation of any encumbrance or security interest over, or transfer of all or any rights and benefits of the Project SPVs under, the concession agreements or any project agreements;

- the selection or replacement of any operation and maintenance contractor and execution of the operation and maintenance agreements; and

- any change in ownership, as defined under the relevant concession agreement of any Project SPV during the construction and operation of the concession agreement. The Sponsor, together with its associates, is currently required to hold a minimum of 26% of the equity share capital of DS, GF, JR, NK, SU, TD and TK pursuant to their respective concession agreements. The Sponsor, together with its associates, is required to hold at least 51% of the equity share capital of KM, PS and HK for a period of two years after COD. The Sponsor, together with its associates, is required to hold at least 33% of

the equity share capital of JR for a period of three years after COD and 26% of the equity share capital of JR during the remaining concession period.

In addition, the concessioning authority's concession agreements typically require the submission to the concessioning authority, for its review and comments, all draft project agreements to which a Project SPV is a party prior to entry, amendment or replacement of such agreements, even if such agreements do not affect the financial liability or obligations of the concessioning authority.

Furthermore, any change in ownership of the Project SPVs during the operation of the concession agreement would be subject to the prior approval of the concessioning authority.

Limited development

In the event the government decides to augment the capacity of the road assets of NK, DS, TD, TK, SU or GF, it may do so, at any time after eight years following COD, by inviting proposals from eligible persons. In the event that these Project SPVs do not qualify as the lowest bidder, it shall be entitled to match the price quoted by the lowest bidder and enter into suitable contractual arrangements for the revised scope of the project. In the event that these Project SPVs do not or fail to bid for the revised scope of the project or match the price quoted by the lowest bidder, the relevant authority may terminate their concession agreement after paying a termination payment as specified in the concession agreement. Additionally, payment of Rs. 1 million is required by the concessionaire, made to the lowest bidder, in the event of participation in the bidding by the Project SPVs but a failure to make the lowest offer and upon deciding to match that lowest offer. In case of HK, KM and PS, in the event the average daily traffic of PCUs in any accounting year exceeds the designed capacity of the project highway, the concessioning authority may request the Project SPVs to undertake capacity augmentation instead of a reduction in the concession period (in consideration of the extension of the Concession Period such as to earn post-tax Equity IRR of 16%, subject to a maximum extension of five years). If the Project SPVs refuse to or fail to undertake such capacity augmentation on the due date intimated by the concessioning authority, the concessioning authority may terminate the concession agreement at its discretion by serving notice and making termination payments on account of an indirect political event having occurred under the relevant concession agreement. For the JR project, if the average daily traffic of PCUs in any financial year shall exceed the designed capacity of the project highway and shall continue to exceed the designed capacity for three financial years following thereafter, an Indirect Political Event shall be deemed to have occurred and the concessioning authority may in its discretion terminate the concession agreement with a prior cure period of 180 days granted to the Concessionaire. The Concessionaire may opt to undertake capacity augmentation to cure the situation such that the capacity of the JR Project Road shall have increased sufficiently for carrying the then current traffic, prior to issue of termination notice.

Additional roads

Under the terms of the concession agreements entered into by each of the Project SPVs and the concessioning authority, the central and state governments have the right to construct and open additional roads which may serve as alternate routes to the Initial Road Assets after the expiry of between eight and fifteen years from the commencement of the concession period, depending on terms of the concession. Upon the commissioning of an additional toll road, the Additional Tollway is required to levy and collect the regular fee, and in the case of HK, JR, PS and KM, the concessioning authority is required to ensure that the fee levied and collected on the additional tollway will be at least 25% higher than the regular fee levied and collected from similar vehicles using their Initial Road Asset. The concession agreements also provide for an increase in the concession period by the specified time period in the event such an additional tollway is constructed. For further details on the risks associated with the construction of a competing road, see the section headed "*Risk Factors – Risks Related to the Trust Group's Business and Industry – The concession agreements contain certain other restrictive terms and conditions which may be subject to varying interpretations*" in this Draft Offer Document.

Completion certificates

Under the terms of the concession agreements, the concessioning authority issues a completion certificate upon the completion of all the construction work and the Independent Engineer determining the tests to be successful for the project set out in the concession agreement and any supplemental agreement (if relevant).

The concessioning authority may also issue a provisional completion certificate if a toll road can be safely and reliably be placed in operation, even though certain works have not yet been completed, which will allow the

concessionaire to carry out tolling operations. In such situations, the concessioning authority typically provides a 'punch list' of items which are to be completed within a specified period. For details of the punch list items for our projects, please see the section headed "*Government and Other Approvals – Approvals in Relation to the Project SPVs*".

Treatment of future claims against the Concessioning Authority

The Project SPVs have subcontracted construction work at their respective projects to EPC contractors (such contracts, the "**EPC Contracts**").

For eight of our projects, there have been delays in construction because of reasons such as the failure of the concessioning authority to provide land for the construction of toll roads, floods and other reasons attributable to the concessionaire as well as the concessioning authority. On account of such delays, there has been an increase in the cost of construction of the relevant projects. The relevant EPC contractor has borne these increased costs and is entitled to claim such increased costs from the relevant Project SPV.

As permitted by the respective concession agreements, the Project SPVs may initiate claims against the concessioning authority to recover the increased costs, which may lead to arbitration and/or litigation proceedings. In addition, the Project SPVs may initiate other proceedings against the concessioning authorities.

Any payments received in cash in a full and final settlement (with no further appeals) of any claims made or intended to be made by a Project SPV against the relevant Concessioning Authority in relation to events pertaining to the period prior to the Reference Date (the "**Sponsor Claims**") will be to the account of the Sponsor. The Project SPV and/or the Trust shall provide such authorisations as may be necessary for the Sponsor to take actions in relation to the Sponsor Claims.

The above arrangement applies to all the Project SPVs except for TK, where any amounts received in a settlement of claims made or intended to be made in relation to events pertaining to the period, after the Reference Date are intended to be utilised by TK for the remaining construction at that project.

The Sponsor will fully indemnify and hold harmless the Trust and the Project SPV in connection with such Sponsor Claims. Upon the Trust and/or Project SPV receiving any amounts as aforementioned, the Sponsor would obtain all approvals and authorisations required from NHAI/HPWD and/or any of the senior lenders of the Project SPV prior to any such payment of the Sponsor Claims to the Sponsor. Any such transfer is required be strictly in accordance with the terms of such approvals.

The Sponsor (on behalf of itself and its affiliates) will also expressly waive the right to make any further claims or initiate any action against the Trust and/or the Project SPV with respect to any matter (known or unknown, whether in law, equity or any agreement or document) in relation to the Sponsor Claims arising prior to the Reference Date.

Above, "**Reference Date**" means:

(i) the Closing Date for Sponsor Claims that are not related to or arising out of the EPC Contracts; and

(ii) as follows, for Sponsor Claims arising out of or in relation to the EPC Contracts

(a) if Project SPV which has received a provisional completion certificate, then the Closing Date;

(b) if Project SPV has not received a provisional completion certificate, then the date of receipt of such provisional completion certificate; or

(c) if the Project SPV has received a provisional completion certificate, however certain additional construction is required to be undertaken post the Closing Date: (i) the Closing Date, in relation to the Sponsor Claims relating to the part of the Project with respect to which a provisional completion certificate has been issued; and (ii) the date of the receipt of the provisional completion

certificate with respect to of the additional part of the Project, in relation to the Sponsor Claims for the additional part of the Project which is yet to be completed.

Details of the Project SPVs and the Initial Road Assets

The Initial Road Assets comprise ten toll roads in the states of Maharashtra, Karnataka, Gujarat, Rajasthan, Haryana and Tamil Nadu that the Project SPVs operate and maintain pursuant to concessions granted by the concessioning authority. The Sponsor will transfer its ownership interests in the Project SPVs to us pursuant to the Formation Transactions.

The table below sets forth details of the Project SPVs:

Project SPV	Project	Lane Kms[(1)]	Commencement of concession period	Commencement of toll collection	End of concession period w no reduction or extension
DS	Dindigul Samayanallore	212.20	July 29, 2006	September 28, 2009	July 28, 2026
NK	Namakkal Karur	165.48	July 29, 2006	August 22, 2009	July 28, 2026
SU	Salem Ulundurpet	468.66	January 15, 2008	July 28, 2012	January 14, 2033
TD	Trichy Dindigul	349.08	January 15, 2008	January 10, 2012	January 14, 2038
HK	Hosur Krishnagiri	359.22	June 7, 2011	June 7, 2011[(5)]	June 6, 2035
TK	Trichy Karur[(2)]	166.00	January 15, 2008	February 22, 2014	January 14, 2038
JR	Jaipur Reengus	187.19	August 14, 2010	July 15, 2013[(6)]	August 13, 2028
GF	Gurgaon Faridabad	264.00	June 1, 2009	June 29, 2012	May 31, 2026
KM	Kandla Mundra Port[(3)]	285.60[(7)]	January 19, 2011	November 7, 2015	January 18, 2023[(3)]
PS	Pune Satara[(4)]	842.10	October 1, 2010	October 1, 2010	September 30, 2034

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Notes:

(1) The above lane kms exclude service road lanes aggregating 957 kms..
(2) Pursuant to an order of the Madras High Court, an 18.6 km stretch that formed part of the original scope for this project has been descoped for the purposes of the issue of the provisional completion certificate for the completed portion of the Project and an additional 2.28 km stretch has been added.
(3) A part of Phase I of the Kandla-Mundra Port Project, which involved the construction of a four-lane highway was completed to the extent of 55.80 kms in November 2015, while the remainder of Phase I is currently under construction. Phase II of the project involves converting the four-lane project to a six-lane project. Under the terms of the concession agreement for this project, the decision relating to converting the project to a six-lane project may be unilaterally decided by KM and NHAI in January 2019 and if the Kandla Mundra Port Project is limited to four-laning, the concession period will be restricted to 12 years and not extended to 25 years (January 18, 2036).
(4) A remaining 30 km portion of the Pune Satara Project is delayed because of delays in land acquisition by the NHAI for the remaining portions of land and other issues that impact the construction of the remaining portion.
(5) HK received a provisional completion certificate on April 5, 2016.
(6) JR received a second provisional completion certificate on October 16, 2015.
(7) The lane kms presented assume completion of both Phases I and II of the project.

1. Dindigul Samyanallore Project

On January 30, 2006, the NHAI and DS entered into a concession agreement in respect of the Dindigul Samyanallore Project. DS was engaged to widen a portion of the NH-7 in Tamil Nadu from Km 373.28 to Km 426.60, from the existing two lanes to four, on a BOT basis. A capex grant of Rs. 310 million was provided for the project. The concession period commenced on July 29, 2006 and the collection of tolls commenced on September 27, 2009. A provisional certificate of completion was issued on September 27, 2009.

Corridor description and competing roads

The DS Project is part of the "golden quadrilateral" on NH 7. Samyanallore is located 13 km west of Madurai and is also the location of the Samyanallore thermal power station, one of the biggest power plants in Tamil Nadu. Traffic on this stretch primarily comprises of raw material and finished goods for the automobile, rubber, chemical and granite manufacturing industries in Madurai. NH 7 is a major North-South National Highway in India that runs through a number of states and connects several important cities such as Jabalpur, Varanasi, Rewa, Nagpur, Adilabad, Nidmal and Armoor (Nizamabad), Kamareddy, Hyderabad, Kurnool, Anantapur, Chikkaballapur, Bengalaru, Krishnagiri, Salem, Madurai, Tirunelveli and Kanyakumari. Furthermore, pilgrims and tourists frequent this road to visit the Meenakshi Amman Temple and the Kazimar big mosque of Madurai.

The project stretch forms part of the main connectivity network joining the commercial hubs of Hyderabad, Bengaluru and Kanyakumari.

According to the DS Traffic Report, developments around the Dindigul and Madurai areas will also stimulate growth, where for example, the expected investments in knowledge hubs along the Madurai-Thoothukudi industrial corridor and Coimbatore-Madurai industrial corridor would promote knowledge, education and manufacturing hubs spread over 5,000 hectares each.

The DS Project runs through the centre of the corridor between Dindigul and Samayanallur. There are several local roads and state highways in areas surrounding the project road, which, if integrated, can form a competing road network. However, the roads surrounding the project road are not integrated and overall cover longer distances than the project road. In addition, according to the DS Traffic Report the competing road networks are of inferior quality and geometry in comparison to the project road with sharp turns, bottlenecks and patches of damaged pavements, adding to travel time and consequently costs.

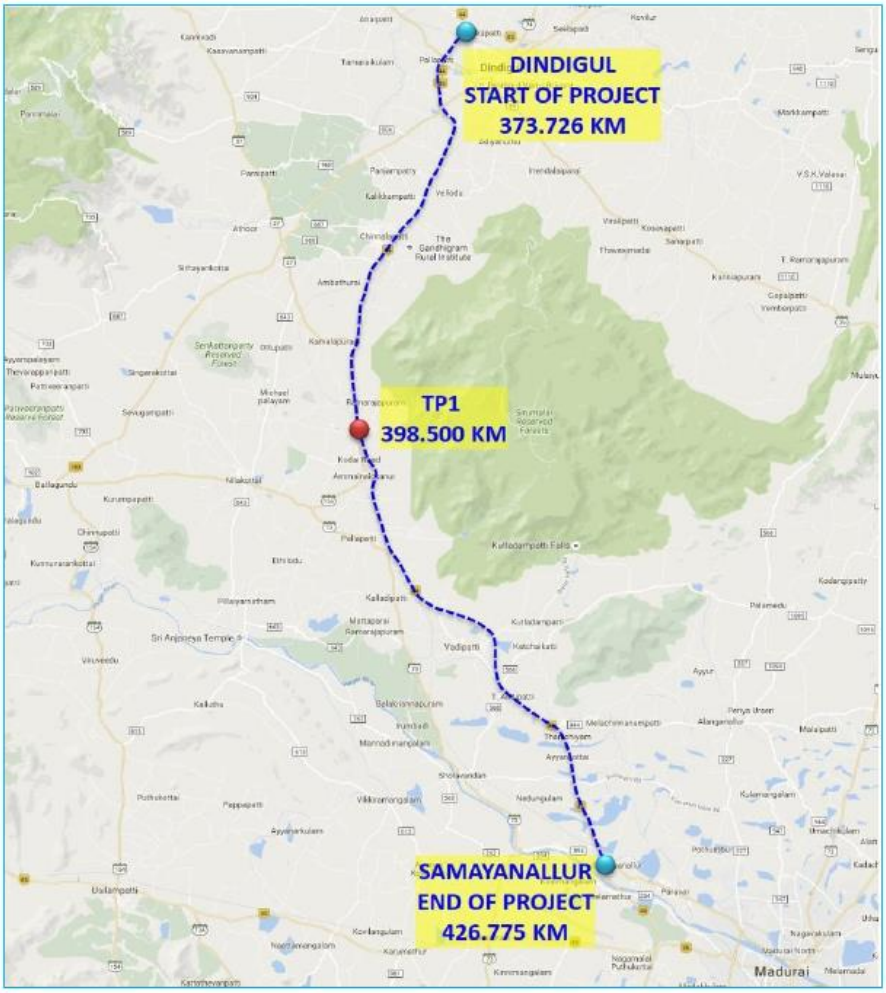

Figure 1: Map of the Dindigul Samyanallore Project

Concession period

The NHAI granted DS a concession for a period of 20 years for this project. The concession period commenced on July 29, 2006 and is expected to expire on July 28, 2026. DS began collecting tolls with respect to this project on September 28, 2009.

Traffic volume

At the toll plaza, total traffic comprises 53% car traffic, 11% LCVs/minibuses, 20% buses/trucks and 16% multi-axle vehicles. Overall, approximately 40% of total traffic is commercial in nature. The majority of the traffic is urban traffic because both ends of the stretch near the toll plaza originate in the developing urban centres of Dindigul and Madurai. There is a higher proportion of return journeys for cars and LCVs/minibuses, where 54% of cars and 53.9% of LCVs/minibuses prefer return journey passes. Traffic volume also decreases during the rainy season from August to November and then picks up again after November.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 – FY16
	2014	**2015**	**2016[5]**	**2015**	**2016**	**(%)**
Car[1]	2,476,270	2,560,124	2,783,244	1,411,200	1,547,947	6%
LCV[2]	607,741	598,765	627,604	316,905	330,132	2%
Bus/Truck[3]	1,065,041	1,103,814	1,089,608	572,603	573, 149	1%
Multi-axle[4]	857,247	879,929	878,110	447,067	488,531	1%
Total	**5,006,301**	**5,142,634**	**5,378,567**	**2,747,777**	**2,939,759**	**4%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) Toll operations were suspended for 16 days due to floods in December 2015.

The tollable annual average daily traffic for the project increased to 31,271 PCUs in 2016 from 28,604 PCUs in 2014, representing a CAGR of 5%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 – FY16
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[1]	6,784	7,014	7,952	7,711	8,459	8%
LCV[2]	1,665	1,640	1,793	1,732	1,804	4%
Bus/Truck[3]	2,918	3,024	3,113	3,129	3,132	3%
Multi-axle[4]	2,349	2,411	2,509	2,443	2,670	3%
Total	**13,716**	**14,089**	**15,367**	**15,015**	**16,064**	**6%**
Total PCUs[5]	**28,604**	**29,396**	**31,271**	**30,689**	**32,574**	**5%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) PCU is defined as "Passenger Car Units" and the PCU factors recommended by the Indian Roads Congress in the "Guidelines for Capacity of Roads in Rural Areas (IRC:64-1990") were used pursuant to the table below:

Vehicle Type	***PCU Factor***	***Vehicle Type***	***PCU Factor***
Car/Jeep	*1.00*	*LCV*	*1.50*

Van/Tempo (passenger)	*1.00*	*2-Axle Truck*	*3.00*
Mini Bus	*1.50*	*3-Axle Rigid Truck*	*3.00*
Standard Bus	*3.00*	*MAV*	*4.50*

(Source: Guidelines for Capacity of Roads in Rural Areas (IRC:64-1990))

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the DS Project's total traffic mix, 50%, 12%, 21% and 17% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 51%, 12%, 20% and 17% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of DS' operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the DS Project by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 – FY16
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
		(Rs. in millions)				
Car[1]	106.8	117.4	128.4	66.2	70.6	10%
LCV[2]	45.8	47.5	50.4	25.7	26.2	5%
Bus/Truck[3]	143.5	154.0	156.4	81.8	79.5	4%
Multi-axle[4]	225.6	248.9	251.6	129.5	138.3	6%
**Total ..... **	**521.7**	**568.9**	**586.8**	**303.2**	**314.6**	**6%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016
	(Rs. in millions)
October	52.4
November	14.4

Notes:
(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The DS Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, DS is required to comply with detailed operating and maintenance standards.

Under the concession agreement, DS is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial year 2021 to 2022.

The following table sets forth DS' operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	**2015**	**2016**	**2015**	**2016**
	(Rs. in millions)				
Operation and maintenance expenditure	30.02	45.43	53.97[(1)]	97.86[(1)]	23.68
Periodic maintenance	28.98	28.56	30.95	13.82	15.48
Total expenditure	**59.00**	**73.99**	**84.92**	**111.68**	**39.16**

Note:

(1) In the six months ended September 30, 2015, the Project SPV made a provision for certain expenses, which was later reversed (in the six months period ended March 31, 2016).

Project cost and financing

The cost of this project was approximately Rs. 4,280 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 3,167.95 million.

Land

The NHAI owns the land that underlies the DS Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

2. Namakkal Karur Project

On January 30, 2006, the NHAI and NK entered into a concession agreement in respect of the Namakkal Karur Project. NK was engaged for the widening of the existing two lane portion from Km 258.65 (End of Namakkal Bypass) to Km 292.60 (Start of Karur Bypass), covering 33.48 kms on the NH 7 in the state of Tamil Nadu to four lanes, and the improvement, operation and maintenance of Km 248.63 (start of the proposed flyover on Namakkal Bypass) to Km 258.65 (end of Namakkal Bypass) on the NH 7, on a BOT basis. A capex grant of Rs. 240 million was provided for the project. The concession period commenced on July 29, 2006 and the collection of tolls commenced on August 22, 2009. A provisional certificate of completion was issued on August 21, 2009.

Corridor description and competing roads

The NK Project on the NH 7 is a part of the "golden quadrilateral" of national highways. The NH 7 is one of the busiest sections of the North-South corridor of South India and carries a large amount of private and commercial passenger traffic as well as a regular stream of freight traffic. The road forms part of the main connectivity network joining the major commercial hubs like Hyderabad, Bengaluru and down south up till Kanyakumari, and also passes through the major settlements of Paramatty and Pugaloor Veleyudampalayam. The project road is through plain terrain for the majority of its length except for a few locations where terrain conditions are more undulating.

Exposed rock has also been observed in several places along the project road. The land surrounding the project road is a mixture of agricultural, urban and semi-urban land use whereas both ends of the project road start and finish in the urban areas of Namakkal and Karur.

According to the NK Traffic Report, approximately 40% of the trucks operating in the state are from Namakkal. Karur is a city known for its home textiles and hand-loom exporters where products are supplied to world leading chain stores such as WalMart, Target, IKEA, JC Penny and Ahlens, which generates high volumes of traffic to nearby ports.

The areas surrounding the project road include local roads and state highways, which, if integrated, can form a competing road network such as State Highway SH-95, especially following the construction of the bridge across the Cauvery river at Mohanur in 2015, which provides direct connectivity between Karur and Namakkal. However, according to the NK Traffic Report, the capacity of the bridge is limited as it only has two lanes, and the adjoining road network passes through several villages, which can cause bottlenecks in the traffic, particularly for trucks and MAV movement. The geometry and quality of the competing road is inferior in comparison to the project road, including sharp turns, bottlenecks and patches where the road passes through dense built up sections. Such conditions result in added travel time and consequently costs. The average speed is 40 km per hour and 70 km per hour on the competing road and on the project road respectively, and total journey time is 45 minutes on the competing road and 39 minutes on the project road. Given that time and fuel savings are a major criterion for the selection of routes, particularly by commercial vehicles, it is unlikely that a significant proportion of commercial traffic will be diverted into using the competing road. In addition, the project road has already been completed and traffic is already using the project road, such that the current traffic traversing the project road already factors any traffic diversion that may have taken place.

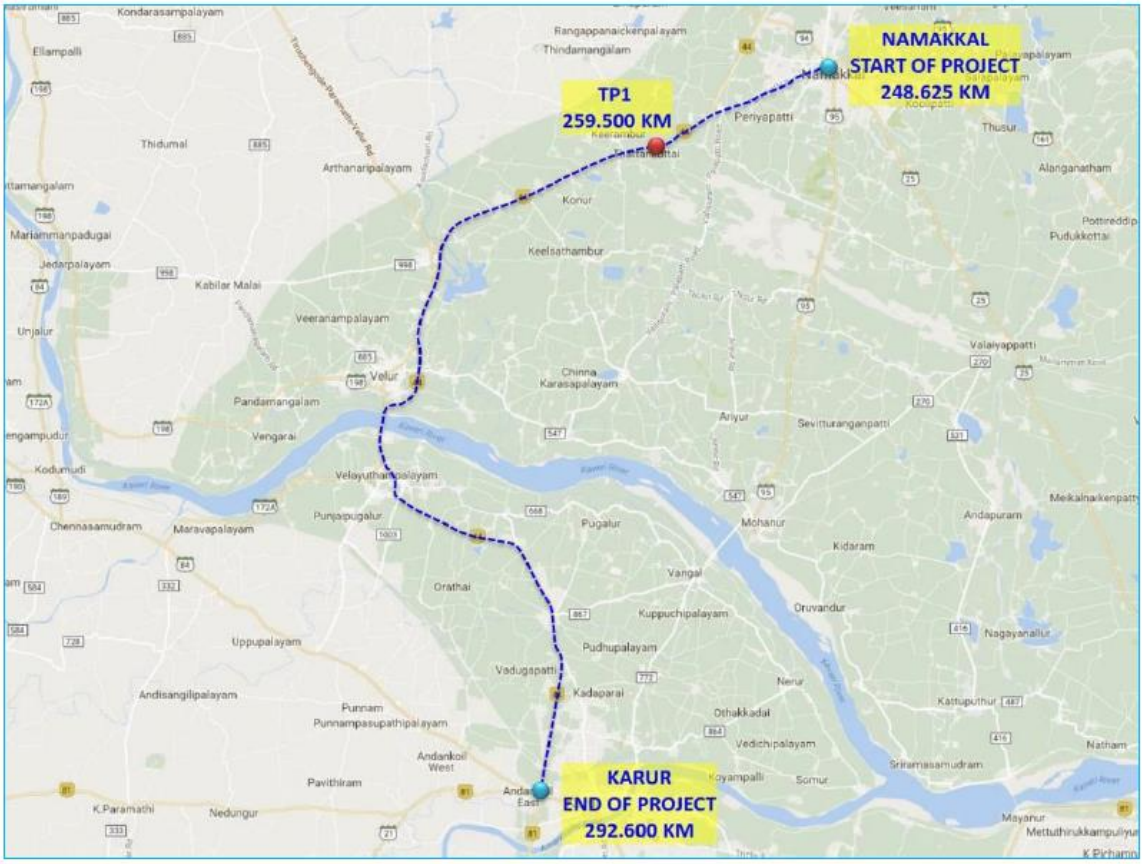

Figure 2: Map of the Namakkal Karur Project

Concession period

The NHAI granted NK a concession for a period of 20 years for this project. The concession period commenced on July 29, 2006 and is expected to expire on July 28, 2026. NK began collecting tolls with respect to this project on August 22, 2009.

Traffic volume

At the toll plaza, total traffic comprises 49% car traffic, 16% LCV/minibuses, 17% trucks/buses and 18% multi-axle vehicles. Overall, approximately 45% of total traffic is commercial in nature and the higher percentage of urban traffic can be attributed to the fact that both ends of the project road are located in the urban centres of Namakkal and Karur. Overall, return journey for vehicles represents 44% of total traffic. The high percentage of return journeys is reflective of the two commercial centres at either end of the project road. The traffic volume is not uniform throughout the year, due to seasonal variations attributable to festivals, holidays and weather. Traffic volume reduces in the rainy season in the period from August to November and then picks up after November.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016[4]**	**2015**	**2016**	**(%)**
Car[1]	1,524,625	1,614,709	1,747,484	880,849	939,760	7%
LCV[2]	592,751	592,429	594,005	302,162	308,615	0%
Bus/Truck[3]	643,334	635,292	616,189	319,739	312,666	-2%
Multi-axle[4]	599,339	741,324	675,428	342,799	349,117	6%
Total	**3,360,051**	**3,583,755**	**3,633,108**	**1845,551**	**1910,159**	**4%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) Toll operations were suspended for 16 days due to floods in December 2015.

The tollable annual average daily traffic for the project increased to 21,504 PCUs in 2016 from 19,290 PCUs in 2014, representing a CAGR of 6%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[1]	4,177	4,424	4,993	4,813	5,135	9%
LCV[2]	1,624	1,623	1,697	1,651	1,686	2%
Bus/Truck[3]	1,763	1,741	1,761	1,747	1,709	0%

Multi-axle[4]	1,642	2,031	1,930	1,873	1,908	8%
Total	**9,206**	**9,819**	**10,380**	**10,085**	**10,438**	**6%**
Total PCUs	**19,290**	**21,220**	**21,504**	**20,961**	**21,375**	**6%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses/trucks and multi-axle vehicles accounted for, in terms of the NK Project's total traffic mix, 46%, 17%, 18% and 19% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 48%, 16%, 17%, and 19% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of NK's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the NK Project by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016**	**2015**	**2016**	
	(Rs. in millions)					**(%)**
Car[1]	49.3	56.0	61.6	31.4	32.8	12%
LCV[2]	35.3	36.2	36.6	18.8	18.9	2%
Bus/Truck[3]	70.6	75.3	72.9	37.9	36.4	2%
Multi-axle[4]	124.3	156.9	148.3	75.7	76.6	9%
Total	**279.5**	**324.4**	**319.6**	**163.8**	**164.6**	**7%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016
	(Rs. in millions)
October	26.3
November	7.7

Notes:

(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The NK project operates 24 hours a day, 365 days a year. In operating and maintaining the project, NK is required to comply with detailed operating and maintenance standards.

Under the concession agreement, NK is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial year 2021 to 2022.

The following table sets forth the NK's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	**2015**	**2016**	**2015**	**2016**
			(Rs. in millions)		
Operation and maintenance expenditure	26.77	34.37	54.08	154.42	19.67
Periodic maintenance	46.30	44.71	-	23.55[(1)]	23.55
Total expenditure	**73.07**	**79.08**	**54.08**	**177.97**	**43.22**

Note:
(1) In the six months ended September 30, 2015, the Project SPV made a provision for certain expenses, which was later reversed (in the six months period ended March 31, 2016).

Project cost and financing

The cost of this project was approximately Rs. 3,520 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 2,642.88 million.

Land

The NHAI owns the land that underlies the NK Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

3. Salem Ulundurpet Project

On July 19, 2007, the NHAI and SU entered into a concession agreement in respect of the Salem Ulundurpet Project. SU was engaged to strengthen and maintain the existing carriageway from Km 0.31 to Km 136.67, on the Salem – Ulundurpet section of NH 68 in the state of Tamil Nadu and widen the roads from two to four lanes, on a BOT basis. A capex grant of Rs. 2,122.6 million and opex grant of 1,537.9 million has been provided towards the project of which Rs. 183.9 million of the opex grant is still to be received by SU. The concession period commenced on January 15, 2008 and the collection of tolls commenced on July 26, 2012. A provisional certificate

of completion was issued on July 26, 2012 and a second provisional completion certificate was issued on August 30, 2013. The project also includes approximately 38 Km of bypass length, which will be converted to a four lane road after 8 years and before 11 years from the COD pursuant to the concession agreement and where sponsor support will be provided.

Corridor description and competing roads

This project corridor connects National Highways NH 7 (Bengalaru-Kanyakumari) and NH 47 at Salem and NH 45 (Trichy-Chennai) and SH-69 at Ulundurpet. It connects Salem to Ulundrupet and is a major part of the east to west connectivity in Tamil Nadu. Although the start of the project road is located in an urban area for an initial 10 km, the majority of the land surrounding the road is predominantly agricultural with isolated built-up sections in between and the end section of the road passes through a reserved forest area.

According to the SU Traffic Report, the expansion of the Salem Coimbatore Industrial Corridor is expected to drive traffic on this toll road. The new industrial corridor is expected to attract an investment of around Rs. 147,000 million in order to create further infrastructure which will in turn create further investment opportunities of about Rs. 430,000 million. Such investment is expected to create approximately Rs. 1.8 million of white and blue collar jobs such that residential developers are planning on expanding developments in the area. Some of the major projects along the project road include the steel production projects and a power plant. Potential traffic growth will also be driven by the reopening of the Puducherry port and the opening of the Nagapattinam port.

The area surrounding the project road includes several local roads and highways which, if integrated, can form a competing road network. However, according to the SU Traffic Report, the competing roads run across the project road and cover longer distances for the same pairs of origin and destination in comparison to the project road. The geometry and quality of the competing road is inferior in comparison to the project road with sharp turns, bottlenecks and patches of damaged pavements, adding to travel times and costs. The average speed on the project road is 70 km per hour and journey time for the entire stretch from Salem to Ulundurpet is 117 minutes, in comparison to the competing roads which have an average speed of 40 km per hour and journey time for the entire stretch from Salem to Ulundurpet of 240 minutes. Given that journey times and fuel cost savings are major criteria for selection of routes, it is unlikely that a significant proportion of commercial and passenger traffic will switch to competing roads. In addition, the project road has already been completed and traffic is already using the project road, such that the current traffic traversing the project road already factors any traffic diversion that may have taken place.

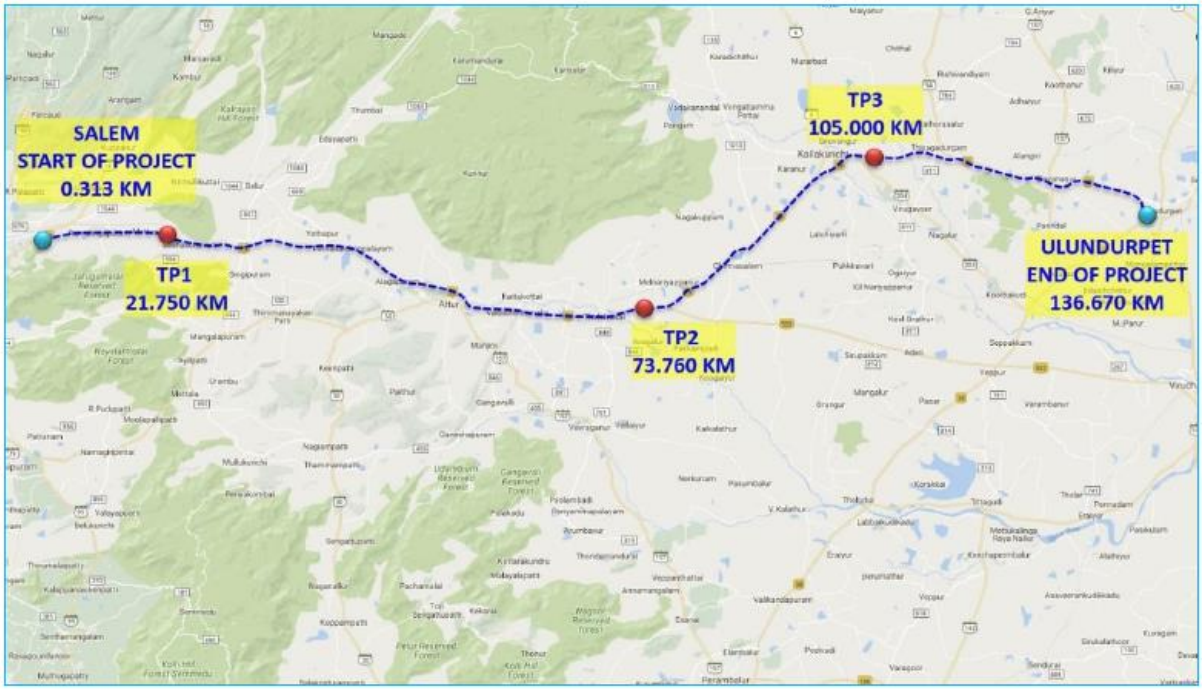

Figure 3: Map of the Salem Ulundurpet Project

Concession period

The NHAI granted SU a concession for a period of 25 years for this project. The concession period commenced on January 15, 2008 and is expected to expire on January 14, 2033. SU began collecting tolls with respect to this project on July 26, 2012.

Traffic volume

Car traffic represents 58% to 61% of total traffic and is unexpectedly high at the toll plaza near Salem, whereas LCV traffic is relatively constant at 10% to 11% and multi-axle traffic is relatively constant at 10% to 12 % of total traffic respectively. The higher percentage of urban traffic in comparison to commercial traffic is due to the development of the urban areas at the start and end of the project road. Overall, return journeys represent approximately 35% of total traffic, which reflects the presence of strong local urban traffic. Due to seasonal variations resulting from festivals and weather, traffic volume dips during the rainy season between August to November and picks up after November.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		YoY growth FY15 – FY16[7]
	2014[5]	2015	2016[6]	2015	2016	(%)
Car[1]	1,525,419	1,717,405	1,899,737	984,505	1,106,598	11%
LCV[2]	306,826	323,087	354,921	179,827	202,115	10%
Bus/Truck[3]	639,267	685,671	678, 147	349,182	357,828	-1%
Multi-axle[4]	356, 147	372,784	360,114	182, 018	191,629	-3%
Total	**2,827,659**	**3,098,948**	**3,292, 919**	**1,695,532**	**1,858,170**	**6%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) One toll plaza out of three was operational for a partial period.
(6) Toll operations were suspended for 16 days due to floods in December 2015
(7) Year-on-year growth for financial year 2015 to financial year 2016 is reflected as financial year 2014 does not reflect full operations, as a result of one non-operating toll plaza during a partial period.

The tollable annual average daily traffic for the project increased to 17,392 PCUs in 2016 from 16,265 PCUs in 2015, representing a year-on-year growth of 7%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016, based on a weighted average at three toll plazas:

	For the FY ended March 31,			For the six months ended September 30,		YoY growth FY15 – FY16[5]
	2014	2015	2016	2015	2016	(%)
Car[1]	4,179	4,705	5,428	5,380	6,047	15%
LCV[2]	841	885	1,014	983	1,104	15%

Bus/Truck[3]	1,751	1,879	1,938	1,908	1,955	3%
Multi-axle[4]	976	1,021	1,029	995	1,047	1%
Total	**7,747**	**8,490**	**9,408**	**9,265**	**10,153**	**11%**
Total PCUs	**15,085**	**16,265**	**17,392**	**17, 054**	**18,281**	**7%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) Year-on-year growth for financial year 2015 to financial year 2016 is reflected as financial year 2014 does not reflect full operations, as a result of one non-operating toll plaza during a partial period.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the SU Project's total traffic mix, 56%, 11%,22% and 12% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 58%, 11%, 21%, and 11% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of SU's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the SU Project's by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**YoY growth FY15 – FY16[5]**
	2014	**2015**	**2016**	**2015**	**2016**	
	(Rs. in millions)					**(%)**
Car[1]	136.5	197.7	227.4	117.0	132.7	15%
LCV[2]	52.1	68.9	79.0	39.7	44.7	15%
Bus/Truck[3]	180.0	240.7	250.0	126.0	129.3	4%
Multi-axle[4]	199.3	265.3	268.2	134.2	143.2	1%
Total	**569.0**	**772.6**	**824.6**	**416.9**	**449.7**	**7%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) Year-on-year growth for financial year 2015 to financial year 2016 is reflected as financial year 2014 does not reflect full operations, as a result of one non-operating toll plaza during a partial period.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016
	(Rs. in millions)
October	69.66
November	21.31

Notes:

(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The SU Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, SU is required to comply with detailed operating and maintenance standards.

Under the concession agreement, SU is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial years 2019 and 2020.

The following table sets forth the SU's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	**2015**	**2016**	**2015**	**2016**
			(Rs. in millions)		
Operation and maintenance expenditure	81.85	112.94	156.91	52.75	66.79
Periodic maintenance	157.57	203.23	227.61	113.81	127.46
Total expenditure	**239.42**	**316.17**	**384.52**	**166.56**	**194.25**

Project cost and financing

The cost of this project was approximately Rs. 11,070 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 6,573.33 million.

Land

The NHAI owns the land that underlies the SU Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

4. Trichy Dindigul Project

On July 19, 2007, the NHAI and TD entered into a concession agreement in respect of the Trichy Dindigul Project. TD was engaged for the strengthening and maintenance of the existing NH 45 carriageway in the state of Tamil Nadu from Km 333.00 to Km 421.60 and the widening of the roads from two to four lanes, on a BOT basis. A capex grant of Rs. 1,074.6 million and opex grant of 1,188.40 million has been provided towards the project of which Rs. 373.26 million of the opex grant is still to be received by TD. The concession period commenced on January 15, 2008 and the collection of tolls commenced on January 10, 2012. A provisional certificate of completion was issued on January 10, 2012.

Corridor description and competing roads

The project corridor is a segment of NH - 45 from Trichy (Km 333.000) to Dindigul (Km 421.273) and lies in the state of Tamil Nadu. It connects the important city of Trichy to Dindigul which is located on the North to South corridor and passes through places such as Manaparai, Vaiyampatti, Ayyalur and Vadamadurai. This corridor

carries a high volume of private and commercial passenger traffic in addition to regular freight traffic. Chinnalapatti, which is located 11 kilometers from Dindigul on the Madurai-Dindigul road is known for its silk industry. People also use this road to access the historical monument of Rock Fort in Dindigul. The land surrounding the project road is predominantly agricultural with some residential, barren, semi-urban, urban and urban commercial areas being found along the project road. There are many settlements and ribbon developments found along the project corridor.

Other industrial developments in the area include a large number of energy equipment manufacturing units, mechanical railway workshops, chemical distilleries and ELCOT IT Park.

The area surrounding the project road includes several local roads and state highways which, if integrated, can form a competing road network. However, according to the TD Traffic Report, most of the competing roads run across the project road and cover longer distances for the same pairs of origin and destination in comparison to the project road. The geometry and quality of the competing road is inferior in comparison to the project road with sharp turns, bottlenecks and patches of damaged pavements, adding to travel time and costs. The average speed on the project road from Trichy to Manapparai is 70 km per hour and the journey time takes approximately 33 minutes, in comparison to the competing roads which have an average speed of 40 km per hour and approximate journey times of 65 to 68 minutes. The average speed on the project road from Trichy to Dindigul is 70 km per hour and the journey time takes approximately 88 minutes, in comparison to the competing roads which have an average speed of 40 km per hour to 60 km per hour and journey times of approximately 129 to 182 minutes. Given that journey times and fuel cost savings are major criteria for selection of routes, it is unlikely that a significant proportion of commercial and passenger traffic will switch to competing roads. In addition, the project road has already been completed and traffic is already using the project road, such that the current traffic traversing the project road already factors in any traffic diversion that may have taken place.

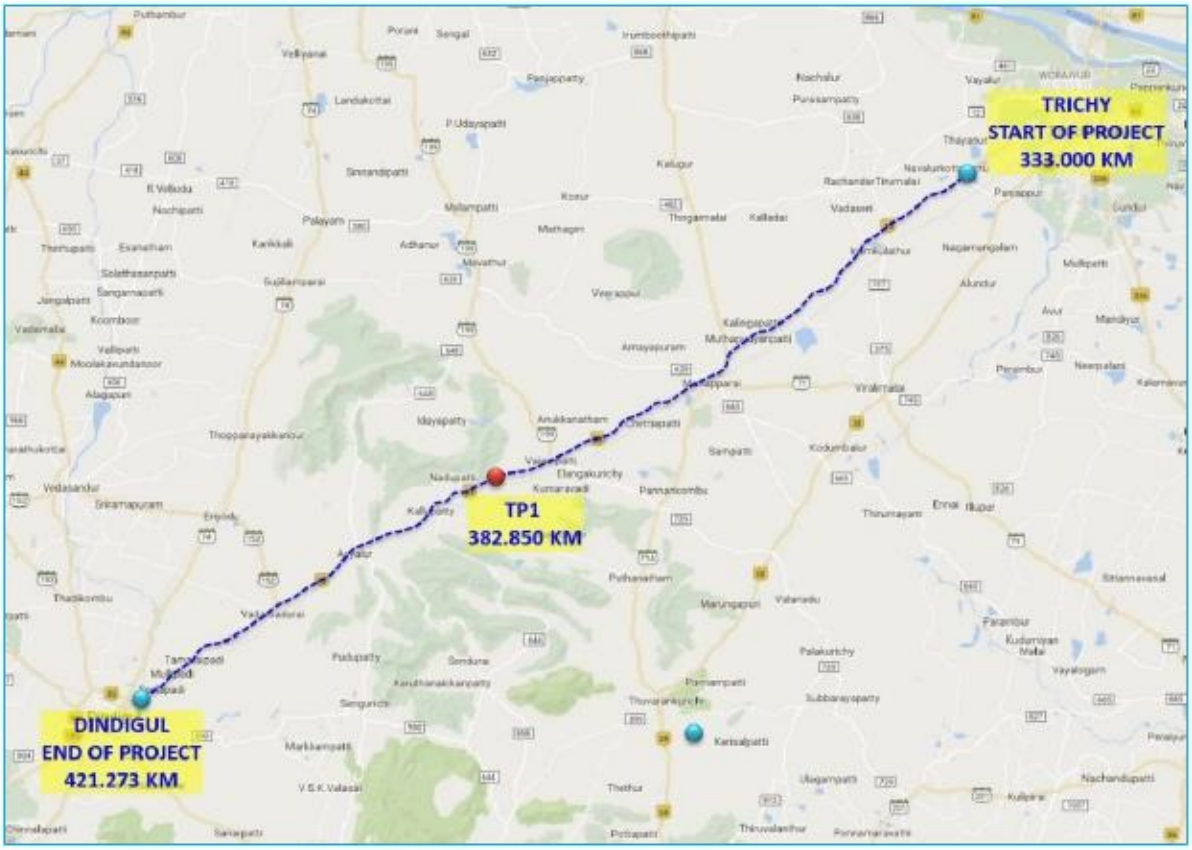

Figure 4: Map of the Trichy Dindigul Project

Concession period

The NHAI granted TD a concession for a period of 30 years for this project. The concession period commenced on January 15, 2008 and is expected to expire on January 14, 2038. TD began collecting tolls with respect to this project on January 10, 2012.

Traffic volume

Car traffic forms 57% of total traffic at the toll plaza while LCVs and buses/trucks form 15% and 21% of total traffic, respectively. Multi-axle traffic form 7% of the total traffic. Around 30% of total traffic is commercial in nature, the higher percentage of urban traffic is due to the project road starting and ending in the urban towns of Trichy and Dindigul. Overall, return journeys represent 42% of total traffic on this project road. The high percentage of return journeys reflects the project road's location between the two major urban centres of Trichy and Dindigul.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 – FY16 (%)
	2014	2015	2016[5]	2015	2016	
Car[1]	1,012,822	1,048,648	1,104,140	559,061	629,004	4%
LCV[2]	335,338	312,699	301,490	157,195	158,160	-5%
Bus/Truck[3]	470,400	416,654	410, 502	220,853	225,242	-7%
Multi-axle[4]	158,874	155,760	139,508	75,578	91,213	-6%
Total	**1,977,434**	**1933,764**	**1,955,639**	**1,012,687**	**1,103,619**	**-1%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project decreased to 9,759 PCUs in 2016 from 9,978 PCUs in 2014, representing a CAGR of -1%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 – FY16
	2014	2015	2016	2015	2016	(%)
Car[1]	2,775	2,873	3,155	3,055	3,437	7%
LCV[2]	919	857	861	859	864	-3%
Bus/Truck[3]	1,289	1,142	1,173	1,207	1,231	-5%
Multi-axle[4]	435	427	399	413	498	-4%
Total	**5,418**	**5,298**	**5,588**	**5,534**	**6,031**	**2%**

Total PCUs	**9,978**	**9,503**	**9, 759**	**9,822**	**10,669**	**-1%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) Toll operations were suspended for 16 days due to floods in December 2015.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the TD Project's total traffic mix, 54%, 16%, 22% and 8% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 55%, 16%, 21%, and 7% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of TD's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the TD Project's by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016**	**2015**	**2016**	
	(Rs. in millions)					**(%)**
Car[(1)]	73.0	81.1	86.4	44.0	50.1	9%
LCV[(2)]	38.8	40.0	40.3	20.9	21.0	2%
Bus/Truck[(3)]	103.3	95.4	98.2	51.8	53.1	-3%
Multi-axle[(4)]	65.5	69.2	65.1	34.5	41.0	0%
Total	**280.6**	**285.7**	**290.1**	**151.2**	**165.2**	**2%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016
	(Rs. in millions)
October	25.91
November	7.05

Notes:
(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The TD Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, TD is required to comply with detailed operating and maintenance standards.

Under the concession agreement, TD is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in year 2017 to 2018.

The following table sets forth the TD's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	**2015**	**2016**	**2015**	**2016**
			(Rs. in millions)		
Operation and maintenance expenditure	35.49	44.16	53.28	19.99	22.88
Periodic maintenance	122.61	137.32	153.80	76.90	71.77
Total expenditure	**158.10**	**181.48**	**207.08**	**96.89**	**94.65**

Project cost and financing

The cost of this project was approximately Rs. 5,400 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 2,891.65 million.

Land

The NHAI owns the land that underlies the TD Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

5. Hosur Krishnagiri Project

On July 2, 2010 the NHAI and HK entered into a concession agreement in respect of the Hosur Krishnagiri Project. HK was engaged to expand a portion of the NH 7 in Tamil Nadu from Km 33.13 to Km 93.00, widening the existing four lanes to six, on a DBFOT basis. The concession period commenced on June 7, 2011 and the collection of tolls commenced on June 7, 2011. A provisional certificate of completion was issued on April 5, 2016.

Corridor description and competing roads

The project road is a section of the NH 7 between Hosur and Krishnagiri and is part of the "golden quadrilateral" which connects Bengaluru and Chennai. The HK Project stretch starts from Km 33.13 near Hosur, a town on the outskirts of Bengalaru, to Km 93.00 in the outskirts of Krishnagiri. NH 7 connects several important cities including Varanasi, Rewa and Jabalpur. The land along the project road is a mixture of agricultural, urban and semi-urban land. Hosur, being under the influence of the extension of Bengalaru from the south, provides urban dominance.

This section of the NH 7 serves traffic to and from the industrial hub of Hosur, where several major automobile and manufacturing companies such as TVS Motor Company, Ashok Leyland, Prestige and Schaeffler have their manufacturing sites. The State Industrial Promotion Corporation of Tamil Nadu ("**SIPCOT**") proposed to expand the existing industrial complex in Hosur. The Krishnagiri district is also a major cultivator of mangos, and has an approved large scale mango export zone.

Tourist traffic on the HK project also includes visitors to Krishnagiri, where the Krishnagiri Dam and Hogenakkal falls are major tourist attractions. The fort of Tipu Sultan on Sayed Basha hills and the Rama temple also draw many visitors every year.

According to the HK Traffic Report, SIPCOT has proposed to expand its existing industrial complex at Hosur in Krishnagiri District with two further expansions, covering areas of over 2,306 acres and steps have been taken to acquire to necessary land. The Government of India is also planning a major infrastructure project in order to boost commerce between South India and East Asia called the Chennai-Bengaluru Industrial Corridor. Industrial parks, special economic zones and information technology parks are expected to be developed along the corridor.

The area surrounding the project road includes several local roads and state highways which, if integrated, can form a competing road network. However, according to the HK Traffic Report the competing roads run across the project road and cover longer distances for the same pairs of origin and destination in comparison to the project road. The geometry and quality of the competing road is inferior in comparison to the project road with sharp turns, bottlenecks and patches of damaged pavements, adding to travel time and costs. The average speed on the from Hosur to Shoolagiri is 70 km per hour and approximate journey time takes 20 minutes, in comparison to the competing roads which have an average speed of 40 km per hour and approximate journey times of 41 to 60 minutes. The average speed on the from Hosur to Krishnagiri is 70 km per hour and approximate journey time takes 45 minutes, in comparison to the competing roads which have an average speed of 40 km per hour and approximate journey times of 96 to 110 minutes. Given that journey times and fuel cost savings are major criteria for selection of routes, it is unlikely that a significant proportion of commercial and passenger traffic will switch to competing roads. In addition, the project road has already been completed and traffic is already using the project road, such that the current traffic traversing the project road already factors in any traffic diversion that may have taken place.

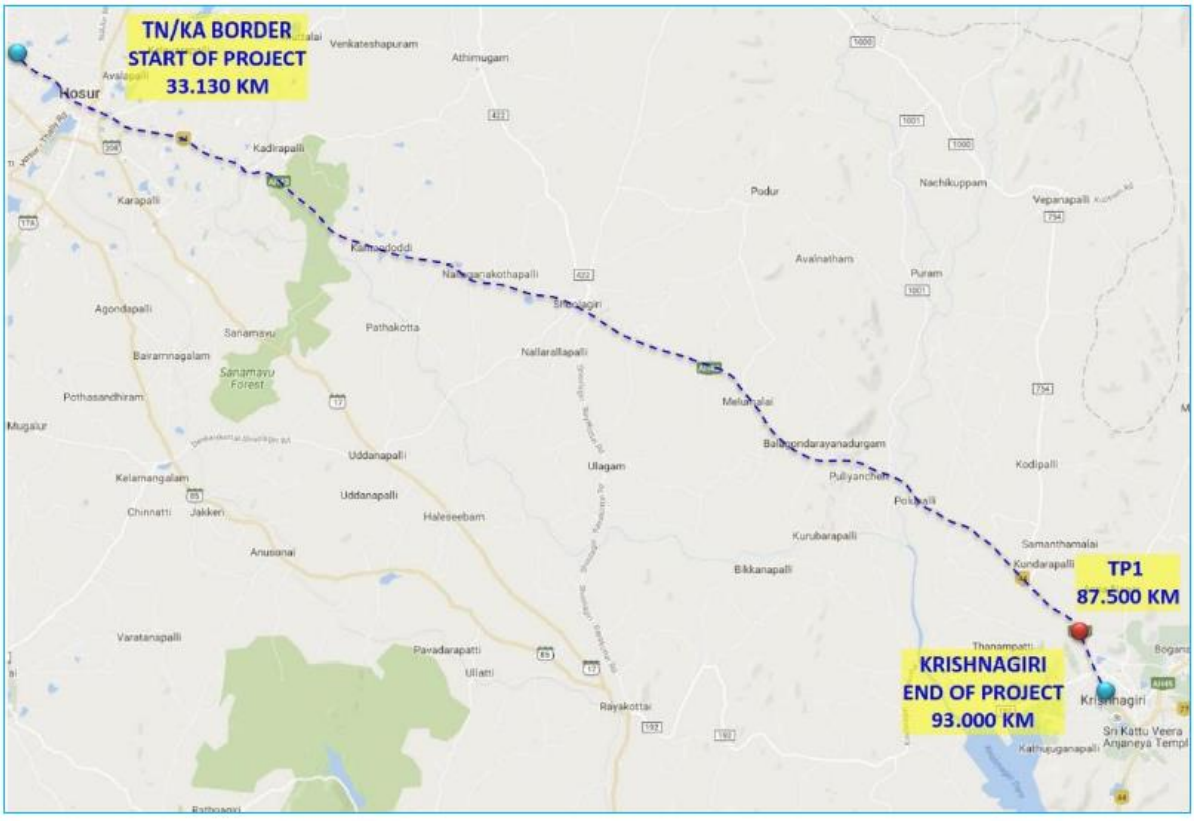

Figure 5: Map of the Hosur Krishnagiri Project

Concession period

The NHAI granted HK a concession for a period of 24 years for this project. The concession period commenced on June 7, 2011 and is expected to expire on June 6, 2035. HK began collecting tolls with respect to this project on June 7, 2011.

The concession agreement provides that, if the actual traffic volume falls short of or exceeds the target traffic volume on a defined date, the concession period will be extended or reduced, respectively, according to a formula specified in the agreement. Extension of the concession period is limited to five years.

For this project, the target date set forth in the concession agreement is April 1, 2020, and the target traffic volume set forth in the concession agreement 60,691 PCUs. The Traffic Consultant projects that per traffic projection actual traffic volume on the target date will exceed target traffic in all scenarios. Based on the terms of the concession agreement, in the event that the actual traffic volume on the target date falls short of or exceeds the target traffic volume by more than 2.5%, the concession period will be deemed to be modified and may be increased by 1.5% for every 1% of shortfall in traffic, provided that the aggregate increase in the concession period does not exceed 20% of the original concession period. In the event that the actual traffic volume exceeds the target traffic volume by more than 2.5%, then for every 1% excess as compared to the target traffic, the concession period shall be reduced by 0.75%, provided that such reduction in concession period does not exceed 10% of the original concession period. Accordingly, based on its projections, the Traffic Consultant estimates that the concession period would be reduced by about 2.4 years due to project traffic exceeding target traffic. Pursuant to the concession agreement, if the average daily traffic of PCU in any accounting year exceeds the design capacity of the project highway, the highway will be augmented and the concession period would be increased to account for additional expenditure incurred for the augmentation of the capacity of the project highway. The Traffic Consultant has observed that the design capacity of the project road is likely to be exceeded in year 2025-2026, which may result in an extension of the concession period. Any extension, however, is subject to NHAI approval and may differ from the Traffic Consultant's estimate depending on actual traffic volumes on the target date.

The project was bid on a premium payable to the NHAI of Rs. 669.00 million in the first year of operation with a subsequent increment of 5% each year on the premium paid in the previous year. In June 2014, pursuant to a scheme of premium restructuring approved by the Government, the NHAI approved the rescheduling of the premium payable to the NHAI for this project. Pursuant to the supplementary agreement for the deferment of premium dated June 17, 2014, and the sanction letter dated June 17, 2014, the NHAI has permitted HK to defer its premium payments in the manner set forth therein. For a description of the premium deferment, please see the section "*Summary of the Concession Agreements*" in this Draft Offer Document. For the financial year 2016, HK paid the NHAI a premium of Rs. 476.50 million and the premium for financial year 2017 is Rs. 853.83 million, out of which deferment sanction is for 300.3 million subject to actual revenue shortfall.

Traffic volume

At the toll plaza, car traffic comprises 54% of total traffic, LCVs/minibuses comprise 12%, buses/trucks comprise 14% and multi-axle vehicles comprise 20% of total traffic. Overall, approximately, 45% of total traffic is commercial in nature, and the higher percentage of urban traffic is due to the urban expansion of Bengalaru. Overall, return journeys represent 30% of total traffic, which reflect the presence of commercial and urban centres on both ends of the project road. Traffic volume reduces in the rainy season from August to November and picks up after November.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 –FY16 (%)**
	2014	**2015**	**2016[4]**	**2015**	**2016**	
Car[1]	3,818,634	4,247,747	4,932,633	2,435,305	2,625,037	14%

LCV[2]	991,440	1,051,690	1,120,137	564,419	576,325	6%
Bus/Truck[3]	1,297,224	1,413,598	1,314,589	664,205	677,550	1%
Multi-axle[4]	1,740,169	2,130,663	1,927,308	986,349	993,323	5%
Total	**7,847,466**	**8,843,698**	**9,294,667**	**4,650,278**	**4,872, 235**	**9%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) Toll operations were suspended for 16 days due to floods in December 2015.

The tollable annual average daily traffic for the project increased to 54,941 PCUs in 2016 from 46,653 PCUs in 2014, representing a CAGR of 9%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[1]	10,462	11,638	14, 093	13,308	14,344	16%
LCV[2]	2,716	2,881	3,200	3,084	3,149	9%
Bus/Truck[3]	3,554	3,873	3,756	3,630	3,702	3%
Multi-axle[4]	4,768	5,837	5,507	5,390	5,428	7%
Total	**21,500**	**24,229**	**26,556**	**25,411**	**26,624**	**11%**
Total PCUs	**46,653**	**53,847**	**54,941**	**53,077**	**54,602**	**9%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the HK Project's total traffic mix, 50%, 12%, 16% and 22% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 53%, 12%, 15%, and 21% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of HK's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the HK Project's by category of vehicles for the financial year 2014, 2015 and 2016 and six months ended September 30, 2015 and 2016:

	For the FY ended March 31,	**For the six months ended September 30,**	**CAGR FY14 – FY16**

	2014	2015	2016	2015	2016	
			(Rs. in millions)			(%)
Car[1]	188.5	225.9	263.2	129.1	138.6	18%
LCV[2]	81.1	90.3	97.3	49.0	52.4	10%
Bus/Truck[3]	198.8	233.5	220.2	111.5	116.0	5%
Multi-axle[4]	490.1	618.5	592.3	302.9	316.0	10%
Total	**958.5**	**1,168.2**	**1,173.0**	**592.5**	**623.0**	**11%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016
	(Rs. in millions)
October	103.4
November	35.8[1]

Notes:
(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The HK Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, HK is required to comply with detailed operating and maintenance standards.

Under the concession agreement, HK is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial year 2022 to 2023.

The following table sets forth the HK 's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	2015	2016	2015	2016
			(Rs. in millions)		
Operation and maintenance expenditure	49.24	44.85	85.49	32.02	62.88
Periodic maintenance	-	56.57	84.47	42.24	47.30
Total expenditure	**49.24**	**101.42**	**169.96**	**74.26**	**110.18**

Project cost and financing

The cost of this project was approximately Rs. 9,250 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 5,501.32 million.

Land

The NHAI owns the land that underlies the HK Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

6. Trichy Karur Project

On July 19, 2007, the NHAI and TK entered into a concession agreement in respect of the Trichy Karur Project. TK was engaged for the strengthening and maintenance of the existing carriageway from Km 135.80 to Km 218.00, on the Trichy - Karur section of the NH 67 in the state of Tamil Nadu, on a BOT basis. A capex grant of Rs. 1,342.6 million proportionate to a 61 km stretch and opex grant of 21.3 million has been provided towards the project. The project road stretch from Km 154.4 to Km 218.0 was completed, however, the stretch of the Trichy bypass from Km 0.0 to Km 17.3 and from Km 153.2 to Km 154.4 could not be completed as the required land for widening was not made available. Therefore, a supplementary agreement was entered into between the NHAI and TK in November 2013, in which a total length of 18.7 Km was delinked from the project for COD purpose and operation and maintenance of an additional 2.28 Km length of project road was also added on a revenue sharing basis with NHAI in the ratio of 83.80 (NHAI) and 16.20 (TK) for the 2.28 km stretch. However, once the NHAI is able to hand over the land for the 18.7 km stretch, TK will be required to finance (at no additional cost to the NHAI) and complete construction within 18 months. The concession period commenced on January 15, 2008 and the collection of tolls commenced on February 22, 2014. A provisional certificate of completion was issued on February 22, 2014.

Corridor description and competing roads

The TK Project begins in Trichy town and terminates at Karur, where the NH 67 intersects the NH 45 on the North-South corridor. The road passes through five taluks: Trichy, Srirangam, Kulithalai, Krishnarayapuram and Karur. The project road runs primarily on flat terrain through an agricultural belt, with some sections being in urban areas.

As the TK project is parallel to the Cauvery river, where sand is transported in large volumes by trucks, traffic is constant on this road. According to the TK Traffic Report, the lifting of the sand mining ban will also add to traffic growth on this road. In addition, one of the largest chemical distilleries in the Tamil Nadu area is located in Trichy. The Karur area is also a centre for bus building, textiles, petroleum and newsprint industries.

Although the area surrounding the project road includes several local roads and state highways which, if integrated, can form a competing road network. According to the TK Traffic Report, there is currently no comparable alternative road capable of providing a similar level of service. However, the competing roads run across the project road and cover longer distances for the same pairs of origin and destination in comparison to the project road. The geometry and quality of the competing road is inferior in comparison to the project road with sharp turns, bottlenecks and patches of damaged pavements, adding to travel time and costs. The average speed on the project road is 70 km per hour and journey time is 70 minutes, in comparison to the competing roads which have an average speed of 40 km per hour and journey time of 149 minutes or 152 minutes. Given that journey times and fuel cost savings are major criteria for selection of routes, it is unlikely that a significant proportion of commercial and passenger traffic will switch to competing roads. In addition, the project road has already been completed and traffic is already using the project road, such that the current traffic traversing the project road already factors in any traffic diversion that may have taken place.

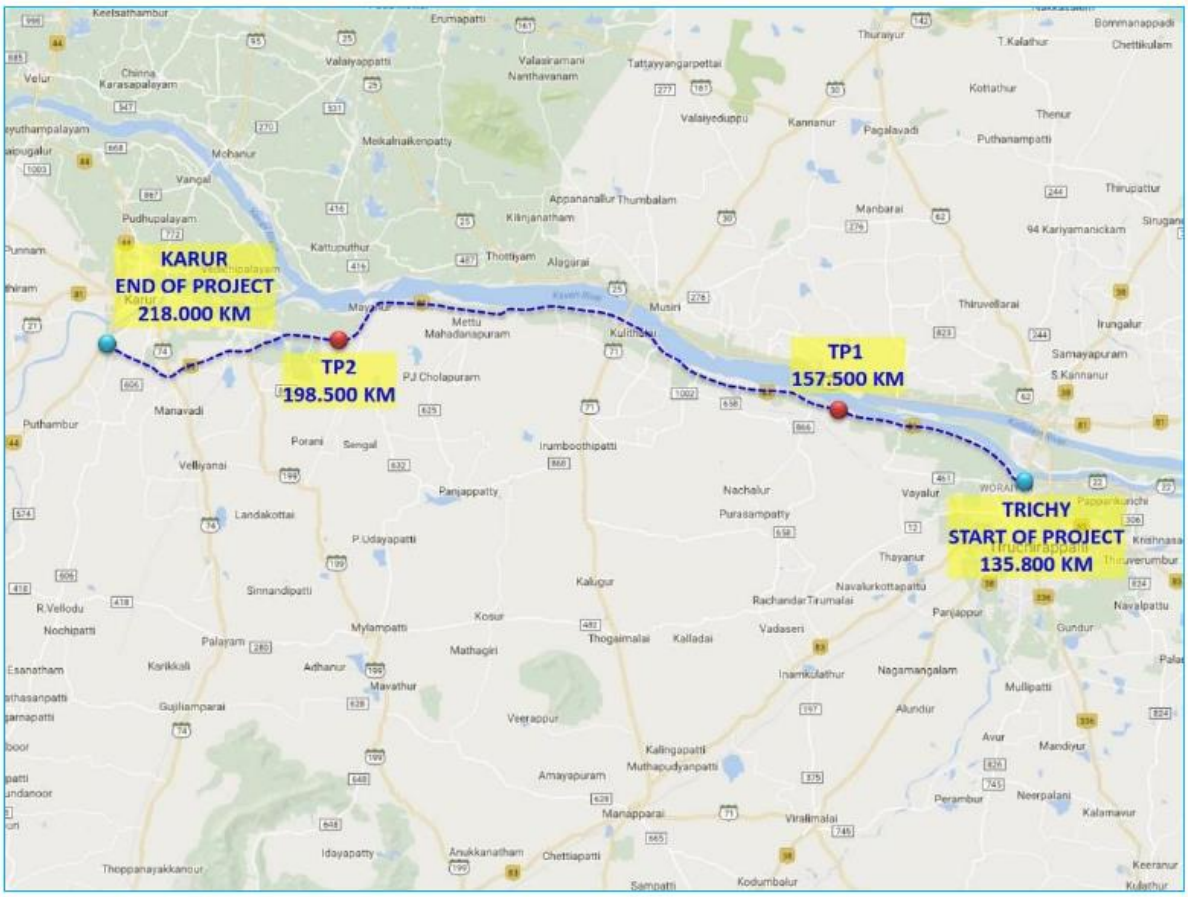

Figure 6: Map of the Trichy Karur Project

Concession period

The NHAI granted TK a concession for a period of 30 years for this project. The concession period commenced on January 15, 2008 and is expected to expire on January 14, 2038. TK began collecting tolls with respect to this project on February 22, 2014.

Traffic volume

At the toll plaza located at km 157.50 near Trichy, 35% of total traffic is commercial in nature, where car traffic comprise 56%, LCVs/minibuses comprise 13%, buses and trucks comprise 22% and multi-axle vehicles comprise 9% of total traffic. At the toll plaza located at km 198.500 near Karur, the proportion of multi-axle vehicles increases to 17%, trucks and buses increase to 43%, car traffic reduces to 32% and LCVs/minibuses reduce to 8% of total traffic. Overall, return journeys at the toll plaza near Karur are higher than the toll plaza near Trichy, being 62% in comparison to 53% of total journeys. Sand mining along the Cauvery river is a reason that there are a high number return journeys for commercial vehicles. Seasonal variations attributable to festivals and weather also affect traffic volume: traffic volume reduces between September and November due to the rainy season and picks up again after November.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		YoY growth FY15 – FY16[5] (%)
	2014[5]	2015	2016[6]	2015	2016	
Car[1]	104,652	1,263,195	1,348,357	703,427	757,528	7%

LCV[2]	38,461	345,389	345,604	181,787	182,646	0%
Bus/Truck[3]	135,894	1,370,631	1,396,311	751,633	745,805	2%
Multi-axle[4]	60,885	506,933	566,201	291,446	303, 027	12%
Total	**339,892**	**3,486,148**	**3,656,474**	**1,928,293**	**1,989,006**	**5%**

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

(5) This project commenced tolling in February 2014, therefore, only year-on-year growth is shown for financial year 2015 to financial year 2016.

(6) Toll operations were suspended for 16 days due to floods in December 2015.

The tollable annual average daily traffic for the project increased to 24,582 PCUs in 2016 from 22,396 PCUs in 2015, representing a year-on-year growth of 10%. The table below sets forth the tollable annual average daily traffic, based on weighted average, by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**YoY growth FY15 – FY16[5]**
	2014[5]	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[1]	2,908	3,461	3,852	3,844	4,139	11%
LCV[2]	1,068	946	987	993	998	4%
Bus/Truck[3]	3,775	3,755	3,989	4,107	4,075	6%
Multi-axle[4]	1,691	1,389	1,618	1,593	1,656	16%
**Total ..... **	**9,441**	**9,551**	**10,447**	**10,537**	**10,869**	**9%**
**Total PCUs ..... **	**23,445**	**22,396**	**24,582**	**24,822**	**25,314**	**10%**

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

(5) This project commenced tolling in February 2014, therefore, only year-on-year growth is shown for financial year 2015 to financial year 2016.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the TK Project's total traffic mix, 37%, 10%, 38% and 15% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 37%, 10%, 38%, and 15% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

For the Fiscal Year 2014, TK recognised construction income related to the construction of roads. From Fiscal Year 2015, substantially all of TK's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the TK Project's by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		YoY growth FY15 – FY16[5]
	2014[5]	2015	2016	2015	2016	
	(Rs. in millions)					(%)
Car[1]	5.2	65.2	71.9	37.2	40.4	10%
LCV[2]	3.1	29.5	30.9	16.0	16.3	5%
Bus/Truck[3]	22.7	213.7	226.9	120.0	121.0	6%
Multi-axle[4]	17.3	152.0	176.7	90.9	93.4	16%
Total	**48.3**	**460.4**	**506.4**	**264.2**	**271.1**	**10%**

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

(5) This project commenced tolling in February 2014, therefore, only year-on-year growth is shown for financial year 2015 to financial year 2016.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016
	(Rs. in millions)
October	44.73
November	12.35

Notes:

(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The TK Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, TK is required to comply with detailed operating and maintenance standards.

Under the concession agreement, TK is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The first major maintenance is expected in financial year 2018 to 2019.

The following table sets forth the TK's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	2015	2016	2015	2016
	(Rs. in millions)				
Operation and maintenance expenditure	18.71	47.49	56.20	23.99	34.25
Periodic maintenance	6.23	83.72	93.77	46.88	52.51
**Total expenditure ..... **	**24.94**	**131.21**	**149.97**	**70.87**	**86.76**

Project cost and financing

The cost of this project was approximately Rs. 8,116 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 3,373.12 million.

Land

The NHAI owns the land that underlies the TK Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

7. Jaipur Reengus Project

On February 19, 2010, the NHAI and JR entered into a concession agreement in respect of the Jaipur Reengus Project. JR was engaged to expand a portion of the NH 11 in the state of Rajasthan, from Km 246.30 to Km 298.08, widening the existing two lanes to four, on a DBFOT basis. A capex grant of Rs. 1,029 million has been provided towards the project. The concession period commenced on August 14, 2010 and the collection of tolls commenced on July 15, 2013. A provisional certificate of completion was issued on July 15, 2013 and a second provisional completion certificate was issued on October 16, 2015.

Corridor description

The Jaipur - Reengus road, a stretch of the NH 11, starts at km 246.3 near the Jaipur bypass and ends at km 298.075 on the Reengus bypass. The project road is 52.65 km long with one toll plaza. The JR project is a main highway that connects cities such as Bikaner, Fatehpur and Sikar to Jaipur as well as connecting such cities to Jaipur International Airport.

This corridor passes through a key manufacturing area in Jaipur where traffic volume is high and the road carries goods traffic generating from industrial areas in the Jaipur district and the stone mines. Chomu town, which is in the midway of the corridor, is also a hub for the purchase of agriculture equipments and machines. The road carries both passenger and freight traffic. Furthermore, this road is frequented by regular tourist traffic due to the popularity of Jaipur and the Khatushyamji temple in Reengus.

According to the JR Traffic Report, the JR project is experiencing high traffic growth rate as a result of Jaipur expanding towards Chomu. Some of the approved layouts between Jaipur and Chomu have already started: initial increase in traffic due to construction works and later increased traffic from the developed areas would contribute to traffic growth rates. Traffic growth potential is also expected to be driven by the development of an industrial park in Sikar for a wide range of industries. Generally, traffic growth rate is heavily reliant on Rajasthan state as around 99% of passenger traffic and around 86% of freight traffic originated from or were destined for Rajasthan.

Although there are no competing roads, there is a village road in the vicinity of the toll plaza which traffic can use to bypass the toll plaza. The alternative route has a four lane section starting just in front of the toll plaza and leads

onto a village road which leads through a small village and rejoins the JR project road just after the toll plaza. This alternative road is about 700 m longer than the project road section. JR will be providing barricades to avoid any leakage traffic.

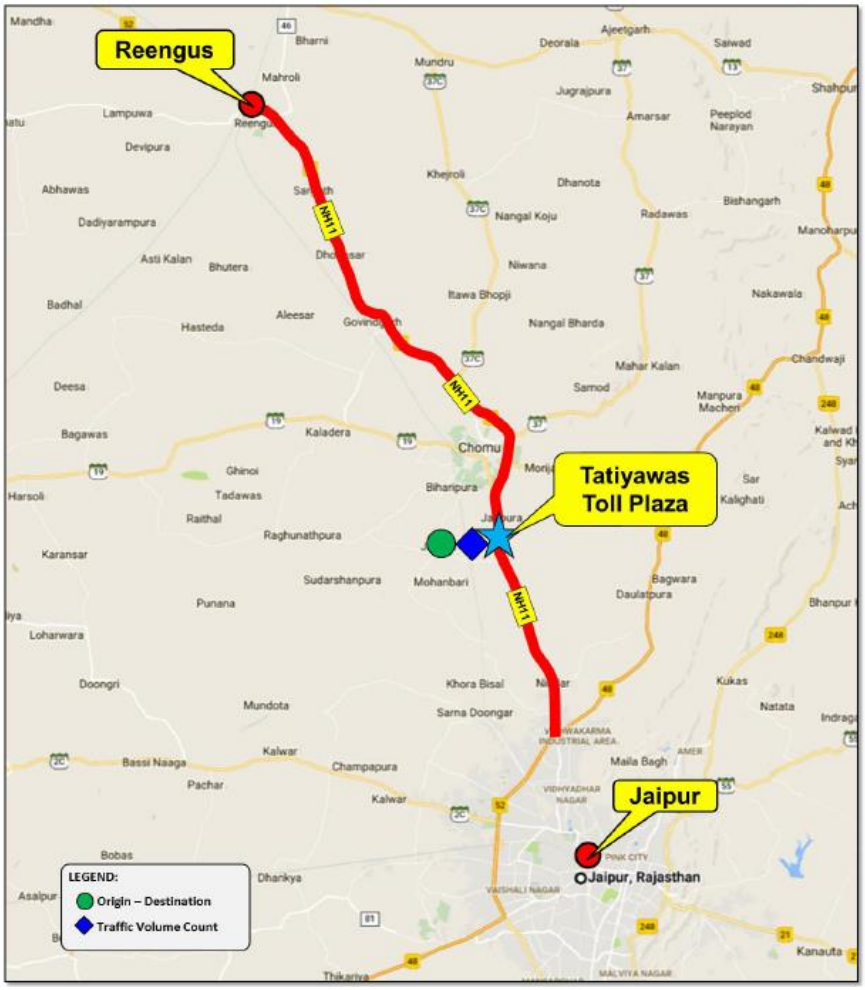

Figure 7: Map of the Jaipur Reengus Project

Concession period

The NHAI granted JR a concession for a period of 18 years for this project. The concession period commenced on August 14, 2010 and is expected to expire on August 13, 2028. JR began collecting tolls with respect to this project on July 15, 2013.

The concession agreement provides that, if the actual traffic volume falls short of or exceeds the target traffic volume on a defined date, the concession period will be extended or reduced, respectively, according to a formula specified in the agreement. Extension of the concession period is limited to four years.

For this project, the target date set forth in the concession agreement is October 1, 2020, and the target traffic volume set forth in the concession agreement is 35,663 PCUs, the passenger car equivalent for various types of vehicles based on industry guidelines. Based on the terms of the concession agreement, in the event that the actual traffic volume on the target date falls short of or exceeds the target traffic volume by more than 2.5%, the concession period will be deemed to be modified and may be increased by 1.5% for every 1% of shortfall in traffic, provided that the aggregate increase in the concession period does not exceed 20% of the original concession period. Any extension, however, is subject to NHAI approval and may differ from the Traffic Consultant's estimate depending on actual traffic volumes on the target date.

In consideration of the grant of the concession, JR pays the NHAI a nominal annual concession fee of Rs. 1. NHAI provided to JR cash support by way of an outright grant equal to the sum set forth in the bid submitted by the consortium bidders, namely Rs. 1029 million, in accordance with the provisions of the JR Concession Agreement.

Traffic volume

At Tatiyawas toll plaza, the traffic composition comprises 75% of cars, 7% of LCVs, 8% of buses, 4% of trucks and 6% of multi-axle vehicles. The minimum traffic variation in terms of PCUs is 3% with respect to average daily traffic and maximum traffic variation in terms of PCUs is 4% with respect to average daily toll.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**YoY growth FY15 – FY16[5]**
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[1]	2,778,217	4,768,603	4,780,097	2,415,258	2,194,922	0.2%
LCV[2]	269,270	416,275	406, 970	207, 816	173,424	-2%
Bus/Truck[3]	562,198	821,467	787,140	393,187	370,144	-4%
Multi-axle[4]	316,214	442,138	468, 246	223,787	197,033	6%
Total	**3,925,902**	**6,448,484**	**6,442,455**	**3,240,050**	**2,935, 524**	**0%**

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

(5) For this project, a provisional certificate of completion was issued on July 15, 2013 for 48 km and the second provisional completion certificate was issued on October 16, 2015 for an addition 4km. Tolling activities only commenced after the first quarter and did not capture revenue for the full financial year 2014.

The tollable annual average daily traffic for the project increased to 26,937 PCUs in 2016 from 26,978 PCUs in 2015, representing a year-on-year growth of 0%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**YoY growth FY15 – FY16[5]**
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[1]	10, 685	13,065	13,060	13 198	11,994	0%
LCV[2]	1,036	1,140	1,112	1,136	948	-2%
Bus/Truck[3]	2,162	2,251	2,151	2,149	2,023	-4%
Multi-axle[4]	1,216	1,211	1,279	1,223	1,077	6%

Total	**15,100**	**17,667**	**17,602**	**17,705**	**16,041**	**0%**
Total PCUs	**24,199**	**26,978**	**26,937**	**26,850**	**24,329**	**0%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) For this project, a provisional certificate of completion was issued on July 15, 2013 for 48 km and the second provisional completion certificate was issued on October 16, 2015 for an addition 4km. Tolling activities only commenced after the first quarter and did not capture revenue for the full financial year 2014.

On average for the three financial years ended 2014, 2015 and 2016, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the JR Project's total traffic mix, 73%, 7%, 13% and 7% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 74%, 6%, 12%, and 7% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

For Fiscal Year 2014, JR recognised construction income in relation to the construction of roads. From Fiscal Year 2015 onwards, substantially all of JR's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the JR Project by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**YoY growth FY15 – FY16[5]**
	2014	**2015**	**2016**	**2015**	**2016**	
	(Rs. in millions)					**(%)**
Car[1]	100.4	177.5	191.6	92.7	95.0	8%
LCV[2]	16.3	26.0	26.8	13.2	12.3	3%
Bus/Truck[3]	68.3	105.6	106.6	51.6	65.3	1%
Multi-axle[4]	68.5	101.4	113.6	51.9	49.8	12%
Total	**253.5**	**410.5**	**438.6**	**209.4**	**222.4**	**7%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.
(5) For this project, a provisional certificate of completion was issued on July 15, 2013 for 48 km and the second provisional completion certificate was issued on October 16, 2015 for an addition 4km. Tolling activities only commenced after the first quarter and did not capture revenue for the full financial year 2014.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016 (Rs. in millions)
October	36.56
November	12.77

Notes:

(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The JR Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, JR is required to comply with detailed operating and maintenance standards.

Under the concession agreement, JR is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial year 2021.

The following table sets forth JR's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	2015	2016	2015	2016
	(Rs. in millions)				
Operation and maintenance expenditure	35.27	45.55	78.94	28.44	44.33
Periodic maintenance	48.97	73.13	81.90	40.95	45.87
Total expenditure	**84.24**	**118.68**	**160.84**	**69.39**	**90.20**

Project cost and financing

The cost of this project was approximately Rs. 5,680 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 3,598.22 million.

Land

The NHAI owns the land that underlies the JR Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

8. Gurgaon Faridabad Project

On January 31, 2009, the Haryana Public Works Department and GF entered into a concession agreement in respect of the Gurgaon Faridabad Project. GF was engaged to upgrade the existing road from Km 0.00 to Km 24.31 on the section of the Gurgaon – Faridabad road, Km 0.00 to Km 6.10 of the section of the MCF road, Km 0.00 to Km 3.10 of the section of the Crusher Zone road, Km 0.00 to Km 28.58 of the section of the Ballabhgarh

– Lukhawas junction road and Km 0.00 to Km 4.10 of the section of the Pali – Bhakri road. The total length of road to be widened from two to four lanes was 66.19 kms, on a BOT basis. The concession period commenced on May 31, 2009 and the collection of tolls commenced on June 29, 2012. A provisional certificate of completion was issued on June 29, 2012.

Corridor description and competing roads

The project road includes four stretches of roads in state of Haryana as shown in the table below:

Name	***Length***
Gurgaon Faridabad Road	*24.31 km*
Crusher Road	*3.10 km*
Ballabgarh Sohna Road	*32.7 km*
MCF Road	*6.1 km*
Total	***66.19 km***

A significant amount of car traffic on the GF road comprises of daily commuter traffic between Gurgaon to Faridabad, Noida and Southeast Delhi. The Crusher Zone has very high density of Trucks and MAV.

According to the GF Traffic Report, the GF Project caters to areas of rapid urban development, including Gurgaon, Faridabad, Ballabhgarh and Sohna, which has led to growth in passenger traffic in this region. The Crusher Zone is also located in an area that is undergoing heavy construction, and such activities are expected to lead to an increase in truck traffic.

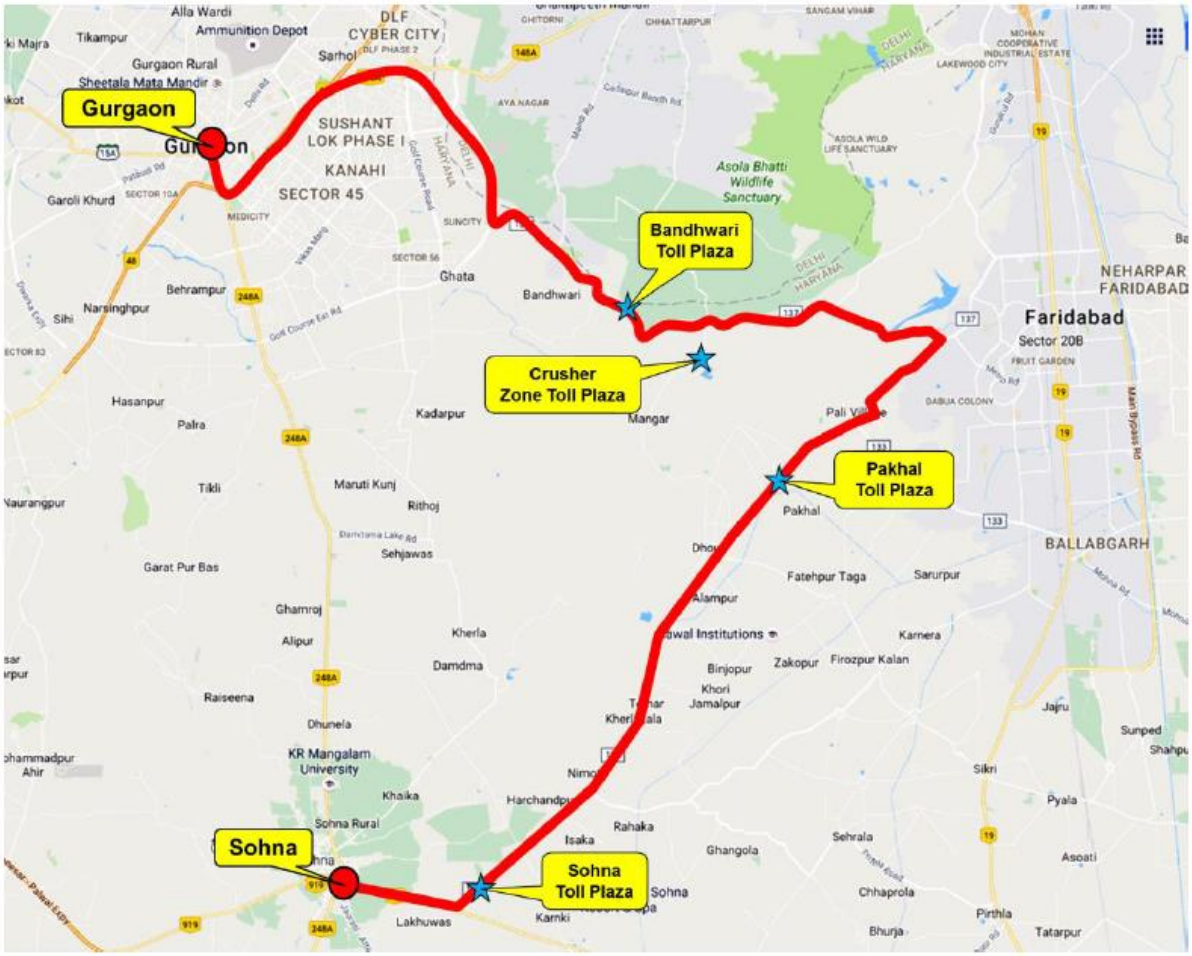

Figure 8: Map of the Gurgaon Faridabad Project

Concession period

HPWD (B&R) Bench granted GF a concession for a period of 17 years for this project. A one-time negative grant of Rs. 1,503 million was payable to the NHAI within 30 days of the financial close of the project. The concession period commenced on May 31, 2009 and is expected to expire on May 30, 2036. GF began collecting tolls with respect to this project on June 29, 2012.

The BS1 toll plaza has minimum variation in terms of vehicles (6 % with respect to Average Daily Traffic ("**ADT**")) and maximum variation in terms of PCUs (23 % with respect to ADT). The BS2 toll plaza has minimum variation in terms of vehicles (7 % with respect to ADT) and has maximum variation in terms of PCUs (20 % with respect to ADT). The Crusher Zone toll plaza has minimum variation in terms of vehicles (15 % with respect to ADT) and maximum variation in terms of PCUs (23 % with respect to ADT). The Bandhwari toll plaza has minimum variation in terms of vehicles and PCUs (16% with respect to ADT) and maximum variation in terms of vehicles (71 % with respect to ADT). The Gurgaon Fraidabad area is primarily urban and thus the majority of traffic results from work based trips. This is reflected in the maximum peak traffic hours which are between 08.00 and 09.00 hours in the BS1 toll plaza location and the Bandhwari toll plaza location and are between 07.00 hours and 08.00 hours in the Crusher Zone toll plaza.

The project corridor is an indication of Haryana's influence in traffic generation. At the BS1 toll plaza location, 87% of passenger traffic and 90% of freight traffic originate from or are destined to Haryana. At the BS2 toll plaza location, 88% of passenger traffic and 90% of freight traffic originate from or are destined to Haryana. The corresponding numbers for the Crusher Zone toll plaza is 86% and 59%. At the Bandhwari Toll Plaza, about 90% of passenger and goods traffic is from Haryana.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 –FY16
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[1]	9,763,748	11,170,184	13,069,267	6,316,891	7,457,771	16%
LCV[2]	1,178,764	1,213,170	1,309,865	629,515	710,923	5%
Bus/Truck[3]	1,853,798	2,074,061	1,924,626	1,007,062	882,895	2%
Multi-axle[4]	124,186	126,250	148,753	67,020	100,094	9%
**Total ..... **	**12,920,496**	**14,583,665**	**16,452,511**	**8,020,489**	**9,151,683**	**13%**

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project increased to 58,681 PCUs in 2016 from 48,362 PCUs in 2014, representing a CAGR of 10%. The table below sets forth the tollable annual average daily traffic, based on summation at all toll plazas, by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 – FY16
	2014	**2015**	**2016**	**2015**	**2016**	
	(Rs. in millions)					**(%)**
Car[1]	26,750	30,603	35,708	34,519	40,753	16%

LCV[2]	3,229	3,324	3,579	3,440	3,885	5%
Bus/Truck[3]	5,079	5,682	5,259	5,503	4,825	2%
Multi-axle[4]	340	346	406	366	547	9%
**Total ..... **	**35,399**	**39,955**	**44,952**	**43,828**	**50,009**	**13%**
**Total PCUs ..... **	**48,362**	**54,192**	**58,681**	**57,836**	**63,515**	**10%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the GF Project's total traffic mix, 78%, 9%, 12% and 1% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 80%, 8%, 12%, and 1% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of GF's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the GF Project by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016**	**2015**	**2016**	
	(Rs. in millions)					**(%)**
Car[1]	103.0	113.8	173.3	77.4	104.9	30%
LCV[2]	80.4	87.4	101.5	47.4	57.2	12%
Bus/Truck[3]	253.1	266.8	291.0	147.9	135.5	7%
Multi-axle[4]	27.4	39.1	38.3	16.6	26.2	18%
**Total ..... **	**463.9**	**507.1**	**604.1**	**289.3**	**323.8**	**14%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016 (Rs. in millions)
October	55.55
November	35.44

Notes:

(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The GF Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, GF is required to comply with detailed operating and maintenance standards.

Under the concession agreement, GF is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial year 2018.

The following table sets forth the GF's operation and maintenance costs during the financial years 2014, 2015 and 2016 for the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	2015	2016	2015	2016
	(Rs. in millions)				
Operation and maintenance expenditure	73.62	123.75	180.65	64.60	110.51
Periodic maintenance	83.38	93.38	104.59	52.29	58.57
Total expenditure	**157.00**	**217.13**	**285.24**	**116.90**	**169.08**

Project cost and financing

The cost of this project was approximately Rs. 7,790 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 4,710.70 million.

Land

The HPWD owns the land that underlies the GF Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

9. Kandla Mundra Port Project

On March 10, 2010, the NHAI and KM entered into a concession agreement in respect of the Kandla Mundra Port Project. KM was engaged to expand the existing road from Km 0.00 to Km 71.40 on the Gandhidham (Kandla) – Mundra Port section of the NH 8A (Extension) in the state of Gujarat by widening the road to four lanes and subsequently to six lanes, on a DBFOT basis. The concession period commenced on January 19, 2011 and the collection of tolls commenced on November 7, 2015. A provisional certificate of completion was issued on November 4, 2016.

Corridor description and competing roads

The KM project is located in the southern part of the Kutch district of Gujarat State. The project road starts at Gandhidham town (Km 0.00) and terminates at Siracha Junction (Km 73.40) on Mandvi Road (NH-8A, Extension). The road carries a high volume of goods and container traffic, which travels back and forth from the two commercial ports of Kandla and Mundra.

The Kandla port is strategically located to handle import and export cargo for the industrial belt stretching across Jammu and Kashmir, Punjab, Himachal Pradesh, Rajasthan and Gujarat and it is the most economical major port in terms of tariff as well as operational expenditure. Mundra is the largest commercial port in India with a high degree of mechanisation and it has a major container handling facility including storage facilities for crude oil, containers, dry bulk, break bulk automobiles and liquid cargo. Around 87% of passenger traffic and 74% of freight traffic originates from or are destined to Mundra port and the Kutch region. According to the KM Traffic Report, the growth of port traffic and cargo will lead to an increase in traffic flow on the project road.

There is an alternative rail route to Mundra Port. Therefore, according to the KM Traffic Report, a substantial change in policy and infrastructure, such as rail fares, travel time, and improvement of existing rail services may affect the traffic volume on the project road negatively.

Figure 9: Map of the Kandla Mundra Port Project

Concession period

The NHAI granted KM a concession for a period of 12 years for this project. However, in the event the six-laning is undertaken in accordance with the provision of the concession agreement, the concession period will be extended to 25 years. The concession period commenced on January 19, 2011 and is expected to expire after 12 years on January 18, 2023. KM began collecting tolls with respect to this project on November 7, 2016.

The concession agreement provides that, if the actual traffic volume falls short of or exceeds the target traffic volume on a defined date, the concession period will be extended or reduced, respectively, according to a formula specified in the agreement. Extension of the concession period is limited to five years.

For this project, the target date set forth in the concession agreement is January 1, 2020, and the target traffic volume set forth in the concession agreement 60,384 PCUs, the passenger car equivalent for various types of vehicles based on industry guidelines. Based on the terms of the concession agreement, in the event that the actual traffic volume on the target date falls short of or exceeds the target traffic volume by more than 2.5%, the concession period will be deemed to be modified and may be increased by 1.5% for every 1% of shortfall in traffic. In the event that the actual traffic volume exceeds the target traffic volume by more than 2.5%, then for every 1% excess as compared to the target traffic, the concession period shall be reduced by 0.75%, provided that such reduction in concession period does not exceed 10% of the original concession period. Any extension, however, is subject to NHAI approval and may differ from the Traffic Consultant's estimate depending on actual traffic volumes on the target date.

The project was bid on a premium payable to the NHAI of Rs. 420.00 million in the first year of operation with a subsequent increment of 5% each year on the premium paid in the previous year. The NHAI has rejected KM's application for premium restructuring for the project. The premium payable for financial year 2017 is Rs. 353.15 million. For further details, please see the section headed "*Risk Factors – Risks Relating to Our Business and Industry –Three Project SPVs (PS, KM and HK) are required to pay annual premiums / negative grants in consideration for being granted the right to build and operate their respective projects. Failure to make such payments could result in the termination of the relevant concession agreement by the Concessioning Authority*" in this Draft Offer Document.

Traffic volume

The traffic primarily consists of MAVs, which represent 67% of traffic, followed by cars representing 15%. The majority of vehicles, both commercial vehicles and cars, originate from or are destined for a destination in Gujarat. Thus traffic volume is dependent upon continued economic improvement within the Gujarat region.

The table below sets forth the tollable traffic count by category of vehicles for the financial year 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,	**For the six months ended September 30,**	
	2016	**2015**	**2016**
Car[(1)]	98,243	-	123,597
LCV[(2)]	15,254	-	23,739
Bus/Truck[(3)]	24,839	-	27,105
Multi-axle[(4)]	906,200	-	1,085,240
Total	**1,044, 536**	**-**	**1,259,680**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial year 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,	**For the six months ended September 30,**	
	2016	**2015**	**2016**
Car[(1)]	673	-	675
LCV[(2)]	104	-	130
Bus/Truck[(3)]	170	-	148

Multi-axle[4]	6,207	5,930
Total	**7,154**	**6,883**
Total PCUs	**29,271**	**28,001**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 10%, 2%, 3%, and 86% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

For fiscal years 2014 and 2015, KM recognised construction income in relation to the construction of roads. For Fiscal Year 2016 onwards, substantially all of KM's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the Kandla Mundra Port Project by category of vehicles for the financial year 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,	**For the six months ended September 30,**	
	2016	**2015**	**2016**
Car[1]	7.3		8.7
LCV[2]	1.5		2.2
Bus/Truck[3]	5.1		5.7
Multi-axle[4]	282.49		373.03
Total	**296.4**		**389.6**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016
	(Rs. in millions)
October	66.92
November	19.49

Notes:

(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The KM Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, KM is required to comply with detailed operating and maintenance standards.

Under the concession agreement, KM is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial year 2029, assuming that six-laning in undertaken and completed in accordance with the concession agreements.

The following table sets forth the KM 's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	**2015**	**2016**	**2015**	**2016**
			(Rs. in millions)		
Operation and maintenance expenditure	19.29	2.80	43.38	7.18	34.79
Periodic maintenance	-	-	35.86	-	48.20
Total expenditure	**19.29**	**2.80**	**79.24**	**7.18**	**82.99**

Project cost and financing

The cost of this project was approximately Rs. 12,260 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 7,093.27 million.

Land

The NHAI owns the land that underlies the KM Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

10. Pune Satara Project

On March 10, 2010, the NHAI and PS entered into a concession agreement in respect of the Pune Satara Project. PS was engaged to expand the Km 725.00 to Km 865.35, Pune – Satara section of the NH 4 in the state of Maharashtra, on a DBFOT basis. The concession period commenced on October 1, 2010 and the collection of tolls commenced on October 1, 2010. On August 28, 2016, the NHAI issued a certificate for accounting and financing purposes for a length of 110 km. At the request of PS, a certificate for accounting and financing purposes was issued by NHAI on August 28, 2016, certifying that a length of 110.73 km on the left-hand side and 110.263 of the right-hand side out of 140.35 km has been completed. The remainder of the Pune Satara Project is under construction and Sponsor support will be provided for the completion of such construction.

Corridor description

The PS Project starts at Chainage 725.00 Km (Satara) and ends at Chainage 865.35 Km (Dehu Road junction) in the state of Maharashtra. The project road is a large four lane divided corridor (currently being converted into six lanes), and carries heavy traffic. The project road is a part of the Mumbai-Bengalaru-Chennai segment of "golden quadrilateral" on the NH 4 and passes through three major industrial towns, (Satara, Pune and Pimpri-Chinchwad), as well as providing access to the Hinjewadi IT Park.

The PS project road is the main highway connecting Pune to Satara, as well as to tourist locations such as Mahabaleshar and Panchgani. The corridor also carries north-south long distance goods traffic for the major industries in the area, along with short distance passenger traffic due to the many tourist destinations present in the vicinity. The Maharashtra Industrial Developmental Corporation ("**MIDC**") has also established an industry zone in Shirwal, which is located along the project corridor, and is also developing further expansion plans. In addition, the road attracts traffic from the region of Mahabaleshwar, and traffic driving to or from the Balaji temple and the sugar factories.

The construction of the remaining portion of the project has been delayed due to local demands for alterations to the project facilities, delayed forest clearance approvals and delays/disputes in the land acquisition process.

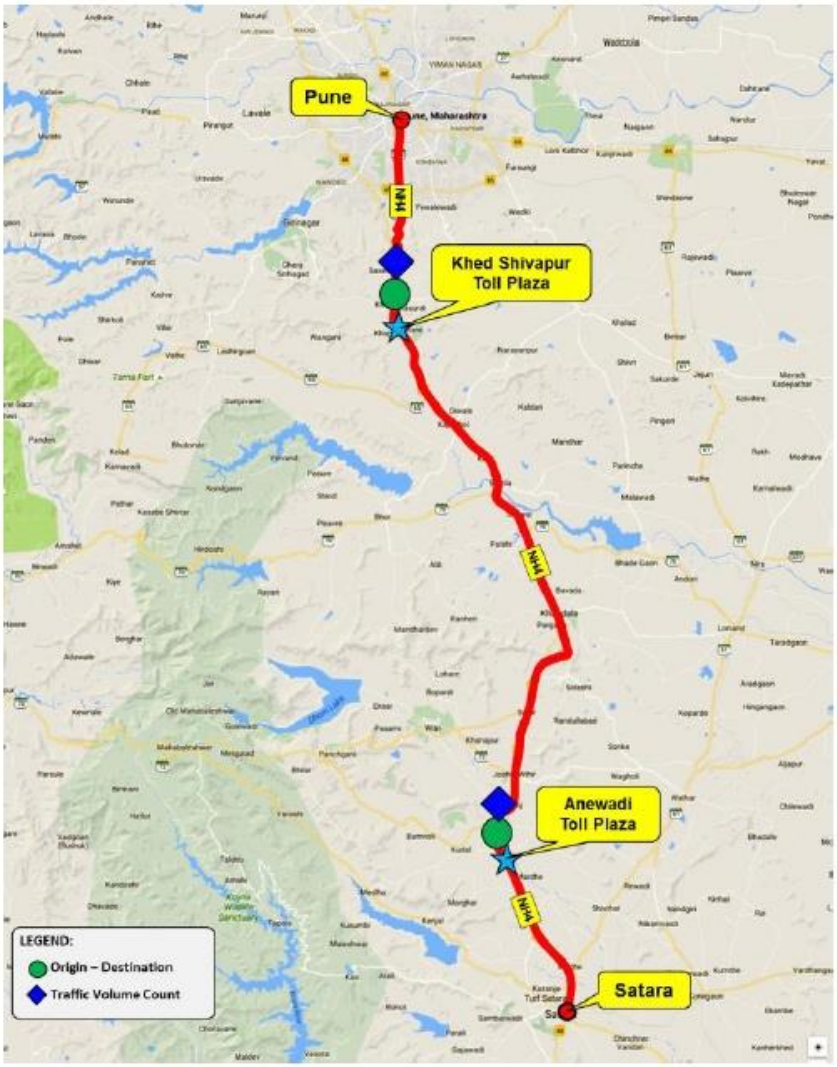

Figure 10: Map of the Pune Satara Project

Concession period

The NHAI granted PS a concession for a period of 24 years for this project. The concession period commenced on October 1, 2010 and is expected to expire on September 30, 2034. PS began collecting tolls with respect to this project on October 1, 2010.

The concession agreement provides that, if the actual traffic volume falls short of or exceeds the target traffic volume on a defined date, the concession period will be extended or reduced, respectively, according to a formula specified in the agreement. Extension of the concession period is limited to five years.

For this project, the target date set forth in the concession agreement is March 31, 2019, and the target traffic volume set forth in the concession agreement 60,848 PCUs, the passenger car equivalent for various types of

vehicles based on industry guidelines. Based on the terms of the concession agreement, in the event that the actual traffic volume on the target date falls short of or exceeds the target traffic volume by more than 2.5%, the concession period will be deemed to be modified and may be increased by 1.5% for every 1% of shortfall in traffic. Any extension, however, is subject to NHAI approval and may differ from the Traffic Consultant's estimate depending on actual traffic volumes on the target date.

The project was bid on a premium payable to the NHAI of Rs. 909.00 million in the first year of operation with a subsequent increment of 5% each year on the premium paid in the previous year. For the financial year 2016, PS paid the NHAI a premium of Rs. 1,160 million. The premium payable for financial year 2017 is Rs. 1,218.15 million.

Traffic volume

At Kehd Shivapur toll plaza, the minimum variation is in terms of PCUs (15% with respect to ADT) and the maximum variation is also in terms of PCUs (7 % with respect to ADT) while the peak period of traffic occurs between 18.00 hours and 19.00 hours. At Anewadi toll plaza, the minimum variation is in terms of PCUs (5% with respect to ADT) and maximum variation is in terms of vehicles (5 % with respect to ADT) while the peak period of traffic occurs between 10.00 hours and 11.00 hours.

70% of the traffic comprises of passenger vehicles while 30% of traffic is freight traffic. Amongst passenger vehicles, the proportion of car traffic is the highest with cars/jeeps/vans comprising 65% and 59% of total traffic at Khed Shivapur and Anewadi toll plaza respectively. Freight vehicles comprise 28% and 33% of total traffic at Khed Shivapur and Anewadi toll plaza respectively. Buses only comprise 7% and 8% of total traffic at Khed Shivapur and Anewadi toll plaza respectively. The majority of both passenger and commercial vehicles have either their origin or destination within the Maharashtra.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 –FY16**
	2014	**2015**	**2016**	**2015**	**2016**	**(%)**
Car[(1)]	4,679,420	4,807,986	5,426,785	2,654,801	2,799,487	8%
LCV[(2)]	929,612	943,869	1,014,970	506, 100	516,344	4%
Bus/Truck[(3)]	1,376,020	1,380,816	1,393,280	727, 263	735,672	1%
Multi-axle[(4)]	815,591	908,972	1,011,351	495,737	525,276	11%
Total	**7,800,643**	**8,041,642**	**8,846,387**	**4,383,901**	**4,576,777**	**6%**

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project increased to 42,842 PCUs in 2016 from 38,006 PCUs in 2014, representing a CAGR of 6%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016**	**2015**	**2016**	

						(%)
Car[1]	12,820	13,173	14,827	14, 507	15,297	8%
LCV[2]	2,547	2,586	2,773	2,765	2,821	4%
Bus/Truck[3]	3,770	3,783	3,807	3,974	4,020	0%
Multi-axle[4]	2,234	2,490	2,763	2,708	2,870	11%
Total	**21,372**	**22,032**	**24,171**	**23,955**	**25,009**	**6%**
Total PCUs	**38,006**	**39,607**	**42,842**	**42,768**	**44,506**	**6%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the PS Project's total traffic mix, 60%, 12%, 17% and 11% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 61%, 11%, 16%, and 12% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of PS's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the PS Project by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			**For the six months ended September 30,**		**CAGR FY14 – FY16**
	2014	**2015**	**2016**	**2015**	**2016**	
	(Rs. in millions)					**(%)**
Car[1]	522.0	578.1	656.9	322.6	342.6	12%
LCV[2]	173.0	187.9	202.9	100.0	105.8	8%
Bus/Truck[3]	507.1	534.3	554.3	280.4	298.4	5%
Multi-axle[4]	526.2	622.5	709.8	342.5	375.3	16%
Total	**1728.3**	**1,923.6**	**2,123.9**	**1,045.6**	**1,122.1**	**11%**

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

	2016 (Rs. in millions)
October	191.49
November	63.92

Notes:

(1) Toll collection was only for eight days due to suspension of collection as directed by the NHAI on account of the demonetisation of high denomination currency by the Government of India.

Maintenance

The PS Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, PS is required to comply with detailed operating and maintenance standards.

Under the concession agreement, PS is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment. The next major maintenance is expected in financial year 2025.

The following table sets forth the PS's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	2015	2016	2015	2016
	(Rs. in millions)				
Operation and maintenance expenditure	164.07	182.78	269.85	77.65	102.65
Periodic maintenance	-	-	-	-	-
Total expenditure	**164.07**	**182.78**	**269.85**	**77.65**	**102.65**

Project cost and financing

The cost of this project was approximately Rs. 20,080 million. As of November 30, 2016, the outstanding debt with respect to this project was Rs. 6,036.69 million.

Land

The NHAI owns the land that underlies the PS Project.

Structure of ownership of the project

For information about the proposed structure of ownership of the project by the Trust, please see the section headed "*About the Trust – Background and Structure of the Trust*" in this Draft Offer Document.

Employees

The table below sets forth the Project SPVs' employees as of the time period indicated:

	As of September 30, 2016
DS	2
GF	7

HK	5
JR	3
KM	9
NK	-
PS	40
SU	4
TD	5
TK	6
Total	**157**

The Project SPVs use contract labour and are therefore also partially dependent on the availability of a sufficient pool of such labour to maintain and operate their projects. The number of contract labourers employed by the Project SPVs varies from time to time based on the nature and extent of work being undertaken. The Project SPVs enter into contracts with independent contractors to complete specified assignments on their projects.

Toll operations comprise of teams (which include a revenue manager, a plaza manager, cashiers, auditors, shift-in-charge, toll collectors and traffic/lane assistants) to ensure the monitoring and management of toll activities at each of the toll plazas located along the project roads. A systematic finance procedure also facilitates the finance department in managing the cash collection and depositing the cash collected as toll from the lanes and from the sales of smartcards from point-of-sales machines.

Seasonality

Traffic volume tends to decrease during the monsoon season and conversely tends to increase during holiday seasons. While the northern parts of India experience monsoon rains during the period from June or July until September or October every year, the southern parts of India, especially Tamil Nadu and some parts of coastal Andhra Pradesh, experience monsoon rains even during the months of August to November. The monsoon season may also restrict the Trust Group's ability to carry on activities related to its operation and maintenance of toll roads. For further details on risk associated with seasonality, please see the section headed "*Risk Factors – Risks Relating to Our Business and Industry – Our business will be subject to seasonal fluctuations that may affect our cash flows*" in this Draft Offer Document. Conversely, traffic volume tends to increase during holiday seasons.

Health, Safety and Environment

The Investment Manager and Project Manager believe that the Trust and the Project SPVs are in compliance, in all material respects, with applicable health, safety and environmental regulations and other requirements in their operations and also maintain adequate workmen's compensation, group medical insurance and personal accident insurance policies. The Project Manager believes that accidents and occupational health hazards can be significantly reduced through a systematic analysis and control of risks and by providing appropriate training to management, employees and sub-contractors. Further, the project managers appointed by the Project SPVs for a project are principally responsible for ensuring that safety standards are met at the relevant project sites.

Sponsor Support Undertaking

As of the date of this Draft Offer Document, none of the Projects have received their final completion certificates. The Project SPVs' receipt of final completion certificates is subject to the completion of either (i) additional construction as specified in the concession agreements (or supplementary agreements) in the case of four of our Projects; or (ii) completion of all conditions specified in the 'punch lists' under the respective provisional completion certificates of our remaining projects. The projects where additional construction is required under their respective concession agreements are:

- KM: As of the date of this Draft Offer Document, KM has received a provisional completion certificate only with respect to 78% of the project. As per a certificate issued by NHAI, KM has completed 78% of construction (as a percentage of the total cost deployed) as of the date of this Draft Offer Document. We expect to complete Phase I of KM by March 2017. In addition, Phase II of this project involves converting the four-lane project to a six-lane project. Under the terms of the concession agreement for this project, the decision relating to converting the project to a six-lane project may be unilaterally decided by KM and NHAI in January 2019. The total estimated cost of the construction remaining to be completed at KM is Rs. 550 million, as of September 30, 2016.

- PS: As of the date of this Draft Offer Document, PS has not yet received a provisional completion certificate. As per a certificate issued by NHAI, PS has completed 78% of its construction (as a percentage of the total cost deployed) as of the date of this Draft Offer Document. Further, a remaining 8 km portion of this project is delayed because of delays in land acquisition by the NHAI for the remaining portions of land and other issues that impact the construction of the remaining portion. Once the land is acquired, PS will be required to construct the additional 8 km portion. The total estimated cost of the construction remaining to be completed of PS is Rs. 2,620 million as of September 30, 2016. We expect to complete the remaining construction (except in relation to the 8km portion) by June 2017.

- SU: This project also includes approximately 38 Km of bypass length, which will be converted to a four lane road after 8 years and before 11 years from the COD pursuant to the concession agreement.

- TK: A 18.7 km stretch of the Trichy bypass could not be completed as the required land for widening was not made available. Therefore, a supplementary agreement was entered into between the NHAI and TK in November 2013, in which a total length of 18.7 Km was delinked from the project for COD purpose. However, once the NHAI is able to hand over the land for the 18.7 km stretch, TK will be required to finance and complete construction within 18 months.

Under the securities purchase agreements for the sale of the Sponsor's stake in the Project SPVs to the Trust, the Sponsor will undertake to provide support for the remaining construction in the various Projects, as set forth below:

In relation to Project with outstanding punch list items

The Sponsor will undertake that, in the event, that the final completion certificate with respect to a Project SPV is not obtained on or prior to Closing Date, it will be solely responsible, at its own cost, for funding and completing all outstanding activities listed in the punch list to the provisional completion certificate obtained by the Project SPV (except to the extent of any amount which has already been provided for towards such outstanding activities in the books of accounts of the Project SPV). The Sponsor will undertake these activities as and when they are required to be completed.

In relation to Projects where additional capital expenditure may be required

As set forth above, four of our projects (KM, PS, SU and TK) may required additional capital expenditure to complete the remaining construction at these Projects. The Sponsor will undertake that in the event the actual cost of completion of these Projects exceeds the estimated completion cost, the Sponsor shall be solely responsible for funding any amounts in excess of such estimated completion cost.

Intellectual Property

We do not own the "Reliance" trademark, which is registered in the name of, and owned by, Anil Dhirubhai Ambani Ventures Private Limited. However, pursuant to a separate trademark and tradename license, the Sponsor has granted to the Trust, the Investment Manager and the Project Manager, the non-transferable and non-assignable right to use the "Reliance" trademark in connection with their respective businesses, on a non-exclusive basis for an annual royalty payments of Rs. 1, payable by the Investment Manager. The license may be terminated under certain circumstances, including if the Investment Manager on behalf of the Trust defaults in the payment of royalty and fails to cure such default within 30 days, if any of the Trust, the Project SPVs, the Sponsor or Anil Dhirubhai Ambani Ventures Private Limited files for bankruptcy or, if the Sponsor's holding in the Trust falls below 5%. Upon the termination of any license, the Trust or the relevant Project SPV, as the case may be, will be required to cease the use of the Reliance trademark and change its name to remove Reliance from its name within three months from the date of termination, which may have a material adverse effect on the operations of the Project SPVs and require management's time and attention.

We do not require any other licenses relating to intellectual property for the operation of our business and none of the Investment Manager, Project Manager or the Project SPVs is involved in any dispute for violation of intellectual property rights. See also "*Risk Factors – Risks Relating to our Business and Industry – We do not own the 'Reliance' trademark and logo. Our license to use the 'Reliance' trademark may be terminated under certain circumstances and our ability to use the trademark may be impaired.*"

Property

The Investment Manager's corporate office is located in Mumbai, and it proposes to conduct operations pertaining to the Trust from such office.

Insurance

The Trust Group's operations are subject to hazards inherent in providing operation and maintenance services, such as risk of equipment failure, work accidents, fire, earthquake, flood and other force majeure events. This includes hazards that may cause injury and loss of life, damage and destruction of property, equipment and environmental damage. The Project SPVs' principal types of insurance coverage include fire insurance, contractor all-risk for under construction projects, money insurance for toll collection, third party liability for operation of roads, loss of profit. The Investment Manager and the Trustee confirm that the amount of insurance that we presently maintain represents an adequate and appropriate level of coverage required to insure the Trust Group's business and operations and all the infrastructure assets held by the Trust Group, and is in accordance with the concession agreements and industry standards in India and will perform regular assessment on the adequacy of its insurance coverage on a yearly basis.

Legal Proceedings

The Project SPVs, the Sponsor, the Investment Manager, the Project Manager and the Trustee are involved in legal proceedings or claims from time to time. Certain proceedings or claims are currently pending at different levels of adjudication before various courts, tribunals and regulatory authorities.

NK, DS, GF and TD have initiated arbitration claims against NHAI in relation to compensation for additional costs incurred due to reasons such as extended construction periods and the delayed completion of the projects and compensation for the loss in toll revenue due to delays in COD. The table below sets out the arbitration claim amounts, claim awarded and pending claim amounts as of the date of this Draft Offer Document.

Project SPV	Arbitration Claim (Rs. In Millions)	Claim Awarded (Rs. Millions)	Pending (Rs. Millions)
NK	1,058.70	699.41	359.29
DS	1,017.35	962.00[(1)]	683.30
GF	950.00	-	950.00
TD	2,821.65	-	2,821.65
Total:	**6,471.58**	**1,661.41**	**4,810.17**

Notes:

(1) This award has been challenged by the NHAI in the High Court of Delhi.

For a description of the material legal proceedings that are outstanding, please see the section headed "*Legal and other Information – Material Litigation and Regulatory Action*" in this Draft Offer Document.

THE DELHI AGRA PROJECT

In addition to the toll-road assets that are being transferred by the Sponsor to the Trust pursuant to the Formation Transactions, the Sponsor (through its wholly owned subsidiary DA) also operates the Delhi-Agra Project, which is a 179.50 km section of NH 2 between Delhi and Agra. As of September 30, 2016, six-laning of 137 km out of total project stretch of 179.50 km is completed. The Trust will enter into the Right of First Offer and Future Assets Agreement with the Sponsor, which will enable the Trust to acquire the Delhi-Agra Project upon the completion of certain milestones. For details, see the section headed, and "*Related Party Transactions – Details of Related Party Transactions Proposed to be Undertaken - Right of First Offer and Future Assets Agreement*".

On July 16, 2010, the NHAI and DA entered into a concession agreement in respect of the Delhi Agra Project. DA was engaged to expand a portion of the NH 2 in the state of Haryana/Uttar Pradesh from Km 20.500 to Km 200.00, widening the existing four lanes to six, on a DBFOT basis. The concession period and the collection of toll commenced on October 16, 2012.

Corridor description and competing roads

The DA project is a part of the "golden quadrilateral project", connecting the states of north India to southern and eastern part of the country. The project road starts at km 20.5 within Faridabad district and goes up to km 200.00 in Agra district on NH 2.

The DA project also passes through the urban settlements of Faridabad, Palwal and Mathura.

The Yamuna Expressway runs parallel to the DA project and is operational, making it a direct competitor.

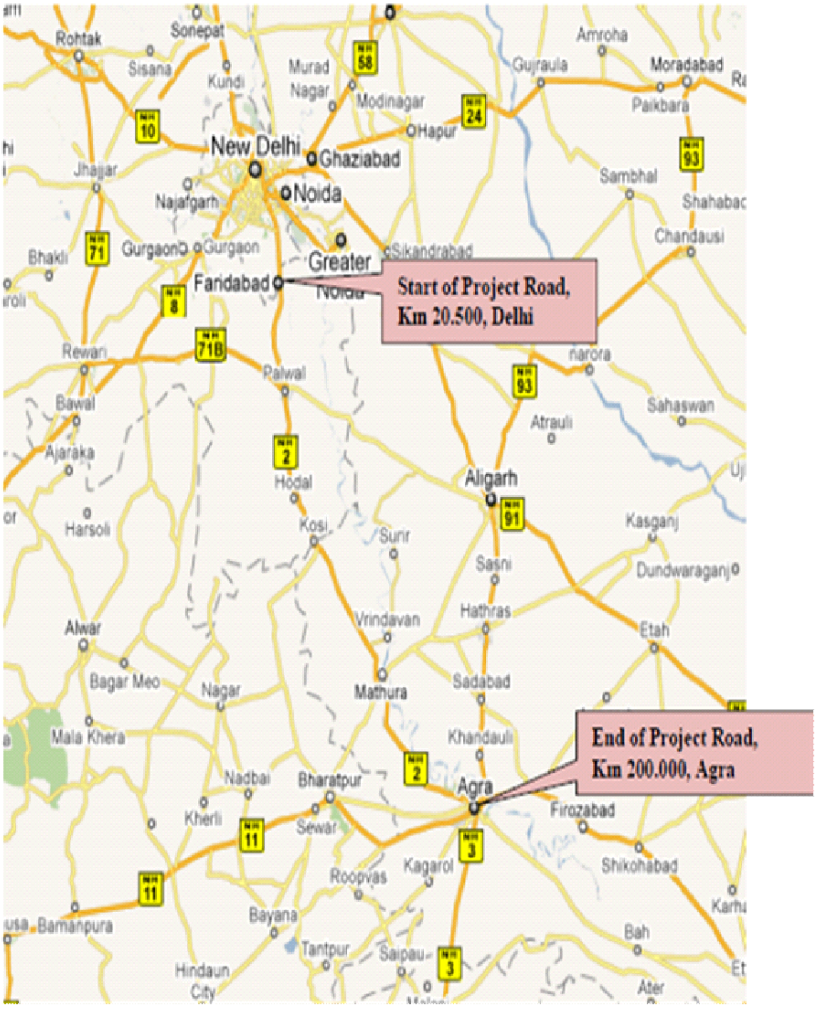

Figure 1: Map of the Delhi Agra Project

Concession period

The NHAI granted DA a concession for a period of 26 years for this project. The concession period commenced on October 16, 2012 and is expected to expire on October 15, 2038. DA began collecting tolls with respect to this project on October 16, 2012.

The concession agreement provides that, if the actual traffic volume falls short of or exceeds the target traffic volume on a defined date, the concession period will be extended or reduced, respectively, according to a formula specified in the agreement. Extension of the concession period is limited to five years and is subject to NHAI's approval.

For this project, the target date set forth in the concession agreement is October 1, 2020, and the target traffic volume set forth in the concession agreement 62,608 passenger car units ("**PCUs**"), the passenger car equivalent for various types of vehicles based on industry guidelines.

In consideration of the grant of the concession, DA pays the NHAI a nominal annual concession fee of Rs. 1. NHAI shall provide to DA cash support by way of an outright grant equal to the sum set forth in the bid submitted by the consortium bidders, namely Rs. 1,800 million, in accordance with the provisions of the DA Concession Agreement.

Traffic volume

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and for the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	For the six months ended September 30,	CAGR FY14 – FY16
	2014	2015	2016	2015	2016	*(%)*
Car[(1)]	2,282,387	2,274,693	2,433,771	1,196,419	1,197,024	3%
LCV[(2)]	510,761	493,162	495,457	246,504	243,777	-2%
Bus/Truck[(3)]	604,369	571,151	531,525	268,083	269,752	-6%
Multi-axle[(4)]	836,508	888,576	941,550	464,487	484,466	6%
Total	4,234,025	4,227,582	4,402,303	2,175,494	2,195,019	2%

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project increased to 24,717 PCUs in 2016 from 23,715 PCUs in 2014, representing a CAGR of 2%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and for the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 – FY16
	2014	2015	2016	2015	2016	*(%)*
Car[(1)]	6,253	6,232	6,650	6538	6541	3%
LCV[(2)]	1,399	1,351	1,354	1347	1332	-2%
Bus/Truck[(3)]	1,656	1,565	1,452	1465	1474	-6%
Multi-axle[(4)]	2,292	2,434	2,573	2538	2647	6%
Total	11,600	11,582	12,028	11,888	11,995	2%
Total PCUs	23633	23908	24613	24,375	24,875	3%

Notes:
(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the DA Project's total traffic mix, 55%, 12%, 13% and 21% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 56%, 11%, 12%, and 21% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

As construction is still ongoing in the Delhi-Agra Project, DA recognises construction income in relation to the construction of roads. DA also derives income from toll collection for the following operations at the project. The following table sets forth the toll fees charged for the DA Project by category of vehicles for the financial year 2014, 2015 and 2016 and for the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,		CAGR FY15 – FY16
	2014	2015	2016	2015	2016	
	(Rs. in millions)					*(%)*
Car[(1)]	308.7	335.10	367.8	180.8	180.7	9%
LCV[(2)]	121.1	121.64	125.7	62.0	64.2	2%
Bus/Truck[(3)]	298.3	295.57	283.5	142.7	149.2	-3%
Multi-axle[(4)]	727.7	807.78	871.9	431.0	457.1	9%
Total	1455.77	1560.09	1648.91	816.57	851.10	6%

Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

Maintenance

The DA Project operates 24 hours a day, 365 days a year. In operating and maintaining the project, DA is required to comply with detailed operating and maintenance standards.

Under the concession agreement, DA is required to carry out the operation and maintenance of the project, to ensure the safe, smooth and uninterrupted flow of traffic during normal operating conditions, to minimize disruption to traffic in the event of accidents or other incidents affecting the safety and use of the project highway, to repair potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices, and to refurbish tolling systems and other equipment.

The following table sets forth the DA's operation and maintenance costs during the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

	For the FY ended March 31,			For the six months ended September 30,	
	2014	2015	2016	2015	2016
	(Rs. in millions)				
Operation and maintenance expenditure	850.58	746.00	468.01	229.32	167.40
Periodic maintenance	–	–	–	–	–
Total expenditure	850.58	746.00	468.01	229.32	167.40

Project cost and financing

The cost of this project is approximately Rs. 29,450 million. As of September 30, 2016, the outstanding debt with respect to this project was Rs. 7,050.5 million.

Land

The NHAI owns the land that underlies the DA Project.

Financial information

For the financial performance of DA as at and for the fiscal year ended March 31, 2016 and as at and for the six months ended September 30, 2015 and 2016, please see "*Financials Information – Financial Statements – DA's Financial Information*" in this Draft Offer Document.

SUMMARY OF THE CONCESSION AGREEMENTS

The following are summaries of the concession agreements entered into by the Project SPVs in relation to their respective business. The descriptions and summaries of the agreements below are not, nor do they purport to be complete descriptions or summaries of all terms of such agreements. Certain terms used in this section have the meaning assigned to them in the respective concession agreements. Copies of these concession agreements are also available for inspection at the registered office of the Trust. For details, refer to "Material Contracts and Documents for Inspection" on page 555.

1. Concession Agreement between NHAI and DS Toll Road Limited ("DS") dated January 30, 2006

DS has entered into a concession agreement for widening the existing 2 (two) lane portion from Km 373.275 to Km 426.600 (covering 53.025 Kms), on NH-7 in the state of Tamil Nadu and widening thereof to 4 (four) lanes on build, operate and transfer ("**BOT**") basis (the "**DS Concession Agreement**", for a period of 20 (twenty) years, from July 29, 2006 ("**DS Appointed Date**") or such date on which the DS Concession Agreement is terminated pursuant to the provisions of the DS Concession Agreement or termination notice ("**DS Termination Date**", and the period between the DS Appointed Date and the DS Termination Date, the "**DS Concession Period**").

Certain Definitions

"**DS Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees or in the currency of debt, as the case may be, outstanding and payable to the senior lenders under the financing documents:

(a) the principal amount of the debt provided by the senior lenders under the financing documents for financing the DS Project (the "**DS Principal**") which is outstanding as on the DS Termination Date but excluding any part of the DS Principal that had fallen due for repayment one year prior to the DS Termination Date unless such repayment had been rescheduled with the prior consent of NHAI; and

(b) all accrued interest, financing fees and charges payable on or in respect of the debt referred to in clause (a) above upto the date preceding the DS Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the DS Termination Date, and (ii) penal interest or charges, payable under the financing documents to any senior lender;

"**DS Debt Service Payments**" shall mean the sum of all principal and interest payments due and payable in an accounting year to the senior lenders under the financing documents;

"**DS Project**" shall mean the development, design, financing, procurement, engineering and construction, operation and maintenance of the DS Project Highway in accordance with the provisions of the DS Concession Agreement and includes all works relating to or in respect of the DS Project Highway as described under the provisions of the DS Concession Agreement;

"**DS Project Assets**" shall mean all physical and other assets relating to and forming part of the DS Project Highway including but not limited to (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, approaches to bridges and flyovers, road overbridges, drainage works, lighting facilities, traffic signals, sign boards, milestones, toll plazas, equipment for the collection of tolls or relating to regulation of traffic, electrical works for lighting on the DS Project Highway, telephone and other communication systems and other equipment for the DS Project, rest areas, relief centres etc.(iii) project facilities situated on the site (iv) the rights of DS under the DS project agreements, (v) financial assets, such as security deposits for electricity supply, telephone etc.;(vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the DS Project Highway, but does not include facilities which are in addition to the project facilities and are not located on the site of the project but which are provided or procured by DS, at its own discretion, for the benefit of users of the DS Project Highway; and

"**DS Project Highway**" shall mean the NH-7 stretch from Km 373.275 to Km 426.600 and includes widening the existing 2 lane portion from Km 373.275 to Km 426.600 covering 53.025 Kms, on NH-7 in the State of Tamil Nadu to 4 lanes and shall include the DS Project Assets and the project facilities to be designed, engineered, built and improved on site and to be operated and maintained during the DS Concession Period in accordance with the provisions of the DS Concession Agreement.

Grant of Concession

Subject to and in accordance with the terms and conditions set forth in the DS Concession Agreement, NHAI has granted to DS and DS has accepted the concession for a period of 20 (twenty) years commencing from the DS Appointed Date, including the exclusive right, license and authority during the subsistence of the DS Concession Agreement to implement the DS Project and the concession in respect of the DS Project Highway.

Further, DS is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the DS Concession Agreement:

(a) develop, design, engineer, finance, procure, construct, operate and maintain the DS Project Highway during the DS Concession Period;

(b) Upon completion of the DS Project Highway and during the operations period to, manage, operate and maintain the DS Project Highway and regulate the use thereof by third parties;

(c) levy, demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the DS Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(d) perform and fulfil all of DS obligations under and in accordance with DS Concession Agreement;

(e) bear and pay all costs, expenses and charges incurred in the fulfillment of all DS obligations under the DS Concession Agreement; and

(f) not assign or create any lien or encumbrance on the concession granted by way of the DS Concession Agreement on the whole or any part of the DS Project Highway nor transfer, lease or part possession therewith save and except as expressly permitted by the DS Concession Agreement or the substitution agreement.

Further, DS has represented and warranted to NHAI that the equity shareholding of Reliance Energy Limited and their associates in the issued and paid up equity share capital of DS shall not be less than (a) 51% (fifty one percent) during the construction period and for 3 (three) years following the commercial operations date and (b) 26% (twenty six percent) during the balance remaining operations period.

Fees

DS shall be entitled to, during the operations period, to levy, collect and appropriate the fees from the users of the DS Project Highway at one toll plaza pursuant to and in accordance with the provisions in the DS Concession Agreement. In accordance with the terms of the DS Concession Agreement, DS shall not collect any fees in relation to exempted vehicles. The fees collected by DS shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the DS Concession Agreement

Grant

NHAI has provided DS, cash support by way of an outright grant equal to the sum set forth in the bid submitted, namely, Rs. 310.00 million, in accordance with the provisions of the DS Concession Agreement (the "**DS Grant**"). The DS Grant was disbursed to DS by way of equity support in accordance with the provisions of the DS Concession Agreement. The DS Grant was credited to the escrow account and was applied by DS for meeting the capital cost of the DS Project.

Concession Fee

In consideration of the grant of concession under the DS Concession Agreement, the concession fee payable by DS to NHAI shall be Re. 1 per year during the term of the DS Concession Agreement.

The concession fee shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

Escrow Account

DS shall within 60 (sixty) days from the date of the DS Concession Agreement, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the total project cost shall be credited to such escrow account. During operations period all fees collected by DS from the users of the DS Project Highway shall be deposited therein. In addition, all fees collected by NHAI in exercise of its rights under the DS Concession Agreement and all disbursements or payments by NHAI pursuant to the DS Concession Agreement shall subject to the rights of deductions and appropriations therefrom of NHAI under the DS Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from the Escrow Account during the DS Concession Period

DS shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated May 13, 2013 ("**DS Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by DS;

(b) all expenses in connection with and relevant to the construction of DS Project Highway by way of payment to the EPC contractor and such other persons as may be specified in the financing documents;

(c) operation and maintenance expenses including fees collection expenses incurred by DS directly or through operation and maintenance contractor and/or tolling contractor, if any, subject to the items and ceiling in respect thereof as set forth in the financing documents but not exceeding 1/12 (one twelfth) of the annual liability on this account;

(d) the whole of the expense on completion of punch list items incurred by NHAI and two times of such expenses subject to a minimum of Rs. 1,000,000 (Rupees one million) in case the punch list items are not completed by DS within 120 (one hundred and twenty) days from the issue of the provisional completion certificate in accordance with the specification and standard as detailed in the DS Concession Agreement;

(e) the whole or part of the expense on repair work or operation and maintenance expenses including fees collection expenses incurred by NHAI, and 1.25 times of the operation and maintenance expenses incurred by the NHAI, if any, in the event of repair and maintenance work being carried out by the NHAI (pursuant to the failure on part of DS in doing so) to maintain and/or repair the DS Project Highway or a part thereof up to and in accordance with the specifications and standards and/or failure on part of DS to commence remedial works within 30 (thirty) days of receipt of notice in this regard from NHAI or the independent consultant, if any, including those on account of exercise of any of its rights under the DS Escrow Agreement provided NHAI certifies to the escrow agent that NHAI had incurred expenses in accordance with the provisions of the DS Escrow Agreement;

(f) all concession fees and negative grants payments due to NHAI from DS under the DS Concession Agreement;

(g) monthly proportionate provision of DS Debt Service Payments due in an accounting year and payment of DS Debt Service Payments in the month when due;

(h) reimbursements of expenditure incurred by NHAI, if any, for payment of insurance premia, etc., which are otherwise DS' responsibility, on account of failure on part of DS to keep such insurance(s) effective and in force;

(i) one-half of such remuneration, cost and expenses of the independent consultant in case DS does not reimburse the remuneration, cost and expenses of the independent consultant to NHAI within 15 (fifteen) days of receiving a statement of expenditure from NHAI;

(j) any payments and damages due and payable by DS to NHAI pursuant to the DS Escrow Agreement, including recovery due to reduction in the scope of work and repayment of revenue shortfall loans; and

(k) balance, if any, in accordance with the instructions of DS.

Withdrawals upon Termination from the escrow account

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by DS;

(b) all concession fees (including negative grants) due and payable to NHAI under the DS Concession Agreement;

(c) all accrued DS Debt Service Payments;

(d) any payments and damages due and payable by DS to NHAI pursuant to the DS Concession Agreement, including termination claims, recovery due to reduction in the scope of work and repayment of revenue shortfall loans;

(e) all accrued operations and maintenance expenses;

(f) any other payments required to be made under the DS Concession Agreement; and

(g) balance, if any, in accordance with the instructions of DS.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to DS by NHAI in accordance with the provisions of the DS Concession Agreement. This shall not apply to appropriation in favour of the senior lenders to the extent of DS Debt Due.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the DS Concession Agreement, require the provision of such addition / deletion to the works and services on or about the DS Project Highway which are beyond the scope of the DS Project as contemplated by the DS Concession Agreement, provided such changes do not require any increase/ decrease in expenditure exceeding 10% of the total project cost and do not adversely affect the commercial operation date. All such changes shall be made by NHAI by an order issued in accordance with the procedure set forth in the DS Concession Agreement.

Termination

Termination by NHAI

In the event of any breach or default by DS under the DS Concession Agreement, including any DS Default (as defined below) and if DS has failed to cure such breach or default within the period provided for the same in the DS Concession Agreement, then NHAI shall be entitled to terminate the DS Concession Agreement by a communication in writing to DS provided that before issuing the termination notice, NHAI shall by a notice in writing inform DS of its intention to issue the termination notice and grant 15 (fifteen) days to DS to make its representation, if any, against such intended termination notice. After the expiry of the 15 (fifteen) day period whether or not NHAI is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. The following events, *inter alia*, shall constitute an event of default by DS ("**DS Default**") unless such DS Default has occurred as a result of NHAI Default (as defined below) or a force majeure event:

(a) DS fails to achieve financial close in accordance with the provisions of the DS Concession Agreement;

(b) DS fails to achieve any project milestones other than the scheduled project completion date within the period prescribed in the DS Concession Agreement and also fails to cure such default within 180 (one hundred and eighty) days from the date of its occurrence;

(c) DS is in material breach of the DS Concession Agreement;

(d) DS commits default in complying with any of the terms and conditions of the DS Concession Agreement, except those defaults in respect of which a cure period has been expressly provided, and fails to remedy or rectify such default within the period provided in a notice in this behalf from NHAI which shall

(i) require DS to remedy the breaches within one month (or such longer period as may be agreed by NHAI in its absolute discretion); or

(ii) permit DS to put forward within 15 (fifteen) days of such notice, a reasonable programme for remedying the breaches, where such programme specifies in reasonable detail the manner in which such breach or breaches is or are proposed to be remedied and the latest date by which it is proposed that such breach or all such breaches shall be remedied;

(e) DS creates any encumbrance, charges or lien in favour of any person save and except as otherwise expressly permitted under the DS Concession Agreement;

(f) the shareholding of Reliance Energy Limited and its associates falls below the minimum prescribed requirement under the DS Concession Agreement and DS does not suo moto cure such default within 90 (ninety) days of its occurrence;

(g) the transfer, pursuant to law, of either (i) the rights and/or obligations of DS under the project agreements, or (ii) all or material parts of the assets or undertaking of DS except where such transfer in the reasonable opinion of NHAI does not affect the ability of DS to perform, and DS has the financial and technical capability to perform its material obligations under the project agreements;

(h) a resolution is passed by the shareholders of DS for the voluntary winding up of DS;

(i) DS is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for DS or for any of its property that has a material bearing on the DS Project;

(j) any petition for winding up of DS is admitted by a court of competent jurisdiction or DS is ordered to be wound up by a court for the purpose of amalgamation or reconstruction provided that, as part of such amalgamation or reconstruction, the property, assets and undertaking of DS are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of DS under the DS Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the technical capability and operating experience necessary for the performance of its obligations under the DS Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the DS Concession Agreement and the project agreements and has a credit worthiness at least as good as that of DS as at the financial close; and

(iii) each of the project agreements remains in full force and effect;

(k) DS is in material breach of any of the project agreements;

(l) an event of default of DS under any of the financing documents has occurred or any of the senior lenders has recalled its loan under any of the financing documents;

(m) DS abandons the operations of the DS Project Highway for more than 15 (fifteen) consecutive days without the prior consent of NHAI, provided that DS shall be deemed not to have abandoned such operation if such abandonment (i) was as a result of force majeure event and is only for the period such force majeure event is continuing, or (ii) is on account of a breach of its obligations by NHAI;

(n) DS repudiates the DS Concession Agreement or otherwise evidences an intention not to be bound by the DS Concession Agreement;

(o) DS suffers an execution being levied on any of its assets or equipment causing a material adverse effect on the DS Project and allows it to be continued for a period of 15 (fifteen) days;

(p) DS has delayed any payment that has fallen due under the DS Concession Agreement if such delay exceeds 90 (ninety) days; or

(q) DS is in breach of its obligation to repay the revenue shortfall loans in accordance the DS Concession Agreement.

Termination by DS

DS is entitled to terminate the DS Concession Agreement upon a 90 (ninety) days' written notice to NHAI upon the occurrence and continuation of any of the following events (each a "**NHAI Default**") unless any such NHAI Default has occurred as a result of DS Default or due to a force majeure event:

(a) NHAI is in breach of the DS Concession Agreement and such breach has a material adverse effect on DS and NHAI fails to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from DS;

(b) NHAI repudiates the DS Concession Agreement or otherwise evidences an irrevocable intention not to be bound by the DS Concession Agreement;

(c) the Government of India or the Government of the State of Tamil Nadu or any governmental agency have by an act of commission or omission created circumstances that have a material adverse effect on the performance of its obligations by DS and have failed to cure such circumstances within 90 (ninety) days of receipt of notice by NHAI in this behalf from DS; or

(d) NHAI has delayed any payment that has fallen due under the DS Concession Agreement if such delay exceeds 90 (ninety) days.

Termination Payments

The termination payment pursuant to the DS Concession Agreement becomes due and payable to DS by NHAI within 30 (thirty) days of a demand being made by DS with the necessary particulars duly certified by the statutory auditors. If NHAI fails to disburse the full termination payment within 30 (thirty) days, the amount remaining unpaid shall be disbursed along with interest in accordance with the provisions under the DS Concession Agreement plus two per cent for the period of delay on such amount.

Upon termination by DS on account of an NHAI Default, DS shall be entitled to receive from NHAI by way of termination payment a sum equal to:

(a) The total DS Debt Due, plus

(b) 120% (one hundred and twenty per cent) of the total subordinated debt, plus

(c) 150% (one hundred and fifty per cent) of the equity (subscribed in cash and actually spent on the project but excluding the amount of equity support as specified in the DS Concession Agreement) if such termination occurs at any time during three years commencing from the DS Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in wholesale price index (published by the Ministry of Industry, Government of India, including any index, which substitutes the wholesale price index) during such year and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and a half per cent) per annum.

Upon termination by NHAI on account of DS Default during the operations period, NHAI shall pay to DS by way of termination payments an amount equal to 90% (ninety percent) of the DS Debt Due less insurance claims, if any, provided, however that if all or any of the insurance claims are not admitted and paid, then 80% of such unpaid claims shall qualify for being included in the computation of the DS Debt Due.

Supplementary Agreements between DS and NHAI

DS has entered into a supplementary agreement to the DS Concession Agreement, with NHAI dated March 6, 2014, in relation to the change in the provisions in relation to the procedure of arbitration. Under the terms of supplementary agreement, any previous arbitration commenced by either party would be subject to the amended procedure of arbitration.

2. Concession Agreement between Haryana Public Works (B&R) Department ("HPWD") and GF Toll Road Private Limited ("GF") dated January 31, 2009

GF has entered into a concession agreement for the upgrading of the existing road from Km 0.000 to Km 24.310 of Gurgaon – Faridabad road, Km 0.000 to Km 6.100 of MCF road, Km 0.000 to Km 3.100 of Crusher Zone road, Km 0.000 to Km 28.575 of Ballabhgarh – Lukhawas junction road, Km 0.000 to Km 4.100 of Pali – Bhakri road, total length of road being 66.185 Kms in Gurgaon and Faridabad districts to strengthen and widen to 4-lane/ 2-lane with paved shoulders on build, operate and transfer ("**BOT**") basis (the "**GF Concession Agreement**", for a period of 17 (seventeen) years, from June 1, 2009 ("**GF Appointed Date**") or such date on which the GF Concession Agreement is terminated pursuant to the provisions of the GF Concession Agreement or termination notice ("**GF Termination Date**", and the period between the GF Appointed Date and the GF Termination Date, the "**GF Concession Period**").

Certain Definitions

"**GF Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees or in the currency of debt, as the case may be, outstanding and payable to the senior lenders under the financing documents:

(a) the principal amount of the debt provided by the senior lenders under the financing documents for financing the GF Project (the "**GF Principal**") which is outstanding as on the GF Termination Date but excluding any part of the GF Principal that had fallen due for repayment one year prior to the GF Termination Date unless such repayment had been rescheduled with the prior consent of HPWD; and

(b) all accrued interest, financing fees and charges payable on or in respect of the debt referred to in clause (a) above up to the date preceding the GF Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the GF Termination Date, and (ii) penal interest or charges, payable under the financing documents to any senior lenders;

"**GF Project**" shall mean the design, engineering, finance, construction, improvement, operation and maintenance of the GF Project Road in accordance with the provisions of the GF Concession Agreement and includes all works relating to or in respect of the GF Project Road as described in GF Concession Agreement;

"**GF Project Assets**" shall mean all physical and other assets relating to and forming part of the GF Project Road including but not limited to (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, approaches to bridges and flyovers, road over bridges, drainage works, lighting facilities, traffic signals, sign boards, milestones, toll plazas, equipment for the collection of tolls or relating to regulation of traffic, electrical works for lighting on the GF Project Road, telephone and other communication systems and equipment for the GF Project, rest areas, administration and maintenance depots, relief centers, service facilities etc. (iii) project facilities situated on the site (iv) all the rights of GF under the GF project agreements, (v) financial assets, such as security deposits for electricity supply, telephone etc.; (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the GF Project Road, but does not include facilities which in addition to the project facilities are not located on the site but which are provided or procured by GF, at its own discretion, for the benefit of users of the GF Project Road; and

"**GF Project Road**" shall mean the upgrading of the existing road from Km 0.000 to Km 24.310 of Gurgaon – Faridabad road, Km 0.000 to Km 6.100 of MCF Road, Km 0.000 to Km 3.100 of Crusher Zone Road, Km 0.800 to Km 29.376 of Ballabhgarh – Lukhawas junction road, Km 0.000 to Km 4.102 of Pali – Bhakri road, total length of road being 66.185 Kms in Gurgaon and Faridabad districts and shall include the GF Project Assets and the project facilities including the work added through the change of scope or through value addition to be designed, engineered, built and improved on site and to be operated and maintained during the GF Concession Period in accordance with the provisions of the GF Concession Agreement.

Grant of Concession

Subject to and in accordance with the terms and conditions set forth in the GF Concession Agreement, HPWD has granted to GF and GF has accepted the concession for a period of 17 (seventeen) years commencing from the GF Appointed Date, including the exclusive right, license and authority during the subsistence of the GF Concession Agreement to implement the GF Project and the concession in respect of the GF Project Road.

Further, GF is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the GF Concession Agreement:

(a) develop, design, engineer, finance, procure, construct, operate and maintain the GF Project Road during the GF Concession Period;

(b) upon completion of the GF Project Road and during the operations period to manage, operate and maintain the GF Project Road and regulate the use thereof by third parties;

(c) levy, demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the GF Project Road or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(d) perform and fulfil all of GF's obligations under and in accordance with GF Concession Agreement;

(e) bear and pay all costs, expenses and charges incurred in the fulfillment of all of GF's obligations under GF Concession Agreement; and

(f) not assign or create any lien or encumbrance on the concession granted by way of the GF Concession Agreement on the whole or any part of the GF Project Road nor transfer, lease or part possession therewith save and except as expressly permitted by the GF Concession Agreement or the substitution agreement.

Further, GF represented and warranted to HPWD that the equity shareholding of the Sponsor and its associates as the case may be in the issued and paid up equity share capital of GF shall not be less than (a) 51% (fifty one percent) during the construction period and for 3 (three) years following the commercial operations date and (b) 26% (twenty six percent) during the balance remaining operations period.

Fees

GF shall be entitled, during the operations period, to levy, collect and appropriate the fees from the users of the GF Project Road at four toll plazas pursuant to and in accordance with the provisions in the GF Concession Agreement. In accordance with the terms of the GF Concession Agreement, GF shall not collect any fees in relation to exempted vehicles. The fees collected by GF shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the GF Concession Agreement

Negative Grant

GF has paid to HPWD a cash payment as set forth in the bid of the bidder and accepted by HPWD, namely, Rs. 1,503.00 million on November 23, 2009. Further, a supplementary agreement to the GF Concession Agreement dated November 27, 2009 has been entered into between GF and HPWD to regularize the delay in financial closure by GF and amount of damages payable by GF for such delay. GF has paid damages to HPWD amounting to Rs. 3.8 million as agreed in the supplementary agreement. However, HPWD has made a claim of Rs. 101.6 million on March 11, 2016 on account of interest on 145 days late deposition of negative grant for delay in financial closure, which is disputed and is pending before the arbitral tribunal for adjudication.

Concession Fee

In consideration of the grant of concession under the GF Concession Agreement, the concession fee payable by GF to HPWD shall be Re. 1 per year during the term of the GF Concession Agreement.

The concession fee shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

Escrow Account

GF shall within 30 (thirty) days from the date of the GF Concession Agreement, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the total project cost shall be credited to such escrow account. During operations period all fees collected by GF from the users of the GF Project Road shall be deposited therein. In addition, all fees collected by HPWD in exercise of its rights under the GF Concession Agreement and all disbursements or payments by HPWD pursuant to the GF Concession Agreement shall, subject to the rights of deductions and appropriations therefrom of HPWD under the GF Concession Agreement, be deposited by HPWD in the escrow account.

Withdrawals from Escrow Account during the Concession Period

GF shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated November 27, 2009 ("**GF Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by GF;

(b) all expenses in connection with and relevant to the construction of GF Project Road by way of payment to the EPC contractor and such other persons as may be specified in the financing documents;

(c) operation and maintenance expenses including fees collection expenses incurred by GF directly or through operation and maintenance contractor and/or tolling contractor, if any, subject to the items and ceiling in respect thereof as set forth in the financing documents but not exceeding 1/12 of the annual liability on this account;

(d) the whole or part of the expense on repair work or operation and maintenance expenses including fees collection expenses incurred by HPWD on account of exercise of any of its rights under the GF Escrow Agreement;

(e) All concession fees and negative grants payments due to HPWD from the GF under the GF Concession Agreement;

(f) reimbursements of expenditure incurred by HPWD, if any, for payment of insurance premia, etc., which are otherwise GF's responsibility, on account of failure on part of GF to keep such insurance(s) effective and in force;

(g) monthly proportionate provision of debt service payments due in an accounting year and payment of debt service payments in the month when due;

(h) one-half of such remuneration, cost and expenses of the independent consultant in case GF does not reimburse the remuneration, cost and expenses of the independent consultant to HPWD within 15 (fifteen) days of receiving a statement of expenditure from HPWD;

(i) any payments and damages due and payable by GF to HPWD pursuant to the GF Concession Agreement, including, repayment of revenue shortfall loans, recovery due to reduction in the scope of work and penalty for operations and maintenance expenses incurred by HPWD; and

(j) balance in accordance with the instructions of GF.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by GF;

(b) all concession fees (including negative grant) due and payable to HPWD under the GF Escrow Agreement;

(c) all accrued debt service payment;

(d) any payments and damages due and payable by GF to HPWD pursuant to the GF Concession Agreement, including termination claims, recovery due to reduction in scope of work and repayment of revenue shortfall loans;

(e) all accrued operations and maintenance expenses;

(f) any other payments required to be made under the GF Escrow Agreement; and

(g) balance, if any, in accordance with the instructions of GF.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to GF by HPWD in accordance with the provisions of the GF Concession Agreement. This shall not apply to appropriation in favour of senior lenders to the extent of GF Debt Due.

Change of Scope

HPWD may, notwithstanding anything to the contrary contained in the GF Concession Agreement, require the provision of such addition / deletion to the works and services on or about the GF Project Road during the construction period which are beyond the scope of the GF Project as contemplated by the GF Concession Agreement, provided such changes do not require any increase/ decrease in expenditure exceeding 10% (ten per cent) of the total project cost and do not adversely affect the commercial operation date. All such changes shall be made by HPWD by an order issued in accordance with the procedure set forth in the GF Concession Agreement.

Compensation for breach of the GF Concession Agreement

Compensation for breach by GF

Subject to the provisions of the GF Concession Agreement, in the event of GF being in material default of the GF Concession Agreement, it shall pay to HPWD as compensation, all direct additional costs suffered or incurred by HPWD arising out of such material default by GF, in one lump sum within 30 (thirty) days of receiving the demand or at GF's option in 3 (three) equal semi-annual installments with interest.

Compensation for breach by HPWD

Subject to the provisions of the provisions of GF Concession Agreement, in the event of HPWD being in material default of the GF Concession Agreement, it shall pay to GF as compensation, all direct additional costs suffered or incurred by GF arising out of such material default by HPWD, in one lump sum within 30 (thirty) days of receiving the demand or at HPWD's option in 3 (three) equal semi-annual installments with interest.

Termination

Termination by HPWD

In the event of any breach or default by GF under the GF Concession Agreement, including any GF Default (as defined below) and if GF has failed to cure such breach or default within the period provided for the same in the GF Concession Agreement, then HPWD shall be entitled to terminate the GF Concession Agreement by a communication in writing to GF provided that before issuing the termination notice, HPWD shall by a notice in writing inform GF of its intention to issue the termination notice and grant 15 (fifteen) days to GF to make its representation, if any, against such intended termination notice. After the expiry of the 15 day period whether or not it is in receipt of such representation, HPWD in its sole discretion can issue the termination notice. The following events, *inter alia*, shall constitute an event of default by GF ("**GF Default**") unless such GF Default has occurred as a result of HPWD Default (as defined below) or a force majeure event:

(a) GF fails to achieve financial close in accordance with the provisions of the GF Concession Agreement;

(b) GF fails to achieve any project milestones other than the scheduled project completion date within the period prescribed in the GF Concession Agreement and also fails to cure such default within 180 (one hundred and eighty) days from the date of its occurrence;

(c) GF is in material breach of the GF Concession Agreement;

(d) GF commits default in complying with any of the terms and conditions of the GF Concession Agreement, except those defaults in respect of which a cure period has been expressly provided, and fails to remedy or rectify such default within the period provided in a notice in this behalf from HPWD which shall

(i) require GF to remedy the breaches within one month (or such longer period as may be agreed by HPWD in its absolute discretion); or

(ii) permit GF to put forward within 15 (fifteen) days of such notice, a reasonable programme for remedying the breaches, where such programme specifies in reasonable detail the manner in which such breach or breaches is or are proposed to be remedied and the latest date by which it is proposed that such breach or all such breaches shall be remedied;

(e) GF creates any encumbrance, charges or lien in favour of any person save and except as otherwise expressly permitted under the GF Concession Agreement;

(f) the shareholding of the consortium members falls below the minimum prescribed requirement under the GF Concession Agreement and GF does not suo moto cure such default within 90 (ninety) days of its occurrence;

(g) the transfer, pursuant to law, of either (i) the rights and/or obligations of GF under any of the project agreements, or (ii) all or material parts of the assets or undertaking of GF except where such transfer in the reasonable opinion of HPWD does not affect the ability of GF to perform, and GF has the financial and technical capability to perform its material obligations under the project agreements;

(h) a resolution is passed by the shareholders of GF for the voluntary winding up of GF;

(i) GF is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for GF or for any of its property that has a material bearing on the GF Project;

(j) any petition for winding up of GF is admitted by a court of competent jurisdiction or GF is ordered to be wound up by a court except for the purpose of amalgamation or reconstruction provided that, as part of such amalgamation or reconstruction, the property, assets and undertaking of GF are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of GF under the GF Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the technical capability and operating experience necessary for the performance of its obligations under the GF Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the GF Concession Agreement and the project agreements and has a credit worthiness at least as good as that of GF as at the financial close; and

(iii) each of the project agreements remains in full force and effect;

(k) GF is in material breach of any of the project agreements;

(l) an event of default of GF under any of the financing documents has occurred or any of the senior lenders has recalled its loan under any of the financing documents;

(m) GF abandons the operations of the GF Project Road for more than 15 (fifteen) consecutive days without the prior consent of HPWD, provided GF shall be deemed not to have abandoned such operation if such abandonment (i) was as a result of force majeure event and is only for the period such force majeure event is continuing, or (ii) is on account of a breach of its obligations by HPWD;

(n) GF repudiates the GF Concession Agreement or otherwise evidences an intention not to be bound by the GF Concession Agreement;

(o) GF suffers an execution being levied on any of its assets or equipment causing a material adverse effect on the GF Project and allows it to be continued for a period of 15 (fifteen) days;

(p) GF has delayed any payment that has fallen due under the GF Concession Agreement if such delay exceeds 90 (ninety) days; or

(q) GF is in breach of its obligation to repay the revenue shortfall loans in accordance the GF Concession Agreement.

Termination by GF

GF is entitled to terminate the GF Concession Agreement upon a 90 (ninety) days' written notice to HPWD upon the occurrence and continuation of any of the following events (each a "**HPWD Default**") unless any such HPWD Default has occurred as a result of GF Default or due to a force majeure event:

(a) HPWD is in breach of the GF Concession Agreement and such breach has a material adverse effect on GF and HPWD fails to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from GF;

(b) HPWD repudiates the GF Concession Agreement or otherwise evidences an irrevocable intention not to be bound by the GF Concession Agreement;

(c) the Government of Haryana or any governmental agency have by an act of commission or omission created circumstances that have a material adverse effect on the performance of its obligations by GF and have failed to cure such circumstances within 90 (ninety) days of receipt of notice by HPWD in this behalf from GF; or

(d) HPWD has delayed any payment that has fallen due under the GF Concession Agreement if such delay exceeds 90 (ninety) days.

Termination Payments

The termination payment pursuant to the GF Concession Agreement becomes due and payable to GF by HPWD within 30 (thirty) days of a demand being made by GF with the necessary particulars duly certified by the statutory auditors. If HPWD fails to disburse the full termination payment within 30 (thirty) days, the amount remaining unpaid shall be disbursed along with interest at the rate of 14% (fourteen per cent) for the period of delay on such amount.

Upon termination by GF on account of HPWD Default, GF shall be entitled to receive from HPWD by way of termination payment a sum equal to:

(a) The total GF Debt Due, plus

(b) 120% (one hundred and twenty per cent) of the total subordinated debt, plus

(c) 150% (one hundred and fifty per cent) of the equity (subscribed in cash and actually spent on the project but excluding the amount of equity support as specified in the GF Concession Agreement) if such termination occurs at any time during three years commencing from the GF Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in wholesale price index (published by the office of the economic advisor. Ministry of Commerce and Industry, Government of India, including any index, which substitutes the wholesale price index) during such year and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and a half per cent) per annum.

Upon termination by HPWD on account of GF Default during the operations period, HPWD shall pay to GF by way of termination payments an amount equal to 90% (ninety percent) of the GF Debt Due less insurance claims, if any, provided, however that if all or any of the insurance claims are not admitted and paid, then 80% of such unpaid claims shall qualify for being included in the computation of the GF Debt Due.

Supplementary Agreement between GF and HPWD

GF has entered into a supplementary agreement to the GF Concession Agreement, with HPWD dated November 27, 2009, in relation to the delay and amount of damages to be paid by GF for delay in achievement of financial closure under the GF Concession Agreement. Through the said supplementary agreement, HPWD had extended the date of financial closure as requested by GF and GF has agreed to deposit a sum of Rs. 3.8 million (Rs. 0.2 million per week) for delay of 19 weeks from scheduled date of July 30, 2009 to the intended date of December 7, 2009.

3. Concession agreement between NHAI and HK Toll Road Private Limited dated July 2, 2010.

HK has entered into a concession agreement for six laning of Km 33.130 to Km 93.000 (approximately 59.87 Kms), Hosur to Krishnagiri section of NH-7 in the state of Tamil Nadu as a build, operate and transfer ("**BOT**") project on design, build, finance and operate ("**DBFO**") pattern (the "**HK Concession Agreement**", for a period of 24 (twenty four) years, from June 7, 2011 ("**HK Appointed Date**") or such date on which the HK Concession Agreement is terminated pursuant to the provisions of the HK Concession Agreement or termination notice ("**HK Termination Date**", and the period between the HK Appointed Date and the HK Termination Date, the "**HK Concession Period**").

Certain Definitions

"**Change in Ownership**" shall mean a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the selected bidder, together with its associates, in the total equity to decline below 51% (fifty one percent) thereof during the construction period and two years thereafter; provided that any material variation (as compared to the representations made by HK during the bidding process for the purposes of meeting the minimum conditions of eligibility or for evaluation of its application or bid, as the case may be) in the proportion of the equity holding of the selected bidder to the total equity, if it occurs prior to the completion of a period of two years from the date the HK Project achieves/ is granted completion certificate, shall constitute Change in Ownership.

"**HK Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees outstanding on the HK Termination Date:

(a) the principal amount of the debt provided by the senior lenders under the financing agreements for financing the total project cost (the "**HK Principal**") but excluding any part of the HK Principal that had fallen due for repayment two years prior to the HK Termination Date;

(b) all accrued interest, financing fees and charges payable under the financing agreements on, or in respect of, the debt referred to in clause (a) above until the HK Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the HK Termination Date; (ii) any penal interest or charges payable under the financing agreements to any senior lender; and (iii) any pre-payment charges in relation to accelerated repayment of debt except where such changes have arisen due to NHAI Default (as defined below); and

(c) any subordinate debt which is included in the financial package and disbursed by lenders for financing the total project cost;

Provided that if all or any part of the HK Debt Due is convertible into equity at the option of the senior lenders and/or HK, it shall for the purposes of the HK Concession Agreement be deemed to be HK Debt Due even after such conversion and the HK Principal thereof shall be dealt with as if such conversion had not been undertaken;

"**HK Debt Service**" shall mean the sum of all payments on account of principal, interest, financing fees and charges due and payable in an accounting year to the senior lenders under the financing agreements.

"**HK PCUs**" shall have the meaning ascribed to a passenger car unit in the Indian Roads Congress Publication No. IRC-64, 1990 or any substitute or modification thereof and when used in the HK Concession Agreement, shall include only motorized vehicles liable to payment of user charges at the toll plazas in accordance with the National Highways Fee (Determination of Rates and Collection) Rules, 2008, and the exempted vehicles specified therein, but does not include tractors, motor cycles and non-motorized vehicles;

"**HK Project**" shall mean the construction, operation and maintenance of the HK Project Highway in accordance with the provisions of the HK Concession Agreement and includes all works, services and equipment relating to or in respect of the scope of the HK Project;

"**HK Project Assets**" shall mean all physical and other assets relating to and forming part of the site including (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, culverts, road overbridges, drainage works, traffic signals, sign boards, kilometer-stones, toll plazas, electrical systems, communication systems, rest areas, relief centres, maintenance depots and administrative offices (iii) project facilities situated on the site (iv) all the rights of HK under the HK project agreements, (v) financial assets, such as receivables, security deposits etc. (vi) insurance proceeds and (vii) applicable permits and authorisations relating to or in respect of the HK Project Highway, but does not include facilities which are not located on the site of the project but which are provided by HK, at its own discretion, for the benefit of users of the HK Project Highway; and

"**HK Project Highway**" shall mean the site comprising the existing road comprising NH-7 from Km 33.130 to Km 93.000 and all HK Project Assets and its subsequent development and augmentation in accordance with the HK Concession Agreement.

Grant of Concession

Subject to and in accordance with the provisions of the HK Concession Agreement, the applicable laws and the applicable permits, NHAI has granted to HK the concession including the exclusive right, licence and authority to construct, operate and maintain the HK Project for a period of 24 (twenty four) years commencing from the HK Appointed Date. HK has accepted the concession and agreed to implement the HK Project subject to and in accordance with the terms and conditions set forth in the HK Concession Agreement.

Further, HK is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the HK Concession Agreement:

(a) right of way, access and license to the site for the purpose of and to the extent conferred by the provisions of the HK Concession Agreement;

(b) finance and construct the HK Project Highway;

(c) manage, operate and maintain the HK Project Highway and regulate the use thereof by third parties;

(d) demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the HK Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(e) perform and fulfil all of the obligations under and in accordance with HK Concession Agreement;

(f) bear and pay all costs, expenses and charges in connection with or incidental to the performance of the obligations under HK Concession Agreement; and

(g) not assign, transfer, sublet or create any lien or encumbrance on HK Concession Agreement, or the concession granted by way of the HK Concession Agreement on the whole or any part of the HK Project Highway nor transfer, lease or part possession therewith, save and except as expressly permitted by the HK Concession Agreement or the substitution agreement.

Commercial Operation Date

The commercial operation date of the HK Project shall be the date on which all conditions precedent have been satisfied or waived, as the case may be, in accordance with the provisions of the HK Concession Agreement ("**HK COD**"). The HK Project Highway shall enter into commercial service on the HK COD whereupon HK shall be entitled to demand and collect fee in accordance with the provisions of the HK Concession Agreement.

HK has agreed and undertaken that it shall achieve HK COD within 180 (one hundred eighty) days from the date of the HK Concession Agreement and in the event of delay, it shall be entitled to a further period not exceeding 120 (one hundred twenty) days, subject to payment of damages to NHAI in a sum calculated at the rate of 0.1% (zero point one per cent) of the performance security for each day of delay; provided that the damages specified herein shall be payable every week in advance and the period beyond the said 180 (one hundred eighty) days shall be granted only to the extent of damages so paid; provided further that no damages shall be payable if such delay in the HK COD has occurred solely as a result of any default or delay by NHAI in procuring satisfaction of the conditions precedent specified in the HK Concession Agreement or due to force majeure.

HK was required to, upon occurrence of HK COD, notify NHAI forthwith.

Fees

HK shall have the sole and exclusive right to demand, collect and appropriate fees from the users of the HK Project Highway pursuant to the HK Concession Agreement and the National Highways Fee (Determination of Rates and Collection) Rules, 2008. In accordance with the terms of the HK Concession Agreement, HK shall not collect any fees in relation to exempted vehicles. The fees shall ordinarily be collected at the toll plaza in accordance with the HK Concession Agreement. The fees collected by HK shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the HK Concession Agreement.

Concession Fee

In consideration of the grant of concession, HK shall pay NHAI by way of concession fee a sum of Re. 1 (Rupee one) per annum.

Additional Concession Fee

Without prejudice to the provisions relating to concession fee as provided in the HK Concession Agreement, HK is required to pay NHAI, on the commercial operations date, a premium in the form of an additional concession fee equal to Rs. 669.00 million as due to NHAI during that year, due and payable for the period remaining in that year, and for each subsequent year of the HK Concession Period, the premium shall be determined by increasing the amount of premium in the respective year by an additional 5% as compared to the immediately preceding year.

The premium payable under the HK Concession Agreement shall be deemed to be part of the concession fee.

Escrow Account

HK shall, prior to the financial close, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the HK Project Highway costs shall be credited to such escrow account. All fees and any other revenues from or in respect of the HK Project Highway, including the proceeds of any deposits, capital receipts or insurance claims collected by HK from the users of the HK Project Highway shall be deposited therein. In addition, all payments made by NHAI after deduction of any outstanding concession fee by NHAI under the HK Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

HK shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated February 1, 2012 ("**HK Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month or at shorter intervals as necessary and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by HK for and in respect of HK Project Highway;

(b) all payments relating to construction of the HK Project Highway, subject to and in accordance with the conditions, if any, set forth in the financing agreements;

(c) operation and maintenance expenses, subject to the ceiling, if any, set forth in the financing agreements;

(d) operation and maintenance expenses incurred by NHAI, provided it certifies to the escrow bank that it had incurred such expenses in accordance with the provisions of HK Concession Agreement and that the amounts claimed are due to it from HK;

(e) concession fee due and payable to NHAI;

(f) monthly proportionate provision of HK Debt Service due in an accounting year;

(g) premium due and payable to NHAI;

(h) all payments and damages certified by NHAI as due and payable to it by HK pursuant to the HK Concession Agreement, including repayment of revenue shortfall loans;

(i) monthly proportionate provision of debt service payments due in an accounting year in respect of subordinated debt;

(j) any reserve requirements set forth in the financing agreements; and

(k) balance, if any, in accordance with the instructions of HK.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by HK for and in respect of the HK Project Highway;

(b) 90% (ninety per cent) of HK Debt Due excluding subordinated debt;

(c) outstanding concession fee;

(d) all payments and damages certified by NHAI as due and payable to it by HK pursuant to the HK Concession Agreement, including premium, repayment of revenue shortfall loan and any claims in connection with or arising out of termination;

(e) retention and payments, arising out of, or in relation to the liability for defects and deficiencies set forth in the HK Concession Agreement**;**

(f) outstanding HK Debt Service including the balance of HK Debt Due;

(g) outstanding subordinated debt;

(h) incurred or accrued operations and maintenance expenses;

(i) any other payments required to be made under the HK Concession Agreement; and

(j) balance, if any, in accordance with the instructions of HK.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to HK by NHAI in accordance with the provisions of the HK Concession Agreement.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the HK Concession Agreement, require the provision of additional works and services which are not included in the scope of the HK Project as contemplated by the HK Concession Agreement. Any such change of scope shall be made in accordance with the provisions of the HK Concession Agreement and the costs thereof shall be expended by HK and reimbursed to it by NHAI in accordance with the HK Concession Agreement.

If HK determines at any time that a change of scope is necessary for providing safer and improved services to the users, it shall by notice in writing require NHAI to consider such change of scope. NHAI shall, within 15 (fifteen) days of receipt of such notice, either accept such change of scope with modifications, if any, and initiate proceedings therefor in accordance with the HK Concession Agreement or inform HK in writing of its reasons for not accepting such change of scope.

Reduction in the Scope of Work

If HK shall have failed to complete any construction works on account of force majeure or for reasons solely attributable to NHAI, NHAI may, in its discretion, require HK to pay 80% (eighty percent) of the sum saved therefrom, and upon such payment to NHAI, the obligations of HK in respect of such works shall be deemed to have been fulfilled. The liability of NHAI shall not exceed beyond the waiver of the aforesaid 80% (eighty percent).

Change in Ownership

HK shall not undertake or permit any Change in Ownership, except with the prior approval of NHAI.

Notwithstanding anything to the contrary contained in the HK Concession Agreement, HK has agreed and acknowledged that (a) all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% (fifteen per cent) of the total equity of HK or (b) acquisition of any control directly or indirectly of the board of directors of HK by any person either by himself or together with any person or persons acting in concert with him shall constitute a Change in Ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on HK, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of HK without such prior approval of NHAI.

Further, HK has represented and warranted to NHAI that it shall at no time undertake or permit any Change in Ownership except in accordance with the provisions of the HK Concession Agreement and that the selected bidder, together with its associates, shall hold not less than 51% (fifty-one percent) of its issued and paid up equity as on the date of the HK Concession Agreement; and that each member of the consortium whose technical and financial capacity was evaluated for the purposes of pre-qualification and short-listing in response to the request for qualification shall hold at least 26% (twenty six per cent) of such equity during the construction period and two years thereafter along with its associates.

Provided further that any such request made under the provisions of the HK Concession Agreement, at the option of NHAI, may be required to be accompanied by a suitable no objection letter from the lenders.

Effect of Variation in Traffic Growth

Subject to the provisions of the HK Concession Agreement, in the event actual average traffic shall have fallen short of the target traffic by more than 2.5%, thereof, then for every 1% (one per cent) shortfall as compared to the target traffic, the HK Concession Period shall, subject to payment of concession fee in accordance with the HK Concession Agreement, be increased by 1.5% (one point five per cent) thereof; provided that such increase in HK Concession Period shall not in any case exceed 20% (twenty per cent) of the HK Concession Period.

Subject to the provisions of the HK Concession Agreement, in the event actual average traffic shall have exceeded the target traffic by more than 2.5%, thereof, then for every 1% (one per cent) excess as compared to the target traffic, the HK Concession Period shall be reduced by 0.75% (zero point seven five per cent) thereof; provided that such reduction in HK Concession Period shall not in any case exceed 10% (ten per cent) thereof.

Provided further that in lieu of a reduction in HK Concession Period under the HK Concession Agreement, HK may elect to pay, in addition to the concession fee that would be due and payable if the HK Concession Period were not reduced hereunder, a further premium equal to 25% (twenty five per cent) of the realizable fee, and upon notice given to this effect by HK no later than two years prior to the HK Termination Date contemplated by the HK Concession Agreement, NHAI shall waive the reduction in HK Concession Period hereunder and recover the concession fee and aforesaid premium for the period waived.

Notwithstanding anything to the contrary contained in the HK Concession Agreement, if the average daily traffic of HK PCUs in any accounting year shall exceed the designed capacity of the HK Project Highway, NHAI at it's option may cause the preparation of a detailed project report ("**HK DPR**"). The said HK DPR, *inter alia* will assess the cost as may have to be incurred for augmenting the capacity of the HK Project Highway such that its capacity shall have increased sufficiently for carrying the then current traffic in accordance with the corresponding provisions of the Indian Roads Congress Publication or any substitute thereof and extension of the HK Concession Period, if any, that may be required to yield HK a post-tax return on the equity (Equity IRR) of 16% per annum, such assessment being made at an assumed debt to equity ratio of 70:30. Such extension of the HK Concession Period shall be however limited to 5 (five) years.

NHAI may thereafter, at their sole option, issue a notice to HK, (to be responded within a period of three months from the date of such notice) to undertake within 6 (six) months of such notice, augmentation so determined by NHAI. For this purpose, all realizable fees that shall accrue from three months from the date of issuance of the aforesaid notice by NHAI, requiring HK to procure capacity augmentation under the provisions of the HK Concession Agreement, shall be included in the assessment of revenue generated against the capacity augmentation and the equity IRR calculations as aforesaid shall be so based on such revenues. On refusal or non-acceptance by HK to undertake such augmentation, either absolutely or on such extension of the HK Concession Period as assessed under the HK DPR, or on the failure of HK to undertake such augmentation on the due date so intimated by NHAI, an indirect political event shall be deemed to have occurred and NHAI may in its discretion terminate the HK Concession Agreement by issuing a termination notice and making a termination payment under and in accordance with the provisions of the HK Concession Agreement; without NHAI being liable to issue any further notice under this provision.

If HK shall have, prior to issue of a termination notice under the provisions of the HK Concession Agreement, completed the construction works necessary for augmenting the capacity of the HK Project Highway such that its capacity shall have increased sufficiently for capacity the then current traffic in accordance with the relevant provisions of the Indian Roads Congress Publication No. IRC - 64, 1990 or any substitute thereof, the indirect political event specified in the HK Concession Agreement shall be deemed to have been cured.

Compensation for breach of the HK Concession Agreement

Compensation for default by HK

Subject to the provisions of the HK Concession Agreement, in the event of HK being in material default or breach of the HK Concession Agreement, it shall pay to NHAI by way of compensation, all direct costs suffered or incurred by NHAI as a consequence of such material default or breach, within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no compensation shall be payable under the provisions of the HK Concession Agreement for any material breach or default in respect of which damages are expressly specified and payable under the HK Concession Agreement or for any consequential losses incurred by NHAI.

Compensation for default by NHAI

Subject to the provisions of the provisions of HK Concession Agreement, in the event of NHAI being in material default or breach of the HK Concession Agreement at any time after the HK Appointed Date, it shall pay to HK by way of compensation, all direct costs suffered or incurred by HK as a consequence of such material default or breach within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no such compensation shall be payable for any material breach or default in respect of which damages have been expressly specified in the HK Concession Agreement.

Termination

Termination by NHAI

In the event of HK Default (as defined below), if HK fails to cure the default within the cure period prescribed or where no cure period is specified, then within a cure period of 60 (sixty) days, NHAI shall be entitled to terminate the HK Concession Agreement, unless the default has occurred solely as a result of any breach of the HK Concession Agreement by NHAI or due to an event of force majeure, by giving a written notice informing HK of its intention to issue such termination notice and grant 15 (fifteen) days' time to HK to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. "**HK Default**", *inter alia*, includes defaults where:

(a) the performance security has been encashed and appropriated in accordance with HK Concession Agreement and HK has failed to replenish or provide fresh performance security within the prescribed cure period of 30 (thirty) days;

(b) subsequent to the replenishment of furnishing of fresh performance security in accordance with the HK Concession Agreement, HK fails to cure, within a period of 90 (ninety) days, the HK Default for which whole or part of the performance security was appropriated;

(c) HK fails to achieve the latest outstanding project milestones as prescribed in the HK Concession Agreement and continues to be in default for 120 (one hundred and twenty) days;

(d) HK abandons or manifests intention to abandon the construction or operation of the HK Project Highway without the prior written consent of NHAI;

(e) the project completion date does not occur within the period specified in the HK Concession Agreement;

(f) the punch list items have not been completed within the period prescribed in the HK Concession Agreement;

(g) HK is in breach of the maintenance requirements or the safety requirements, as the case may be;

(h) HK has failed to make any payment to NHAI within the period specified in the HK Concession Agreement;

(i) an escrow default has occurred and HK fails to cure the default within a cure period of 15 (fifteen) days;

(j) upon occurrence of a financial default, the lenders' representative has by notice required NHAI to undertake suspension or termination, as the case may be, in accordance with the substitution agreement and HK fails to cure the default within the prescribed cure period;

(k) a breach of any of the project agreements by HK has caused a material adverse effect;

(l) HK creates any encumbrance in breach of the HK Concession Agreement;

(m) HK repudiates the HK Concession Agreement or otherwise takes any action or evidences or conveys an intention not to be bound by the HK Concession Agreement;

(n) a change in ownership has occurred in breach of the provisions of the HK Concession Agreement;

(o) There is transfer, pursuant to law either of (a) the rights and/or obligations of HK under any of the project agreements or of (b) all or part of the assets or undertaking of HK, and such transfer causes a material adverse effect;

(p) an execution levied on any assets of HK has caused a material adverse effect;

(q) HK is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for HK or for the whole or material part of its assets that has a material bearing on the HK Project;

(r) HK has been or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause in the reasonable opinion of NHAI, a material adverse effect;

(s) a resolution for the winding up of HK is passed, or any petition for the winding up of HK is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or HK is ordered to be wound up by the court except for the purposes of amalgamation or reconstruction, provided that, as part of such amalgamation or reconstruction, the entire property, assets and undertaking of HK are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of HK under the HK Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the capability and operating experience necessary for the performance of its obligations under the HK Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the HK Concession Agreement and the project agreements and has a credit worthiness at least as good as that of HK as at the HK Appointed Date; and

(iii) each of the project agreements remains in full force and effect;

(t) any representation or warranty of HK herein contained which is, as of date hereof, found to be materially false or HK is at any time hereafter found to be in breach thereof;

(u) HK submits to NHAI any statement, notice or other document in written or electronic form, which has a material effect on NHAI's rights, obligations or interests and which is false in material particulars;

(v) HK has failed to fulfil any obligation, for which failure termination has been specified in the HK Concession Agreement; or

(w) HK commits a default in complying with any other provision of the HK Concession Agreement if such a default causes a material adverse effect on NHAI.

Termination by HK

In the case of NHAI Default (as defined below), if NHAI fails to cure the default within a cure period of 90 (ninety) days or such longer period as provided in the HK Concession Agreement, HK shall subject to the provisions of the substitution agreement be entitled to terminate the HK Concession agreement by giving a written notice informing NHAI of its intention to issue a termination notice and grant 15 (fifteen) days' time to NHAI to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, HK in its sole discretion can issue the termination notice. "**NHAI Default**" unless the default has occurred as a result of any breach of the HK Concession Agreement by HK or due to an event of force majeure, *inter alia*, includes defaults where:

(a) NHAI commits a material default in complying with any of the provisions of the HK Concession Agreement and such default has a material adverse effect on HK;

(b) NHAI has failed to make any payment to HK within the period specified in HK Concession Agreement;

(c) NHAI repudiates the HK Concession Agreement or otherwise take any action that amounts to or manifests an irrevocable intention not to be bound by the HK Concession Agreement; or

(d) the State of Tamil Nadu commits a material default in complying with the provisions of the state support agreement if such default has a material adverse effect on HK and the breach continues for a period of 90 (ninety) days from the date of notice given in this behalf by HK to NHAI.

Termination Payment

Upon termination of the HK Concession Agreement by NHAI on account of occurrence of HK Default, NHAI shall pay an amount equal to 90% (ninety per cent) of the HK Debt Due less insurance cover, if any, provided, however, that if all or any of the insurance claims forming part of the insurance cover are not admitted and paid, then 80% (eighty per cent) of such unpaid claims shall qualify for being included in the computation of HK Debt Due.

Upon termination of the HK Concession Agreement by HK on account of occurrence of NHAI Default, NHAI shall pay to HK, by way of termination payments, an amount equal to (i) HK Debt Due and (ii) 150% (one hundred and fifty per cent) of the adjusted equity.

Supplementary Agreements between HK and NHAI

HK has entered into a supplementary agreement to the HK Concession Agreement dated June 17, 2014, with NHAI, in relation to the deferment of premium. Further, while availing deferment of premium, HK unconditionally agrees to waive any penalty or damages that HK considers it is entitled to claim from NHAI on account of any non-satisfaction of conditions precedent by NHAI at the time of declaration of the appointed date or thereafter, either directly or in consequence thereto by virtue of any of the articles/provisions of HK Concession Agreement.

4. Concession Agreement between NHAI and JR Toll Road Private Limited ("JR") dated February 19, 2010

JR has entered into a concession agreement to augment the existing road from Km 246.300 to Km 298.075, Jaipur Reengus section of NH-11 in the state of Rajasthan on design, build, finance, operate and transfer ("**DBFOT**") basis (the "**JR Concession Agreement**", for a period of 18 (eighteen) years, from August 14, 2010 ("**JR Appointed Date**") or such date on which the JR Concession Agreement is terminated pursuant to the provisions of the JR Concession Agreement or termination notice ("**JR Termination Date**", and the period between the JR Appointed Date and the JR Termination Date, the "**JR Concession Period**").

Certain Definitions

"**Change in Ownership**" shall mean a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the consortium members, together with their associates, in the total equity to decline (i) below 51% (fifty one percent) thereof during construction period (ii) 33% (thirty three per cent) thereof during a period of 3 (three) years following commercial operations date, and (iii) 26% (twenty six per cent) thereof, or such lower proportion as may be permitted by NHAI during the remaining JR Concession Period; provided that any material variation (as compared to the representations made by JR during the bidding process for the purposes of meeting the minimum conditions of eligibility or for evaluation of its application or bid, as the case may be,) in the proportion of the equity holding of any consortium member to the total equity, if it occurs prior to the commercial operations date, shall constitute Change in Ownership.

"**JR Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees outstanding on the JR Termination Date:

(a) the principal amount of the debt provided by the senior lenders under the financing agreements for financing the total project cost (the "**JR Principal**") but excluding any part of the JR Principal that had fallen due for repayment two years prior to the JR Termination Date;

(b) all accrued interest, financing fees and charges payable under the financing agreements on, or in respect of, the debt referred to in clause (a) above until the JR Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the JR Termination Date, (ii) any penal interest or charges payable under the financing agreements to any senior lender, and (iii) any pre-payment charges in relation to accelerated repayment of debt except where such charges have arisen due to NHAI Default (as defined hereinbelow); and

(c) any subordinated debt which is included in the financial package and disbursed by lenders for financing the total project cost;

provided that if all or any part of the JR Debt Due is convertible into equity at the option of the senior lenders and/or JR, it shall for the purposes of the JR Concession Agreement be deemed to be JR Debt Due even after such conversion and the JR Principal thereof shall be dealt with as if such conversion had not been undertaken.

"**JR PCUs**" shall have the meaning ascribed to a passenger car unit in the Indian Roads Congress Publication No. IRC-64, 1990 or any substitute or modification thereof and when used in the JR Concession Agreement, shall include only motorized vehicles liable to payment of user charges at the toll plazas in accordance with the National Highways Fee (Determination of Rates and Collection) Rules, 2008, and the exempted vehicles specified therein, but does not include tractors, motor cycles and non-motorized vehicles;

"**JR Project**" shall mean the construction, operation and maintenance of the JR Project Highway in accordance with the provisions of the JR Concession Agreement and includes all works, services and equipment relating to or in respect of the scope of the JR Project;

"**JR Project Assets**" shall mean all physical and other assets relating to and forming part of the site including (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, culverts, road overbridges, drainage works, traffic signals, sign boards, kilometre-stones, toll plazas, electrical systems, communication systems, rest areas, relief centres, maintenance depots and administrative offices (iii) project facilities situated on the site (iv) all the rights of JR under the JR project agreements, (v) financial assets, such as receivables, security deposits etc. (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the JR Project Highway, but does not include facilities which are not located on the site of the project but which are provided or procured by JR, at its own discretion, for the benefit of users of the JR Project Highway; and

"**JR Project Highway**" shall mean the site comprising the existing road comprising NH-11 from Km 246.300 to Km 298.075 and all JR Project Assets and its subsequent development and augmentation in accordance with the JR Concession Agreement.

Grant of Concession

Subject to and in accordance with the provisions of the JR Concession Agreement, the applicable laws and the applicable permits, NHAI has granted to JR the concession including the exclusive right, license and authority to construct, operate and maintain the JR Project for a period of 18 (eighteen) years commencing from the JR Appointed Date. JR has accepted the concession and agreed to implement the JR Project subject to and in accordance with the terms and conditions set forth in the JR Concession Agreement.

Further, JR is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the JR Concession Agreement:

(a) right of way, access and license to the site for the purpose of and to the extent conferred by the provisions of the JR Concession Agreement;

(b) finance and construct the JR Project Highway;

(c) manage, operate and maintain the JR Project Highway and regulate the use thereof by third parties;

(d) demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the JR Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(e) perform and fulfil all of JR's obligations under and in accordance with JR Concession Agreement;

(f) bear and pay all costs, expenses and charges in connection with or incidental to the performance of the obligations under JR Concession Agreement; and

(g) not assign, transfer, sublet or create any lien or encumbrance on JR Concession Agreement, or the concession granted by way of the JR Concession Agreement on the whole or any part of the JR Project Highway nor transfer, lease or part possession therewith, save and except as expressly permitted by the JR Concession Agreement or the substitution agreement.

Fees

On and from the commercial operations date, JR shall have the sole and exclusive right to demand, collect and appropriate fees from the users of the JR Project Highway pursuant to the JR Concession Agreement and the National Highways Fee (Determination of Rates and Collection) Rules, 2008. In accordance with the terms of the JR Concession Agreement, JR shall not collect any fees in relation to exempted vehicles. The fees shall ordinarily be collected at the toll plazas in accordance with the JR Concession Agreement. The fees collected by JR shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the JR Concession Agreement.

Grant

NHAI has provided to JR, cash support by way of an outright grant equal to the sum set forth in the bid submitted, namely, Rs. 1029.00 million, in accordance with the provisions of the JR Concession Agreement (the "**JR Grant**"). The JR Grant was disbursed to JR by way of equity support in accordance with the provisions of the JR Concession Agreement. The JR Grant was credited to the escrow account and was applied by JR for meeting the capital cost of the JR Project.

Concession Fee

In consideration of the grant of concession, the JR shall pay to NHAI by way of concession fee a sum of Re. 1 (Rupee one) per annum.

Escrow Account

JR shall, prior to the JR Appointed Date, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the JR Project Highway costs shall be credited to such escrow account. All fees and any other revenues from or in respect of the JR Project Highway, including the proceeds of any deposits, capital receipts or insurance claims collected by JR from the users of the JR Project Highway shall be deposited therein. In addition, all payments made by NHAI after deduction of any outstanding concession fee by NHAI under the JR Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

JR shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated January 25, 2011 ("**JR Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month or at shorter intervals as necessary and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by JR for and in respect of JR Project Highway;

(b) all payments relating to construction of the JR Project Highway, subject to and in accordance with the conditions, if any, set forth in the financing agreements;

(c) operation and maintenance expenses, subject to the ceiling, if any, set forth in the financing agreements;

(d) operation and maintenance expenses incurred by NHAI, provided it certifies to the escrow bank that it had incurred such expenses in accordance with the provisions of JR Concession Agreement and that the amounts claimed are due to it from JR;

(e) concession fee due and payable to NHAI;

(f) monthly proportionate provision of debt service due in an accounting year;

(g) all payments and damages certified by NHAI as due and payable to it by JR pursuant to the JR Concession Agreement, including repayment of revenue shortfall loans;

(h) monthly proportionate provision of debt service payments due in an accounting year in respect of subordinated debt;

(i) any reserve requirements set forth in the financing agreements; and

(j) balance, if any, in accordance with the instructions of JR.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by JR for and in respect of the JR Project Highway;

(b) 90% (ninety per cent) of JR Debt Due excluding subordinated debt;

(c) outstanding concession fee;

(d) all payments and damages certified by NHAI as due and payable to it by JR pursuant to the JR Concession Agreement, including premium, repayment of revenue shortfall loans and any claims in connection with or arising out of termination;

(e) retention and payments arising out of, or in relation to, the liability for defects and deficiencies set forth in the JR Concession Agreement;

(f) outstanding debt service including the balance of JR Debt Due;

(g) outstanding subordinated debt;

(h) incurred or accrued operations and maintenance expenses;

(i) any other payments required to be made under the JR Concession Agreement; and

(j) balance, if any, in accordance with the instructions of JR.

Further, no appropriation of termination payments can be made towards the balance amount specified in point (j) above, from the escrow account upon termination until the vesting certificate has been issued to JR by NHAI in accordance with the provisions of the JR Concession Agreement.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the JR Concession Agreement, require the provision of additional works and services which are not included in the scope of the JR Project as contemplated by the JR Concession Agreement. Any such change of scope shall be made in accordance with the provisions of the JR Concession Agreement and the costs thereof shall be expended by JR and reimbursed to it by NHAI in accordance with the JR Concession Agreement.

If JR determines at any time that a change of scope is necessary for providing safer and improved services to the users, it shall by notice in writing require NHAI to consider such change of scope. NHAI shall, within 15 (fifteen) days of receipt of such notice, either accept such change of scope with modifications, if any, and initiate proceedings therefor in accordance with the JR Concession Agreement or inform JR in writing of its reasons for not accepting such change of scope.

Reduction in the Scope of Work

If JR shall have failed to complete any construction works on account of force majeure or for reasons solely attributable to NHAI, NHAI may, in its discretion, require JR to pay 80% (eighty percent) of the sum saved therefrom, and upon such payment to NHAI, the obligations of JR in respect of such works shall be deemed to have been fulfilled. The liability of NHAI shall not extend beyond waiver of the aforesaid 80% (eighty per cent).

Change in Ownership

JR shall not undertake or permit any Change in Ownership, except with the prior approval of NHAI.

Notwithstanding anything to the contrary contained in the JR Concession Agreement, JR has agreed and acknowledged that (a) all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% (fifteen percent) of the total equity of JR or (b) acquisition of any control directly or indirectly of the board of directors of JR by any person either by himself or together with any person or persons acting in concert with him shall constitute a Change in Ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on JR, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of JR without such prior approval of NHAI.

Further, JR has represented and warranted to NHAI that it shall at no time undertake or permit any Change in Ownership except in accordance with the provisions of the JR Concession Agreement and that the consortium members, together with their associates, hold not less than 51% (fifty-one percent) of its issued and paid up equity as on the date of the JR Concession Agreement; and that no member of the consortium whose technical and financial capacity was evaluated for the purposes of pre-qualification and short-listing in response to the request for qualification shall hold less than 26% (twenty six percent) of such equity during the construction period.

Effect of Variation in Traffic Growth

Subject to the provisions of the JR Concession Agreement, in the event actual average traffic shall have fallen short of the target traffic by more than 2.5%, then for every 1% (one per cent) shortfall as compared to the target traffic, the JR Concession Period shall, subject to payment of concession fee in accordance with the JR Concession Agreement, be increased by 1.5% (one point five per cent) thereof; provided that such increase in JR Concession Period shall not in any case exceed 20% (twenty per cent) of the JR Concession Period.

Subject to the provisions of the JR Concession Agreement, in the event actual average traffic shall have exceeded the target traffic by more than 2.5%, then for every 1% (one per cent) excess as compared to the target traffic, the JR Concession Period shall be reduced by 0.75% (zero point seven five per cent) thereof; provided that such reduction in JR Concession Period shall not in any case exceed 10% (ten per cent) thereof.

Provided further that in lieu of a reduction in JR Concession Period under the JR Concession Agreement, JR may elect to pay, in addition to the concession fee that would be due and payable if the JR Concession Period were not reduced hereunder, a further premium equal to 25% (twenty five per cent) of the realizable fee, and upon notice given to this effect by JR no later than two years prior to the JR Termination Date contemplated by the JR Concession Agreement, NHAI shall waive the reduction in JR Concession Period hereunder forthwith.

Notwithstanding anything to the contrary contained in the JR Concession Agreement, if the average daily traffic of JR PCUs in any accounting year shall exceed the designed capacity of the JR Project Highway and shall continue to exceed the designated capacity for 3 (three) accounting years following thereafter, an indirect political event shall be deemed to have occurred and NHAI may in its discretion terminate the JR Concession Agreement by issuing a termination notice and making a termination payment under and in accordance with the provisions of the JR Concession Agreement. Provided that before issuing the termination notice, NHAI shall inform JR of its intention to issue such termination notice and grant a period of 180 (one hundred and eighty) days for making a representation, and may, after the expiry of such period, whether or not it has received such representation, in its sole discretion issue the termination notice.

If JR shall have, prior to issue of a termination notice under the provisions of the JR Concession Agreement, completed the construction works necessary for augmenting the capacity of the JR Project Highway such that its capacity shall have increased sufficiently for capacity the then current traffic in accordance with the relevant provisions of the Indian Roads Congress Publication No. IRC - 64, 1990 or any substitute thereof, the indirect political event specified in the JR Concession Agreement shall be deemed to have been cured.

Compensation for breach of the JR Concession Agreement

Compensation for breach by JR

Subject to the provisions of the JR Concession Agreement, in the event of JR being in material default or breach of the JR Concession Agreement, it shall pay to NHAI by way of compensation, all direct costs suffered or incurred by NHAI as a consequence of such material default, within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no compensation shall be payable under the provisions of the JR Concession Agreement for any breach or default in respect of which damages are expressly specified and payable under the JR Concession Agreement.

Compensation for breach by NHAI

Subject to the provisions of the provisions of JR Concession Agreement, in the event of NHAI being in material default or breach of the JR Concession Agreement at any time after the JR Appointed Date, it shall pay to JR by way of compensation, all direct costs suffered or incurred by JR as a consequence of such material default within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no such compensation shall be payable for any material breach or default in respect of which damages have been expressly specified in the JR Concession Agreement.

Termination

Termination by NHAI

In the event of JR Default (as defined below), if JR fails to cure the default within the cure period prescribed or where no cure period is specified, then within a cure period of 60 (sixty) days, NHAI shall be entitled to terminate the JR Concession Agreement, unless the default has occurred solely as a result of any breach of the JR Concession Agreement by NHAI or due to an event of force majeure, by giving a written notice informing JR of its intention to issue such termination notice and grant 15 (fifteen) days' time to JR to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. "**JR Default**", *inter alia*, includes defaults where:

(a) the performance security has been encashed and appropriated in accordance with JR Concession Agreement and JR has failed to replenish or provide fresh performance security within the prescribed cure period of 30 (thirty) days;

(b) subsequent to the replenishment of furnishing of fresh performance security in accordance with the JR Concession Agreement, JR fails to cure, within a period of 90 (ninety) days, the JR Default for which whole or part of the performance security was appropriated;

(c) JR fails to achieve the latest outstanding project milestones as prescribed in the JR Concession Agreement and continues to be in default for 90 (ninety) days;

(d) JR abandons or manifests intention to abandon the construction or operation of the JR Project Highway without the prior written consent of NHAI;

(e) the project completion date does not occur within the period specified in the JR Concession Agreement;

(f) the punch list items have not been completed within the period prescribed in the JR Concession Agreement;

(g) JR is in breach of the maintenance requirements or the safety requirements, as the case may be;

(h) JR has failed to make any payment to NHAI within the period specified in the JR Concession Agreement;

(i) an escrow default has occurred and JR fails to cure the default within a cure period of 15 (fifteen) days;

(j) upon occurrence of a financial default, the lenders' representative has by notice required NHAI to undertake suspension or termination, as the case may be, in accordance with the substitution agreement and JR fails to cure the default within the prescribed cure period;

(k) a breach of any of the project agreements by JR has caused a material adverse effect;

(l) JR creates any encumbrance in breach of the JR Concession Agreement;

(m) JR repudiates the JR Concession Agreement or otherwise takes any action or evidences or conveys an intention not to be bound by the JR Concession Agreement;

(n) a Change in Ownership has occurred in breach of the provisions of the JR Concession Agreement;

(o) There is transfer, pursuant to law either of (a) the rights and/or obligations of JR under any of the project agreements or of (b) all or part of the assets or undertaking of JR, and such transfer causes a material adverse effect;

(p) an execution levied on any assets of JR has caused a material adverse effect;

(q) JR is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for JR or for the whole or material part of its assets that has a material bearing on the JR Project;

(r) JR has been or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause in the reasonable opinion of NHAI, a material adverse effect;

(s) a resolution for the winding up of JR is passed, or any petition for the winding up of JR is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or JR is ordered to be wound up by the court except for the purposes of amalgamation or reconstruction, provided that, as part of such amalgamation or reconstruction, the entire property, assets and undertaking of JR are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of JR under the JR Concession Agreement and the project agreements, and provided that:

    (i) the amalgamated or reconstructed entity has the capability and operating experience necessary for the performance of its obligations under the JR Concession Agreement and the project agreements;

    (ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the JR Concession Agreement and the project agreements and has a credit worthiness at least as good as that of JR as at the JR Appointed Date; and

    (iii) each of the project agreements remains in full force and effect;

(t) any representation or warranty of JR herein contained which is, as of date hereof, found to be materially false or JR is at any time hereafter found to be in breach thereof;

(u) JR submits to NHAI any statement, notice or other document in written or electronic form, which has a material effect on NHAI's rights, obligations or interests and which is false in material particulars;

(v) JR has failed to fulfil any obligation, for which failure termination has been specified in the JR Concession Agreement; or

(w) JR commits a default in complying with any other provision of the JR Concession Agreement if such a default causes a material adverse effect on NHAI.

NHAI shall, if there are senior lenders, send a copy of its notice of intention to issue a termination notice to inform the lenders' representative and grant 15 (fifteen) days to the lenders' representative, for making a representation on behalf of the senior lenders stating the intention to substitute JR in accordance with the substitution agreement. In the event NHAI receives such representation on behalf of the senior lenders, it shall, in its discretion, either withhold termination for a period not exceeding 180 (one hundred and eighty) days from the date of such representation or exercise its right of suspension, as the case may be, for enabling the lenders' representative to exercise the senior lenders' right of substitution in accordance with the substitution agreement. Provided that the lenders' representative may, instead of exercising the senior lenders' right of substitution, procure that the default specified in the notice is cured within the aforesaid period of 180 (one hundred and eighty) days, and upon such curing thereof, NHAI shall withdraw its notice referred to above and restore all the rights of JR. Provided further that upon written request from the lenders representative and JR, NHAI shall extend the aforesaid period of 180 (one hundred and eighty) days by such further period not exceeding 90 (ninety) days, as NHAI may deem appropriate.

Termination by JR

In the case of NHAI Default (as defined below), if NHAI fails to cure the default within a cure period of 90 (ninety) days or such longer period as provided in the JR Concession Agreement, JR shall subject to the provisions of the substitution agreement be entitled to terminate the JR Concession agreement by giving a written notice informing NHAI of its intention to issue a termination notice and grant 15 (fifteen) days' time to NHAI to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, JR in its sole discretion can issue the termination notice. "**NHAI Default**" unless the default has occurred as a result of any breach of the JR Concession Agreement by JR or due to an event of force majeure, inter alia, includes defaults where:

(a) NHAI commits a material default in complying with any of the provisions of the JR Concession Agreement and such default has a material adverse effect on JR;

(b) NHAI has failed to make any payment to JR within the period specified in JR Concession Agreement;

(c) NHAI repudiates the JR Concession Agreement or otherwise take any action that amounts to or manifests an irrevocable intention not to be bound by the JR Concession Agreement; or

(d) the State of Rajasthan commits a material default in complying with the provisions of the state support agreement if such default has a material adverse effect on JR and the breach continues for a period of 90 (ninety) days from the date of notice given in this behalf by JR to NHAI.

Termination Payment

Upon termination of the JR Concession Agreement by NHAI on account of occurrence of JR Default, NHAI shall pay an amount equal to 90% (ninety per cent) of the JR Debt Due less insurance cover, if any, provided, however, that if all or any of the insurance claims forming part of the insurance cover are not admitted and paid, then 80% of such unpaid claims shall qualify for being included in the computation of JR Debt Due.

Upon termination of the JR Concession Agreement by JR on account of occurrence of NHAI Default, NHAI shall pay to JR, by way of termination payments, an amount equal to (i) JR Debt Due and (ii) 150% (one hundred and fifty per cent) of the adjusted equity.

Termination payment shall become due and payable to JR within 15 (fifteen) days of a demand being made by JR to NHAI with the necessary particulars, and in the event of any delay, NHAI shall pay interest at a rate equal to 3% (three percent) above the bank rate on the amount of termination payment remaining unpaid; provided that such delay shall not exceed 90 (ninety) days.

Supplementary Agreement between JR and NHAI

JR has entered into a supplementary agreement to the JR Concession Agreement, with NHAI dated July 5, 2013, in relation to *inter alia* issuance of provisional certificate for construction of part length of the JR Project as the JR Project Highway could not be completed owing to the non-fulfillment of certain obligations of both parties, on acquisition of land and the delays caused were beyond the control of both parties. The terms of the supplementary agreement *inter alia* state that, (i) the commercial operation date of the part length of the JR Project shall be the date on which the independent engineer issues the provisional completion certificate for the part length i.e. 48.00 Km and JR will be allowed to collect toll for this completed reach of 48.00 Km, (ii) JR shall complete the punch list items in 90 (ninety) days as per the provisions of the JR Concession Agreement and the works in the balance length of 4.65 Km of stretch of the JR Project Highway within the appropriate period as determined by the independent engineer; (iii) that there shall be no claims, whatsoever by both the parties for aforesaid delays and extension of scheduled project completion date; (iv) that JR shall not claim for any loss inclusive of escalation, if any, arising out of extension of the construction period; and (v) that both JR and NHAI have agreed that there shall not be any extension of the concession period.

5. Concession Agreement between NHAI and KM Toll Limited ("KM") dated March 10, 2010

KM has entered into a concession agreement to augment the existing road from Km 0.000 to Km 71.400 (approximately 71.400 Kms) on the Gandhidham (Kandla) – Mundra Port section of NH-8A extension in the state of Gujarat by four laning and subsequent six-laning thereof on design, build, finance, operate and transfer ("**DBFOT**") basis (the "**KM Concession Agreement**", for a period of 25 (twenty five) years, from January 19, 2011 ("**KM Appointed Date**") or such date on which the KM Concession Agreement is terminated pursuant to the provisions of the KM Concession Agreement or termination notice ("**KM Termination Date**", and the period between the KM Appointed Date and the KM Termination Date, the "**KM Concession Period**").

Certain Definitions

"**Change in Ownership**" shall mean a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the selected bidder, together with its associates, in the total equity to decline below 51% (fifty one percent) thereof during construction period and 2 (two) years thereafter; provided that any material variation (as compared to the representations made by KM during the bidding process for the purposes of meeting the minimum conditions of eligibility or for evaluation of its application or bid, as the case may be) in the proportion of the equity holding of the selected bidder to the total equity, if it occurs prior to the completion of a period two years after commercial operations date, shall constitute Change in Ownership;

"**KM Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees outstanding on the KM Termination Date:

(a) the principal amount of the debt provided by the senior lenders under the financing agreements for financing the total project cost (the "**KM Principal**") but excluding any part of the KM Principal that had fallen due for repayment two years prior to the KM Termination Date;

(b) all accrued interest, financing fees and charges payable under the financing agreements on, or in respect of, the debt referred to in clause (a) above until the KM Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the KM Termination Date, (ii) any penal interest or charges payable under the financing agreements to any senior lender, and (iii) any pre-payment charges in relation to accelerated repayment of debt except where such charges have arisen due to NHAI Default (as defined hereinbelow); and

(c) any subordinated debt which is included in the financial package and disbursed by lenders for financing the total project cost,

provided that if all or any part of the KM Debt Due is convertible into equity at the option of the senior lenders and/or KM, it shall for the purposes of the KM Concession Agreement be deemed to be KM Debt Due even after such conversion and the KM Principal thereof shall be dealt with as if such conversion had not been undertaken.

"**KM Debt Service**" shall mean the sum of all payments on account of principal, interest, financing fees and charges due and payable in an accounting year to the senior lenders under the financing agreements;

"**KM PCUs**" shall have the meaning ascribed to a passenger car unit in the Indian Roads Congress Publication No. IRC-64, 1990 or any substitute or modification thereof and when used in the KM Concession Agreement, shall include only motorized vehicles liable to payment of user charges at the toll plazas in accordance with the National Highways Fee (Determination of Rates and Collection) Rules, 2008, and the exempted vehicles specified therein, but does not include tractors, motor cycles and non-motorized vehicles;

"**KM Project**" shall mean the construction, operation and maintenance of the KM Project Highway in accordance with the provisions of the KM Concession Agreement and includes all works, services and equipment relating to or in respect of the scope of the KM Project;

"**KM Project Assets**" shall mean all physical and other assets relating to and forming part of the site including (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, culverts, road overbridges, drainage works, traffic signals, sign boards, kilometre-stones, toll plazas, electrical systems, communication systems, rest areas, relief centres, maintenance depots and administrative offices (iii) project facilities situated on the site (iv) all the rights of KM under the KM project agreements, (v) financial assets, such as receivables, security deposits etc. (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the KM Project Highway, but does not include facilities which are not located on the site of the project but which are provided or procured by KM, at its own discretion, for the benefit of users of the KM Project Highway; and

"**KM Project Highway**" shall mean the site comprising the existing road comprising NH-8A extension from Km 0.000 to Km 71.400 and all KM Project Assets and its subsequent development and augmentation in accordance with the KM Concession Agreement.

Grant of Concession

Subject to and in accordance with the provisions of the KM Concession Agreement, the applicable laws and the applicable permits, NHAI has granted to KM the concession including the exclusive right, license and authority to construct, operate and maintain the KM Project for a period of 25 (twenty five) years commencing from the KM Appointed Date. KM has accepted the concession and agreed to implement the KM Project subject to and in accordance with the terms and conditions set forth in the KM Concession Agreement. Provided that in the event six-laning is not undertaken for any reason in accordance with the provisions of the KM Concession Agreement, the KM Concession Period shall be 12 (twelve) years.

Further, KM is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the KM Concession Agreement:

(a) right of way, access and license to the site for the purpose of and to the extent conferred by the provisions of the KM Concession Agreement;

(b) finance and construct the KM Project Highway;

(c) manage, operate and maintain the KM Project Highway and regulate the use thereof by third parties;

(d) demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the KM Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(e) perform and fulfil all of KM's obligations under and in accordance with KM Concession Agreement;

(f) bear and pay all costs, expenses and charges in connection with or incidental to the performance of the obligations of KM under KM Concession Agreement; and

(g) not assign, transfer, sublet or create any lien or encumbrance on KM Concession Agreement, or the concession granted by way of the KM Concession Agreement on the whole or any part of the KM Project Highway nor transfer, lease or part possession therewith, save and except as expressly permitted by the KM Concession Agreement or the substitution agreement.

At any time before the 8th anniversary of the KM Appointed Date, KM may, by a notice in this behalf to NHAI, excuse itself from all obligations relating to the six-laning of the KM Project Highway and thereupon operate the four-lane KM Project Highway for the KM Concession Period of 12 (twelve) years. Upon delivery of such notice, the KM Concession Agreement shall be deemed to be modified as if it were restricted to a four-lane KM Project Highway for the KM Concession Period of 12 (twelve) years.

At any time before the 8th anniversary of the KM Appointed Date, NHAI may, in the event it is satisfied that six-laning is not required on the scheduled six-laning date or within two years therefrom, by a notice in this behalf to KM, restrict the concession to four-laning thereby reducing the KM Concession Period to 12 (twelve) years. Upon the delivery of such notice, the KM Concession Agreement shall be deemed to be modified to as if it were restricted to a four-lane KM Project Highway for the KM Concession Period of 12 (twelve) years.

Fees

On and from the commercial operation date, KM shall have the sole and exclusive right to demand, collect and appropriate fees from the users of the KM Project Highway pursuant to the KM Concession Agreement and the National Highways Fee (Determination of Rates and Collection) Rules, 2008. In accordance with the terms of the KM Concession Agreement, KM shall not collect any fees in relation to exempted vehicles. The fees shall ordinarily be collected at the toll plazas in accordance with the KM Concession Agreement. The fees collected by KM shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the KM Concession Agreement.

Concession Fee

In consideration of the grant of concession, the KM shall pay to NHAI by way of concession fee a sum of Re. 1 (Rupee one) per annum and the premium as specified in KM Concession Agreement.

Additional Concession Fee (Premium)

Without prejudice to the provisions relating to concession fee as provided in the KM Concession Agreement, KM is required to pay NHAI, on the commercial operations date, a premium in the form of an additional concession fee equal to Rs. 420.00 million as due to NHAI during that year, due and payable for the period remaining in that year, and for each subsequent year of the KM Concession Period, the premium shall be determined by increasing the amount of premium in the respective year by an additional 5% as compared to the immediately preceding year.

The premium payable under the KM Concession Agreement shall be deemed to be part of the concession fee.

Escrow Account

KM shall, prior to the KM Appointed Date, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the KM Project Highway costs shall be credited to such escrow account. All fees and any other revenues from or in respect of the KM Project Highway, including the proceeds of any deposits, capital receipts or insurance claims collected by KM from the users of the KM Project Highway shall be deposited therein. In addition, all payments made by NHAI after deduction of any outstanding concession fee by NHAI under the KM Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

KM shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated [●] ("**KM Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month or at shorter intervals as necessary and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by KM for and in respect of KM Project Highway;

(b) all payments relating to construction of the KM Project Highway, subject to and in accordance with the conditions, if any, set forth in the financing agreements;

(c) operation and maintenance expenses, subject to the ceiling, if any, set forth in the financing agreements;

(d) operation and maintenance expenses incurred by NHAI, provided it certifies to the escrow bank that it had incurred such expenses in accordance with the provisions of KM Concession Agreement and that the amounts claimed are due to it from KM;

(e) concession fee due and payable to NHAI;

(f) monthly proportionate provision of KM Debt Service due in an accounting year;

(g) premium due and payable to NHAI;

(h) all payments and damages certified by NHAI as due and payable to it by KM pursuant to the KM Concession Agreement, including repayment of revenue shortfall loan;

(i) monthly proportionate provision of debt service payments due in an accounting year in respect of subordinated debt;

(j) any reserve requirements set forth in the financing agreements; and

(k) balance, if any, in accordance with the instructions of KM.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable for and in respect of KM Project Highway;

(b) 90% (ninety per cent) of KM Debt Due excluding subordinated debt;

(c) outstanding concession fee;

(d) all payments and damages certified by NHAI, as due and payable by KM to NHAI pursuant to the KM Concession Agreement, including premium, repayment of revenue shortfall loans and any claims in connection with or arising out of termination;

(e) retention and payments arising out of, or in relation to, liability for defects and deficiencies set forth in the KM Concession Agreement;

(f) outstanding KM Debt Service including the balance of KM Debt Due;

(g) outstanding subordinated debt;

(h) incurred or accrued operations and maintenance expenses;

(i) any other payments required to be made under the KM Concession Agreement; and

(j) balance, if any, in accordance with the instructions of KM.

Further, no appropriation of termination payments can be made from the escrow account towards the balance amount specified in clause (j) above upon termination until the vesting certificate has been issued to KM by NHAI in accordance with the provisions of the KM Concession Agreement.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the KM Concession Agreement, require the provision of additional works and services which are not included in the scope of the KM Project as contemplated by the KM Concession Agreement. Any such change of scope shall be made in accordance with the provisions of the KM Concession Agreement and the costs thereof shall be expended by KM and reimbursed to it by NHAI in accordance with the KM Concession Agreement.

If KM determines at any time that a change of scope is necessary for providing safer and improved services to the users, it shall by notice in writing require NHAI to consider such change of scope. NHAI shall, within 15 (fifteen) days of receipt of such notice, either accept such change of scope with modifications, if any, and initiate proceedings therefor in accordance with the KM Concession Agreement or inform KM in writing of its reasons for not accepting such change of scope.

Any works or services which are provided under and in accordance with the provisions of the KM Concession Agreement will form part of the KM Project Highway.

Reduction in the Scope of Work

If KM shall have failed to complete any construction works on account of force majeure or for reasons solely attributable to NHAI, NHAI may, in its discretion, require KM to pay 80% (eighty per cent) of the sum saved therefrom, and upon such payment to NHAI, the obligations of KM in respect of such works shall be deemed to have been fulfilled. The liability of NHAI shall not exceed beyond the waiver of the aforesaid 80% (eighty percent).

Change in Ownership

KM shall not undertake or permit any Change in Ownership, except with the prior approval of NHAI.

Notwithstanding anything to the contrary contained in the KM Concession Agreement, KM agrees and acknowledges that (a) all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% (fifteen percent) of the total equity of KM or (b) acquisition of any control directly or indirectly of the board of directors of KM by any person either by himself or together with any person or persons acting in concert with him shall constitute a Change in Ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on KM, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of KM without such prior approval of NHAI.

Further, KM represents and warrants to NHAI that it shall at no time undertake or permit any Change in Ownership except in accordance with the provisions of the KM Concession Agreement and that the selected bidder, together with its associates, hold not less than 51% (fifty-one percent) of its issued and paid up equity as on the date of the KM Concession Agreement.

Provided further that any such request made under the provisions of the KM Concession Agreement, at the option of NHAI, may be required to be accompanied by a suitable no objection letter from the lenders.

Effect of Variation in Traffic Growth

Subject to the provisions of the KM Concession Agreement, in the event actual average traffic shall have fallen short of the target traffic by more than 2.5%, then for every 1% (one per cent) shortfall as compared to the target traffic, the KM Concession Period shall, subject to payment of concession fee in accordance with the KM Concession Agreement, be increased by 1.5% (one point five per cent) thereof; provided that such increase in KM Concession Period shall not in any case exceed 20% (twenty per cent) of the KM Concession Period.

Subject to the provisions of the KM Concession Agreement, in the event actual average traffic shall have exceeded the target traffic by more than 2.5%, then for every 1% (one per cent) excess as compared to the target traffic, the KM Concession Period shall be reduced by 0.75% (zero point seven five per cent) thereof; provided that such reduction in KM Concession Period shall not in any case exceed 10% (ten per cent) thereof.

Provided further that in lieu of a reduction in KM Concession Period under the KM Concession Agreement, KM may elect to pay, in addition to the concession fee that would be due and payable if the KM Concession Period were not reduced hereunder, a further premium equal to 25% (twenty five per cent) of the realizable fee in the respective year, and upon notice given to this effect by KM no later than two years prior to the KM Termination Date contemplated by the KM Concession Agreement, NHAI shall waive the reduction in KM Concession Period hereunder and recover the concession fee and the aforesaid premium for the price waived hereunder.

Notwithstanding anything to the contrary contained in the KM Concession Agreement, if the average daily traffic of KM PCUs in any accounting year shall exceed the designed capacity of the KM Project Highway, NHAI at its option may cause the preparation of a detailed project report ("**KM DPR**"). The said KM DPR, *inter alia* will assess the cost as may have to be incurred for augmenting the capacity of the KM Project Highway such that its capacity shall have increased sufficiently for carrying the then current traffic in accordance with the corresponding provisions of the Indian Roads Congress Publication or any substitute thereof and extension of the KM Concession Period, if any, that may be required to yield KM a post-tax return on the equity (Equity IRR) of 16% per annum, such assessment being made at an assumed debt to equity ratio of 70:30. Such extension of the KM Concession Period shall be however limited to 5 (five) years.

NHAI may thereafter, at their sole option, issue a notice to KM, (to be responded within a period of three months from the date of such notice) to undertake within 6 (six) months of such notice, augmentation so determined by NHAI. For this purpose, all realizable fees that shall accrue from three months from the date of issuance of the aforesaid notice by NHAI, requiring KM to procure capacity augmentation under the provisions of the KM Concession Agreement, shall be included in the assessment of revenue generated against the capacity augmentation and the equity IRR calculations as aforesaid shall be so based on such revenues. On refusal or non-acceptance by KM to undertake such augmentation, either absolutely or on such extension of the KM Concession Period as assessed under the KM DPR, or on the failure of KM to undertake such augmentation on the due date so intimated by NHAI, an indirect political event shall be deemed to have occurred and NHAI may in its discretion terminate the KM Concession Agreement by issuing a termination notice and making a termination payment under and in accordance with the provisions of the KM Concession Agreement; without NHAI being liable to issue any further notice under this provision.

If KM shall have, prior to issue of a termination notice under the provisions of the KM Concession Agreement, completed the construction works necessary for augmenting the capacity of the KM Project Highway such that its capacity shall have increased sufficiently for capacity the then current traffic in accordance with the relevant provisions of the Indian Roads Congress Publication No. IRC - 64, 1990 or any substitute thereof, the indirect political event specified in the KM Concession Agreement shall be deemed to have been cured.

Compensation for breach of the KM Concession Agreement

Compensation for breach by KM

Subject to the provisions of the KM Concession Agreement, in the event of KM being in material default or breach of the KM Concession Agreement, it shall pay to NHAI by way of compensation, all direct costs suffered or incurred by NHAI as a consequence of such material default or breach, within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no compensation shall be payable under the provisions of the KM Concession Agreement for any breach or default in respect of which damages are expressly specified and payable under the KM Concession Agreement or for any consequential losses incurred by NHAI.

Compensation for breach by NHAI

Subject to the provisions of the provisions of KM Concession Agreement, in the event of NHAI being in material default or breach of the KM Concession Agreement at any time after the KM Appointed Date, it shall pay to KM by way of compensation, all direct costs suffered or incurred by KM as a consequence of such material default within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no such compensation shall be payable for any breach or default in respect of which damages have been expressly specified in the KM Concession Agreement.

Termination

Termination by NHAI

In the event of KM Default (as defined below), if KM fails to cure the default within the cure period prescribed or where no cure period is specified, then within a cure period of 60 (sixty) days, NHAI shall be entitled to terminate the KM Concession Agreement, unless the default has occurred solely as a result of any breach of the KM Concession Agreement by NHAI or due to an event of force majeure, by giving a written notice informing KM of its intention to issue such termination notice and grant 15 (fifteen) days' time to KM to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. "**KM Default**", *inter alia*, includes defaults where:

(a) the performance security has been encashed and appropriated in accordance with KM Concession Agreement and KM has failed to replenish or provide fresh performance security within the prescribed cure period of 30 (thirty) days;

(b) subsequent to the replenishment of furnishing of fresh performance security in accordance with the KM Concession Agreement, KM fails to cure, within a period of 90 (ninety) days, the KM Default for which whole or part of the performance security was appropriated;

(c) KM fails to achieve the latest outstanding project milestones as prescribed in the KM Concession Agreement and continues to be in default for 120 days;

(d) KM abandons or manifests intention to abandon the construction or operation of the KM Project Highway without the prior written consent of NHAI;

(e) the project completion date does not occur within the period specified in the KM Concession Agreement;

(f) the punch list items have not been completed within the period prescribed in the KM Concession Agreement;

(g) KM is in breach of the maintenance requirements or the safety requirements, as the case may be;

(h) KM has failed to make any payment to NHAI within the period specified in the KM Concession Agreement;

(i) an escrow default has occurred and KM fails to cure the default within a cure period of 15 (fifteen) days;

(j) upon occurrence of a financial default, the lenders' representative has by notice required NHAI to undertake suspension or termination, as the case may be, in accordance with the substitution agreement and KM fails to cure the default within the prescribed cure period;

(k) a breach of any of the project agreements by KM has caused a material adverse effect;

(l) KM creates any encumbrance in breach of the KM Concession Agreement;

(m) KM repudiates the KM Concession Agreement or otherwise takes any action or evidences or conveys an intention not to be bound by the KM Concession Agreement;

(n) a Change in Ownership has occurred in breach of the provisions of the KM Concession Agreement;

(o) there is transfer, pursuant to law either of (a) the rights and/or obligations of KM under any of the project agreements or of (b) all or part of the assets or undertaking of KM, and such transfer causes a material adverse effect;

(p) an execution levied on any assets of KM has caused a material adverse effect;

(q) KM is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for KM or for the whole or material part of its assets that has a material bearing on the KM Project;

(r) KM has been or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause in the reasonable opinion of NHAI, a material adverse effect;

(s) a resolution for the winding up of KM is passed, or any petition for the winding up of KM is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or KM is ordered to be wound up by the court except for the purposes of amalgamation or reconstruction, provided that, as part of such amalgamation or reconstruction, the entire property, assets and undertaking of KM are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of KM under the KM Concession Agreement and the project agreements, and provided that:

    (i) the amalgamated or reconstructed entity has the capability and operating experience necessary for the performance of its obligations under the KM Concession Agreement and the project agreements;

    (ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the KM Concession Agreement and the project agreements and has a credit worthiness at least as good as that of KM as at the KM Appointed Date; and

    (iii) each of the project agreements remains in full force and effect;

(t) any representation or warranty of KM herein contained which is, as of date hereof, found to be materially false or KM is at any time hereafter found to be in breach thereof;

(u) KM submits to NHAI any statement, notice or other document in written or electronic form, which has a material effect on NHAI's rights, obligations or interests and which is false in material particulars;

(v) KM has failed to fulfil any obligation, for which failure termination has been specified in the KM Concession Agreement; or

(w) KM commits a default in complying with any other provision of the KM Concession Agreement if such a default causes a material adverse effect on NHAI.

NHAI shall, if there are senior lenders, send a copy of its notice of intention to issue a termination notice to inform the lenders' representative and grant 15 (fifteen) days to the lenders' representative, for making a representation on behalf of the senior lenders stating the intention to substitute KM in accordance with the substitution agreement. In the event NHAI receives such representation on behalf of the senior lenders, it shall, in its discretion, either withhold termination for a period not exceeding 180 (one hundred and eighty) days from the date of such representation or exercise its right of suspension, as the case may be, for enabling the lenders' representative to exercise the senior lenders' right of substitution in accordance with the substitution agreement. Provided that the lenders' representative may, instead of exercising the senior lenders' right of substitution, procure that the default specified in the notice is cured within the aforesaid period of 180 (one hundred and eighty) days, and upon such curing thereof, NHAI shall withdraw its notice referred to above and restore all the rights of KM. Provided further that upon written request from the lenders representative and KM, NHAI shall extend the aforesaid period of 180 (one hundred and eighty) days by such further period not exceeding 90 (ninety) days, as NHAI may deem appropriate.

Termination by KM

In the case of NHAI Default (as defined below), if NHAI fails to cure the default within a cure period of 90 (ninety) days or such longer period as provided in the KM Concession Agreement, KM shall subject to the provisions of the substitution agreement be entitled to terminate the KM Concession agreement by giving a written notice informing NHAI of its intention to issue a termination notice and grant 15 (fifteen) days' time to NHAI to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, KM in its sole discretion can issue the termination notice. "**NHAI Default**" unless the default has occurred as a result of any breach of the KM Concession Agreement by KM or due to an event of force majeure, inter alia, includes defaults where:

(a) NHAI commits a material default in complying with any of the provisions of the KM Concession Agreement and such default has a material adverse effect on KM;

(b) NHAI has failed to make any payment to KM within the period specified in KM Concession Agreement;

(c) NHAI repudiates the KM Concession Agreement or otherwise take any action that amounts to or manifests an irrevocable intention not to be bound by the KM Concession Agreement; or

(d) the State of Gujarat commits a material default in complying with the provisions of the state support agreement if such default has a material adverse effect on KM and the breach continues for a period of 90 (ninety) days from the date of notice given in this behalf by KM to NHAI.

Termination Payment

Upon termination of the KM Concession Agreement by NHAI on account of occurrence of KM Default during the operation period, NHAI shall pay an amount equal to 90% (ninety per cent) of the KM Debt Due less insurance cover, if any, provided, however, that if all or any of the insurance claims forming part of the insurance cover are not admitted and paid, then 80% of such unpaid claims shall qualify for being included in the computation of KM Debt Due.

Upon termination of the KM Concession Agreement by KM on account of occurrence of NHAI Default, NHAI shall pay to KM, by way of termination payments, an amount equal to

(i) KM Debt Due; and

(ii) 150% (one hundred and fifty per cent) of the adjusted equity.

Supplementary Agreement between KM and NHAI

KM has entered into a supplementary agreement to the KM Concession Agreement, with NHAI dated November 4, 2015, in relation to *inter alia* issuance of provisional certificate for the construction of part length of the KM Project as these were delays attributable to both parties during the construction period. The terms of the supplementary agreement *inter alia* state that, (i) the provisional commercial operation date of the completed length of the KM Project shall be the date on which the independent engineer issues the provisional completion certificate for the part length of the road (78.15%) after the independent engineer has carried out necessary inspection and safety and ascertained safety and completeness of the stretch as per NHAI guidelines and KM will thereafter be allowed to collect toll for this completed length in accordance with the provisions of the toll fee notifications and the KM Concession Agreement, (ii) the KM Concession Period shall not be extended beyond the scope of the provisions of the KM Concession Agreement; (iii) KM unconditionally indemnifies NHAI for any accident/incident/loss occurred at the intersection locations where traffic is diverted due to non-completion of the KM Project Highway and KM undertakes to execute all precautionary measures as per the safety requirement as per the good engineering practice and maintain such diversion in traffic worthy conditions all the time till the balance works are completed in the affected portion; (iv) that KM agrees to complete the balance works with an aggregate length of 15.600 Km and complete work as per the programme to be approved by the independent engineer; (v) that the KM Project Highway for a total length of 71.400 Km is completed; (vi) that the portion with aggregate length of 8.45 Km will be commenced after land is made available to KM; (vii) that the scheduled four-laning date shall be modified to the extent determined by the independent engineer and approved by the NHAI and KM shall abide by the decision of the NHAI in respect of extension of the scheduled four-laning date; (viii) that both parties have agreed for mutual waiver of damages and claims under certain provisions of the KM Concession Agreement for the delay in handing over the affected stretches of the KM Project Highway and KM will also not claim for loss of revenue; and (ix) KM shall not make any claim in arbitration/DRB/court against the extension of the scheduled project completion date and issue of the provisional completion certificate by NHAI without extension of the KM Concession Period and KM shall also not claim for any loss inclusive of escalation, if any, arising out of extension of the construction period..

6. Concession Agreement between NHAI and NK Toll Road Limited ("NK") dated January 30, 2006

NK has entered into a concession agreement for widening of the existing 2 lane portion from Km 258.645 (End of Namakkal Bypass) to Km 292.600 (Start of Karur Bypass), covering 33.48 Kms on NH-7 in the state of Tamil Nadu to 4 lanes and improvement, operation and maintenance of Km 248.625 (start of the proposed flyover on Namakkal Bypass) to Km 258.645 (end of Namakkal Bypass) on NH-7 on build, operate and transfer ("**BOT**") basis (the "**NK Concession Agreement**", for a period of 20 (twenty) years, from July 29, 2006 ("**NK Appointed Date**") or such date on which the NK Concession Agreement is terminated pursuant to the provisions of the NK Concession Agreement or termination notice ("**NK Termination Date**", and the period between the NK Appointed Date and the NK Termination Date, the "**NK Concession Period**").

Certain Definitions

"**NK Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees or in the currency of the debt, as the case may be, outstanding and payable to the senior lenders under the financing documents:

(a) the principal amount of the debt provided by the senior lenders under the financing agreements for financing the NK Project (the "**NK Principal**") which is outstanding as on the NK Termination Date but excluding any part of the NK Principal that had fallen due for repayment one year prior to the NK Termination Date unless such repayment has been rescheduled with the prior consent of NHAI; and

(b) all accrued interest, financing fees and charges payable under the financing agreements on, or in respect of, the debt referred to in clause (a) above up to the date preceding the NK Termination Date but excluding (i) above up to the date preceding the NK Termination Date; and (ii) penal interest or charges, payable under the financing documents to any senior lender;

"**NK Debt Service Payments**" shall mean the sum of all principal and interest payments due and payable in an accounting year to the senior lenders under the financing documents

"**NK Project**" shall mean the development, design, financing, procurement, engineering and construction, operation and maintenance of the NK Project Highway in accordance with the provisions of the NK Concession Agreement and includes all works relating to or in respect of the NK Project Highway as described under the provisions of the NK Concession Agreement;

"**NK Project Assets**" shall mean all physical and other assets relating to and forming part of the NK Project Highway including but not limited to (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, approaches to bridges and flyovers, road overbridges, drainage works, lighting facilities, traffic signals, sign boards, milestones, toll plazas, equipment for the collection of tolls or relating to regulation of traffic, electrical works for lighting on the NK Project Highway, telephone and other communication systems and other equipment for the NK Project, rest areas, relief centres etc.(iii) project facilities situated on the site (iv) the rights of NK under the NK project agreements, (v) financial assets, such as security deposits for electricity supply, telephone etc. (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the NK Project Highway, but does not include facilities which are not located on the site of the project but which are provided or procured by NK, at its own discretion, for the benefit of users of the NK Project Highway; and

"**NK Project Highway**" shall mean the NH-7 stretch from Km 248.625 to Km 292.600 and includes (i) widening the existing 2 lane portion from Km 258.645 to Km 292.600 covering 33.48 Kms on NH-7 in the State of Tamil Nadu, to 4 lanes and (ii) improvement, operations and maintenance of Km 248.625 to Km 258.645 in the State of Tamil Nadu, to 4 lanes and shall include the NK Project Assets and the project facilities to be designed, engineered, built and improved on site and to be operated and maintained during the NK Concession Period in accordance with the provisions of the NK Concession Agreement.

Grant of Concession

Subject to and in accordance with the terms and conditions set forth in the NK Concession Agreement, NHAI has granted to NK and NK has accepted the concession for a period of 20 (twenty) years commencing from the NK Appointed Date, including the exclusive right, license and authority during the subsistence of the NK Concession Agreement to implement the NK Project and the concession in respect of the NK Project Highway.

Further, NK is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the NK Concession Agreement:

(a) to develop, design, engineer, finance, procure, construct, operate and maintain the NK Project Highway during the NK Concession Period;

(b) manage, operate and maintain the NK Project Highway and regulate the use thereof by third parties;

(c) levy, demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the NK Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(d) perform and fulfil all of the obligations under and in accordance with NK Concession Agreement;

(e) bear and pay all costs, expenses and charges in connection with or incidental to the performance of NK's obligations under NK Concession Agreement; and

(f) not assign or create any lien or encumbrance on the concession granted by way of the NK Concession Agreement on the whole or any part of the NK Project Highway nor transfer, lease or part possession therewith save and except as expressly permitted by the NK Concession Agreement or the substitution agreement.

Further, NK has represented and warranted to NHAI that the equity shareholding of Reliance Energy Limited and their associates in the issued and paid up equity share capital of NK shall not be less than (a) 51% (fifty one percent) during the construction period and for 3 (three) years following the commercial operations date and (b) 26% (twenty six percent) during the balance remaining operations period.

Fees

NK shall be entitled to, during the operations period, to levy, collect and appropriate the fees from the users of the NK Project Highway at one toll plaza pursuant to and in accordance with the provisions in the NK Concession Agreement. In accordance with the terms of the NK Concession Agreement, NK shall not collect any fees in relation to exempted vehicles. The fees collected by NK shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the NK Concession Agreement

Grant

NHAI has provided to NK, cash support by way of an outright grant equal to the sum set forth in the bid submitted, namely, Rs. 240.00 million, in accordance with the provisions of the NK Concession Agreement (the " NK **Grant**"). The NK Grant was disbursed to NK by way of equity support in accordance with the provisions of the NK Concession Agreement. The NK Grant was credited to the escrow account and was applied by NK for meeting the capital cost of the NK Project.

Concession Fee

In consideration of the grant of concession under the NK Concession Agreement, the concession fee payable by NK to NHAI shall be Re. 1 per year during the term of the NK Concession Agreement.

The concession fee shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

Escrow Account

NK shall within 60 days from the date of the NK Concession Agreement, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the total project cost shall be credited to such escrow account. During operations period all fees collected by NK from the users of the NK Project Highway shall be deposited therein. In addition, all fees collected by NHAI in exercise of its rights under the NK Concession Agreement during the NK Concession Period and all disbursements or payments by NHAI pursuant to the NK Concession Agreement shall also, subject to the rights of deductions and appropriations therefrom of NHAI under the NK Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

NK shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated February 6, 2013 ("**NK Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due unless otherwise expressly provided in the instruction letter:

(a) all taxes due and payable by NK;

(b) all expenses in connection with and relevant to the construction of the NK Project Highway by way of payment to the EPC contractor and such other persons as may be specified in the financing documents;

(c) operation and maintenance expenses including fees collection expenses incurred by NK directly or through operation and maintenance contractor and/or tolling contractor, if any, subject to the items and ceiling in respect thereof as set forth in the financing documents but not exceeding 1/12 of the annual liability on this account;

(d) the whole of the expense on completion of punch list items incurred by NHAI and two times such expenses subject to a minimum of Rs. 1,000,000 (Rupees one million) in case the punch list items are not completed by NK within 120 days from the issue of provisional completion certificate in accordance with the specifications and standards and as detailed in the NK Concession Agreement;

(e) the whole or part of the expense on repair work or operation and maintenance expenses including fees collection expenses incurred by NHAI, and 1.25 times of the operation and maintenance expenses incurred by the NHAI, if any, in the event of repair and maintenance work being carried out by the NHAI (pursuant to the failure on part of NK in doing so) to maintain and/or repair the NK Project Highway or a part thereof up to and in accordance with the specifications and standards and/or failure on part of NK to commence remedial woks within 30 (thirty) days of receipt of notice in this regard from NHAI or the independent consultant, if any, including those on account of exercise of any of its rights under the NK Concession Agreement provided NHAI certifies to the escrow agent that NHAI had incurred expenses in accordance with the provisions of the NK Escrow Agreement;

(f) all concession, fees and negative grant payments due to NHAI from NK under the NK Escrow Agreement;

(g) monthly proportionate provision of NK Debt Service Payments due in an accounting year and payment of NK Debt Service Payments in the month when due;

(h) reimbursements of expenditure incurred by NHAI, if any, for payment of insurance premia, etc., which are otherwise NK's responsibility, on account of failure on part of NK to keep such insurance(s) effective and in force;

(i) one-half of such remuneration, cost and expenses of the independent consultant in case NK does not reimburse the remuneration, cost and expenses of the independent consultant to NHAI within 15 (fifteen) days of receiving a statement of expenditure from NHAI;

(j) any payments and damages due and payable by NK to NHAI pursuant to the NK Escrow Agreement, including recovery due to reduction in the scope of work and repayment of revenue shortfall loans; and

(k) balance in accordance with the instructions of NK.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by NK;

(b) all concession fees (including negative grants) due and payable to NHAI under the NK Concession Agreement;

(c) all accrued NK Debt Service Payments;

(d) any payments and damages due and payable by NK to NHAI pursuant to the NK Concession Agreement, including termination claims, recovery due to reduction in scope of work and repayment of revenue shortfall loans;

(e) all accrued operations and maintenance expenses;

(f) any other payments required to be made under the NK Concession Agreement; and

(g) balance, if any, in accordance with the instructions of NK.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to NK by NHAI in accordance with the provisions of the NK Concession Agreement. However, this restriction shall not apply to appropriation in favour of the senior lenders to the extent of NK Debt Due.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the NK Concession Agreement, require the provision of such addition / deletion to the works and services on or about the NK Project Highway which are beyond the scope of the NK Project as contemplated by the NK Concession Agreement, provided such changes do not require any increase/ decrease in expenditure exceeding 10% (ten per cent) of the total project cost and do not adversely affect the commercial operation date. All such changes shall be made by NHAI by an order issued in accordance with the procedure set forth in the NK Concession Agreement.

Compensation for breach of the NK Concession Agreement

Compensation for breach by NK

Subject to the provisions of the NK Concession Agreement, in the event of NK being in material default of the NK Concession Agreement and such default is cured before termination, NK shall pay to NHAI as compensation, all direct additional costs suffered or incurred by NHAI arising out of such material default by NK, in one lumpsum within 30 (thirty) days of receiving the demand or at the NK's option in 3 (three) equal semi-annual installments with interest.

Compensation for breach by NHAI

Subject to the provisions of the NK Concession Agreement, in the event of NHAI being in material default of the NK Concession Agreement and such default is cured before termination, NHAI shall pay to NK as compensation, all direct additional costs suffered or incurred by NK arising out of such material default by NHAI, in one lumpsum within 30 (thirty) days of receiving the demand or at the NHAI's option in 3 (three) equal semi-annual installments with interest.

Termination

Termination by NHAI

In the event of any breach or default by NK under the NK Concession Agreement, including any NK Default (as defined below) and if NK has failed to cure such breach or default within the period provided for the same in the NK Concession Agreement, then NHAI shall be entitled to terminate the NK Concession Agreement by a communication in writing to NK provided that before issuing the termination notice, NHAI shall by a notice in writing inform NK of its intention to issue the termination notice and grant 15 (fifteen) days to NK to make its representation, if any, against such intended termination notice. After the expiry of the 15 day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. The following events, *inter alia*, shall constitute an event of default by NK (an "**NK Default**") unless such NK Default has occurred as a result of NHAI Default (as defined below) or a force majeure event:

(a) NK fails to achieve financial close in accordance with the provisions of the NK Concession Agreement;

(b) NK fails to achieve any project milestones other than the scheduled project completion date within the period prescribed in the NK Concession Agreement and also fails to cure such default within 180 days from the date of its occurrence;

(c) NK is in material breach of the NK Concession Agreement;

(d) NK commits default in complying with any of the terms and conditions of the NK Concession Agreement, save and except those defaults in respect of which a cure period has been expressly provided, and fails to remedy or rectify such default within the period provided in a notice in this behalf from NHAI which shall

    (i) require NK to remedy the breaches within one month (or such longer period as may be agreed by NHAI in its absolute discretion); or

    (ii) permit NK to put forward within 15 (fifteen) days of such notice, a reasonable programme for remedying the breaches, where such programme specifies in reasonable detail the manner in which such breach or breaches is or are proposed to be remedied and the latest date by which it is proposed that such breach or all such breaches shall be remedied;

(e) NK creates any encumbrance, charges or lien in favour of any person save and except as otherwise expressly permitted under the NK Concession Agreement;

(f) the shareholding of Reliance Energy Limited and its associates falls below the minimum prescribed requirement under the NK Concession Agreement and NK does not suo moto cure such default within 90 (ninety) days of its occurrence;

(g) the transfer, pursuant to law, of either (i) the rights and/or obligations of NK under the project agreements, or (ii) all or material parts of the assets or undertaking of NK except where such transfer in the reasonable opinion of NHAI does not affect the ability of NK to perform, and NK has the financial and technical capability to perform its material obligations under the project agreements;

(h) a resolution is passed by the shareholders of NK for the voluntary winding up of NK;

(i) NK is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for NK or for any of its property that has a material bearing on the NK Project;

(j) any petition for winding up of NK is admitted by a court of competent jurisdiction or NK is ordered to be wound up by a court except for the purpose of amalgamation or reconstruction provided that, as part of such amalgamation or reconstruction, the property, assets and undertaking of NK are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of NK under the NK Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the technical capability and operating experience necessary for the performance of its obligations under the NK Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the NK Concession Agreement and the project agreements and has a credit worthiness at least as good as that of NK as at the financial close; and

(iii) each of the project agreements remains in full force and effect;

(k) NK is in material breach of any of the project agreements;

(l) an event of default of NK under any of the financing documents has occurred or any of the senior lenders has recalled its loan under any of the financing documents;

(m) NK abandons the operations of the NK Project Highway for more than 15 (fifteen) consecutive days without the prior consent of NHAI, provided NK shall be deemed not to have abandoned such operation if such abandonment (i) was as a result of force majeure event and is only for the period such force majeure event is continuing, or (ii) is on account of a breach of its obligations by NHAI;

(n) NK repudiates the NK Concession Agreement or otherwise evidences an intention not to be bound by the NK Concession Agreement;

(o) NK suffers an execution being levied on any of its assets or equipment causing a material adverse effect on the NK Project and allows it to be continued for a period of 15 (fifteen) days;

(p) NK has delayed any payment that has fallen due under the NK Concession Agreement if such delay exceeds 90 (ninety) days; or

(q) NK is in breach of its obligation to repay the revenue shortfall loans in accordance the NK Concession Agreement.

Termination by NK

NK is entitled to terminate the NK Concession Agreement upon a 90 (ninety) days' written notice to NHAI upon the occurrence and continuation of any of the following events (each a "**NHAI Default**") unless any such NHAI Default has occurred as a result of NK Default or due to a force majeure event:

(a) NHAI is in breach of the NK Concession Agreement and such breach has a material adverse effect on NK and NHAI fails to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from NK;

(b) NHAI repudiates the NK Concession Agreement or otherwise evidences an irrevocable intention not to be bound by the NK Concession Agreement;

(c) the Government of India or the Government of the State of Tamil Nadu or any governmental agency have by an act of commission or omission created circumstances that have a material adverse effect on the performance of its obligations by NK and have failed to cure such circumstances within 90 (ninety) days of receipt of notice by NHAI in this behalf from NK; or

(d) NHAI has delayed any payment that has fallen due under the NK Concession Agreement if such delay exceeds 90 (ninety) days.

Termination Payments

The termination payment pursuant to the NK Concession Agreement becomes due and payable to NK by NHAI within 30 (thirty) days of a demand being made by NK with the necessary particulars duly certified by the statutory auditors. If NHAI fails to disburse the full termination payment within 30 (thirty) days, the amount remaining unpaid shall be disbursed along with interest in accordance with the provisions under the NK Concession Agreement plus two per cent for the period of delay on such amount.

Upon termination by NK on account of an NHAI Default, NK shall be entitled to receive from NHAI by way of termination payment a sum equal to:

(a) The total NK Debt Due, plus

(b) 120% (one hundred and twenty per cent) of the total subordinated debt, plus

(c) 150% (one hundred and fifty per cent) of the equity (subscribed in cash and actually spent on the project but excluding the amount of equity support as specified in the NK Concession Agreement) if such termination occurs at any time during three years commencing from the NK Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in wholesale price index (published by the Ministry of Industry, Government of India, including any index, which substitutes the wholesale price index) during such year and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and a half per cent) per annum.

Upon termination of the NK Concession Agreement by NHAI on account of occurrence of NK Default during the operations period, NHAI shall pay to NK by way of termination payment an amount equal to 90% (ninety per cent) of the NK Debt Due less insurance cover, if any, provided, however, that if all or any of the insurance claims are not admitted and paid, then 80% of such unpaid claims shall qualify for being included in the computation of NK Debt Due.

Supplementary Agreements between NK and NHAI

NK has entered into a supplementary agreement to the NK Concession Agreement, with NHAI dated March 6, 2014, in relation to the change in the provisions in relation to the procedure of arbitration. Under the terms of supplementary agreement, any previous arbitration commenced by either party shall be subject to the amended procedure of arbitration.

7. Concession Agreement between NHAI and PS Toll Road Private Limited dated March 10, 2010

PS has entered into a concession agreement to augment the existing road from Km 725.000 to Km 865.350, Pune – Satara section of NH-4 in the state of Maharashtra by six-laning thereof as BOT (toll) on design, build, finance, operate and transfer ("**DBFOT**") pattern (the "**PS Concession Agreement**", for a period of 24 (twenty four) years, from October 1, 2010 ("**PS Appointed Date**") or such date on which the PS Concession Agreement is terminated pursuant to the provisions of the PS Concession Agreement or termination notice ("**PS Termination Date**", and the period between the PS Appointed Date and the PS Termination Date, the "**PS Concession Period**").

Certain Definitions

"**Change in Ownership**" shall mean a transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, that causes the aggregate holding of the consortium members, together with their associates, in the total equity to decline below 51% (fifty one percent) thereof during construction period and two years thereafter; provided that any material variation (as compared to the representations made by the PS during the bidding process for the purposes of meeting the minimum conditions of eligibility or for evaluation of its application or bid, as the case may be,) in the proportion of the equity holding of any consortium member to the total equity, if it occurs prior to completion of a period two years after the date the project achieves/is granted completion certificate, shall constitute Change in Ownership;

"**PS Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees outstanding on the PS Termination Date:

(a) the principal amount of the debt provided by the senior lenders under the financing agreements for financing the total project cost ("**PS Principal**") but excluding any part of the PS Principal that had fallen repayment two years prior to the PS Termination Date;

(b) all accrued interest, financing fees and charges payable under the financing agreements on, or in respect of, the debt referred to in clause (a) above until the PS Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the PS Termination Date, (ii) any penal interest or charges payable under the financing agreements to any senior lender, and (iii) any pre-payment charges in relation to accelerated repayment of debt except where such charges have arisen due to NHAI Default (as defined hereinbelow); and

(c) any subordinated debt which is included in the financial package and disbursed by lenders for financing the total project cost;

provided that if all or any part of the PS Debt Due is convertible into equity at the option of the senior lenders and/or PS, it shall for the purposes of the PS Concession Agreement be deemed to be PS Debt Due even after such conversion and the PS Principal thereof shall be dealt with as if such conversion had not been undertaken;

"**PS Debt Service**" shall mean the sum of all payments on account of principal, interest, financing fees and charges due and payable in an accounting year to the senior lenders under the financing agreements;

"**PS PCUs**" shall have the meaning ascribed to a passenger car unit in the Indian Roads Congress Publication No. IRC-64, 1990 or any substitute or modification thereof and when used in the PS Concession Agreement, shall include only motorized vehicles liable to payment of user charges at the toll plazas in accordance with the National Highways Fee (Determination of Rates and Collection) Rules, 2008, and the exempted vehicles specified therein, but does not include tractors, motor cycles and non-motorized vehicles;

"**PS Project**" shall mean the construction, operation and maintenance of the PS Project Highway in accordance with the provisions of the PS Concession Agreement and includes all works, services and equipment relating to or in respect of the scope of the PS Project;

"**PS Project Assets**" shall mean all physical and other assets relating to and forming part of the site including (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, culverts, road overbridges, drainage works, traffic signals, sign boards, kilometre-stones, toll plazas, electrical systems, communication systems, rest areas, relief centres, maintenance depots and administrative offices (iii) project facilities situated on the site (iv) all the rights of PS under the PS project agreements, (v) financial assets, such as receivables, security deposits etc. (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the PS Project Highway, but does not include facilities which are not located on the site of the project but which are provided by PS, at its own discretion, for the benefit of users of the PS Project Highway; and

"**PS Project Highway**" shall mean the site comprising the existing road comprising NH-4 from Km 725.000 to Km 865.350 and all PS Project Assets and its subsequent development and augmentation in accordance with the PS Concession Agreement.

Grant of Concession

Subject to and in accordance with the provisions of the PS Concession Agreement, the applicable laws and the applicable permits, NHAI has granted to PS the concession including the exclusive right, license and authority to construct, operate and maintain the PS Project for a period of 24 (twenty four) years commencing from the PS Appointed Date. PS has accepted the concession and agreed to implement the PS Project subject to and in accordance with the terms and conditions set forth in the PS Concession Agreement.

Further, PS is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the PS Concession Agreement:

(a) right of way, access and license to the site for the purpose of and to the extent conferred by the provisions of the PS Concession Agreement;

(b) finance and construct the PS Project Highway;

(c) manage, operate and maintain the PS Project Highway and regulate the use thereof by third parties;

(d) demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the PS Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(e) perform and fulfil all of PS's obligations under and in accordance with PS Concession Agreement;

(f) bear and pay all costs, expenses and charges in connection with or incidental to the performance of PS's obligations under PS Concession Agreement; and

(g) not assign, transfer, sublet or create any lien or encumbrance on PS Concession Agreement, or the concession granted by way of the PS Concession Agreement on the whole or any part of the PS Project Highway nor transfer, lease or part possession therewith, save and except as expressly permitted by the PS Concession Agreement or the substitution agreement.

Commercial Operation Date

The commercial operation date of the PS Project shall be the date on which all conditions precedent have been satisfied or waived, as the case may be, in accordance with the provisions of the PS Concession Agreement ("**PS COD**"). The PS Project Highway shall enter into commercial service on the PS COD whereupon PS shall be entitled to demand and collect fee in accordance with the provisions of the PS Concession Agreement.

PS has agreed and undertaken that it shall achieve PS COD within 180 (one hundred eighty) days from the date of the PS Concession Agreement and in the event of delay, it shall be entitled to a further period not exceeding 120 (one hundred twenty) days, subject to payment of damages to NHAI in a sum calculated at the rate of 0.1% (zero point one per cent) of the performance security for each day of delay. Provided that the damages specified herein shall be payable every week in advance and the period beyond the said 180 (one hundred eighty) days shall be granted only to the extent of damages so paid; provided further that no damages shall be payable if such delay in the PS COD has occurred solely as a result of any default or delay by NHAI in procuring satisfaction of the conditions precedent specified in the PS Concession Agreement or due to force majeure.

PS shall, upon occurrence of PS COD, notify NHAI forthwith.

Fees

On and from the commercial operations date, PS shall have the sole and exclusive right to demand, collect and appropriate fees from the users of the PS Project Highway pursuant to the PS Concession Agreement and the National Highways Fee (Determination of Rates and Collection) Rules, 2008. In accordance with the terms of the PS Concession Agreement, PS shall not collect any fees in relation to exempted vehicles. The fees shall ordinarily be collected at the toll plazas in accordance with the PS Concession Agreement. The fees collected by PS shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the PS Concession Agreement.

Concession Fee

In consideration of the grant of concession, the PS shall pay to NHAI by way of concession fee a sum of Re. 1 (Rupee one) per annum and the premium as specified in PS Concession Agreement

Additional Concession Fee

Without prejudice to the provisions relating to concession fee as provided in the PS Concession Agreement, PS is required to pay NHAI, on the PS Appointed Date, a premium in the form of an additional concession fee equal to Rs. 909.00 million as due to NHAI during that year, due and payable for the period remaining in that year, and for each subsequent year of the PS Concession Period, the premium shall be determined by increasing the amount of premium in the respective year by an additional 5% as compared to the immediately preceding year.

The premium payable under the PS Concession Agreement shall be deemed to be part of the concession fee.

Escrow Account

PS shall, prior to the financial close, open and establish the escrow account with the escrow bank and all funds constituting the financial package for meeting the PS Project Highway costs shall be credited to such escrow account. All fees and any other revenues from or in respect of the PS Project Highway, including the proceeds of any deposits, capital receipts or insurance claims collected by PS from the users of the PS Project Highway shall be deposited therein. In addition, all payments made by NHAI after deduction of any outstanding concession fee by NHAI under the PS Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

PS shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated March 19, 2015 ("**PS Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month or at shorter intervals as necessary and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by PS for and in respect of PS Project;

(b) all payments relating to construction of the PS Project Highway, subject to and in accordance with the conditions, if any, set forth in the financing agreements;

(c) operation and maintenance expenses, subject to the ceiling, if any, set forth in the financing agreements;

(d) operation and maintenance expenses incurred by NHAI, provided it certifies to the escrow bank that it had incurred such expenses in accordance with the provisions of PS Concession Agreement and that the amounts claimed are due to it from PS;

(e) concession fee due and payable to NHAI;

(f) monthly proportionate provision of PS Debt Service due in an accounting year;

(g) premium due and payable to NHAI;

(h) all payments and damages certified by NHAI as due and payable to it by PS pursuant to the PS Concession Agreement, including repayment of revenue shortfall loans;

(i) monthly proportionate provision of debt service payments due in an accounting year in respect of subordinated debt;

(j) any reserve requirements set forth in the financing agreements; and

(k) balance, if any, in accordance with the instructions of PS.

NHAI shall, at the time of the opening of the escrow account give irrevocable instructions by way of the escrow agreement, to the escrow bank instructing, *inter alia*, that all fee and any other revenues from or in respect of PS Project Highway (including the proceeds of insurance claims deposited in the escrow account) until the completion of the six-laning shall be transferred to a separate sub-account being the construction period fee escrow sub-account.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by PS;

(b) 90% (ninety per cent) of PS Debt Due excluding subordinated debt;

(c) outstanding concession fee;

(d) all payments and damages due and payable by PS to NHAI or certified by NHAI pursuant to the PS Concession Agreement, including premium and repayment of revenue shortfall loans;

(e) retention and payments relating to the liability for defects and deficiencies pursuant to the PS Concession Agreement**;**

(f) outstanding PS Debt Service including the balance of PS Debt Due;

(g) outstanding subordinated debt;

(h) incurred or accrued operations and maintenance expenses;

(i) any other payments required to be made under the PS Concession Agreement; and

(j) balance, if any, in accordance with the instructions of PS.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to PS by NHAI in accordance with the provisions of the PS Concession Agreement.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the PS Concession Agreement, require the provision of additional works and services which are not included in the scope of the PS Project as contemplated by the PS Concession Agreement. Any such change of scope shall be made in accordance with the provisions of the PS Concession Agreement and the costs thereof shall be expended by PS and reimbursed to it by NHAI in accordance with the PS Concession Agreement.

If PS determines at any time that a change of scope is necessary for providing safer and improved services to the users, it shall by notice in writing require NHAI to consider such change of scope. NHAI shall, within 15 (fifteen) days of receipt of such notice, either accept such change of scope with modifications, if any, and initiate proceedings therefor in accordance with the PS Concession Agreement or inform PS in writing of its reasons for not accepting such change of scope.

Any works or services which are provided under and in accordance with the PS Concession Agreement shall form part of the PS Project Highway.

Reduction in the Scope of Work

If PS shall have failed to complete any construction works on account of force majeure or for reasons solely attributable to NHAI, NHAI may, in its discretion, require PS to pay 80% (eighty per cent) of the sum saved therefrom, and upon such payment to NHAI, the obligations of PS in respect of such works shall be deemed to have been fulfilled. The liability of NHAI shall not exceed beyond the waiver of the aforesaid 80% (eighty percent).

Change in Ownership

PS shall not undertake or permit any Change in Ownership, except with the prior approval of NHAI.

Notwithstanding anything to the contrary contained in the PS Concession Agreement, PS has agreed and acknowledged that (a) all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% (fifteen percent) of the total equity of the PS or (b) acquisition of any control directly or indirectly of the board of directors of the PS by any person either by himself or together with any person or persons acting in concert with him shall constitute a Change in Ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on PS, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of PS without such prior approval of NHAI.

Further, PS has represented and warranted to NHAI that it shall at no time undertake or permit any Change in Ownership except in accordance with the provisions of the PS Concession Agreement and that the consortium members, together with their associates, hold not less than 51% (fifty-one percent) of its issued and paid up equity as on the date of the PS Concession Agreement; and that each member of the consortium whose technical and financial capacity was evaluated for the purposes of pre-qualification and short-listing in response to the request for qualification shall hold at least 26% (twenty six percent) of such equity during the construction period and two years thereafter along with its associates.

Provided further that any such request made under the provisions of the PS Concession Agreement, at the option of NHAI, may be required to be accompanied by a suitable no objection letter from the lenders.

Effect of Variation in Traffic Growth

Subject to the provisions of the PS Concession Agreement, in the event actual average traffic shall have fallen short of the target traffic by more than 2.5%, then for every 1% (one per cent) shortfall as compared to the target traffic, the PS Concession Period shall, subject to payment of concession fee in accordance with the PS Concession Agreement, be increased by 1.5% (one point five per cent) thereof; provided that such increase in PS Concession Period shall not in any case exceed 20% (twenty per cent) of the PS Concession Period.

Subject to the provisions of the PS Concession Agreement, in the event actual average traffic shall have exceeded the target traffic by more than 2.5%, then for every 1% (one per cent) excess as compared to the target traffic, the PS Concession Period shall be reduced by 0.75% (zero point seven five per cent) thereof; provided that such reduction in PS Concession Period shall not in any case exceed 10% (ten per cent) thereof.

Provided further that in lieu of a reduction in PS Concession Period under the PS Concession Agreement, PS may elect to pay, in addition to the concession fee that would be due and payable if the PS Concession Period were not reduced hereunder, a further premium equal to 25% (twenty five per cent) of the realizable fee, and upon notice given to this effect by PS no later than two years prior to the PS Termination Date contemplated by the PS Concession Agreement, NHAI shall waive the reduction in PS Concession Period hereunder and recover the concession fee and the premium for the period waived.

Notwithstanding anything to the contrary contained in the PS Concession Agreement, if the average daily traffic of PS PCUs in any accounting year shall exceed the designed capacity of the PS Project Highway, NHAI at its option may cause the preparation of a detailed project report ("**PS DPR**"). The said PS DPR, *inter alia* will assess the cost as may have to be incurred for augmenting the capacity of the PS Project Highway such that its capacity shall have increased sufficiently for carrying the then current traffic in accordance with the corresponding provisions of the Indian Roads Congress Publication or any substitute thereof and extension of the PS Concession Period, if any, that may be required to yield PS a post-tax return on the equity (Equity IRR) of 16% per annum, such assessment being made at an assumed debt to equity ratio of 70:30. Such extension of the PS Concession Period shall be however limited to 5 (five) years.

NHAI may thereafter, at their sole option, issue a notice to PS, (to be responded within a period of three months from the date of such notice) to undertake within 6 (six) months of such notice, augmentation so determined by NHAI. For this purpose, all realizable fees that shall accrue from three months from the date of issuance of the aforesaid notice by NHAI, requiring PS to procure capacity augmentation under the provisions of the PS Concession Agreement, shall be included in the assessment of revenue generated against the capacity augmentation and the equity IRR calculations as aforesaid shall be so based on such revenues. On refusal or non-acceptance by PS to undertake such augmentation, either absolutely or on such extension of the PS Concession Period as assessed under the PS DPR, or on the failure of PS to undertake such augmentation on the due date so intimated by NHAI, an indirect political event shall be deemed to have occurred and NHAI may in its discretion terminate the PS Concession Agreement by issuing a termination notice and making a termination payment under and in accordance with the provisions of the PS Concession Agreement; without NHAI being liable to issue any further notice under this provision.

If PS shall have, prior to issue of a termination notice under the provisions of the PS Concession Agreement, completed the construction works necessary for augmenting the capacity of the PS Project Highway such that its capacity shall have increased sufficiently for capacity the then current traffic in accordance with the relevant provisions of the Indian Roads Congress Publication No. IRC - 64, 1990 or any substitute thereof, the indirect political event specified in the PS Concession Agreement shall be deemed to have been cured.

Compensation for breach of the PS Concession Agreement

Compensation for breach by PS

Subject to the provisions of the PS Concession Agreement, in the event of PS being in material default or breach of the PS Concession Agreement, it shall pay to NHAI by way of compensation, all direct costs suffered or incurred by NHAI as a consequence of such material default or breach, within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no compensation shall be payable under the provisions of the PS Concession Agreement for any breach or default in respect of which damages are expressly specified and payable under the PS Concession Agreement or for any consequential losses incurred by NHAI.

Compensation for breach by NHAI

Subject to the provisions of the provisions of PS Concession Agreement, in the event of NHAI being in material default or breach of the PS Concession Agreement at any time after the PS Appointed Date, it shall pay to PS by way of compensation, all direct costs suffered or incurred by PS as a consequence of such material default or breach within 30 (thirty) days of receipt of the demand supported by necessary particulars thereof; provided that no such compensation shall be payable for any breach or default in respect of which damages have been expressly specified in the PS Concession Agreement.

Termination

Termination by NHAI

In the event of PS Default (as defined below), if PS fails to cure the default within the cure period prescribed or where no cure period is specified, then within a cure period of 60 (sixty) days, NHAI shall be entitled to terminate the PS Concession Agreement, unless the default has occurred solely as a result of any breach of the PS Concession Agreement by NHAI or due to an event of force majeure, by giving a written notice informing PS of its intention to issue such termination notice and grant 15 (fifteen) days' time to PS to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. "**PS Default**", *inter alia*, includes defaults where:

(a) the performance security has been encashed and appropriated in accordance with PS Concession Agreement and PS has failed to replenish or provide fresh performance security within the prescribed cure period of 30 (thirty) days;

(b) subsequent to the replenishment of furnishing of fresh performance security in accordance with the PS Concession Agreement, PS fails to cure, within a period of 90 (ninety) days, the PS Default for which whole or part of the performance security was appropriated;

(c) PS fails to achieve the latest outstanding project milestones as prescribed in the PS Concession Agreement and continues to be in default for 120 (one hundred and twenty) days;

(d) PS abandons or manifests intention to abandon the construction or operation of the PS Project Highway without the prior written consent of NHAI;

(e) the project completion date does not occur within the period specified in the PS Concession Agreement;

(f) the punch list items have not been completed within the period prescribed in the PS Concession Agreement;

(g) PS is in breach of the maintenance requirements or the safety requirements, as the case may be;

(h) PS has failed to make any payment to NHAI within the period specified in the PS Concession Agreement;

(i) an escrow default has occurred and PS fails to cure the default within a cure period of 15 (fifteen) days;

(j) upon occurrence of a financial default, the lenders' representative has by notice required NHAI to undertake suspension or termination, as the case may be, in accordance with the substitution agreement and PS fails to cure the default within the prescribed cure period;

(k) a breach of any of the project agreements by PS has caused a material adverse effect;

(l) PS creates any encumbrance in breach of the PS Concession Agreement;

(m) PS repudiates the PS Concession Agreement or otherwise takes any action or evidences or conveys an intention not to be bound by the PS Concession Agreement;

(n) a change in ownership has occurred in breach of the provisions of the PS Concession Agreement;

(o) There is transfer, pursuant to law either of (a) the rights and/or obligations of PS under any of the project agreements or of (b) all or part of the assets or undertaking of PS, and such transfer causes a material adverse effect;

(p) an execution levied on any assets of PS has caused a material adverse effect;

(q) PS is adjudged bankrupt or insolvent, or if a trustee or receiver is appointed for PS or for the whole or material part of its assets that has a material bearing on the PS Project;

(r) PS has been or is in the process of being liquidated, dissolved, wound-up, amalgamated or reconstituted in a manner that would cause in the reasonable opinion of NHAI, a material adverse effect;

(s) a resolution for the winding up of PS is passed, or any petition for the winding up of PS is admitted by a court of competent jurisdiction and a provisional liquidator or receiver is appointed and such order has not been set aside within 90 (ninety) days of the date thereof or PS is ordered to be wound up by the court except for the purposes of amalgamation or reconstruction, provided that, as part of such amalgamation or reconstruction, the entire property, assets and undertaking of PS are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of PS under the PS Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the capability and operating experience necessary for the performance of its obligations under the PS Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the PS Concession Agreement and the project agreements and has a credit worthiness at least as good as that of PS as at the PS Appointed Date; and

(iii) each of the project agreements remains in full force and effect;

(t) any representation or warranty of PS herein contained which is, as of date hereof, found to be materially false or PS is at any time hereafter found to be in breach thereof;

(u) PS submits to NHAI any statement, notice or other document in written or electronic form, which has a material effect on NHAI's rights, obligations or interests and which is false in material particulars;

(v) PS has failed to fulfil any obligation, for which failure termination has been specified in the PS Concession Agreement; or

(w) PS commits a default in complying with any other provision of the PS Concession Agreement if such a default causes a material adverse effect on NHAI.

Termination by PS

In the case of NHAI Default (as defined below), if NHAI fails to cure the default within a cure period of 90 (ninety) days or such longer period as provided in the PS Concession Agreement, PS shall subject to the provisions of the substitution agreement be entitled to terminate the PS Concession agreement by giving a written notice informing NHAI of its intention to issue a termination notice and grant 15 (fifteen) days' time to NHAI to make its representation, if any, against such intended termination notice. After the expiry of the 15-day period whether or not it is in receipt of such representation, PS in its sole discretion can issue the termination notice. "**NHAI Default**" unless the default has occurred as a result of any breach of the PS Concession Agreement by PS or due to an event of force majeure, inter alia, includes defaults where:

(a) NHAI commits a material default in complying with any of the provisions of the PS Concession Agreement and such default has a material adverse effect on PS;

(b) NHAI has failed to make any payment to PS within the period specified in PS Concession Agreement;

(c) NHAI repudiates the PS Concession Agreement or otherwise take any action that amounts to or manifests an irrevocable intention not to be bound by the PS Concession Agreement; or

(d) the State of Maharashtra commits a material default in complying with the provisions of the state support agreement if such default has a material adverse effect on PS and the breach continues for a period of 90 (ninety) days from the date of notice given in this behalf by PS to NHAI.

Termination Payment

Upon termination of the PS Concession Agreement by NHAI on account of occurrence of PS Default, NHAI shall pay an amount equal to 90% (ninety per cent) of the PS Debt Due less insurance cover, if any, provided, however, that if all or any of the insurance claims forming part of the insurance cover are not admitted and paid, then 80% of such unpaid claims shall qualify for being included in the computation of PS Debt Due.

Upon termination of the PS Concession Agreement by PS on account of occurrence of NHAI Default, NHAI shall pay to PS, by way of termination payments, an amount equal to

(i) PS Debt Due; and

(ii) 150% (one hundred and fifty per cent) of the adjusted equity.

Supplementary Agreement between PS and NHAI

PS has entered into a supplementary agreement to the PS Concession Agreement, with NHAI dated October 31, 2014 in relation to the completion of balance works within an extended period and towards mutual waiver of all claims and damages payable from either side on account of delay / non-fulfillment of conditions precedent. PS was unable to complete the work within the stipulated time period and had requested an extension of time on account of various reasons such as delay in issuance of applicable permits relating to environmental protection and conservation of the site, delay in publication of encroachment notices and delay in acquisition of additional land requirement. Further, NHAI was unable to provide 100% encumbrance free land even after the lapse of the scheduled project completion date. PS was also found to be in default of operating the escrow account by the independent engineer pursuant to which an audit firm was appointed to examine whether the escrow account was maintained in accordance with the provisions of the concession agreement and it was found that there had been no defalcation or misappropriation of funds, although there were serious irregularities in maintenance of the escrow account. The terms of the supplementary agreement *inter alia* state that, (i) PS shall waive off all damages arising out of any reason including delay in handing over the right of way and any other provision of the PS Concession Agreement; (ii) PS undertakes to provide all the necessary assistance to NHAI in terms of equipment, machineries, man-power, construction materials, etc. for getting the encroachments cleared from the project site and taking over the project sections and starting the construction work immediately on project sections where either the encroachments are removed or land acquisitions/possession is handed over; (iii) PS agrees to maintain the PS Project Highway in traffic worthy condition as per the provisions of the PS Concession Agreement; (iv) a penalty equal to 20% of the income earned from investment made in the Reliance Money Management fund may also be imposed on PS for the grave violation of the provisions of the PS Concession Agreement in relation to, *inter alia*, irregularity in maintenance of the escrow account and no defalcation of toll receipt money; and (v) NHAI shall grant an extension of time for the non-achievement of certain milestones and for the scheduled completion date without imposition of any penalty/ damages on PS as specified in the supplementary agreement but such extension would not mean extension of the PS Concession Period under the PS Concession Agreement.

8. Concession Agreement between NHAI and SU Toll Road Private Limited ("SU") dated July 19, 2007

SU has entered into a concession agreement for the strengthening and maintenance of the existing carriageway from Km 0.313 to Km 136.670, on the Salem – Ulundurpet section of NH-68 in the state of Tamil Nadu and widening thereof to 4 lanes on build, operate and transfer ("**BOT**") basis (the "**SU Concession Agreement**", for a period of 25 (twenty five) years, from January 15, 2008 ("**SU Appointed Date**") or such date on which the SU Concession Agreement is terminated pursuant to the provisions of the SU Concession Agreement or termination notice ("**SU Termination Date**", and the period between the SU Appointed Date and the SU Termination Date, the "**SU Concession Period**").

Certain Definitions

"**SU Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees or in the currency of the debt, as the case may be, outstanding and payable to the senior lenders under the financing documents:

(a) the principal amount of the debt provided by the senior lenders under the financing documents for financing the SU Project (the "**SU Principal**") which is outstanding as on the SU Termination Date but excluding any part of the SU Principal that had fallen due for repayment one year prior to the SU Termination Date unless such repayment has been rescheduled with the prior consent of NHAI; and

(b) all accrued interest, financing fees and charges payable on, or in respect of, the debt referred to in clause (a) above up to the date preceding the SU Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the SU Termination Date; and (ii) penal interest or charges, payable under the financing documents to any senior lender;

"**SU Debt Service Payments**" means the sum of all principal and interest payments due and payable in an accounting year to the senior lenders under the financing documents;

"**SU Project**" shall mean the design, engineering, finance, construction, improvement, operation and maintenance of the SU Project Highway in accordance with the provisions of the SU Concession Agreement and includes all works relating to or in respect of the SU Project Highway as described under the provisions of the SU Concession Agreement;

"**SU Project Assets**" shall mean all physical and other assets relating to and forming part of the SU Project Highway including but not limited to (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, approaches to bridges and flyovers, road overbridges, drainage works, lighting facilities, traffic signals, sign boards, milestones, toll plazas, equipment for the collection of tolls or relating to regulation of traffic, electrical works for lighting on the SU Project Highway, telephone and other communication systems and other equipment for the SU Project, rest areas, relief centres etc.(iii) project facilities situated on the site (iv) the rights of SU under the SU project agreements, (v) financial assets, such as security deposits for electricity supply, telephone etc. (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the SU Project Highway, but does not include facilities which are not located on the site of the project but which are provided by SU, at its own discretion, for the benefit of users of the SU Project Highway; and

"**SU Project Highway**" shall mean the strengthening and maintenance of the existing carriageway of NH-68 from Km 0.313 to Km 136.670 in the State of Tamil Nadu and widening it to 4 lanes and shall include the SU Project Assets and the project facilities including work added through the change of scope or through value addition to be designed, engineered, built and improved on site and to be operated and maintained during the SU Concession Period in accordance with the provisions of the SU Concession Agreement.

Grant of Concession

Subject to and in accordance with the terms and conditions set forth in the SU Concession Agreement, NHAI has granted to SU and SU has accepted the concession for a period of 25 (twenty five) years commencing from the SU Appointed Date, including the exclusive right, license and authority during the subsistence of the SU Concession Agreement to implement the SU Project and the concession in respect of the SU Project Highway.

Further, SU is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the SU Concession Agreement:

(a) right of way, access and license to the site for the purpose of and to the extent conferred by the provisions of the SU Concession Agreement;

(b) to develop, design, engineer, finance, procure, construct, operate and maintain the SU Project Highway during the SU Concession Period;

(c) Upon the completion of the SU Project Highway and during the operations period to manage, operate and maintain the SU Project Highway and regulate the use thereof by third parties;

(d) levy, demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the SU Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(e) perform and fulfil all of the obligations under and in accordance with SU Concession Agreement;

(f) bear and pay all costs, expenses and charges incurred in the fulfillment of all the obligations under the SU Concession Agreement; and

(g) not assign or create any lien or encumbrance on the concession granted by way of the SU Concession Agreement on the whole or any part of the SU Project Highway nor transfer, lease or part possession therewith save and except as expressly permitted by the SU Concession Agreement or the substitution agreement.

The aggregate equity shareholding of Reliance Energy Limited and its associates as the case may be in the issued and paid up equity share capital of SU shall not be less than (a) 51% (fifty-one percent) during the construction period and for 3 (three) years following commercial operation date, and (b) 26% (twenty six percent) during the balance remaining operations period.

SU shall provide 8 (eight) bypasses in the SU Project. After a period of 8 (eight) years from the commercial operation date, all the bypasses including related structures on them shall be widened to four lane configuration by SU. Such work of 4-laning the bypasses should be completed satisfactorily before the 11th anniversary of the commercial operation date. In case of default, material breach of the contractual obligation by SU shall be considered by NHAI thereby the SU Concession Agreement shall be accordingly terminated. However, if SU desires, it can construct four lane bypasses including related structures at any time before the 8 (eight) years period from the commercial operation date.

Fees

SU shall be entitled to, during the operations period, to levy, collect and appropriate the fees from the users of the SU Project Highway pursuant to and in accordance with the fee notification and the provisions in the SU Concession Agreement. In accordance with the terms of the SU Concession Agreement, SU shall not collect any fees in relation to exempted vehicles. The fees collected by SU shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the SU Concession Agreement

Grant

NHAI has provided SU, cash support by way of an outright grant equal to the sum set forth in the bid submitted, namely, Rs. 3,660.50 million, in accordance with the provisions of the SU Concession Agreement (the "**SU Grant**"). The SU Grant of Rs. 2,122.6 million was disbursed to SU by way of equity support in accordance with the provisions of the SU Concession Agreement and credited to the escrow account by SU for meeting the capital cost of the SU Project. The balance SU Grant of Rs. 1,537.9 is payable as operation and maintenance expenses out of which Rs. 1,354 million has been credited to the escrow account for meeting the operations and maintenance expenses. The balance amount of operation and maintenance support outstanding Rs. 183.9 million.

Concession Fee

In consideration of the grant of concession under the SU Concession Agreement, the concession fee payable by SU to NHAI shall be Re. 1 per year during the term of the SU Concession Agreement.

The concession fee shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

Escrow Account

SU shall at least 60 days from the date of the SU Concession Agreement, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the SU Project cost shall be credited to such escrow account. During operations period all fees collected by SU from the users of the SU Project Highway shall be deposited therein. In addition, all disbursements or payments by NHAI pursuant to the SU Concession Agreement shall subject to the rights of deductions and appropriations therefrom of NHAI under the SU Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

SU shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated December 18, 2014 ("**SU Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month or at shorter intervals as necessary and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by SU;

(b) all expenses in connection with and relevant to the construction of SU Project Highway by way of payment to the EPC contractor and such other persons as may be specified in the financing documents;

(c) operation and maintenance expenses including fees collection expenses incurred by SU directly or through operation and maintenance contractor and/or tolling contractor, if any, subject to the items and ceiling in respect thereof as set forth in the financing documents but not exceeding 1/12 of the annual liability on this account;

(d) the whole or part of the expense on repair work or operation and maintenance expenses including fees collection expenses incurred by NHAI on account of exercise of any of its rights and obligations under the SU Concession Agreement;

(e) all concession fees and negative grants payments due to NHAI from SU under the SU Concession Agreement;

(f) reimbursements of expenditure incurred by NHAI, if any, for payment of insurance premia, etc., which are otherwise SU's responsibility, on account of failure on part of SU to keep such insurance(s) effective and in force;

(g) monthly proportionate provision of SU Debt Service Payments due in an accounting year and payment of SU Debt Service Payments in the month when due;

(h) one-half of such remuneration, cost and expenses of the independent consultant in case SU does not reimburse the remuneration, cost and expenses of the independent consultant to NHAI within 15 (fifteen) days of receiving a statement of expenditure from NHAI;

(i) any payments and damages due and payable by SU to NHAI pursuant to the SU Concession Agreement, including repayment of revenue shortfall loans, recovery due to reduction in the scope of work and penalty for operations and maintenance expenses incurred by NHAI; and

(j) balance in accordance with the instructions of SU.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by SU;

(b) all concession fees (including negative grant) due and payable to NHAI under the SU Concession Agreement;

(c) all accrued SU Debt Service Payments;

(d) any payments and damages due and payable by SU to NHAI pursuant to the SU Concession Agreement, including termination claims, recovery due to reduction in scope of work and repayment of revenue shortfall loans;

(e) all accrued operations and maintenance expenses;

(f) any other payments required to be made under the SU Concession Agreement; and

(g) balance, if any, in accordance with the instructions of SU.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to SU by NHAI in accordance with the provisions of the SU Concession Agreement. This shall not apply to appropriation in favour of senior lenders to the extent of SU Debt Due.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the SU Concession Agreement, require the provision of such addition / deletion to the works and services on or about the SU Project Highway which are beyond the scope of the SU Project as contemplated by the SU Concession Agreement, provided such changes do not require any increase/ decrease in expenditure exceeding 10% of the total project cost and do not adversely affect the commercial operation date. All such changes shall be made by NHAI by an order issued in accordance with the procedure set forth in the SU Concession Agreement.

Compensation for breach of the SU Concession Agreement

Compensation for breach by SU

Subject to the provisions of the SU Concession Agreement, in the event of SU being in material default of the SU Concession Agreement and such default is cured before termination, SU shall pay to NHAI as compensation, all direct additional costs suffered or incurred by NHAI arising out of such material default by SU, in one lumpsum within 30 (thirty) days of receiving the demand or at the SU's option in 3 (three) equal semi-annual installments with interest.

Compensation for breach by NHAI

Subject to the provisions of the SU Concession Agreement, in the event of NHAI being in material default of the SU Concession Agreement and such default is cured before termination, NHAI shall pay to SU as compensation, all direct additional costs suffered or incurred by SU arising out of such material default by NHAI, in one lumpsum within 30 (thirty) days of receiving the demand or at the NHAI's option in 3 (three) equal semi-annual installments with interest.

Termination

Termination by NHAI

In the event of any breach or default by SU under the SU Concession Agreement, including any SU Default (as defined below) and if SU has failed to cure such breach or default within the period provided for the same in the SU Concession Agreement, then NHAI shall be entitled to terminate the SU Concession Agreement by a communication in writing to SU provided that before issuing the termination notice, NHAI shall by a notice in writing inform SU of its intention to issue the termination notice and grant 15 (fifteen) days to SU to make its representation, if any, against such intended termination notice. After the expiry of the 15 day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. The following events, *inter alia*, shall constitute an event of default by SU ("**SU Default**") unless such SU Default has occurred as a result of NHAI Default (as defined below) or a force majeure event:

(a) SU fails to achieve financial close in accordance with the provisions of the SU Concession Agreement;

(b) SU fails to achieve any project milestones other than the scheduled project completion date within the period prescribed in the SU Concession Agreement and also fails to cure such default within 180 (one hundred and eighty) days from the date of its occurrence;

(c) SU is in material breach of the SU Concession Agreement;

(d) SU commits default in complying with any of the terms and conditions of the SU Concession Agreement, except those defaults in respect of which a cure period has been expressly provided, and fails to remedy or rectify such default within the period provided in a notice in this behalf from NHAI which shall

    (i) requires SU to remedy the breaches within one month (or such longer period as may be agreed by NHAI in its absolute discretion); or

    (ii) permits SU to put forward within 15 (fifteen) days of such notice, a reasonable programme for remedying the breaches, where such programme specifies in reasonable detail the manner in which such breach or breaches is or are proposed to be remedied and the latest date by which it is proposed that such breach or all such breaches shall be remedied;

(e) SU creates any encumbrance, charges or lien in favour of any person save and except as otherwise expressly permitted under the SU Concession Agreement;

(f) the shareholding of Reliance Energy Limited falls below the minimum prescribed requirement under the SU Concession Agreement and SU does not suo moto cure such default within 90 (ninety) days of its occurrence;

(g) the transfer, pursuant to law, of either (i) the rights and/or obligations of SU under the project agreements, or (ii) all or material parts of the assets or undertaking of SU except where such transfer in the reasonable opinion of NHAI does not affect the ability of SU to perform, and SU has the financial and technical capability to perform its material obligations under the project agreements;

(h) a resolution is passed by the shareholders of SU for the voluntary winding up of SU;

(i) SU is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for SU or for any of its property that has a material bearing on the SU Project;

(j) any petition for winding up of SU is admitted by a court of competent jurisdiction or SU is ordered to be wound up by a court for the purpose of amalgamation or reconstruction provided that, as part of such amalgamation or reconstruction, the property, assets and undertaking of SU are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of SU under the SU Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the technical capability and operating experience necessary for the performance of its obligations under the SU Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the SU Concession Agreement and the project agreements and has a credit worthiness at least as good as that of SU as at the financial close; and

(iii) each of the project agreements remains in full force and effect;

(k) SU is in material breach of any of the project agreements;

(l) an event of default of SU under any of the financing documents has occurred or any of the senior lenders has recalled its loan under any of the financing documents;

(m) SU abandons the operations of the SU Project Highway for more than 15 (fifteen) consecutive days without the prior consent of NHAI, provided SU shall be deemed not to have abandoned such operation if such abandonment (i) was as a result of force majeure event and is only for the period such force majeure event is continuing, or (ii) is on account of a breach of its obligations by NHAI;

(n) SU repudiates the SU Concession Agreement or otherwise evidences an intention not to be bound by the SU Concession Agreement;

(o) SU suffers an execution being levied on any of its assets or equipment causing a material adverse effect on the SU Project and allows it to be continued for a period of 15 (fifteen) days;

(p) SU has delayed any payment that has fallen due under the SU Concession Agreement if such delay exceeds 90 (ninety) days; or

(q) SU is in breach of its obligation to repay the revenue shortfall loans in accordance the SU Concession Agreement.

Termination by SU

SU is entitled to terminate the SU Concession Agreement upon a 90 (ninety) days' written notice to NHAI upon the occurrence and continuation of any of the following events (each a "**NHAI Default**") unless any such NHAI Default has occurred as a result of SU Default or due to a force majeure event:

(a) NHAI is in breach of the SU Concession Agreement and such breach has a material adverse effect on SU and NHAI fails to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from SU;

(b) NHAI repudiates the SU Concession Agreement or otherwise evidences an irrevocable intention not to be bound by the SU Concession Agreement;

(c) the Government of India or the Government of the State of Tamil Nadu or any governmental agency have by an act of commission or omission created circumstances that have a material adverse effect on the performance of its obligations by SU and have failed to cure such circumstances within 90 (ninety) days of receipt of notice by NHAI in this behalf from SU; or

(d) NHAI has delayed any payment that has fallen due under the SU Concession Agreement if such delay exceeds 90 (ninety) days.

Termination Payments

The termination payment pursuant to the SU Concession Agreement becomes due and payable to SU by NHAI within 30 (thirty) days of a demand being made by SU with the necessary particulars duly certified by the statutory auditors. If NHAI fails to disburse the full termination payment within 30 (thirty) days, the amount remaining unpaid shall be disbursed along with interest in accordance with the provisions under the SU Concession Agreement plus two per cent for the period of delay on such amount.

Upon termination by SU on account of an NHAI Default, SU shall be entitled to receive from NHAI by way of termination payment a sum equal to:

(a) The total SU Debt Due, plus

(b) 120% (one hundred and twenty per cent) of the total subordinated debt, plus

(c) 150% (one hundred and fifty per cent) of the equity (subscribed in cash and actually spent on the project but excluding the amount of equity support as specified in the SU Concession Agreement) if such termination occurs at any time during three years commencing from the SU Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in wholesale price index (published by the Ministry of Industry, Government of India, including any index, which substitutes the wholesale price index) during such year and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and a half per cent) per annum.

Upon termination by NHAI on account of occurrence of SU Default during the operations period, NHAI shall pay to SU by way of termination payment an amount equal to 90% (ninety percent) of the SU Debt Due less insurance claims, if any, provided, however, that if all or any of the insurance claims are not admitted and paid, then 80% (eighty percent) of such unpaid claims shall qualify for being included in the computation of SU Debt Due.

Supplementary Agreements between SU and NHAI

SU has entered into a supplementary agreement to the SU Concession Agreement, with NHAI dated August 29, 2013 in relation to the completion of balance works in the stretch from Km 0.313 to Km 45.765 of the SU Project Highway and specified the timeline for completion of certain encumbered items. The terms of the supplementary agreement *inter alia* state that, (i) the scheduled project completion date is extended to the actual commercial operation date of the stretch from Km 0.313 to Km 45.765; (ii) there will be no extension in the SU Concession Period; (iii) the commercial operation date of the stretch from Km 0.313 to Km 45.765 shall be the date on which the independent engineer issues the provisional completion certificate; (iv) SU shall be allowed to collect toll for the completed stretch from Km 0.313 to Km 45.765 after issue of provisional completion certificate; (v) SU has agreed to complete within a period of four months, from the date of handing over the unencumbered land for urban service road 0.90 km, 2 primary intersection, 4 second intersections, drain in encumbered land, TNEB and TWAD utility shifting work and (vi) SU has consented to absolve NHAI from any claims for damages arising out of and for delays and extension of the scheduled project completion date and has undertaken not to make any claim for any losses during the extended period of the work with effect from January 14, 2011 to actual commercial operations date.

SU has entered into a supplementary agreement to the SU Concession Agreement, with NHAI dated May 30, 2012 in relation to the completion of works in the stretch from Km 45.765 to Km 136.670 of the SU Project Highway. The terms of the supplementary agreement *inter alia* state that, (i) the scheduled project completion date is extended to the actual commercial operation date of the stretch from Km 45.765 to Km 136.670; (ii) there will be no extension in the SU Concession Period on account of this extension; (iii) the commercial operation date of the stretch from Km 45.765 to Km 136.670 shall be the date on which the independent engineer issues the provisional completion certificate; (iv) SU shall be allowed to collect toll for the completed stretch from Km 45.765 to Km 136.670 after issue of provisional completion certificate as per the provisions of the SU Concession Agreement; and (v) There shall be no claim by both the parties for the delay and extension of scheduled project completion date. SU shall not claim for any loss during the extended period.

9. Concession Agreement between NHAI and TD Toll Road Private Limited dated July 19, 2007

TD has entered into a concession agreement for the strengthening and maintenance of the existing carriageway from Km 333.000 to Km 421.600, of NH-45 in the state of Tamil Nadu and widening to 4 lanes on build, operate and transfer ("**BOT**") basis (the "**TD Concession Agreement**", for a period of 30 (thirty) years, from January 15, 2008 ("**TD Appointed Date**") or such date on which the TD Concession Agreement is terminated pursuant to the provisions of the TD Concession Agreement or termination notice ("**TD Termination Date**", and the period between the TD Appointed Date and the TD Termination Date, the "**TD Concession Period**").

Certain Definitions

"**TD Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees or in the currency of the debt, as the case may be, outstanding and payable to the senior lenders under the financing documents:

(a) the principal amount of the debt provided by the senior lenders under the financing documents for financing the TD Project (the "**TD Principal**") which is outstanding as on the TD Termination Date but excluding any part of the TD Principal that had fallen due for repayment one year prior to the TD Termination Date unless such repayment has been rescheduled with the prior consent of NHAI; and

(b) all accrued interest, financing fees and charges payable on, or in respect of, the debt referred to in clause (a) above up to the date preceding the TD Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the TD Termination Date; and (ii) penal interest or charges, payable under the financing documents to any senior lender;

"**TD Debt Service Payments**" shall mean the sum of all principal and interest payments due and payable in an accounting year to the senior lenders under the financing documents;

"**TD Project**" shall mean the design, engineering, finance, construction, improvement, operation and maintenance of the TD Project Highway in accordance with the provisions of the TD Concession Agreement and includes all works relating to or in respect of the TD Project Highway as described under the provisions of the TD Concession Agreement;

"**TD Project Assets**" shall mean all physical and other assets relating to and forming part of the TD Project Highway including but not limited to (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, approaches to bridges and flyovers, road overbridges, drainage works, lighting facilities, traffic signals, sign boards, milestones, toll plazas, equipment for the collection of tolls or relating to regulation of traffic, electrical works for lighting on the TD Project Highway, telephone and other communication systems and other equipment for the TD Project, rest areas, relief centres etc.(iii) project facilities situated on the site (iv) the rights of TD under the TD project agreements, (v) financial assets, such as security deposits for electricity supply, telephone etc. (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the TD Project Highway, but does not include facilities which are not located on the site of the project but which are provided by TD, at its own discretion, for the benefit of users of the TD Project Highway; and

"**TD Project Highway**" shall mean the strengthening and maintenance of the existing carriageway of NH-45 from Km 333.000 to Km 421.600 in the State of Tamil Nadu and widening it to 4 lanes and shall include the TD Project Assets and the project facilities including work added through the change of scope or through value addition to be designed, engineered, built and improved on site and to be operated and maintained during the TD Concession Period in accordance with the provisions of the TD Concession Agreement.

Grant of Concession

Subject to and in accordance with the terms and conditions set forth in the TD Concession Agreement, NHAI has granted to TD and TD has accepted the concession for a period of 30 (thirty) years commencing from the TD Appointed Date, including the exclusive right, license and authority during the subsistence of the TD Concession Agreement to implement the TD Project and the concession in respect of the TD Project Highway.

Further, TD is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the TD Concession Agreement:

(a) right of way, access and license to the site to the extent conferred by the provisions of the TD Concession Agreement;

(b) to develop, design, engineer, finance, procure, construct, operate and maintain the TD Project Highway during the TD Concession Period;

(c) upon the completion of the TD Project Highway and during the operations period to manage, operate and maintain the TD Project Highway and regulate the use thereof by third parties;

(d) levy, demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the TD Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(e) perform and fulfil all of the obligations under and in accordance with TD Concession Agreement;

(f) bear and pay all costs, expenses and charges in connection with or incidental to the performance of the obligations under TD Concession Agreement; and

(g) not assign or create any lien or encumbrance on the concession granted by way of the TD Concession Agreement on the whole or any part of the TD Project Highway nor transfer, lease or part possession therewith save and except as expressly permitted by the TD Concession Agreement or the substitution agreement.

The aggregate equity shareholding of Reliance Energy Limited and its associates as the case may be in the issued and paid up equity share capital of TD shall not be less than (a) 51% (fifty-one percent) during the construction period and for 3 (three) years following commercial operation date, and (b) 26% (twenty six percent) during the balance remaining operations period.

Fees

TD shall be entitled to, during the operations period, to levy, collect and appropriate the fees from the users of the TD Project Highway at one toll plaza, pursuant to and in accordance with the provisions in the TD Concession Agreement. In accordance with the terms of the TD Concession Agreement, TD shall not collect any fees in relation to exempted vehicles. The fees collected by TD shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the TD Concession Agreement

Grant

NHAI has provided to TD, cash support by way of an outright grant equal to the sum set forth in the bid submitted, namely, Rs. 2,263.00 million, in accordance with the provisions of the TD Concession Agreement ("**TD Grant**"). The TD Grant of Rs. 1,074.6 million was disbursed to TD by way of equity support towards meeting the capital cost of the TD Project in accordance with the provisions of the TD Concession Agreement. The balance TD Grant of Rs.1,188.4 Million is payable as operation and maintenance support out of which Rs. 858 million has been credited to the escrow account and applied for the TD Project so far. The balance amount of O&M support outstanding is Rs. 330.4 million. The TD Grant was credited to the escrow account and was applied by TD for meeting the operation and maintenance expenses.

Concession Fee

In consideration of the grant of concession under the TD Concession Agreement, the concession fee payable by TD to NHAI shall be Re. 1 per year during the term of the TD Concession Agreement.

The concession fee shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

Escrow Account

TD shall at least 60 days from the date of the TD Concession Agreement, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the TD Project cost shall be credited to such escrow account. During operations period all fees collected by TD from the users of the TD Project Highway shall be deposited therein. In addition, all disbursements or payments by NHAI pursuant to the TD Concession Agreement shall subject to the rights of deductions and appropriations therefrom of NHAI under the TD Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

TD shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated March 28, 2008 ("**TD Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month or at shorter intervals as necessary and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by TD;

(b) all expenses in connection with and relevant to the construction of TD Project Highway by way of payment to the EPC contractor and such other persons as may be specified in the financing documents;

(c) operation and maintenance expenses including fees collection expenses incurred by TD directly or through operation and maintenance contractor and/or tolling contractor, if any, subject to the items and ceiling in respect thereof as set forth in the financing documents but not exceeding 1/12 of the annual liability on this account;

(d) the whole or part of the expenses on repair work or operation and maintenance expenses including fees collection expenses incurred by NHAI on account of exercise of any of its rights and obligations under the TD Concession Agreement;

(e) all concession and fees due to NHAI from TD under the TD Concession Agreement;

(f) reimbursements of expenditure incurred by NHAI, if any, for payment of insurance premia, etc., which are otherwise TD's responsibility, on account of failure on part of TD to keep such insurance(s) effective and in force;

(g) monthly proportionate provision of TD Debt Service Payments due in an accounting year and payment of TD Debt Service Payments in the month when due;

(h) one-half of such remuneration, cost and expenses of the independent consultant in case TD does not reimburse the remuneration, cost and expenses of the independent consultant to NHAI within 15 (fifteen) days of receiving a statement of expenditure from NHAI;

(i) any payments and damages due and payable by TD to NHAI pursuant to the TD Concession Agreement, including repayment of revenue shortfall loans, recovery due to reduction in the scope of work and repayment for operations and maintenance expenses incurred by NHAI; and

(j) balance, in accordance with the instructions of TD.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by TD;

(b) all concession fees (including negative grant) due and payable to NHAI under the TD Concession Agreement;

(c) all accrued TD Debt Service Payments;

(d) any payments and damages due and payable by TD to NHAI pursuant to the TD Concession Agreement, including termination claims, recovery due to reduction in scope of work and repayment of revenue shortfall loans;

(e) all accrued operations and maintenance expenses;

(f) any other payments required to be made under the TD Concession Agreement; and

(g) balance, if any, in accordance with the instructions of TD.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to TD by NHAI in accordance with the provisions of the TD Concession Agreement. This shall not apply to appropriation in favour of senior lenders to the extent of TD Debt Due.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the TD Concession Agreement, require the provision of such addition / deletion to the works and services on or about the TD Project Highway which are beyond the scope of the TD Project as contemplated by the TD Concession Agreement, provided such changes do not require any increase/ decrease in expenditure exceeding 10% of the total project cost and do not adversely affect the commercial operation date. All such changes shall be made by NHAI by an order issued in accordance with the procedure set forth in the TD Concession Agreement.

Compensation for breach of the TD Concession Agreement

Compensation for breach by TD

Subject to the provisions of the TD Concession Agreement, in the event of TD being in material default of the TD Concession Agreement and such default is cured before termination, TD shall pay to NHAI as compensation, all direct additional costs suffered or incurred by NHAI arising out of such material default by TD, in one lumpsum within 30 (thirty) days of receiving the demand or at the TD's option in 3 (three) equal semi-annual installments with interest.

Compensation for breach by NHAI

Subject to the provisions of the TD Concession Agreement, in the event of NHAI being in material default of the TD Concession Agreement and such default is cured before termination, NHAI shall pay to TD as compensation, all direct additional costs suffered or incurred by TD arising out of such material default by NHAI, in one lumpsum within 30 (thirty) days of receiving the demand or at the NHAI's option in 3 (three) equal semi-annual installments with interest.

Termination

Termination by NHAI

In the event of any breach or default by TD under the TD Concession Agreement, including any TD Default (as defined below) and if TD has failed to cure such breach or default within the period provided for the same in the TD Concession Agreement, then NHAI shall be entitled to terminate the TD Concession Agreement by a communication in writing to TD provided that before issuing the termination notice, NHAI shall by a notice in writing inform TD of its intention to issue the termination notice and grant 15 (fifteen) days to TD to make its representation, if any, against such intended termination notice. After the expiry of the 15 day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. The following events, *inter alia*, shall constitute an event of default by TD ("**TD Default**") unless such TD Default has occurred as a result of NHAI Default (as defined below) or a force majeure event:

(a) TD fails to achieve financial close in accordance with the provisions of the TD Concession Agreement;

(b) TD fails to achieve any project milestones other than the scheduled project completion date within the period prescribed in the TD Concession Agreement and also fails to cure such default within 180 days from the date of its occurrence;

(c) TD is in material breach of the TD Concession Agreement;

(d) TD commits default in complying with any of the terms and conditions of the TD Concession Agreement, save and except those defaults in respect of which a cure period has been expressly provided, and fails to remedy or rectify such default within the period provided in a notice in this behalf from NHAI which shall

  (i) requires TD to remedy the breaches within one month (or such longer period as may be agreed by NHAI in its absolute discretion); or

  (ii) permits TD to put forward within 15 (fifteen) days of such notice, a reasonable programme for remedying the breaches, where such programme specifies in reasonable detail the manner in which such breach or breaches is or are proposed to be remedied and the latest date by which it is proposed that such breach or all such breaches shall be remedied;

(e) TD creates any encumbrance, charges or lien in favour of any person save and except as otherwise expressly permitted under the TD Concession Agreement;

(f) the shareholding of Reliance Energy Limited falls below the minimum prescribed requirement under the TD Concession Agreement and TD does not suo moto cure such default within 90 (ninety) days of its occurrence;

(g) the transfer, pursuant to law, either of (i) the rights and/or obligations of TD under the project agreements, or (ii) all or material parts of the assets or undertaking of TD except where such transfer in the reasonable opinion of NHAI does not affect the ability of TD to perform, and TD has the financial and technical capability to perform its material obligations under the project agreements;

(h) a resolution is passed by the shareholders of TD for the voluntary winding up of TD;

(i) TD is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for TD or for any of its property that has a material bearing on the TD Project;

(j) any petition for winding up of TD is admitted by a court of competent jurisdiction or TD is ordered to be wound up by a court except for the purpose of amalgamation or reconstruction provided that, as part of such amalgamation or reconstruction, the property, assets and undertaking of TD are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of TD under the TD Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the technical capability and operating experience necessary for the performance of its obligations under the TD Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the TD Concession Agreement and the project agreements and has a credit worthiness at least as good as that of TD as at the financial close; and

(iii) each of the project agreements remains in full force and effect;

(k) TD is in material breach of any of the project agreements;

(l) an event of default of TD under any of the financing documents has occurred or any of the senior lenders has recalled its loan under any of the financing documents;

(m) TD abandons the operations of the TD Project Highway for more than 15 (fifteen) consecutive days without the prior consent of NHAI, provided TD shall be deemed not to have abandoned such operation if such abandonment (i) was as a result of force majeure event and is only for the period such force majeure event is continuing, or (ii) is on account of a breach of its obligations by NHAI;

(n) TD repudiates the TD Concession Agreement or otherwise evidences an intention not to be bound by the TD Concession Agreement;

(o) TD suffers an execution being levied on any of its assets or equipment causing a material adverse effect on the TD Project and allows it to be continued for a period of 15 days;

(p) TD has delayed any payment that has fallen due under the TD Concession Agreement if such delay exceeds 90 (ninety) days; or

(q) TD is in breach of its obligation to repay the revenue shortfall loans in accordance the TD Concession Agreement.

Termination by TD

TD is entitled to terminate the TD Concession Agreement upon a 90 (ninety) days' written notice to NHAI upon the occurrence and continuation of any of the following events (each a "**NHAI Default**") unless any such NHAI Default has occurred as a result of TD Default or due to a force majeure event:

(a) NHAI is in breach of the TD Concession Agreement and such breach has a material adverse effect on TD and NHAI fails to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from TD;

(b) NHAI repudiates the TD Concession Agreement or otherwise evidences an irrevocable intention not to be bound by the TD Concession Agreement;

(c) the Government of India or the Government of the State of Tamil Nadu or any governmental agency have by an act of commission or omission created circumstances that have a material adverse effect on the performance of its obligations by TD and have failed to cure such circumstances within 90 (ninety) days of receipt of notice by NHAI in this behalf from TD; or

(d) NHAI has delayed any payment that has fallen due under the TD Concession Agreement if such delay exceeds 90 (ninety) days.

Termination Payments

The termination payment pursuant to the TD Concession Agreement becomes due and payable to TD by NHAI within 30 (thirty) days of a demand being made by TD with the necessary particulars duly certified by the statutory auditors. If NHAI fails to disburse the full termination payment within 30 (thirty) days, the amount remaining unpaid shall be disbursed along with interest in accordance with the provisions under the TD Concession Agreement plus two per cent for the period of delay on such amount.

Upon termination by TD on account of an NHAI Default, TD shall be entitled to receive from NHAI by way of termination payment a sum equal to:

(a) The total TD Debt Due, plus

(b) 120% (one hundred and twenty per cent) of the total subordinated debt, plus

(c) 150% (one hundred and fifty per cent) of the equity (subscribed in cash and actually spent on the project but excluding the amount of equity support as specified in the TD Concession Agreement) if such termination occurs at any time during three years commencing from the TD Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in wholesale price index (published by the Ministry of Industry, Government of India, including any index, which substitutes the wholesale price index) during such year and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and a half per cent) per annum.

Upon termination by NHAI on account of occurrence of TD Default during the operations period, NHAI shall pay to TD by way of termination payment an amount equal to 90% (ninety percent) of the TD Debt Due less insurance claims, if any, provided, however, that if all or any of the insurance claims are not admitted and paid, then 80% (eighty percent) of such unpaid claims shall qualify for being included in the computation of TD Debt Due.

Supplementary Agreements between TD and NHAI

TD has entered into a supplementary agreement to the TD Concession Agreement, with NHAI dated September 5, 2011 in relation to the shifting of the location of the toll plaza on account of representations from the local public to shift the toll plaza to provide relief to local users from paying toll fee. The terms of the supplementary agreement *inter alia* state that, (i) TD shall not claim any potential toll revenue losses or financial implications in future due to change in the toll plaza location from the location provided in the TD Concession Agreement, (ii) due to suspension of works at the existing toll plaza at Km 360.450 and delay in finalizing the alternate location of new toll plaza the construction period is extended up to actual commercial operation date or plus 10 (ten) days from the date of publications of toll fee in the newspaper, whichever is later, (iii) TD shall complete all works in the toll plaza at Km 382.850 in all respects within 6 months after handing over of required additional lands free from all encumbrances by NHAI and till then will collect toll fees by constructing temporary arrangements with in the right of way of 60 meters, (iv) NHAI/independent consultant will issue the provisional completion certificate for the stretch between Km 334.000 to Km 421.273 subject to fulfillment of all contract conditions as per the TD Concession Agreement and TD will ensure to maintain the safety of traffic between Km 333.000 to Km 334.000 and (v) TD is allowed to initially collect toll on the continuous stretch of Km 87.273 on NH-45. The supplementary agreement also specifies that (i) there shall be no claim by both parties for the delay in finalizing the toll plaza location, including the extended period thereof since it was agreed that it was not attributable to both parties; (ii) TD has undertaken not to claim any extra cost except collecting of toll fees from the actual length of the TD Project Highway constructed; (iii) TD has undertaken that it shall complete construction of the grade separator at the junction of NH 45 and NH 67 and all other related works within nine months from the date of clearance of the court case related to the Trichy Bypass of NH 67 and handing over of encumbrance-free land by NHAI without any financial implication except collecting toll fee for the increased length duly following the procedure; and (iv) the TD Concession Agreement will be revised to effect the increase in project length due to the change in location of the grade separator after completion of construction of the grade separator and other related works in the operation and maintenance period.

10. Concession Agreement between NHAI and TK Toll Road Private Limited ("TK") dated July 19, 2007

TK has entered into a concession agreement for the strengthening and maintenance of the existing carriageway from Km 135.800 to Km 218.000, on the Trichy - Karur section of NH-67 in the state of Tamil Nadu on build, operate and transfer ("**BOT**") basis (the "**TK Concession Agreement**", for a period of 30 (thirty) years, from January 15, 2008 ("**TK Appointed Date**") or such date on which the TK Concession Agreement is terminated pursuant to the provisions of the TK Concession Agreement or termination notice ("**TK Termination Date**", and the period between the TK Appointed Date and the TK Termination Date, the "**TK Concession Period**").

Certain Definitions

"**TK Debt Due**" shall mean the aggregate of the following sums expressed in Indian Rupees or in the currency of the debt, as the case may be, outstanding and payable to the senior lenders under the financing documents:

(a) the principal amount of the debt provided by the senior lenders under the financing documents for financing the TK Project (the "**TK Principal**") which is outstanding as on the TK Termination Date but excluding any part of the TK Principal that had fallen due for repayment one year prior to the TK Termination Date unless such repayment has been rescheduled with the prior consent of NHAI; and

(b) all accrued interest, financing fees and charges payable on, or in respect of, the debt referred to in clause (a) above up to the date preceding the TK Termination Date but excluding (i) any interest, fees or charges that had fallen due one year prior to the TK Termination Date; and (ii) penal interest or charges, payable under the financing documents to any senior lender;

"**TK Debt Service Payments**" shall mean the sum of all principal and interest payments due and payable in an accounting year to the senior lenders under the financing documents;

"**TK Project**" shall mean the design, engineering, finance, construction, improvement, operation and maintenance of the TK Project Highway in accordance with the provisions of the TK Concession Agreement and includes all works relating to or in respect of the TK Project as described under the provisions of the TK Concession Agreement;

"**TK Project Assets**" shall mean all physical and other assets relating to and forming part of the TK Project Highway including but not limited to (i) rights over the site in the form of license, right of way or otherwise, (ii) tangible assets such as civil works including the foundation, embankments, pavements, road surface, interchanges, bridges, approaches to bridges and flyovers, road overbridges, drainage works, lighting facilities, traffic signals, sign boards, milestones, toll plazas, equipment for the collection of tolls or relating to regulation of traffic, electrical works for lighting on the TK Project Highway, telephone and other communication systems and other equipment for the TK Project, rest areas, relief centres etc.(iii) project facilities situated on the site (iv) the rights of TK under the TK project agreements, (v) financial assets, such as security deposits for electricity supply, telephone etc. (vi) insurance proceeds and (vii) applicable permits and authorizations relating to or in respect of the TK Project Highway, but does not include facilities which are not located on the site of the project but which are provided by TK, at its own discretion, for the benefit of users of the TK Project Highway; and

"**TK Project Highway**" shall mean the strengthening and maintenance of the existing carriageway of NH-67 from Km 135.800 to Km 218.000 in the State of Tamil Nadu and widening it to 4 lanes and shall include the TK Project Assets and the project facilities including work added through the change of scope or through value addition to be designed, engineered, built and improved on site and to be operated and maintained during the TK Concession Period in accordance with the provisions of the TK Concession Agreement.

Grant of Concession

Subject to and in accordance with the terms and conditions set forth in the TK Concession Agreement, NHAI has granted to TK and TK has accepted the concession for a period of 30 (thirty) years commencing from the TK Appointed Date, including the exclusive right, license and authority during the subsistence of the TK Concession Agreement to implement the TK Project and the concession in respect of the TK Project Highway.

Further, TK is obliged or entitled to, *inter alia*, the following in accordance with the provisions of the TK Concession Agreement:

(a) right of way, access and license to the site for the purpose of and to the extent conferred by the provisions of the TK Concession Agreement;

(b) to develop, design, engineer, finance, procure, construct, operate and maintain the TK Project Highway during the TK Concession Period;

(c) Upon completion of the TK Project Highway and during the operations period to manage, operate and maintain the TK Project Highway and regulate the use thereof by third parties;

(d) levy, demand, collect and appropriate fees from vehicles and persons liable for payment of fees for using the TK Project Highway or any part thereof and refuse entry of any vehicle if the fee due is not paid;

(e) perform and fulfil all of the obligations under and in accordance with TK Concession Agreement;

(f) bear and pay all costs, expenses and charges in connection with or incidental to the performance of the obligations under TK Concession Agreement; and

(g) not assign or create any lien or encumbrance on the concession granted by way of the TK Concession Agreement on the whole or any part of the TK Project Highway nor transfer, lease or part possession therewith save and except as expressly permitted by the TK Concession Agreement or the substitution agreement.

The aggregate equity shareholding of Reliance Energy Limited and its associates as the case may be in the issued and paid up equity share capital of TK shall not be less than (a) 51% (fifty-one percent) during the construction period and for 3 (three) years following commercial operation date, and (b) 26% (twenty six percent) during the balance remaining operations period.

Fees

TK shall be entitled to, during the operations period, to levy, collect and appropriate the fees from the users of the TK Project Highway pursuant to and in accordance with the provisions in the TK Concession Agreement. In accordance with the terms of the TK Concession Agreement, TK shall not collect any fees in relation to exempted vehicles. The fees collected by TK shall be deposited in the escrow account and appropriated in accordance with the relevant provisions of the TK Concession Agreement

Grant

NHAI has provided to TK, cash support by way of an outright grant equal to the sum set forth in the bid submitted, namely, Rs. 1,485.00 million, in accordance with the provisions of the TK Concession Agreement (the "**TK Grant**"). The TK Grant was disbursed to TK by way of equity support in accordance with the provisions of the TK Concession Agreement. The TK Grant of Rs. 1,342.6 million was credited to the escrow account and was applied by TK for meeting the capital cost of the TK Project. The balance of Rs.142.4 million has not been released on account of pending completion of Trichy Bypass due to delay in finalization of the alignment by NHAI.

Concession Fee

In consideration of the grant of concession under the TK Concession Agreement, the concession fee payable by TK to NHAI shall be Re. 1 per year during the term of the TK Concession Agreement.

The concession fee shall be paid in advance within 90 (ninety) days of the commencement of the year for which it is due and payable.

Escrow Account

TK shall at least 60 days from the date of the TK Concession Agreement, open and establish the escrow account with the escrow bank and all funds constituting the financing package for meeting the TK Project cost shall be credited to such escrow account. During operations period all fees collected by TK from the users of the TK Project Highway shall be deposited therein. In addition, all disbursements or payments by NHAI pursuant to the TK Concession Agreement shall subject to the rights of deductions and appropriations therefrom of NHAI under the TK Concession Agreement, be deposited by NHAI in the escrow account.

Withdrawals from Escrow Account during the Concession Period

TK shall give to the escrow bank, at the time of the opening of the escrow account, irrevocable instructions by way of escrow agreement dated [●] ("**TK Escrow Agreement**") instructing, *inter alia*, that the deposits into the escrow account be appropriated in the following order every month or at shorter intervals as necessary and if not due in a month then appropriated proportionately in such month and retained in the escrow account and paid out therefrom in the month when due:

(a) all taxes due and payable by TK;

(b) all expenses in connection with and relevant to the construction of TK Project Highway by way of payment to the EPC contractor and such other persons as may be specified in the financing documents;

(c) operation and maintenance expenses including fees collection expenses incurred by TK directly or through operation and maintenance contractor and/or tolling contractor, if any, subject to the items and ceiling in respect thereof as set forth in the financing documents but not exceeding 1/12th of the annual liability on this account;

(d) the whole or part of the expense on repair work or operation and maintenance expenses including fees collection expenses incurred by NHAI on account of exercise of any of its rights under the TK Concession Agreement;

(e) all concession and fees due to NHAI from TK under the TK Concession Agreement;

(f) reimbursements of expenditure incurred by NHAI, if any, for payment of insurance premia, etc., which are otherwise TK,s responsibility, on account of failure on part of TK to keep such insurance(s) effective and in force;

(g) monthly proportionate provision of debt service due in an accounting year and payment of TK Debt Service Payments in the month when due;

(h) one-half of such remuneration, cost and expenses of the independent consultant in case TK does not reimburse the remuneration, cost and expenses of the independent consultant to NHAI within 15 (fifteen) days of receiving a statement of expenditure from NHAI;

(i) any payments and damages due and payable by TK to NHAI pursuant to the TK Concession Agreement, including repayment of revenue shortfall loans, recovery due to reduction in the scope of work, penalty for operations and maintenance expenses incurred by NHAI; and

(j) balance in accordance with the instructions of TK.

Withdrawals from the Escrow Account upon Termination

In case of termination, the amounts standing to the credit of the escrow account shall be disbursed towards:

(a) all taxes due and payable by TK;

(b) all concession fees (including negative grant) due and payable to NHAI under the TK Concession Agreement;

(c) all accrued TK Debt Service Payments;

(d) any payments and damages due and payable by TK to NHAI pursuant to the TK Concession Agreement, including repayment of revenue shortfall loans, recovery due to reduction in scope of work and termination claims;

(e) all accrued operations and maintenance expenses;

(f) any other payments required to be made under the TK Concession Agreement; and

(g) balance, if any, in accordance with the instructions of TK.

Further, no appropriation of termination payments can be made from the escrow account upon termination until the vesting certificate has been issued to TK by NHAI in accordance with the provisions of the TK Concession Agreement. This shall not apply to appropriation in favour of senior lenders to the extent of TK Debt Due.

Change of Scope

NHAI may, notwithstanding anything to the contrary contained in the TK Concession Agreement, require the provision of such addition / deletion to the works and services on or about the TK Project Highway which are beyond the scope of the TK Project as contemplated by the TK Concession Agreement, provided such changes do not require any increase/ decrease in expenditure exceeding 10% of the total project cost and do not adversely affect the commercial operation date. All such changes shall be made by NHAI by an order issued in accordance with the procedure set forth in the TK Concession Agreement.

Compensation for breach of the TK Concession Agreement

Compensation for breach by TK

Subject to the provisions of the TK Concession Agreement, in the event of TK being in material default of the TK Concession Agreement and such default is cured before termination, TK shall pay to NHAI as compensation, all direct additional costs suffered or incurred by NHAI arising out of such material default by TK, in one lumpsum within 30 (thirty) days of receiving the demand or at the TK's option in 3 (three) equal semi-annual installments with interest.

Compensation for breach by NHAI

Subject to the provisions of the TK Concession Agreement, in the event of NHAI being in material default of the TK Concession Agreement and such default is cured before termination, NHAI shall pay to TK as compensation, all direct additional costs suffered or incurred by TK arising out of such material default by NHAI, in one lumpsum within 30 (thirty) days of receiving the demand or at the NHAI's option in 3 (three) equal semi-annual installments with interest.

Termination

Termination by NHAI

In the event of any breach or default by TK under the TK Concession Agreement, including any TK Default (as defined below) and if TK has failed to cure such breach or default within the period provided for the same in the TK Concession Agreement, then NHAI shall be entitled to terminate the TK Concession Agreement by a communication in writing to TK provided that before issuing the termination notice, NHAI shall by a notice in writing inform TK of its intention to issue the termination notice and grant 15 (fifteen) days to TK to make its representation, if any, against such intended termination notice. After the expiry of the 15 (fifteen) day period whether or not it is in receipt of such representation, NHAI in its sole discretion can issue the termination notice. The following events, *inter alia*, shall constitute an event of default by TK (a "**TK Default**") unless such TK Default has occurred as a result of NHAI Default (as defined below) or a force majeure event:

(a) TK fails to achieve financial close in accordance with the provisions of the TK Concession Agreement;

(b) TK fails to achieve any project milestones other than the scheduled project completion date within the period prescribed in the TK Concession Agreement and also fails to cure such default within 180 days from the date of its occurrence;

(c) TK is in material breach of the TK Concession Agreement;

(d) TK commits default in complying with any of the terms and conditions of the TK Concession Agreement, except those defaults in respect of which a cure period has been expressly provided, and fails to remedy or rectify such default within the period provided in a notice in this behalf from NHAI which shall

    (i) requires TK to remedy the breaches within one month (or such longer period as may be agreed by NHAI in its absolute discretion); or

(ii) permits TK to put forward within 15 (fifteen) days of such notice, a reasonable programme for remedying the breaches, where such programme specifies in reasonable detail the manner in which such breach or breaches is or are proposed to be remedied and the latest date by which it is proposed that such breach or all such breaches shall be remedied;

(e) TK creates any encumbrance, charges or lien in favour of any person save and except as otherwise expressly permitted under the TK Concession Agreement;

(f) the shareholding of Reliance Energy Limited falls below the minimum prescribed requirement under the TK Concession Agreement and TK does not suo moto cure such default within 90 (ninety) days of its occurrence;

(g) the transfer, pursuant to law, either of (i) the rights and/or obligations of TK under the project agreements, or (ii) all or material parts of the assets or undertaking of TK except where such transfer in the reasonable opinion of NHAI does not affect the ability of TK to perform, and TK has the financial and technical capability to perform its material obligations under the project agreements;

(h) a resolution is passed by the shareholders of TK for the voluntary winding up of TK;

(i) TK is adjudged bankrupt or insolvent or if a trustee or receiver is appointed for TK or for any of its property that has a material bearing on the TK Project;

(j) any petition for winding up of TK is admitted by a court of competent jurisdiction or TK is ordered to be wound up by a court except for the purpose of amalgamation or reconstruction provided that, as part of such amalgamation or reconstruction, the property, assets and undertaking of TK are transferred to the amalgamated or reconstructed entity and that the amalgamated or reconstructed entity has unconditionally assumed the obligations of TK under the TK Concession Agreement and the project agreements, and provided that:

(i) the amalgamated or reconstructed entity has the technical capability and operating experience necessary for the performance of its obligations under the TK Concession Agreement and the project agreements;

(ii) the amalgamated or reconstructed entity has the financial standing to perform its obligations under the TK Concession Agreement and the project agreements and has a credit worthiness at least as good as that of TK as at the financial close; and

(iii) each of the project agreements remains in full force and effect;

(k) TK is in material breach of any of the project agreements;

(l) an event of default of TK under any of the financing documents has occurred or any of the senior lenders has recalled its loan under any of the financing documents;

(m) TK abandons the operations of the TK Project Highway for more than 15 (fifteen) consecutive days without the prior consent of NHAI, provided TK shall be deemed not to have abandoned such operation if such abandonment (i) was as a result of force majeure event and is only for the period such force majeure event is continuing, or (ii) is on account of a breach of its obligations by NHAI;

(n) TK repudiates the TK Concession Agreement or otherwise evidences an intention not to be bound by the TK Concession Agreement;

(o) TK suffers an execution being levied on any of its assets or equipment causing a material adverse effect on the TK Project and allows it to be continued for a period of 15 (fifteen) days;

(p) TK has delayed any payment that has fallen due under the TK Concession Agreement if such delay exceeds 90 (ninety) days; or

(q) TK is in breach of its obligation to repay the revenue shortfall loans in accordance the TK Concession Agreement.

Termination by TK

TK is entitled to terminate the TK Concession Agreement upon a 90 (ninety) days' written notice to NHAI upon the occurrence and continuation of any of the following events (each a "**NHAI Default**") unless any such NHAI Default has occurred as a result of TK Default or due to a force majeure event:

(a) NHAI is in breach of the TK Concession Agreement and such breach has a material adverse effect on TK and NHAI fails to cure such breach or take effective steps for curing such breach within 90 (ninety) days of receipt of notice in this behalf from TK;

(b) NHAI repudiates the TK Concession Agreement or otherwise evidences an irrevocable intention not to be bound by the TK Concession Agreement;

(c) the Government or the Government of the State of Tamil Nadu or any governmental agency have by an act of commission or omission created circumstances that have a material adverse effect on the performance of its obligations by TK and have failed to cure such circumstances within 90 (ninety) days of receipt of notice by NHAI in this behalf from TK; or

(d) NHAI has delayed any payment that has fallen due under the TK Concession Agreement if such delay exceeds 90 (ninety) days.

Termination Payments

The termination payment pursuant to the TK Concession Agreement becomes due and payable to TK by NHAI within 30 (thirty) days of a demand being made by TK with the necessary particulars duly certified by the statutory auditors. If NHAI fails to disburse the full termination payment within 30 (thirty) days, the amount remaining unpaid shall be disbursed along with interest in accordance with the provisions under the TK Concession Agreement plus two per cent for the period of delay on such amount.

Upon termination by TK on account of an NHAI Default, TK shall be entitled to receive from NHAI by way of termination payment a sum equal to:

(a) The total TK Debt Due, plus

(b) 120% (one hundred and twenty per cent) of the total subordinated debt, plus

(c) 150% (one hundred and fifty per cent) of the equity (subscribed in cash and actually spent on the project but excluding the amount of equity support as specified in the TK Concession Agreement) if such termination occurs at any time during three years commencing from the TK Appointed Date and for each successive year thereafter, such amount shall be adjusted every year to fully reflect the changes in wholesale price index (published by the Ministry of Industry, Government of India, including any index, which substitutes the wholesale price index) during such year and the adjusted amount so arrived at shall be reduced every year by 7.5% (seven and a half per cent) per annum.

Upon termination by NHAI on account of occurrence of TK Default during the operations period, NHAI shall pay to TK by way of termination payment an amount equal to 90% (ninety percent) of the TK Debt Due less insurance claims, if any, provided, however, that if all or any of the insurance claims are not admitted and paid, then 80% (eighty percent) of such unpaid claims shall qualify for being included in the computation of TK Debt Due.

Supplementary Agreements between TK and NHAI

TK has entered into a supplementary agreement to the TK Concession Agreement, with NHAI dated November 14, 2013 in relation to project completion which could not be achieved due to delays on account of both parties. The terms of the supplementary agreement *inter alia* state that Lalapet ROB and its approaches for a length of 2.28 km, which was not in the scope of the TK Project Highway as per the TK Concession Agreement, shall become part of the TK Project Highway and assigned to TK for operation and maintenance with the stipulation to share the user-fee revenue in the proportion 83.80::16.20 between NHAI and TK, acknowledging that a length

of 18.476 km (the Trichy Bypass) of the original stretch of the TK Project Highway could not be completed on account of a pending court case and, (i) the continuous stretch of the TK Project Highway between Km. 154.400 and KM 176.976 shall be put to commercial operation for which the user fee shall be collected at the temporary toll plaza located at Km. 157.500 and the stretch from Km 176.976 to 218.028 shall be put to commercial operations with the toll plaza at Km 198.500 subject to the condition that the TK Project Highway will pass the requisite tests as stipulated in the TK Concession Agreement and on issue of the provisional completion certificate as per the TK Concession Agreement by the independent engineer for the stretch from Km 154.400 to Km 218.028, (ii) the work of the loop/slip road at Km 175.000 will be completed within 12 months from the date of handing over of the land and the grade separator on the state highway at Km 212.385 will be completed within 6 months from the date of clearance of all encumbrances, (iii) the work of the permanent toll plaza at Km 157.500 and related items will be completed by TK within 4 (four) months from the date of accepting such proposal of TK, (iv) the balance works in the stretch from Km 135.800 to Km 154.400 i.e. Trichy Bypass will be completed within 18 months from the date of handing over the encumbrance free land, after finalization of alignment of Trichy Bypass, (v) escalation payment will be made on the date of the provisional completion certificate for the work done on the unencumbered portion of Trichy Bypass (which could not be taken up due to the court case on alignment), (vi) for the work already done in the Trichy Bypass, no escalation or additional payment would be payable to TK and the balance works in the remaining stretch of Trichy Bypass shall be completed by TK without any additional financial implication to NHAI and (vii) in case the work of Trichy Bypass could not be taken up and is to be deleted from the scope of the TK Concession Agreement due to extraneous reasons, in that event, NHAI will reimburse the cost of the work done in Trichy Bypass worked out on the date of the provisional completion certificate with due adjustment of grant already received by TK. The supplementary agreement also states that the scheduled project completion date has been extended, excluding the reach from Km 135.800 to Km 154.400 but there shall be no extension in the concession period on account of this extension and that there shall be no claim from both parties for the delay and extension of the scheduled construction period. Further, TK shall not claim any loss on account of delays in completion of the TK Project Highway in Km 154.400 to Km 218.028 and NHAI will not levy any penalties for such delays on TK. TK has also agreed to forego any claim on NHAI under the TK Concession Agreement for delay in handing over land for the affected stretch.

REGULATIONS AND POLICIES

The following description is a summary of certain sector specific laws and regulations in India, which are applicable to the business of the Trust Group. The information detailed in this section has been obtained from publications available in the public domain. The regulations and their descriptions set out below may not be exhaustive, and are only intended to provide general information to the Bidders and are neither designed nor intended to substitute for professional legal advice. Judicial and administrative interpretations are subject to modification or clarification by subsequent legislative, judicial or administrative decisions. For information regarding regulatory approvals obtained by the Trust, see the section "Government and Other Approvals" on page 523.

Set forth below are certain significant legislations, regulations and policies that generally govern the infrastructure sector in which the Trust Group operates.

Regulatory Framework for the Road Sector

The primary central legislations governing the road sector are the National Highways Act, 1956 (the "**NH Act**") and the National Highways Authority of India Act, 1988 (the "**NHAI Act**").

NH Act

In accordance with the NH Act, the GoI is vested with the power to declare a highway as a national highway and also to acquire land for this purpose. The GoI may, by notification, declare its intention to acquire any land when it is satisfied that, for a public purpose, such land is required for the building, maintenance, management or operation of a national highway, or part thereof. The NH Act prescribes the procedure for such land acquisition. Such procedure includes *inter alia* declaration of an intention to acquire, entering and inspecting such land, hearing of objections, declaration required to be made for the acquisition and the mode of taking possession. The NH Act also provides for payment of compensation to owners and any other person whose right of enjoyment in the land has been affected.

The GoI is responsible for the development and maintenance of national highways. However, it may direct that such functions may also be exercised by the government of the state in which the highway is located or by any officer or authority subordinate to the GoI or to the state government. Further, the GoI has the power to enter into an agreement with any person for the development and maintenance of a part or whole of the highway. Such person would have the right to collect and retain fees at such rates as may be notified by the GoI and will also have the powers to regulate and control the traffic, for proper management of the highway, in accordance with the provisions of the Motor Vehicles Act, 1988.

National Highways Fee (Determination of Rates and Collection) Rules, 2008

The National Highways Fee (Determination of Rates and Collection) Rules, 2008 (the "**NH Fee Rules**"), regulates the collection of fee for the use of national highways. In accordance with the NH Fee Rules, the GoI may, by a notification, levy fee for use of any section of a national highway, permanent bridge, bypass or tunnel forming part of a national highway, as the case may be. However, the GoI may, by notification, exempt any section of a national highway, permanent bridge, bypass or tunnel constructed through a public funded project from levy of such fee.

The NH Fee Rules supersede the National Highways (Temporary Bridges) Rules, 1964, the National Highways (Collection of Fees by any Person for the Use of Section of National Highways/ Permanent Bridge/ Temporary Bridge on National Highways) Rules, 1997, the National Highways (Fees for the use of National Highways Section and Permanent Bridges – Public Funded Project) Rules, 1997 and the National Highways (Rate of Fees) Rules, 1997 other than in respect of things done or omitted to be done under such rules prior to supersession. The NH Fee Rules do not apply to agreements and contracts executed or bids invited prior to the publication of such rules i.e. prior to December 5, 2008.

The collection of fee in case of a public funded project shall commence within 45 days from the date of completion of the project. The NH Fee Rules further provide for the base rate of fees applicable for the use of a section of the national highway for different categories of vehicles.

NHAI Act

NHAI

The National Highways Authority of India ("**NHAI**") was constituted pursuant to the NHAI Act and became operational in 1995. The NHAI Act details the functions of NHAI, which primarily are the development, maintenance and management of national highways and any other highways vested in, or entrusted to it, by the GoI, and matters connected therewith or incidental thereto. In accordance with the NHAI Act, the GoI carries out development and maintenance of the national highway system through NHAI. Subject to the provisions of the NHAI Act, NHAI has the power to enter into and perform any contract necessary for the discharge of its functions under the NHAI Act. NHAI has the power to acquire any land, and such acquired land will be deemed to be land needed for a public purpose. The NHAI Act prescribes a limit in relation to the value of the contracts that may be entered into by NHAI. However, NHAI may enter into contracts exceeding the value so specified, on obtaining prior approval of the GoI. NHAI Act provides that the contracts for acquisition, sale or lease of immovable property on behalf of NHAI cannot exceed a term of 30 years unless previously approved by the GoI. The National Highways Authority of India (Amendment) Act, 2013, received the assent of the President on September 10, 2013. Such amendment has increased the institutional capacity of NHAI.

As per the NHAI Works Manual, 2006, NHAI's mandate is the time and cost bound implementation of the National Highways Development Project ("**NHDP**") through a host of funding options, which include fund assistance from external multilateral agencies like the World Bank and the Asian Development Bank. NHDP Phase – I also strives to provide road connectivity to major ports. NHAI's role encompasses involving the private sector in provision, maintenance and operation of the national highways.

Financing of the NHDP

The GoI, under the Central Road Fund Act, 2000 created a dedicated fund for NHDP. Certain sources for financing of NHDP are through securitization of cess levied on fuel as well as involving the private sector and encouraging Public Private Partnership. The NHDP is also being financed through long-term external loans from the World Bank, the Asian Development Bank and the Japan Bank for International Cooperation as well as through tolling of roads.

Private Participation in NHDP

In an effort to attract private sector participation in the NHDP, NHAI has formulated model concession agreements where a private entity being the concessionaire is awarded a concession to build, operate and collect toll on a road for a specified period of time, which is usually up to 30 years.

The bidding for the projects takes place in two stages as per the process provided below:

1. in the pre-qualification stage, NHAI selects certain bidders on the basis of technical and financial expertise, prior experience in implementing similar projects and previous track record; and

2. in the second stage, NHAI invites commercial bids from the pre-qualified bidders on the basis of which the right to develop the project is awarded.

In accordance with the model concession agreement for projects above Rs. 100 crores, the concessionaire meets the upfront cost and expenditure on annual maintenance and recovers the entire cost along with the interest from toll collections during the concession period. As per the 'Guidelines for Investment in Road Sector' issued by the Ministry of Shipping, Road Transport and Highways ("**MoRTH**") in 2009, in order to increase the viability of the projects, a capital grant of up to 40% of project cost could be provided by NHAI or the GoI. The quantum of grant is determined on a case to case basis and typically constitutes the bid parameter in BOT projects which are generally not viable based on toll revenue alone. For certain projects with high traffic volumes, bidders also offer a negative grant (i.e. premium) to NHAI. The concessionaire at the end of the concession period transfers the road back to the Government (free of charge and clear of all encumbrances), the concessionaire's investment in the road is recovered directly through user fees by way of tolls. As per the model concession agreement for annuity based projects, in annuity projects, the private entity is required to meet the entire upfront cost (no grant is paid by NHAI or the GOI) and the expenditure on annual maintenance. The concessionaire recovers the entire investment through pre-determined annuity payments by to be made by NHAI or the GOI. Furthermore, MoRTH approved certain amendments to the model concession agreement, *inter alia*, in relation to deferment of premium payments.

Exit Policy

The Cabinet Committee on Economic Affairs ("**CCEA**") in May 2015 approved a comprehensive exit policy framework with the objective to mobilize funds in the market. This policy framework now permits divestment of 100 percent equity by concessionaires/developers after two years of completion of construction to facilitate unlocking of funds for new projects. The equity divested is required to be invested by promoters in their new projects. NHAI has vide its circulars dated June 9, 2015, September 9, 2015 and November 19, 2015, permitted 100% equity divestment after 2 (two) years of construction completion for all BOT projects irrespective of the year of the award and clarified that there would be no restrictions on the subsequent divestment by the investors.

Premium Deferment

The CCEA in October 2013 approved a policy for the rationalization of premium quoted by concessionaires in respect of national highways projects. Subsequently, the MoRTH approved the policy in April 2014. This policy introduces a revised tolling policy for 'stressed' highway projects, which are identified based on certain parameters such as if the project has not been able to achieve financial close within the stipulated period and NHAI has been unable to fulfill the conditions precedent under the relevant concession agreement, and provides for the deferment of premium payments to NHAI by the concessionaires of such stressed projects. The policy is expected to revitalize stressed highway projects.

One Time Fund Infusion

CCEA in October 2015 gave its approval to NHAI for a one-time infusion of funds with the purpose of reviving and physically completing stalled projects in the advanced stages of completion. As per the policy, the amount of funds required in each case shall be approved by NHAI on a case to case basis.

Compensation and Extension

CCEA in November 2015 has approved and authorised NHAI to consider extension of the concession period for current projects in the BOT (Toll/Annuity) mode, except for projects where tolling is permitted from the appointed date, which are languishing during the construction period due to causes not attributable to the concessionaire. Further, CCEA further approved and authorised NHAI to pay annuities to the concessionaire corresponding to the actual period of delay not attributable to the concessionaire upon successful completion of the project.

Prevention of Overloading

NHAI vide its policy circular in May 2014, prescribed amendments to the fee rules. Under the circular, the driver or owner of a mechanical vehicle which is loaded in excess of permissible load specified for its category, (i) shall not be permitted to use the national highway or crossing the toll plaza until the excess load has been removed, and (ii) is liable to pay a fee to the toll collection agency equal to ten times of the fee applicable to such category of mechanical vehicle. However, in case no weighbridge has been installed at the toll plaza, no fee for overloading shall be levied. Further, the amended rules are applicable to all concession agreements irrespective of their date of execution.

Subsequently, by way of its policy circular in December 2015, the NHAI amended the fee rules and its earlier May 2014 policy circular, prescribing strict implementation of its earlier directions in relation to the removal of excess load (including a detailed procedure with respect to the manner in which the overloaded vehicle must be dealt with), besides charging a penalty.

Arbitral Awards

CCEA in August 2016 approved various measures to revive the construction section. Under the proposal put forward by NITI Aayog and approved by CCEA, government agencies would pay 75% of the arbitral award amount to an escrow account against margin free bank guarantee, in those cases where the award is challenged. The aforesaid escrow account may be used to repay bank loans or meet commitments in ongoing projects.

Use of Micro-Surfacing

MoRTH vide its circular in September 2016, permitted the use of micro-surfacing as preventive maintenance/renewal treatment, and directed the implementing agencies to ensure that at least 25-30% of the total eligible length for periodical renewal, preferably in a continuous stretch is covered by micro-surfacing or other similar type of treatment in the future.

Toll Suspension due to Demonetisation

NHAI had vide notification dated November 9, 2016, suspended the collection of user fee at toll plazas on national highways due to demonetisation of Rs. 500 and Rs. 1,000 notes. The period of such suspension was extended from November 9, 2016, to December 2, 2016. Further, by way of its order in November 2016, NHAI directed that the loss on account of non-collection of toll from November 9, 2016, to December 2/3, 2016, is to be addressed as per the provisions of the respective concession agreements, and provided for the procedure for reimbursement of cost, specifying guidelines in relation to interest payment on debt and O&M expenses.

Indian Tolls Act, 1851

In accordance with the Indian Tolls Act, 1851 (the "Tolls Act"), the state governments have been vested with the power to levy tolls at such rates as they deem fit, to be levied upon any road or bridge, made or repaired at the expense of the Central or any state government. The tolls levied under the Tolls Act, are deemed to be 'public revenue' and the collection of tolls can be placed under any person the state governments' deem fit. Such persons are enjoined with the same responsibilities as if they were employed in the collection of land revenue. Further, all police officers are bound to assist the toll collectors when required in the implementation of the Tolls Act. The Tolls Act further gives power for recovery of toll and exempts certain category of people from payment of toll.

Provisions under the Constitution of India and other legislations in relation to collection of toll

Entry 59, List II of Schedule VII read with Article 246 of the Constitution of India vests state governments with the power to levy tolls. Further, in accordance with the Tolls Act, state governments have been vested with the power to levy tolls at such rates as they deem fit.

Control of National Highways (Land and Traffic) Act, 2002

The Control of National Highways (Land and Traffic) Act, 2002 (the "Control of NH Act") provides for control of land within national highways, right of way and traffic moving on national highways and also for removal of unauthorised occupation thereon.

In accordance with the provisions of the Control of NH Act, the Central Government has established Highway Administrations. Under the Control of NH Act, all land that forms part of a highway which vests in the Central Government, or that which does not already vest in the Central Government but has been acquired for the purpose of highways shall be deemed to be the property of the Central Government. The Control of NH Act prohibits any person from occupying any highway land or discharging any material through on such land without the permission of the Highway Administration or any officer authorised by such administration. The Control of NH Act permits the grant of lease and license for use of highway land for temporary use.

Other Laws and Regulations

In addition to the aforementioned legislations which are applicable to the Trust, other material legislations that are applicable to the operations of the Trust include:

Indian Trusts Act, 1882

The Indian Trusts Act, 1882 ("**Trusts Act**") governs all private trusts in India.

The Trusts Act sets out the purpose for which private trusts can be established, the manner in which they may be created, executed and extinguished. The person creating a trust under the Trusts Act is the author of such trust, the person to whom the author grants the power and authority to regulate the trust is the trustee and the persons for whose benefit such trust has been created are the beneficiaries of such trust. The Trust Act sets out the rights, duties, liabilities and powers of the trustees and the beneficiaries vis-a-vis the trust. The Trust has been settled in accordance with the provisions of the Trusts Act.

Other Laws

The laws above are specific to the regulations specifically applicable to an operating business. The generic regulations that are applicable to the Trust Group, include environmental laws, labour laws and other applicable laws.

Environment Regulation

Infrastructure projects must also ensure compliance with environmental legislation such as the Water (Prevention and Control of Pollution) Act 1974 ("**Water Pollution Act**"), the Air (Prevention and Control of Pollution) Act, 1981 ("**Air Pollution Act**") and the Environment Protection Act, 1986 ("**Environment Act**"). The Water Pollution Act aims to prevent and control water pollution. This legislation provides for the constitution of a Central Pollution Control Board and State Pollution Control Boards. The functions of the Central Pollution Control Board include, *inter alia*, coordination of activities of the State Pollution Control Boards, collecting data relating to water pollution and the measures for the prevention and control of water pollution and prescription of standards for streams or wells. The State Pollution Control Boards are responsible for, *inter alia*, the planning for programmes for prevention and control of pollution of streams and wells, collecting and disseminating information relating to water pollution and its prevention and control, inspection of sewage or trade effluents, works and plants for their treatment and to review the specifications and data relating to plants set up for treatment and purification of water, laying down or annulling the effluent standards for trade effluents and for the quality of the receiving waters, and laying down standards for treatment of trade effluents to be discharged. This legislation prohibits any person from establishing any industry, operation or process or any treatment and disposal system, which is likely to discharge trade effluent into a stream, well or sewer, or bring into use any new or altered outlet for discharge of sewage, or begin to make any new discharge of sewage without taking prior consent of the State Pollution Control Board.

The Central and State Pollution Control Boards constituted under the Water Pollution Act are also to perform functions as per the Air Pollution Act for the prevention and control of air pollution. The Air Pollution Act aims for the prevention, control and abatement of air pollution. It is mandated under this Act that no person can, without the previous consent of the State Pollution Control Board, establish or operate any industrial plant in an air pollution control area as notified by the State Government. The Environment Act has been enacted for the protection and improvement of the environment. The Environment Act empowers the GoI to take measures to protect and improve the environment such as by laying down standards for emission or discharge of pollutants, providing for restrictions regarding areas where industries may operate and so on. The GoI may make rules for regulating environmental pollution. With respect to forest conservation, the Forest (Conservation) Act, 1980 prevents state governments from making any order directing that any forest land be used for a non-forest purpose or that any forest land is assigned through lease or otherwise to any private person or corporation not owned or managed or controlled by the Government without the prior approval of the GoI. The Ministry of Environment and Forests ("**MoEF**") mandates that Environment Impact Assessment ("EIA") must be conducted for specified projects. In the process, the MoEF receives proposals for the setting up of projects and assesses their impact on the environment before granting clearances to the projects.

The EIA Notification S.O. 1533, issued on September 14, 2006 (the "**EIA Notification**") under the provisions of the Environment Act, prescribes that new construction of specified projects require prior environmental clearance from the MoEF. The environmental clearance must be obtained from the MoEF according to the procedure

specified in the EIA Notification. No construction work or preparation of land by the project management except for securing the land, relating to the setting up of a specified project can be undertaken until such clearance is obtained. Under the EIA Notification, the environmental clearance process for new projects consists of four stages – screening, scoping, public consultation and appraisal. After completion of public consultation, the applicant is required to make appropriate changes in the draft 'EIA Report' and the 'Environment Management Plan.' The final EIA Report has to be submitted to the concerned regulatory authority for appraisal. The regulatory authority is required to give its decision within 105 days of the receipt of the final EIA Report.

Public Liability Insurance Act, 1991

The Public Liability Insurance Act, 1991 (the "**Public Liability Act**"), imposes liability on the owner or controller of hazardous substances for any damage arising out of an accident involving such hazardous substances. A list of 'hazardous substances' covered by the legislation has been enumerated by the Government by way of a notification. The owner or handler is also required to take out an insurance policy insuring against liability under the legislation. The rules made under the Public Liability Act mandate that the employer has to contribute towards the Environment Relief Fund, a sum equal to the premium paid on the insurance policies. This amount is payable to the insurer.

Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy, 2015

In September 2015, MoRTH has launched Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy, 2015 which will require road developers to earmark 1% of a project's total cost for planting of trees and shrubs across the national highways. Under this policy, the maintenance of such plantations will be outsourced through a bidding process to plantation agencies. MoRTH/NHAI will appoint the authorized agency for empanelment of such plantation agencies.

Laws Relating to Employment

Certain other laws and regulations that may be applicable to the Trust and the Project SPVs include the following:

- Contract Labour (Regulation and Abolition) Act, 1970;
- The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979;
- Factories Act, 1948;
- Payment of Wages Act, 1936;
- Payment of Bonus Act, 1965;
- Employees' State Insurance Act, 1948;
- Employees' Provident Funds and Miscellaneous Provisions Act, 1952;
- Equal Remuneration Act, 1976;
- Payment of Gratuity Act, 1972;
- Shops and Commercial Establishments Acts, where applicable;
- Minimum Wages Act 1948;
- Industrial Disputes Act, 1947; and
- Employees Compensation Act, 1923.

InvIT Regulations

The InvIT Regulations lay out the framework for infrastructure investment trusts and the registration and regulation thereof. No person shall act as an infrastructure investment trust unless it has obtained a certificate of registration from SEBI. The InvIT Regulations prescribe, *inter alia*, the eligibility criteria and the rights and responsibilities of the parties to an infrastructure investment trust, namely its sponsor, investment manager, trustee and project manager; and the rights and responsibilities of the valuer and auditor of an infrastructure investment trust. While an infrastructure investment trust may undertake an issue of its units by way of an initial offer or a private placement, it is mandatory for the units of all infrastructure investment trusts to be listed on a recognized stock exchange having nationwide trading terminals. By way of its circular dated May 11, 2016, SEBI notified the guidelines for the public issue of units of an infrastructure investment trust.

On October 20, 2016, SEBI issued a circular in relation to the disclosure of financial information on offer documents/placement memorandums for infrastructure investment trusts, and on November 29, 2016, a circular

detailing the continuous disclosures and compliances by infrastructure investment trusts. Subsequently, on November 30, 2016, SEBI notified the Securities and Exchange Board of India (Infrastructure Investment Trusts) (Amendment) Regulations, 2016, which contained, *inter alia*, amendments to certain definitions, the utilization of the proceeds of an issue, the infrastructure investment trust's sponsor's post-issue unitholding, the minimum offer to the public, thresholds for unitholders' approvals and disclosure requirements, and certain clarifications in relation to the investment conditions applicable to infrastructure investment trusts.

Parties to an infrastructure investment trust are required to maintain the eligibility conditions specified under Regulation 4 of the InvIT Regulations on an ongoing basis. These eligibility conditions include, among other things, that (a) the sponsor, investment manager and trustee of an infrastructure investment trust are separate entities, (b) the sponsor of an infrastructure investment trust has a net worth of not less than Rs. 1,000 million and has a sound track record in the development of infrastructure or fund management in the infrastructure sector, (c) the investment manager of an infrastructure investment trust has a net worth of not less than Rs. 100 million and has not less than five years' experience in fund management or advisory services or development in the infrastructure sector, (d) the trustee of an infrastructure investment trust is registered with the SEBI under Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993 and is not an associate of the Sponsor or Investment Manager, and (e) each of the sponsor, investment manager, project manager and trustee of an infrastructure investment trust are "fit and proper persons" as defined under Schedule II of the Intermediaries Regulations on an ongoing basis.

For the purpose of determining as to whether an entity is a "fit and proper person", SEBI may take account of any consideration as it deems fit, including but not limited to the (a) integrity, reputation and character; (b) absence of convictions and restraint orders; (c) competence including financial solvency and networth; and (d) absence of categorization as a wilful defaulter of the intermediary, the principal officer, the directors, promoters or key management persons of such entity.

Foreign Investment Regulations

Foreign investment in Indian securities is governed by the provisions of the FEMA, read with the applicable FEMA Regulations and the extant consolidated FDI Policy issued by the Department of Industrial Policy and Promotion, Ministry of Commerce and Industry, Government. Foreign investment is permitted (except in the prohibited sectors) either through the automatic route or the approval route, depending upon the sector in which foreign investment is sought to be made. Under the FEMA Regulations and the current consolidated FDI Policy, effective from June 7, 2016, an infrastructure investment trust registered and regulated by SEBI under the InvIT Regulations, being an 'investment vehicle', is permitted to receive foreign investment from a person resident outside India (other than an individual who is citizen of or any other entity which is registered / incorporated in Pakistan or Bangladesh), including an FPI or an NRI subject to the terms and conditions specified in the FEMA Regulations.

Downstream investment by an infrastructure investment trust shall be regarded as foreign investment if neither the sponsor nor the investment manager of such an infrastructure investment trust is Indian 'owned and controlled' as defined in FEMA Regulations. Where an infrastructure investment trust's sponsor or investment manager is organized in a form other than a company or an LLP, SEBI shall determine whether such sponsor or investment manager is foreign owned and controlled.

Downstream investment by an 'investment vehicle' that is reckoned as foreign investment shall have to conform to the sectoral caps and conditions/restrictions, if any, as applicable to the company in which the downstream investment is made as per the FDI Policy. Downstream investment in an LLP by an 'investment vehicle' that is reckoned as foreign investment has to conform to the provisions of Schedule 9 of the FEMA Regulations as well as the extant FDI Policy for foreign investment in LLPs. Foreign investment of up to 100% through the automatic route is permitted in the infrastructure sector in India. An infrastructure investment trust that receives foreign investment shall be required to make such report and in such format to RBI or to SEBI as may be prescribed by them from time to time.

The payment for the units of an infrastructure investment trust acquired by a person resident or registered/ incorporated outside India shall be made by an inward remittance through the normal banking channel including by debit to an NRE or an FCNR account. Further, any person who is a non-resident and holds units of an infrastructure investment trust in accordance with the FEMA Regulations may pledge such units to secure credit facilities being extended to the non-resident investor.

The Units have not been and will not be registered under the U.S. Securities Act or any state securities laws of the United States, and may not be offered or sold within the United States, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the U.S. Securities Act and applicable state securities laws. Accordingly, the Units are being offered and sold (i) within the United States only to persons reasonably believed to be "qualified institutional buyers" (as defined in Rule 144A under the U.S. Securities Act and referred to in this Draft Offer Document as "U.S. QIBs", for the avoidance of doubt, the term U.S. QIBs does not refer to a category of institutional investor defined under applicable Indian regulations and referred to in the Draft Offer Document as "QIBs") in transactions exempt from, or not subject to, the registration requirements of the U.S. Securities Act, and (ii) outside the United States in reliance on Regulation S under the U.S. Securities Act and the applicable laws of the jurisdiction where those offers and sales occur.

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

UNIT HOLDING STRUCTURE

The details of the total outstanding Units of the Trust as at the date of this Draft Offer Document are as set forth below:

	Particulars	Aggregate Value at Issue Price (Rs. in Millions)
A	**UNITS OUTSTANDING PRIOR TO THE ISSUE (PRE-FORMATION TRANSACTIONS)**	
	Nil	Nil
B	**UNITS OUTSTANDING PRIOR TO THE ISSUE (UPON-FORMATION TRANSACTIONS)**(1)	
	[●] Units	[●]
C	**PRESENT OFFER IN TERMS OF THE OFFER DOCUMENT**(2)	
	Issue of up to [●] Units, aggregating to Rs. 30,000 million(3)	[●]
D	**UNITS OUTSTANDING AFTER THE ISSUE**(5)	
	[●] Units	[●]

(1) *The Units to be issued to the Sponsor pursuant to the Formation Transactions will be created post Bid/Issue Closing Date.*

(2) *The Investment Manager, in consultation with the GCBRLMs and the BRLMs, reserves the option to retain oversubscription of up to 25% of the Issue size in accordance with the InvIT Regulations.*

(3) *The Issue has been authorized by a resolution of the duly authorized committee of the board of directors of the Investment Manager dated November 9, 2016.*

(4) *The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors in the Issue for up to 60% of the Institutional Bidder Category in accordance with the InvIT Regulations.*

(5) *The Issue will constitute at least 25% of the total outstanding Units on a post-Issue basis in accordance with Regulation 14(1A) of the InvIT Regulations.*

Notes:

1) The Issue is being made through the Book Building Process, wherein not more than 75% of the Issue shall be available for allocation to Institutional Bidders on a proportionate basis, provided that the Investment Manager, in consultation with the GCBRLMs and the BRLMs, may allocate up to 60% of the Institutional Bidder Category to Anchor Investors and Strategic Investors on a discretionary basis in accordance with the InvIT Regulations. Further, not less than 25% of the Issue shall be available for allocation on a proportionate basis to Other Bidders, subject to valid Bids being received at or above the Issue Price. In case of under-subscription in any category, the unsubscribed portion in either category may be Allotted to Bidders in the other category at the discretion of the Investment Manager, in consultation with the GCBRLMs, the BRLMs and the Designated Stock Exchange.

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

3) In accordance with the InvIT Regulations, no Unitholder shall enjoy superior voting or any other rights over any other Unitholder, and there shall not be multiple classes of Units. There shall be only one denomination of Units. Notwithstanding the above, subordinate Units may be issued only to the Sponsor and its Associates, where such subordinate Units shall carry only inferior voting or any other rights compared to the other Units.

4) ***Unit Holding Pattern***

The table below provides details of the Unit holding pattern of the Trust:

Category	Category of Unitholder	Pre-Issue Unit Holding[(1)] (Pre-Formation Transaction)		Pre-Issue Unit Holding (Upon-Formation Transaction)[(2)]		Units To Be Allotted in the Issue[(4)]		Post-Issue Unit Holding	
		No. of Units	As a % of the total outstanding Units	No. of Units	As a % of the total outstanding Units	No. of Units	As a % of the total outstanding Units[(3)]	No. of Units	As a % of the total outstanding Units[(3)]
A	**Sponsor(s) / Investment Manager / Project Manager(s) and their Associates / related parties**								
(1)	**Indian**								
(a)	Individuals / HUF	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
(b)	Central/State Govt.	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
(c)	Financial Institutions/Banks	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
(d)	Any Other	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
	Sub-Total (A)(1)	***Nil***	-	***Nil***	-	***Nil***	-	***Nil***	-
(2)	**Foreign**								
(a)	Individuals (Non Resident Indians / Foreign Individuals)	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
(b)	Foreign Government	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
(c)	Institutions	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
(d)	Foreign Portfolio Investors	*Nil*	-	*Nil*	-	*Nil*	-	*Nil*	-
(e)	Any Other	*Nil*	-	[●]	[●]	*Nil*	-	[●]	[●]
(i)	Reliance Infrastructure Limited	*Nil*	-	[●]	[●]	*Nil*	-	[●]	[●]
	Sub-Total (A)(2)	***Nil***	-	[●]	[●]	***Nil***	-	[●]	[●]
(B)	**Public Holding**								
(1)	**Institutions**								
(a)	Mutual Funds	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(b)	Financial Institutions/Banks	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(c)	Venture Capital Funds	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(d)	Central/State Government	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(e)	Insurance Companies	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(f)	Provident/pension funds	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(g)	Foreign Portfolio Investors	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(h)	Foreign Venture Capital Investors	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(i)	Any Other	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
	Sub-Total (B)(1)	***Nil***	-	***Nil***	-	[●]	[●]	[●]	[●]
(2)	**Non-Institutions**								
(a)	Central Government / State Government(s) / President of India	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(b)	Individuals	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(c)	NBFCs registered with RBI	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
(d)	Any Other	*Nil*	-	*Nil*	-	[●]	[●]	[●]	[●]
	Sub-Total (B)(2)	***Nil***	-	***Nil***	-	[●]	[●]	[●]	[●]
	Total Public Unit holding (B) = (B)(1) + (B)(2)	***Nil***	-	***Nil***	-	[●]	[●]	[●]	[●]
	Total Units Outstanding (C) = (A) + (B)	***Nil***	-	[●]	[●]	[●]	[●]	[●]	[●]
	TOTAL	***Nil***	-	[●]	**100.00**	[●]	[●]	[●]	**100.00**

[(1)] As on the date of the Draft Offer Document

[(2)] The Units issued to the Sponsor pursuant to the Formation Transactions will be created post Bid/Issue Closing Date

[(3)] On a post-Issue basis

[(4)] To be updated after finalization of the Issue Price

5) ***Details of Sponsor's Lock-in***

a) In accordance with Regulation 12 of the InvIT Regulations, the Sponsor shall hold not less than 15% of the total Units of the Trust after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units, subject to the following:

(i) the Sponsor would be resposible for all acts, omissions and representations/covenants of the Trust related to the formation of the Trust, the sale/transfer of the Project SPVs to the Trust;

(ii) the Trust/Trustee of the Trust shall also have recourse against the Sponsor for any breach in this regard;

(iii) the Project Manager shall be the Sponsor or an Associate of the Sponsor and shall continue to act in such capacity for a period of not less than three years from the date of listing of the Units unless a suitable replacement is appointed by the Unitholders through the Trustee.

Provided that the condition specified in (iii) herein above shall not be applicable where the Sponsor holds not less than 25% of the total Units of the Trust after the Issue, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units.

b) As on the date of the date of the Final Offer Document, the Sponsor holds [●] Units, which constitute [●]% of the total outstanding Units on a post-Issue basis.

c) Details of the Units to be locked-in for a period of three years (or such other period as may be prescribed under the InvIT Regulations) are as follows:

Sr. No.	Name of Unitholder	Number of Units	As a % of the total outstanding Units on a post-Issue basis
1.	Reliance Infrastructure Limited	[●]	[●]
Total		[●]	[●]

d) Further, any Units in excess of 15% of the total Units after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, held by the Sponsor, shall be locked-in for a period of not less than one year from the date of listing of the Units, in accordance with Regulation 12 of the InvIT Regulations and applicable law.

6) ***Other Lock-in Requirements***

The Units held by any persons other than the Sponsor, shall be locked-in for a period of not less than one year from the date of listing of the Units, in accordance with the InvIT Regulations.

7) The GCBRLMs and the BRLMs do not hold any Units as on the date of this Draft Offer Document.

8) The Investment Manager, on behalf of the Trust, shall ensure that transactions in the Units by the Sponsor and its Associates, during the period between the date of filing the Offer Document with the SEBI and the Stock Exchanges and the Bid/Issue Closing Date, shall be reported to the Stock Exchanges within 24 hours of such transactions.

9) ***Prohibition on Offer of Incentives***

No person connected with the Issue, including any person connected with the distribution of the Issue, shall offer any incentive, whether direct or indirect, in any manner, whether in cash or kind or services or otherwise to any person for making an application for Allotment of the Units.

LEVERAGE

The following tables present (a) the capital structure of the Trust (including any borrowing or deferred payments) on a combined basis, as of September 30, 2016, as adjusted taking into account the Formation Transactions and the utilization of the Net Proceeds, as described in the section "*Use of Proceeds*", on page 79, and (b) the capital structure of the Project SPVs (including any borrowing or deferred payment) on a standalone basis, as of September 30, 2016.

The information presented below should be read in conjunction with the sections "*Use of Proceeds*", "*Financial Statements*" and "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" on pages 79, 355 and 463, respectively.

A. Combined Capital Structure of the Trust (including any Borrowings or Deferred Payments)

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	607.02	[●]
Subordinate Debt	23,379.79	[●]
Other Equity	8,143.98	[●]
Total Shareholders' Funds	**32,130.79**	[●]
Borrowings		
Borrowings from related parties	1,075.00	[●]
Long term borrowings	41,952.58	[●]
Current maturities of long term borrowings	1,537.66	[●]
Deferred Payments	-	[●]
Total Debt	**44,565.24**	[●]
Total Capitalization	**76,696.03**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

B. Standalone Capital Structure of the Project SPVs (including any Borrowings or Deferred Payments)

1. DS

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	52.10	[●]
Subordinate Debt	468.00	[●]
Other Equity	137.61	[●]
Total Shareholders' Funds	**657.71**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	2975.40	[●]
Current maturities of long term borrowings	175.88	[●]
Deferred Payments	-	[●]
Total Debt	**3,151.28**	[●]
Total Capitalization	**3,808.99**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

2. GF

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	19.61	[●]
Subordinate Debt	1,755.90	[●]
Other Equity	(316.73)	[●]
Total Shareholders' Funds	**1,458.78**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	4,182.80	[●]
Current maturities of long term borrowings	496.40	[●]
Deferred Payments	-	[●]
Total Debt	**4,679.20**	[●]
Total Capitalization	**6,137.98**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

3. HK

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	37.11	[●]
Subordinate Debt	2,920.60	[●]
Other Equity	669.98	[●]
Total Shareholders' Funds	**3,627.69**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	5,486.12	[●]
Current maturities of long term borrowings	9.99	[●]
Deferred Payments	-	[●]
Total Debt	**5,496.11**	[●]
Total Capitalization	**9,123.80**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

4. JR

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	0.11	[●]
Subordinate Debt	1,245.31	[●]
Other Equity	(540.95)	[●]
Total Shareholders' Funds	**704.47**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	3,395.70	[●]
Current maturities of long term borrowings	175.12	[●]

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Deferred Payments	-	[●]
Total Debt	**3,570.82**	[●]
Total Capitalization	**4,275.29**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

5. KM

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	34.09	[●]
Subordinate Debt	3,458.50	[●]
Other Equity	(115.80)	[●]
Total Shareholders' Funds	**3,376.79**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	6,815.76	[●]
Current maturities of long term borrowings	190.13	[●]
Deferred Payments	-	[●]
Total Debt	**7,005.89**	[●]
Total Capitalization	**10,382.68**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

6. NK

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	44.77	[●]
Subordinate Debt	1,976.18	[●]
Other Equity	(311.91)	[●]
Total Shareholders' Funds	**1,709.04**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	1,081.68	[●]
Current maturities of long term borrowings	58.90	[●]
Deferred Payments	-	[●]
Total Debt	1,140.58	[●]
Total Capitalization	**2,849.62**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

7. PS

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	0.11	[●]
Subordinate Debt	9,785.11	[●]
Other Equity	5,154.57	[●]
Total Shareholders' Funds	**14939.79**	[●]
Borrowings		
Borrowings from related parties	1,000.00	[●]
Long term borrowings	5,658.85	[●]
Current maturities of long term borrowings	-	[●]
Deferred Payments	-	[●]
Total Debt	**6,658.85**	[●]
Total Capitalization	**21598.64**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

8. SU

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	184.12	[●]
Subordinate Debt	0	[●]
Other Equity	1,661.26	[●]
Total Shareholders' Funds	**1,845.38**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	6,509.32	[●]
Current maturities of long term borrowings	27.22	[●]
Deferred Payments	-	[●]
Total Debt	**6,536.54**	[●]
Total Capitalization	**8,381.92**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

9. TD

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	107.45	[●]
Subordinate Debt	152.50	[●]
Other Equity	534.03	[●]
Total Shareholders' Funds	**793.98**	[●]
Borrowings		
Borrowings from related parties	-	[●]
Long term borrowings	2,786.80	[●]
Current maturities of long term borrowings	96.72	[●]

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Deferred Payments	-	[●]
Total Debt	**2,883.52**	[●]
Total Capitalization	**3,677.50**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

10. TK

Particulars	As at September 30, 2016	
	Pre-Issue (Rs. in Millions)	Post-Issue[(1)(2)] (Rs. in Millions)
Shareholders' Funds		
Equity Share Capital	127.56	[●]
Subordinate Debt	1,617.70	[●]
Other Equity	1271.91	[●]
Total Shareholders' Funds	**3,017.17**	[●]
Borrowings		
Borrowings from related parties	75.00	[●]
Long term borrowings	3,060.16	[●]
Current maturities of long term borrowings	307.30	[●]
Deferred Payments	-	[●]
Total Debt	**3,442.46**	[●]
Total Capitalization	**6,459.63**	[●]

(1) Can be determined only upon conclusion of the Issue
(2) Based on the estimated utilization of the Net Proceeds

Borrowing Policy

Investment Manager may from time to time, consider availing additional borrowings/debt, in accordance with the investment strategy of the Trust, subject to the InvIT Regulations. In accordance with Regulation 20(2) of the InvIT Regulations, if the aggregate consolidated borrowings and deferred payments of the Trust, net of cash and cash equivalents exceed 25% of the value of the Trust Assets, for any further borrowing:

a) credit rating shall be obtained from a credit rating agency registered with SEBI; and

b) an approval from Unitholders shall be obtained in the manner specified under Regulation 22 of the InvIT Regulations, namely where the votes cast in favour of a resolution shall be more than the votes cast against such resolution, or such other percentage as may be prescribed under the InvIT Regulations.

However, in accordance with Regulation 20(1) of the InvIT Regulations, the aggregate consolidated borrowings and deferred payments of the Trust, net of cash and cash equivalents shall never exceed 49% of the value of the Trust Assets.

If either of the conditions in relation to the aggregate consolidated borrowings of the Trust, as specified hereinabove, are breached on account of market movements of the price of the underlying assets or securities, the Investment Manager shall inform the same to the Trustee at the earliest and ensure that such condition is satisfied within six months of the breach, in accordance with the InvIT Regulations.

Lock-up on the Trust and the Investment Manager (Contractual)

The Trust (acting through the Trustee) and the Investment Manager shall not, without the prior written consent of the Managers, during the period commencing from the date of the Draft Offer Document and ending 180 calendar days after the listing of the Units, directly or indirectly: (i) issue, offer, transfer, lend, pledge, sell, encumber,

contract to sell or issue, sell any option or contract to purchase, purchase any option or contract to sell or issue, grant any option, right or warrant to purchase, lend, or otherwise transfer, dispose of directly or indirectly any Units or any securities convertible into or exercisable or exchangeable for Units, other than pursuant to the Securities Purchase Agreements or the Issue (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of Units or any other securities convertible into or exercisable as or exchangeable for Units, or (iii) publicly announce any intention to enter into any transaction described in (i) or (ii) above; whether any such transaction described in (i) or (ii) above is to be settled by delivery of Units or such other securities, in cash or otherwise. However, the aforesaid restrictions shall not apply to (i) an issue of Units made as consideration with respect to an acquisition made by the Trust pursuant to the right of first offer and future assets agreement; and (ii) any buy-back of Units made by the Trust.

Lock-in Restrictions

Lock-in on the Sponsor (Regulatory)

In accordance with Regulation 12 of the InvIT Regulations, the Sponsor shall hold not less than 15% of the total Units of the Trust after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units, subject to the following:

(i) the Sponsor would be resposible for all acts, omissions and representations/covenants of the Trust related to the formation of the Trust, the sale/transfer of the Project SPVs to the Trust;

(ii) the Trust/Trustee of the Trust shall also have recourse against the Sponsor for any breach in this regard;

(iii) the Project Manager shall be the Sponsor or an Associate of the Sponsor and shall continue to act in such capacity for a period of not less than three years from the date of listing of the Units unless a suitable replacement is appointed by the Unitholders through the Trustee.

Provided that the condition specified in (iii) herein above shall not be applicable where the Sponsor holds not less than 25% of the total Units of the Trust after the Issue, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units.

Further, any Units in excess of 15% of the total Units after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, held by the Sponsor, shall be locked-in for a period of not less than one year from the date of listing of the Units, in accordance with Regulation 12 of the InvIT Regulations and applicable law.

Lock-in on the Sponsor (Contractual)

The Sponsor shall not, without the prior written consent of the GCBRLMs and the BRLMs, during the period commencing from the date of filing of the Draft Offer Document and ending 180 calendar days from the listing of the Units, directly or indirectly: (i) in relation to any Units or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Units other than pursuant to the Issue, issue, offer, transfer, lend, pledge, sell, contract to sell or issue, sell any option or contract to sell or issue, grant any option, right or warrant to purchase, lend, or otherwise transfer, dispose of or create any encumbrances; ii) except as disclosed in the Draft Offer Document, enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of Units or any securities convertible into or exercisable as or exchangeable for Units; or (iii) publicly announce any intention to enter into any transaction described in (i) or (ii) above; whether any such transaction described in (i) or (ii) above is to be settled by delivery of Units or securities, in cash or otherwise. The aforesaid restrictions shall not apply to any bank financing or refinancing proposed to be undertaken by any of the Project SPVs and any pledge of the equity shares held by the Sponsor in the Project SPV in relation to such bank financing or refinancing taken by the Project SPVs, provided that the overall bank debt of such Project SPV shall not be increased and that the Sponsor ensures the release of such pledge for the transfer of such equity shares to the Trust pursuant to the relevant Securities Purchase Agreement.

Lock-up on the Sponsor (Contractual)

The Sponsor shall not, without the prior written consent of the GCBRLMs BRLMs, during the periods (i) commencing from the date of filing of the Draft Offer Document and ending 180 calendar days from the date of filing the Draft Offer Document (which period shall be extendable by the mutual consent of the GCBRLMs and

BRLMs and the Sponsor) and (ii) commencing from the listing of the Units and ending 180 calendar days thereafter, directly or indirectly undertake any offering of debt, equity, units of an infrastructure investment trust that proposes to invest in the road infrastructure sector in India or any other jurisdiction.

Further, none of the Sponsor or any of its Associates shall set up any infrastructure investment trust that proposes to invest in the road infrastructure sector in India or in any other jurisdiction subsequent to the filing of the Draft Offer Document by the Trust and until a period of 180 calendar days from the listing of the Units.

RELATED PARTY TRANSACTIONS

In accordance with the InvIT Regulations, 'related parties' shall mean 'related parties' as defined under the Companies Act or under applicable accounting standards, and shall also include (i) the Sponsor; (ii) the Investment Manager; (iii) the Project Manager; (iv) the Trustee; (v) any promoter, director or partner of the Sponsor, the Investment Manager or the Project Manager. Further, any transaction between the Trust and one or more infrastructure investment trusts having a common investment manager or sponsor, or a transaction where the Investment Manager or the Sponsor is an Associate of the investment manager or sponsor of the other infrastructure investment trust(s), shall be deemed to be related party transactions for such parties. However, for the purpose of this section, 'related parties' shall not include the promoters, directors and partners of the Trustee.

A. Procedure for Dealing with Related Party Transactions

General Requirements

In accordance with relevant provisions of the InvIT Regulations, all related party transactions shall be on an arms-length basis, in compliance with applicable accounting standards and any other guidelines issued by the SEBI from time to time. Such related party transactions shall be in the best interest of the Unitholders, and must be consistent with the strategy and investment objectives of the Trust.

Approval of the Unitholders

In the case of related party transactions proposed to be entered into after the Issue, an approval from Unitholders shall be obtained in the manner specified under Regulation 22 of the InvIT Regulations (where the votes cast in favour of a resolution shall be more than the votes cast against such resolution), prior to entering into any such subsequent transaction if:

a) the total value of all the related party transactions, in a financial year, pertaining to acquisition or sale of assets, whether directly or through a holding company or through an SPV, or investments into securities exceeds 5% of the value of the Trust Assets; or

b) the value of the funds borrowed from related parties, in a financial year, exceeds five per cent. of the total consolidated borrowings of the Trust, the holding company and the SPVs.

It is clarified that voting by any person who is a related party with respect to any transaction, as well as the voting by the Associates of such person, shall not be considered on the specific issue.

Role of the Investment Manager

The Investment Manager is responsible for formulating and maintaining all such internal processes and relevant controls with respect to related party transactions, so as to ensure compliance with the InvIT Regulations and applicable accounting standards. Further, the Investment Manager shall convene meetings of the Unitholders in accordance with Regulation 22 of the InvIT Regulations, and maintain records pertaining to such meetings in the manner prescribed. The Investment Manager shall also ensure compliance with any additional guidelines issued by the SEBI in the future.

Disclosure and Reporting

The Investment Manager shall submit to the Trustee, quarterly reports on the activities of the Trust, including the status of compliance with the requirements specified under the InvIT Regulations in relation to related party transactions, within 30 days of the end of each quarter.

All related party transactions of the Trust shall be disclosed to the Stock Exchanges and the Unitholders periodically, in accordance with the InvIT Regulations and the agreement to be entered into with the Stock Exchanges in relation to the listing of the Units. The Investment Manager shall adequately disclose the details of any fees or commissions received or to be received by such related parties to the Stock Exchanges.

Further, in accordance with the InvIT Regulations, the Investment Manager shall submit an annual report to all Unitholders, electronically or by physical copies, and to the Stock Exchanges within three months from the end of the financial year, which shall contain, *inter alia*, details of all related party transactions, including acquisitions

or disposal of any projects, directly or through SPVs during the year, the value of which exceeded 5% of value of the Trust Assets.

B. Details of Related Party Transactions Undertaken Prior to the filing of the Draft Offer Document

The Trust has entered into the following related party transactions in the last three financial years and in the current financial year:

Sr. No.	Name of the Related Party	Nature of Relationship with the Trust	Nature of Transaction
1.	Reliance Infrastructure Limited	Sponsor	The Trust was settled with an initial settlement amount of Rs. 10,000 by the Sponsor.
2.	Reliance Nippon Life Asset Management Limited	Investment Manager	The Trustee (acting on behalf of the Trust) has entered into the Investment Management Agreement dated October 3, 2016, with the Investment Manager for managing and administering the Trust, in accordance with the InvIT Regulations. Further, going forth, the Investment Manager will be paid fees by the Trustee (acting on behalf of the Trust) with respect to the services provided by the Investment Manager, in accordance with the Investment Management Agreement. For details, see "*Background and Structure of the Trust*" and "*The Investment Manager*" on page 110 and page 339, respectively.
3.	Reliance Infrastructure Limited	Project Manager	The Trustee (acting on behalf of the Trust) has entered into the Project Implementation Agreements with the Sponsor (in its capacity as the Project Manager), with respect to each of the Project SPVs, which set out the obligations of the Project Manager with respect to the execution of each of the projects, in accordance with the InvIT Regulations. Further, going forth, the Project Manager will be paid fees by the respective Project SPVs, with respect to the operation and maintenance services provided, in accordance with the Project Implementation Agreements. For details, see "*Background and Structure of the Trust*" and "*The Project Manager*" and on page 110 and page 348, respectively.
4.	Reliance Infrastructure Limited	Sponsor	Pursuant to a separate trademark and tradename license, the Sponsor has granted to the Trust, each of the Project SPVs and the Investment Manager, the non-transferable and non-assignable right to use the "Reliance" trademark as part of their respective corporate names, if applicable, in connection with their respective businesses and any other ancillary purpose, on a non-exclusive basis.

For details of the related party transactions entered into by the Project SPVs during the preceding three fiscal years and the six-month period ended September 30, 2016, as per the requirements under Ind-AS 24 '*Related Party Disclosures*' issued by the ICAI and as reported in the Condensed Combined Financial Statements, please refer to the "*Financial Statements*" on page 355.

C. Details of Related Party Transactions Proposed to be Undertaken

Transactions in Connection with the Issue

In connection with the completion of the Issue and prior to the Allotment of the Units in the Issue, the Trustee (on behalf of the Trust) will acquire the equity shares of the Project SPVs, all of which are currently either wholly or majority owned by the Sponsor. The Trustee (on behalf of the Trust) intends to acquire the equity shares of the Project SPVs after the Bid/Issue Closing Date and prior to the Allotment in the Issue. Subject to the receipt of requisite approvals, the Trust intends to acquire 100% of the equity shares in each of DS, GF, HK, JR, KM, NK, PS, SU, TD and TK. However, the Sponsor currently holds only 74% of the equity shares of PS and its ability to acquire the residual 26% of the equity shares from the other shareholder of PS, and consequently, its ability to transfer any additional equity shares of PS (post-acquisition from the other shareholder of PS) to the Trust, is subject to the approval of NHAI. Further, along with the equity shares of the Project SPVs, the Trustee (on behalf of the Trust) simultaneously intends to acquire, all or part, of the subordinate debt certificates issued by certain Project SPVs to the Sponsor pursuant to the Securities Purchase Agreements. As consideration for the acquisition of the equity shares of, and the subordinate debt certificates issued by, the Project SPVs, the Trust will issue Units to the Sponsor on or around the Acquisition Date. The Securities Purchase Agreements for each Project SPV are in draft form and will be executed after the Bid/Issue Closing Date and on or before the Acquisition Date.

Further, almost all of the Net Proceeds of the Issue are proposed to be utilized towards (a) the Secured Trust Financing towards repayment/prepayment, in part or full, of certain loans/facilities availed by the Project SPVs from their respective senior lenders/lenders; and (b) the Unsecured Trust Financing towards prepayment, in part, of the unsecured subordinate debt provided to such Project SPVs by the Sponsor, and the prepayment, in full, of the unsecured loans/advances provided to such Project SPVs by the Sponsor. The aforesaid investments will be made by entering into the Debt Documentation with the Project SPVs.

Other Related Party Transactions

In order to conduct its business, the Trust may enter into transactions with related parties in the future, which will be carried out in compliance with the aforesaid procedure for dealing with related party transactions, applicable accounting standards and the provisions of the InvIT Regulations.

A summary of the such proposed transactions (other than the Formation Transactions and the Debt Documentation) is provided below:

Sr. No.	Name of the Related Party	Nature of Relationship with the Trust	Nature of Transaction
1.	Reliance Infrastructure Limited	Sponsor	The Sponsor, the Investment Manager and the Trustee (acting on behalf of the Trust) propose to enter into the Right of First Offer and Future Assets Agreement, which will enable the Trust to have the right to access DA and the future assets which are developed or acquired by the Sponsor's future subsidiaries after the Issue.
2.	Reliance Infrastructure Limited	Sponsor	In connection with the establishment and registration of the Trust, the Sponsor has incurred Rs. 1.10 million in expenses. The Trust shall reimburse the Sponsor the aforesaid set-up costs incurred in relation to the establishment and registration of the Trust from the Net Proceeds.

Further, as consideration for the services of each of the Trustee, the Investment Manager and the Project Manager, the Trust will be required to pay each of the Trustee, the Investment Manager and the Project Manager, such fees and expenses as agreed in their respective engagement letters. For additional details in relation to the fees and expenses charged or chargeable to the Trust by each of the Trustee, the Investment Manager and the Project Manager, see "*Background and Structure of the Trust – Fees and Expenses*" on page 136.

D. Potential Conflicts of Interest

We may be subject to potential conflicts of interest arising out of our relationship with our Sponsor and its Associates, including the Sponsor group, and we will enter into transactions with related parties in the future.

Details in relation to our policies for dealing with related party transactions are provided herein above. Further, in accordance with the InvIT Regulations, not less than half the directors of the Investment Manager are independent, and are not directors or members of the governing board of another infrastructure investment trust.

We cannot assure you that our policies will succeed in eliminating the influence of any potential conflicts of interest. If they are not successful, decisions could be made that might fail to reflect fully the interests of all Unitholders. For additional details of the risks involved in transactions that involve potential conflicts of interest, see "*Risk Factors – We will enter into related-party transactions. There can be no assurance that we could not have achieved more favourable terms if such transactions had been entered into with third parties*" on page 41.

While the Sponsor operates various infrastructure projects and accordingly, has interests in infrastructure assets apart from those of the Project SPVs, none of these other infrastructure assets compete or are likely to compete, directly or indirectly, with the activities of the Trust. The Sponsor confirms that it shall perform its duty in relation to the Trust independent of its related business.

Further, in order to enable the Trust to have the right to acquire DA and any other future assets which may be developed or acquired by any Sponsor Group Entity (as defined below) and acquire a controlling interest in DA or such future asset, after the InvIT Listing (as defined below), the Sponsor will enter into the Right of First Offer and Future Assets Agreement with the Trust (acting through the Trustee and the Investment Manager) after the Bid/Issue Closing Date but prior to Allotment. The Trust is required to distribute 90% of its Net Distributable Cash Flows to its Unitholders. Accordingly, any future acquisitions (including pursuant to the Right of First Offer and Future Assets Agreement) may require the Trust to raise capital, either through a further issue of Units or to borrow funds from lenders.

Right of First Offer and Future Assets Agreement

To enable the Investor to have the right to acquire DA and any other future asset which may be developed or acquired by any Sponsor Group Entity (as defined below) after the InvIT Listing (as defined below), the Sponsor has agreed to undertake certain obligations on the terms set out below.

Certain relevant definitions in the Right of First Offer and Future Assets Agreement are as follows:

"**Acquisition Date**" means the date on which a Sponsor Group Entity (i) executes a valid and binding concession agreement for a toll road project in India with any Authority or (ii) completes the direct or indirect acquisition of equity shares or interest in a toll road project in India and becomes the holder of such equity shares or interest;

"**Authority**" means the NHAI, any public works department and any other relevant concession authority granting the concession to the relevant asset;

"**Closing Date**" means the date on which the InvIT Listing occurs;

"**Control**" shall have the meaning set forth under the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations, 2011 and the terms "**Controlling**" and "**Controlled**" shall be construed accordingly.

"**DA Minimum Shareholding Period**" shall mean a period of two years from the DA Project Completion Date, within which any transfer of the direct and/or indirect legal or beneficial ownership of any shares, or securities convertible into shares, which causes the total Equity of the Sponsor in DA to decline below 51%, would constitute a "change in ownership" under the terms of the concession agreement entered into between DA and the NHAI.

"**Equity**" shall have the meaning given to such term under the relevant concession agreement.

"**Force Majeure Event**" shall have the meaning given to such term in the relevant concession agreement, for the relevant asset, and where such term is not defined in the relevant concession agreement, it shall mean the occurrence of any event, which prevents the relevant asset from performing its obligations and enforcing its rights under the relevant concession agreement and which act or event is (i) beyond the reasonable control and not arising out of the fault of the relevant asset, (ii) the relevant asset has been unable to overcome such act or event by the exercise of due diligence and reasonable efforts, skill and care, and (iii) has a material adverse effect on the relevant asset, including but not limited to collecting toll at the applicable rates in accordance with the relevant concession agreement;

"Future Asset" shall mean any entity set up or acquired by the Sponsor after InvIT Listing and complying with each of the following conditions:

(i) which is or will be engaged solely and exclusively in the business of operating and managing toll roads located in India;

(ii) which is or will be the concessionaire of a toll road which is or will be developed or operated by a Sponsor Group Entity or in which a Sponsor Group Entity currently holds equity shares or other interest enabling it to exercise Control or otherwise exercises Control or has acquired equity shares or other interest after the InvIT Listing Date that enable it to exercise control or otherwise exercises Control after the InvIT Listing Date;

(iii) where the underlying toll road asset has completed less than 12 (twelve) months from its Project Completion Date or is not a Stabilized Revenue Asset as on the Acquisition Date; and

(iv) where the toll road asset for which such entity is the concessionaire is free from any Material Defects.

"**Future Mature Asset**" shall mean any entity acquired by the Sponsor after InvIT Listing and complying with each of the following conditions:

(i) which is engaged solely and exclusively in the business of operating and managing toll roads located in India;

(ii) which is the concessionaire of a toll road which is developed or operated by a Sponsor Group Entity or in which a Sponsor Group Entity currently holds equity shares or other interest enabling it to exercise Control or otherwise exercises Control or has acquired equity shares or other interest after the InvIT Listing Date that enable it to exercise control or otherwise exercises Control after the InvIT Listing Date;

(iii) where the underlying toll road asset has completed at least 12 (twelve) months from its Project Completion Date, or is a Stabilized Revenue Asset as of the Acquisition Date;

(iv) which, as of the date of the proposed transfer of such Future Mature Asset to a third party, has not less than three years remaining until the expiry of the concession period under its concession agreement with the relevant Authority; and

(v) where the toll road asset for which such entity is the concessionaire is free from any Material Defects.

"**Governmental Authority**" means any entity or Person exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including any governmental or statutory authority, agency, department, board, commission, public body or instrumentality of India;

"**Investor**" means the Trust (acting through the Trustee) and the Investment Manager;

"**InvIT Listing**" means the listing and commencement of trading of the units of the Trust on the BSE Limited and the National Stock Exchange of India Limited;

"**InvIT Listing Date**" means the date of the InvIT Listing;

"**Material Defect**" in relation to a relevant asset, means any disputes, litigation or arbitration proceedings, pending approvals, each of which is reasonably likely to result in a material adverse impact on the business and results of operations of such entity or asset;

"**Minimum Shareholding Requirement**" means a requirement, if any, under any Law, regulation, contract or agreement, including the concession agreement with any Authority, agreement with other shareholders or lenders of the relevant asset who are not related, directly or indirectly, to the Sponsor, which stipulates that a Sponsor Group Entity shall hold a certain minimum percentage of the equity shares of or interest in a relevant asset at the relevant time;

"**Project Completion Date**" means the date on which the project receives a provisional completion certificate, or a completion certificate, as the case may be, in accordance with the terms of the relevant concession agreement.

"**Related Party**" shall have the meaning given to such term under Section 2(76) of the Companies Act, 2013 as well as under the applicable accounting standards;

"**Sponsor Group Entity**" means the Sponsor or any of the Sponsor's existing or future subsidiaries, LLPs or other entities that are Controlled by or under common Control with, the Sponsor. For the avoidance of doubt, "**Sponsor Group Entity**" shall exclude the Investment Manager and its subsidiaries, subsidiary entities, trusts and undertakings; and

"**Stabilized Revenue Asset**" means an entity,

(a) which has provisions in its concession agreement for the payment of certain fixed amounts by the relevant Authority to the concessionaire entity (the "**Fixed Payments**");

(b) where the quantum of Fixed Payments payable to such entity is not less than 90% of the total revenue to be collected by such entity in any financial period; and

(c) Fixed Payments have actually been made, unconditionally and without any encumbrance by the concessioning authorities and received by such entity for at least one financial period.

I. DA ROFO THRESHOLD SPV

The Sponsor shall notify the Investor in writing within five (5) days of DA receiving a provisional completion certificate in accordance with Article 14 of the Concession Agreement dated July 16, 2010 (the "**DA Project Completion Date**").

On the date falling twelve (12) months from the DA Project Completion Date, DA shall automatically, without any further action by any Person, be deemed to be a "**DA ROFO Threshold SPV**", provided that any period, for which a Material Defect or a Force Majeure Event in respect of DA subsists, shall not be considered for the computation of such twelve (12) month period, provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties.

Upon DA becoming a DA ROFO Threshold SPV, the Sponsor shall notify the Investor in writing of such event within five (5) days thereof and such notice shall also specify whether the condition that DA is free from Material Defects has been satisfied, provided that if such condition has not been satisfied on the date of DA becoming a DA ROFO Threshold SPV, then the Sponsor shall notify the Investor only upon the satisfaction of such condition (such date of notice of satisfaction of the condition, the "**DA ROFO Threshold SPV Notice Date**").

Sale of the DA ROFO Threshold SPV

Invitation by the Sponsor to the Investor to make an offer

The Sponsor shall make the invitation to offer to the Investor for the acquisition of all (but not less than all) of the equity shares or interest held by all Sponsor in the DA ROFO Threshold SPV within a period of 18 (eighteen) months from the DA ROFO Threshold SPV Notice Date; provided that the period for making an invitation to offer may be extended beyond the initial 18 (eighteen) months only upon mutual agreement of the Parties in writing (such period, including any extension(s) thereof, the "**DA ROFO Threshold SPV Share Sale Offer Period**"). The Parties also agree that in the event of the occurrence of a Force Majeure Event at any time within

the DA ROFO Threshold SPV Share Sale Offer Period, the period for which such Force Majeure Event subsists shall not be considered for computing the DA ROFO Threshold SPV Share Sale Offer Period.

In the event the Sponsor does not make an invitation to offer to the Investor at any time during the DA ROFO Threshold SPV Share Sale Offer Period, and the Investor has not called for such invitation, then upon the expiry of such DA ROFO Threshold SPV Share Sale Offer Period, without any further action by any Person, the rights, obligations and procedures as set out in the Right of First Offer and Future Assets Agreement shall automatically be triggered whereby the Sponsor shall be required to make an invitation to offer to the Investor for the acquisition of all (but not less than all) of the equity shares or interest held by all Sponsor in the DA ROFO Threshold SPV within five (5) days of the expiry of the DA ROFO Threshold SPV Share Sale Offer Period (the date of invitation to offer by the Sponsor, the "**DA ROFO Post-Threshold SPV Share Sale Offer Period Invitation Date**") and the Investor shall have the right to make or decline to make an offer for the equity shares or interest in the DA ROFO Threshold SPV in accordance with the terms of this Agreement.

Investors' Right to Call for an Invitation to Offer

The Sponsor has granted the right (but not the obligation) to the Investor to, at any time during the DA ROFO Threshold SPV Share Sale Offer Period, to cause the Sponsor to invite the Investor to offer for all, but not less than all, of the equity shares or interest of the DA ROFO Threshold SPV held by the Sponsor, by the delivery of a notice to the Sponsor requesting the Sponsor to immediately make an invitation ("**DA ROFO Investor Call Notice**").

Valuation

Within three (3) working days of receiving the DA ROFO Threshold SPV Notice, the Investor shall request the valuer of the InvIT (the " **Valuer**") to undertake a valuation of the DA ROFO Threshold SPV. The Valuer shall within a period of 30 (thirty) days of such request provide the Sponsor and the Investor with (i) a valuation of the DA ROFO Threshold SPV and (ii) the price for the DA ROFO Threshold SPV Offer Shares ((i) and (ii), together, the "**DA ROFO Price and Terms**"). The Sponsor has agreed to provide the Valuer with access to all information and documentation, including access to the site, that is required or necessary for the Valuer to complete its valuation within such time period.

The Sponsor and the Investor have agree that, in the event the Investor chooses to make an offer as specified below, the DA ROFO Price and Terms provided by the Valuer shall be binding on the Parties.

Offer by the Investor

Within 10 (ten) days of the receipt of the DA ROFO Price and Terms from the Valuer (the "**DA ROFO Threshold SPV Offer Period**", the Investor shall either deliver a notice to the Sponsor making an offer to purchase all (and not less than all) of the DA ROFO Threshold SPV Offer Shares at the DA ROFO Price and Terms (the "**DA ROFO Threshold SPV Offer**") or reject the DA ROFO Threshold SPV Notice.

In the event the Investor has issued a DA ROFO Threshold SPV Offer, then the Sponsor shall (i) confirm to the Investor that the DA ROFO Threshold SPV remains free of Material Defects (provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties) and (ii) accept such offer and consummate the sale of such DA ROFO Threshold SPV Offer Shares, which shall, at the time of the transfer, be free and clear of any pre-emptive rights, liens, mortgages, charges, pledges, trusts or any other encumbrances or transfer restrictions ("**Encumbrances**") at the DA ROFO Price and Terms as determined by the Valuer, within 60 (sixty) days from the date of the DA ROFO Threshold SPV Offer by the Investor.

Absence of offer by Investor

In the event the Investor (a) notifies the Sponsor of its intent not to purchase the DA ROFO Threshold SPV Offer Shares within the DA ROFO Threshold SPV Offer Period or (b) fails to respond to the DA ROFO Threshold SPV Notice within the DA ROFO Threshold SPV Offer Period, or (c) notifies the Sponsor of its intent to purchase the DA ROFO Threshold SPV Offer Shares within the DA ROFO Threshold SPV Offer Period but is unable complete such acquisition within the Extended Financing Period (defined below), the Sponsor shall be entitled to transfer

and complete the sale of all, but not less than all, of the DA ROFO Threshold SPV Offer Shares to any third party purchaser within 6 (six) months of the end of the DA ROFO Threshold SPV Offer Period, or the Extended Financing Period, as applicable, at a valuation and price no less than DA ROFO Price and Terms.

Last-look

In the event that the Sponsor is unable to identify third party purchasers or complete the sale of all, but not less than all, of the DA ROFO Threshold SPV Offer Shares within a period of 6 (six) months of the end of the DA ROFO Threshold SPV Offer Period, the Sponsor may, in its sole discretion, offer the DA ROFO Threshold SPV Offer Shares to the Investor or invite the Investor to offer for the DA ROFO Threshold SPV Offer Shares, in the manner specified below.

Last-look between 6 (six) months and 12 (twelve) months of the end of the DA ROFO Threshold SPV Offer Period

At any time after 6 (six) months of the end of the DA ROFO Threshold SPV Offer Period, but prior to the expiry of 12 (twelve) months of the end of the DA ROFO Threshold SPV Offer Period, the Sponsor may, in its sole discretion, deliver a notice to the Investor (in writing), irrevocably offering to sell to the Investor all, but not less than all, of the DA ROFO Threshold SPV Offer Shares at the DA ROFO Price and Terms ("**DA ROFO Threshold SPV Sponsor Offer**"). The Investor shall have the right, but not the obligation, to purchase the DA ROFO Threshold SPV Offer Shares at the DA ROFO Price and Terms.

Within 30 (thirty) days of receiving the DA ROFO Threshold SPV Sponsor Offer (the "**DA ROFO Last Look Period**"), the Investor shall either agree to purchase all, but not less than all, of the DA ROFO Threshold SPV Offer Shares on the DA ROFO Price and Terms by delivering a written notice to the Sponsor (a " **DA ROFO Threshold SPV Sponsor Offer Acceptance Notice**") or reject the DA ROFO Threshold SPV Sponsor Offer.

In the event the Investor accepts the DA ROFO Threshold SPV Sponsor Offer, then the Sponsor shall (i) confirm to the Investor that the DA ROFO Threshold SPV remains free of Material Defects (provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties) and (ii) consummate the sale of such DA ROFO Threshold SPV Offer Shares, which shall at the time of the transfer, be free and clear of any Encumbrances, at the DA ROFO Price and Terms, within 60 (sixty) days from the date of the Threshold SPV Offer Notice by the Investor.

In the event that the Investor (a) rejects the DA ROFO Threshold SPV Sponsor Offer or (b) fails to respond to the DA ROFO Threshold SPV Sponsor Offer within the DA ROFO Last Look Period, as the case may be, the Sponsor shall be entitled to transfer all, or any part, of the DA ROFO Threshold SPV Offer Shares to any third party purchaser without any restriction.

Last-look after 12 (twelve) months of the end of the DA ROFO Threshold SPV Offer Period

At any time after the expiry 12 (twelve) months of the end of the DA ROFO Threshold SPV Offer Period, the Sponsor may, in its sole discretion, deliver a notice to the Investor making an irrevocable invitation to the Investor to offer for the acquisition of all (but not less than all) of the DA ROFO Threshold SPV Offer Shares (the " **Second DA ROFO Threshold SPV Notice**")

Second Valuation

Within three (3) working days of receiving the Second DA ROFO Threshold SPV Notice, the Investors shall request the Valuer to undertake a valuation of the DA ROFO Threshold SPV. The Valuer shall within a period of 30(thirty) days of such request provide the Sponsor and the Investor with (i) a second valuation of the DA ROFO Threshold SPV and (ii) the price for the DA ROFO Threshold SPV Offer Shares ((i) and (ii) together, the "**Second DA ROFO Price and Terms**"). TheSponsor agrees to provide the Valuer with access to all information and documentation, including access to the site, that is required or necessary for the Valuer to complete its valuation within such time period.

The Sponsor and the Investor hereby agree that, in the event the Investor chooses to make an offer as specified below, the Second DA ROFO Price and Terms provided by the Valuer shall be binding on the Parties.

Last- Look Offer by the Investor

Within 10 (ten) days of the receipt of the Second DA ROFO Price and Terms from the Valuer (the "**Second DA ROFO Threshold SPV Offer Period**", the Investor shall either deliver a notice to the Sponsor making an offer to purchase all (and not less than all) of the DA ROFO Threshold SPV Offer Shares at the Second DA ROFO Price and Terms (the "**Second DA ROFO Threshold SPV Offer**") or reject the Second DA ROFO Threshold SPV Notice.

In the event the Investor has issued a Second DA ROFO Threshold SPV Offer Notice, then the Sponsor shall (i) confirm to the Investor that the DA ROFO Threshold SPV remains free of Material Defects (provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties) and (ii) accept such offer and consummate the sale of such DA ROFO Threshold SPV Offer Shares free and clear of any Encumbrances at the DA ROFO Price and Terms, within 60 (sixty) days.

Absence of Last-Look offer by Investor

In the event the Investor (a) notifies the Sponsor of its intent not to purchase the DA ROFO Threshold SPV Offer Shares within the Second DA ROFO Threshold SPV Offer Period or (b) fails to respond to the Second DA ROFO Threshold SPV Notice within the Second DA ROFO Threshold SPV Offer Period, as the case may be, the Sponsor shall be entitled to transfer all, or any part, of the DA ROFO Threshold SPV Offer Shares to a third party purchaser without any restriction.

II. FUTURE ASSET THRESHOLD SPV

The Sponsor shall notify the Investor in writing within five (5) days of any asset held or acquired by the Sponsor becoming a Future Asset, which notice shall also include (i) all material information, including financial information, concession terms and other material contractual obligations, liabilities and litigation information in relation to the Future Asset, in legible and understandable form and (ii) the Project Completion Date, if applicable, of such Future Asset and the location of the toll road asset of which the Future Asset is the concessionaire.

On the date falling 12 (twelve) month from the Project Completion Date of a Future Asset, such Future Asset shall automatically, without any further action by any Person, become a "**Future Asset Threshold SPV**", provided that any period for which a Material Defect or a Force Majeure Event in respect of such Future Asset subsists shall not be considered for the computation of the 12 month above, provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties.

Upon a Future Asset becoming a Future Asset Threshold SPV, the Sponsor shall notify the Investor in writing of such event within five (5) days thereof and such notice shall also specify whether each of the following conditions has been satisfied:

(a) the Sponsor Group Entity owns more than 50% (fifty per cent.) of equity shares or other interest in such Future Asset Threshold SPV and exercises Control over such Future Asset Threshold SPV;

(b) the Sponsor Group Entity is not restricted, pursuant to any Minimum Shareholding Requirement, from transferring more than 50% (fifty per cent.) of the equity shares or other interest and Control of such Future Asset Threshold SPV to the Investor; and

(c) the road asset of which the Future Asset Threshold SPV is the concessionaire is free from any Material Defects, provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties.

Provided that if any of the conditions set out above has not been satisfied on the date of the Future Asset becoming a Future Asset Threshold SPV, then the Sponsor shall notify the Investor only upon the satisfaction of all conditions (such date of notice of satisfaction of all conditions, the "**Future Asset Threshold SPV Notice Date**").

Sale in a Future Asset Threshold SPV

Invitation by the Sponsor to the Investor to make an offer

The Sponsor shall make the invitation to offer to the Investor for the acquisition of all (but not less than all) of the equity shares or interest held by all Sponsor Group Entities in the relevant Future Asset Threshold SPV within a period of 36 (thirty-six) months from the Future Asset Threshold SPV Notice Date; provided that the 36 (thirty-six) month period shall be automatically extended by 12 (twelve) months upon the written notice of either Party to take into account adverse, uncertain or illiquid market conditions, provided further that the period for making an invitation to offer may be extended beyond the initial 36 (thirty-six) months and any extension of 12 (twelve) months only upon mutual agreement of the Parties in writing (such period, including any extension(s) thereof, the "**Future Asset Threshold SPV Share Sale Offer Period**"). The Parties have also agreed that in the event of the occurrence of a Force Majeure Event at any time within the Future Asset Threshold SPV Share Sale Offer Period, the period for which such Force Majeure Event subsists shall not be considered for computing the Future Asset Threshold SPV Share Sale Offer Period.

In the event the Sponsor does not make an invitation to offer to the Investor for the acquisition of all (but not less than all) of the equity shares or interest held by all Sponsor Group Entities in the relevant Future Asset Threshold SPV at any time during the Future Asset Threshold SPV Share Sale Offer Period, then upon the expiry of such Future Asset Threshold SPV Share Sale Offer Period, without any further action by any Person, the rights, obligations and procedures as set out in the Right of First Offer and Future Assets Agreement shall automatically be triggered whereby the Sponsor shall be required to make an invitation to offer to the Investor within five (5) days of the expiry of the Future Asset Threshold SPV Share Sale Offer Period (the date of invitation to offer by the Sponsor, the "**Future Asset Post-Threshold SPV Share Sale Offer Period Invitation Date**") and the Investor shall have the right to make or decline to make an offer for the equity shares of or interest in a Future Asset Threshold SPV in accordance with the terms of this Agreement.

Valuation

Within seven (7) working days of receiving the Future Asset Threshold SPV Notice, the Investor shall request the Valuer to undertake a valuation of the Future Asset Threshold SPV. The Valuer shall within a period of 45(forty-five) days of such request provide the Sponsor and the Investor with (i) a valuation of the Future Asset Threshold SPV and (ii) the price for the Future Asset Threshold SPV Offer Shares ((i) and (ii) together, the "**Future Asset Price and Terms**"). The Sponsor agrees to provide the Valuer with access to all information and documentation, including access to the site, that is required or necessary for the Valuer to complete its valuation within such time period.

The Sponsor and the Investor hereby agree that, in the event the Investor chooses to make an offer as specified below**,** the Future Asset Price and Terms provided by the Valuer shall be binding on the Parties.

Offer by the Investor

Within 10 (ten) days of the receipt of the Future Asset Price and Terms from the Valuer (the "**Future Asset Threshold SPV Offer Period**"), the Investor shall either deliver a notice to the Sponsor making an offer to purchase all (and not less than all) of the Future Asset Threshold SPV Offer Shares at the Future Asset Price and Terms (the "**Future Asset Threshold SPV Offer**") or reject the Future Asset Threshold SPV Notice.

In the event the Investor has issued a Future Asset Threshold SPV Offer Notice, then the Sponsor shall (i) confirm to the Investor that the Future Asset Threshold SPV remains free of Material Defects (provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties) and (ii) accept such offer and consummate the sale of such Future Asset Threshold SPV Offer Shares free and clear of any Encumbrances at the Future Asset Price and Terms as determined by the Valuer, within 60 (sixty) days from the date of the Future Asset Threshold SPV Offer by the Investor.

Absence of offer by the Investor

In the event that the Investor (a) notifies the Sponsor of its intent not to purchase the Future Asset Threshold SPV Offer Shares within the Future Asset Threshold SPV Offer Period or (b) fails to respond to the Future Asset Threshold SPV Notice within the Future Asset Threshold SPV Offer Period, as the case may be, the Sponsor shall be entitled to (i) retain the Future Asset Threshold SPV; or (ii) transfer and complete the sale of all, but not less than all, of the Future Asset Threshold SPV Offer Shares to any other Person, without any restriction.

III. FUTURE MATURE ASSETS

Proposed Sale of a Future Mature Asset by the Sponsor Group Entity

Investor's Right of First Refusal

In the event that any Sponsor Group Entity intends to sell all or any portion of the equity shares or interest in any Future Mature Asset held by it to any Person other than a Related Party (any such Person, a "**Relevant Third Party**") (whether this intention to sell is triggered by such Relevant Third Party's indication of its interest to acquire such equity shares or interest, or under any other circumstances, including arising from any discontinuation or expiry or waiver of any contractual or regulatory obligation to maintain certain level of shareholding in the Future Mature Asset by the Sponsor Group Entity), it shall first offer such equity shares or interest to the Investor, in the manner specified below. The Investor shall have a right, but not an obligation, to purchase the equity shares or interest offered by the Sponsor Group Entity.

The Sponsor Group Entity shall deliver to the Investor a notice in writing specifying (i) the number of Future Mature Asset equity shares (or other interest) held by the Sponsor Group Entity, and the Sponsor Group Entity's right or obligation, if any, to own up to the Minimum Shareholding Requirement and any other terms and conditions in connection therewith (the "**Future Mature Asset Offer Shares**"), (ii) all material information, including financial information, concession terms and other material contractual obligations, liabilities and litigation information in relation to the proposed transaction to the Investor in legible and understandable form, and (iii) the price per Future Mature Asset Offer Share and terms at which it intends to sell the Future Mature Assets Offer Shares to the Relevant Third Person (the "**Future Mature Asset ROFR Notice**") offering to sell the Future Mature Asset Offer Shares to the Investor at the Future Mature Asset Offer Price and Terms (defined below). The terms set out in (i), (ii) and (iii) above are collectively hereinafter referred to as "**Future Mature Asset Offer Price and Terms**".

Within 45 (forty five) days of receiving the Future Mature Asset ROFR Notice (the "**Future Mature Asset ROFR Period**"), the Investor shall either agree to purchase all (but not less than all) of the Future Mature Asset Offer Shares on the Future Mature Asset Offer Price and Terms by delivering a written notice to the Sponsor Group Entity (a "**Future Mature Asset ROFR Acceptance Notice**") or reject the Future Mature Asset ROFR Notice.

A Future Mature Asset ROFR Acceptance Notice shall be binding on the Sponsor Group Entity. If the Investor issues a Future Mature Asset ROFR Acceptance Notice, it shall be entitled to purchase the relevant Future Mature Asset ROFR Shares.

In the event the Investor has issued a Future Mature Asset ROFR Acceptance Notice, then the Sponsor Group Entity shall (i) confirm to the Investor that the Future Mature Asset remains free of Material Defects (provided however that if the Investment Manager disagrees with the assessment of the Sponsor with respect to the existence of such Material Defect, the Sponsor and the Investment Manager shall jointly appoint an independent third party (meeting the criteria specified in Regulation 2(1)(zzf)(b) of the InvIT Regulations) to determine the existence of a Material Defect, and such determination shall be binding on all Parties) and (ii) consummate the sale of such

Future Mature Asset Offer Shares free and clear of any Encumbrances at the Future Mature Asset Offer Price and Terms, within 60 (sixty) days from the date of the Future Mature Asset ROFR Acceptance Notice by the Investor.

If the Investor does not issue the Future Mature Asset ROFR Acceptance Notice or fails to respond to the Sponsor Group Entity(s) within the period specified above or rejects the Future Mature Asset ROFR Notice, as the case may be, the Sponsor Group Entity shall, be entitled to transfer and complete the sale to the Relevant Third Party, on the Future Mature Asset Offer Price and Terms, the Future Mature Asset Offer Shares, within 180 (one hundred and eighty) days of the expiry of the Future Mature Asset ROFR Period. In the event that no Future Mature Asset ROFR Acceptance Notice from the Investor is received by the Sponsor during the Future Mature Asset ROFR Period, the Investor shall be deemed to have not accepted the offer under the Future Mature Asset ROFR Notice.

If the Sponsor Group Entity fails to transfer the Future Mature Asset Offer Shares within the period specified above to the Relevant Third Party, it shall not be entitled to transfer the Future Mature Asset Offer Shares thereafter to any other Person, without re-offering the Future Mature Asset Offer Shares to the Investor, in accordance with the provisions of the Right of First Offer and Future Assets Agreement.

Certain Confirmations

In the event the Investor notifies the Sponsor Group Entity of its intention to purchase any equity shares or interest pursuant to the Right of First Offer and Future Assets Agreement, but the Investor fails to complete its purchase of such equity shares or interest within the time period agreed between the Sponsor Group Entity and the Investor solely due to the Investor's failure (but not the Sponsor Group Entity's default or failure) to perform its contractual obligations in respect of such purchase, then without prejudice to the other rights of the Sponsor Group Entity, the Sponsor Group Entity shall have the right (but not the obligation) to sell all (but not less than all) such Shares to any other Person, without any restriction.

Further, in the event the Sponsor makes an invitation to offer to the Investor in connection with the Future Assets Threshold SPV Offer Shares of more than one Future Asset Threshold SPV or an offer in connection with the Future Mature Asset Offer Shares of more than one Future Mature Asset, then the Investor shall evaluate each such invitation to offer for Future Asset Threshold SPV Offer Shares in each Future Asset Threshold SPV, or Future Mature Asset Offer Shares in each such Future Mature asset, as the case may be, as a separate and distinct invitation to offer and will not under any circumstances be required to make any collective offer or decline to make an offer in respect of the equity shares of or interest in such Future Asset Threshold SPVs, or Future Mature Assets, collectively. For the avoidance of doubt, it is hereby clarified that the Investor retains the right to make or decline to make an offer in respect of the Future Asset Threshold SPV Offer Shares in all or any of the Future Asset Threshold SPVs under consideration, and to accept the offer in respect of the Future Mature Asset Offer Shares of in all or any Future Mature Asset, and all the rights of the Investor set forth in this agreement may be exercised separately with respect to each Future Asset Threshold SPV, or Future Mature Asset under consideration.

The time period taken for obtaining approvals under law from any Governmental Authority (including from the NHAI or other relevant concession authority under the concession agreements), any lender, or any third party for the transfer of equity shares or interest shall be excluded for the purpose of computing the time periods as set out in the Right of First Offer and Future Assets Agreement and the Parties have agreed to cooperate with each other to obtain all such approvals, if required. Further, the Parties have agreed that the time period taken for the Trust to obtain unitholder approval, where required under applicable law, and the time taken for the Trust to raise financing for such acquisition (including through any issue of units or debt financing) shall be excluded for the purpose of computing the time periods as set out in the Right of First Offer and Future Assets Agreement, provided that in the event that any such period to obtain unitholder approval or raise financing extends beyond 180 days from the (i) DA ROFO Threshold SPV Offer; (ii) DA ROFO Threshold SPV Sponsor Offer; (iii) Second DA ROFO Threshold SPV Offer; (iv) Future Asset Threshold SPV Offer; or (v) Future Mature Asset ROFR Acceptance Notice, as applicable, the Sponsor shall have the right (but not the obligation), to either (i) refuse to complete the relevant transaction or (ii) request for a fresh valuation from the Valuer (the "**Reset Valuation**" and the price and terms determined pursuant to such Reset Valuation, the "**Reset Valuation Price and Terms**") and extend the time period permitted for the completion of the transaction at the Reset Valuation Price and Terms (such 180 day period, together with any extensions thereto, the "**Extended Financing Period**"). It is clarified than in the event of any force majeure event or regulatory change that occurs during the Extended Financing Period, the Sponsor may, after mutual discussions with the Investor, provide reasonable extensions to such period. It is further clarified that any such actions by the Sponsor will not affect any other rights of the Investor under the Right of First Offer and Future Assets Agreement.

All time periods mentioned in the Right of First Offer and Future Assets Agreement may be altered by mutual agreement in writing between the Investor and the Sponsor.

Termination

The Right of First Offer and Future Assets Agreement may only be terminated as follows:

(i) if the InvIT Listing has not occurred on or prior to [●] or any other date as may be mutually agreed by the Parties in writing;

(ii) by mutual consent of the Parties in writing;

(iii) by notice in writing by either Party, if the Sponsor and/or any Sponsor Group Entity ceases to hold 10% (ten per cent) of the total issued units in the InvIT; or

(iv) by notice in writing by either Party, if the InvIT ceases to be listed on the BSE or the NSE.

VALUATION

In accordance with Regulation 21(7) of the InvIT Regulations, the Valuers have undertaken a valuation of the Project SPVs which are proposed to be acquired by the Trust pursuant to the Formation Transactions, and which will comprise the Trust Assets. Consequent to the aforesaid valuation, the Valuers have prepared a valuation report dated December 14, 2016 (the "**Valuation Report**"), which has been included as **Annex A** herewith.

A. Summary of the Valuation and Valuation Methodology

For details in relation to the summary of the valuation and valuation methodology, see the Valuation Report, included as **Annex A** herewith. The Valuation Report sets out the Valuers' opinion as to the fair enterprise value of the Project SPVs as on December 31, 2016.

B. Frequency of Valuation

In accordance with the InvIT Regulations, after the listing of the Units pursuant to the Issue, valuations will be carried out in the following manner:

a) a half-yearly valuation of the Trust Assets shall be conducted by the Valuers for the half-year ending September 30, for incorporating any key changes in the previous six months. The half-yearly valuation report shall be prepared within one month from the date of end of such half year; and

b) a full valuation of the Trust Assets (including physical inspection of each of the Trust's infrastructure projects) shall be conducted by the Valuers not less than once every financial year, and that such a full valuation shall be conducted at the end of each financial year, within two months from the end of such financial year.

The valuation reports received by the Investment Manager shall be submitted to Stock Exchanges within 15 days from the receipt of such valuation reports.

However, in case of any material development that may have an impact on the valuation of the Trust Assets, the Investment Manager shall require the Valuers to undertake a full valuation of the infrastructure project under consideration, within not more than two months from the date of such event, and disclose the same to the Trustee and the Stock Exchanges within 15 days of such valuation.

C. Declaration of NAV

The Investment Manager shall ensure that computation and declaration of NAV of the Trust is based on the valuation done by the Valuers, not later than 15 days from the date of valuation.

DISTRIBUTION POLICY

Distribution Policy

Distributions shall be made by the Trust to the Unitholders, from time to time, in accordance with the Indenture of Trust and the InvIT Regulations. The Trustee shall make and shall ensure that the Investment Manager declares distributions not less than once every six months in each Financial Year, as required under the InvIT Regulations. However, Unitholders should note that there is no assurance or guarantee that distributions will be made in any amount or at all.

The InvIT Regulations provide that not less than 90% of net distributable cash flows of each Project SPV are required to be distributed to the Trust in proportion of its holding in each of the Project SPVs subject to applicable provisions of the Companies Act. Further, not less than 90% of net distributable cash flows of the Trust shall be distributed to the Unitholders. Such distributions shall be declared and made not less than once every six months in every financial year and shall be made not later than fifteen days from the date of such declaration. The distributions to the Unitholders shall be made in the manner specified below.

The Trust's first distribution after the date of the listing of the Units will be for the period from the date of the listing of the Units to the date of 1st half year financials and will be declared by the Investment Manager on or before [●]. The Trustee will make such distribution within 15 days of such date and no later. Subsequent distributions shall take place on semi-annual basis with the amount calculated as at March 31 and September 30 each year for the six-month period ending on each of the said dates. In the event distributions are not made within 15 days of declaration, the Investment Manager shall pay interest at the rate of 15% per annum until the distribution is made to the Unitholders. Such interest is not and will not be recoverable by the Investment Manager from the Trust in the form of fees or any other charges payable by the Trust to the Investment Manager.

Distributions shall be made *pro rata* to the total subscription amount of a Unitholder and in accordance with the provisions of the Indenture of Trust, the InvIT Regulations and this section. Distributions will be declared in Rupees and each Unitholder will receive its/her/his distribution in Rupees. The form, frequency and amount of future distributions on the Units will depend on the earnings, financial position and results of operations of the Trust, as well as contractual restrictions and the provisions of applicable law. Please see the "*Statement of Tax Benefits*" on page 103, for information on tax implications.

Since the establishment of the Trust, there have not been any distributions made on the Units. The Trust's distribution policy is to distribute as per the Trust's net distributable cash flows (the "**Net Distributable Cash Flows**"). The Trust's distribution policy is to distribute at least 90% of the Net Distributable Cash Flows of the Trust.

The Net Distributable Cash Flows of the Trust are substantially based on the cash flow to be generated from the underlying operations undertaken by the Project SPVs. The cash flow will be received by the Trust in the form of:

a) interest accrued on and principal repayment upon repayment of the debt availed by each of the Project SPVs from the Trust. For further information in relation to the proposed infusion of debt, see "*Use of Proceeds*" on page 79; and

b) dividends and proceeds from capital reduction from the Project SPVs, subject to the provisions of the Companies Act.

See the section "*Risk Factors*" on page 16 for a description of factors that may adversely affect the ability of the Trust to make distributions to Unitholders.

Distribution Policy of the Trust

In accordance with the InvIT Regulations, and the applicable guidelines, as may be issued by SEBI from time to time:

a) Each Project SPV, and any other SPV that may be acquired by the Trust, shall distribute at least 90% of its respective net distributable cash flows to the Trust, subject to the applicable provisions under Companies Act/LLP Act or any Central Government Act, as applicable, not less than once every six months and such distributions shall be paid not later than 15 days from the date of their declaration; and

b) The Trust shall distribute at least 90% of the Net Distributable Cash Flows to the Unitholders not less than once every six months.

The framework for calculation of net distributable cash flows at a (i) standalone Project SPV level; and (ii) standalone Trust level, is as provided herein below:

A. Calculation of Net Distributable Cash Flows at a Standalone Project SPV Level

Sr. No.	Description
1.	**Profit after tax as per profit and loss account (standalone) (A)**
2.	**Less:** Any premium / negative grant payments to the Concessioning Authority (net of tax, as applicable)
3.	**Add:** Depreciation and amortisation as per profit and loss account
4.	**Add/less:** Loss/gain on sale of infrastructure assets
5.	**Add:** Proceeds from sale of infrastructure assets adjusted for the following: • related debts settled or due to be settled from sale proceeds • directly attributable transaction costs • proceeds reinvested or planned to be reinvested as per para 18 (7) (a) of the InvIT Regulations
6.	**Add:** Proceeds from sale of infrastructure assets not distributed pursuant to an earlier plan to re-invest, if such proceeds are not intended to be invested subsequently net of any profit/(loss) recognized in the profit and loss account
7.	**Add/less:** Any other item of non-cash expense / non cash income (net of actual cash flows for these items), if deemed necessary by the Investment Manager, including but not limited to: • any decrease / increase in carrying amount of an asset or of a liability recognised in profit and loss account on measurement of the asset or the liability at fair value; • interest cost as per effective interest rate method; • deferred tax; and • any other items charged/credited to the P&L Account which do not involve corresponding cash flow.
8.	**Less:** Repayment of debt (principal) / redeemable preference shares / debentures, if deemed necessary by the Investment Manager
9.	**Total Adjustments (B)**
10.	**Net Distributable Cash Flows (C)=(A+B)**

A minimum of 90% of the net distributable cash flows arrived at in (C) above shall be distributed by each Project SPV and any other SPVs that may be acquired in the future, to the Trust, subject to the applicable provisions of Companies Act/LLP Act or any Central Government Act, as applicable, net of applicable taxes, if any, proportionate to the Trust's equity shareholding in such Project SPV.

B. Calculation of Net Distributable Cash Flows at the Standalone Trust Level

Sr. No.	Description
1.	Cash flows received from the project SPVs in the form of interest
2.	Cash flows received from the project SPVs in the form of dividend
3.	Any other income accruing at the Trust level and not captured above, including but not limited to interest / return on surplus cash invested by the Trust
4.	Cash flows received from the project SPVs towards the repayment of the debt issued to the Project SPVs by the Trust
5.	Proceeds from project SPVs for any capital reduction by way of buy back etc., subject to applicable law
6.	Proceeds from sale of assets of the project SPV not distributed pursuant to an earlier plan to re-invest, or if such proceeds are not intended to be invested subsequently
7.	**Total cash inflow at the Trust level (A)**
8.	**Less:** Any payment of fees, interest and expense incurred at the Trust level, including but not limited to the fees of the Investment Manager
9.	**Less:** Costs/retention associated with sale of assets of the project SPVs: • related debts settled or due to be settled from sale proceeds of project SPVs • transaction costs paid on sale of the assets of the project SPV • Capital gains taxes on sale of assets / share in project SPVs / other investments
10.	**Less:** Proceeds reinvested or planned to be reinvested as per Regulation 18(7)(a) of the InvIT Regulations
11.	**Less:** Repayment of debt at the Trust level, if deemed necessary by the Investment Manager
12.	**Less:** Infusion of subordinate debt in SPV for debt servicing and/or major maintenance reserve, if deemed necessary by Investment Manager
13.	**Less:** Income tax (if applicable) at the Standalone Trust Level
14.	**Total cash outflows / retention at the Trust level (B)**
15.	**Net Distributable Cash Flows (C)=(A+B)**

A minimum of 90% of the Net Distributable Cash Flows arrived at in (C) above shall be distributed by the Trust to the Unitholders, subject to the applicable provisions of InvIT Regulations, net of applicable taxes, if any.

Distribution on Disposition

Disposition means any transaction or series of transactions whereby the Investment Manager in consultation with the Trustee, in accordance with the InvIT Regulations, sells or otherwise disposes for cash or other consideration the Trust's right, title and interest in and to any or all of the investments or from the sale of any Trust Asset or on account of closure of project or termination of project or winding up of a Project SPV ("**Disposition**").

The Trustee in consultation with the Investment Manager shall distribute the cash proceeds realized on any Disposition net of all fees, charges, taxes and costs relating to such Disposition, and net of all expenses *pro rata* to the total subscription amount of a Unitholder provided that such proceeds from Disposition are not used for investments in any project in which the Trust is permitted to invest, acquire or set up in accordance with InvIT Regulations or in any Project SPV, within a period of one year of such Disposition.

Any tax paid by the Trust on behalf of the Unitholder or tax deducted on investments made (including temporary investments) shall be considered to be towards amounts distributed as mentioned above.

Distribution on Dissolution

In the event of dissolution or winding up of the Trust, all of the Trust Assets or the proceeds therefrom shall be distributed or used as follows and in the following order of priority:

a) First, towards the payment of the debts and liabilities of the Trust, including without limitation any fees, any amounts due to the Investment Manager, the Project Manager or a service provider and the expenses of liquidation;

b) Second, towards the setting up of any reserves which the Trustee or the authority in-charge of the dissolution of the affairs of the Trust may deem reasonably necessary for any contingent or unforeseen liabilities or obligations of the Trust; and

c) Third, towards the Unitholders in accordance with the terms of the Indenture of Trust, the InvIT Regulations, the Trusts Act, the Offer Document and the Final Offer Document.

Deduction of Taxes

In accordance with the Indenture of Trust, the Trustee may in consultation with the Investment Manager, make any deductions of taxes, cess, fees, charges, assessments and duties that may be required to be deducted or withheld under applicable laws before making any payment to any Unitholder, whether by way of distribution, redemption of any Units or otherwise.

The Trustee may in consultation with the Investment Manager, also deduct any stamp duties or government taxes, registration fees or charges payable by it or for which the Trustee may be liable in respect of any payment to any Unitholder, whether by way of distribution, redemption of any Units or otherwise, or in connection with any documents executed in that regard.

Subject to applicable law, the Trustee or the Investment Manager, as the case may be, shall not be liable to account to any Unitholder or otherwise for any payment made or suffered by the Trustee or the Investment Manager in good faith to any duly empowered revenue authority for taxes or other charges in any way arising out of or relating to any transactions of whatsoever nature under these presents, notwithstanding that any such payment ought not to be or need not have been made or suffered.

In-specie Distribution

Subject to the provisions of applicable law, the Trustee, in consultation with the Investment Manager, may anytime during the life of the Trust make in-specie distributions of the Trust Assets on such terms and conditions as it may deem appropriate and in a manner that is in accordance with the Indenture of Trust, the InvIT Regulations, the Trusts Act and applicable law.

RIGHTS OF UNITHOLDERS

Rights of Unitholders

Subject to the provisions of the InvIT Regulations, the Indenture of Trust, and applicable rules, regulations and guidelines, the rights of the Unitholders include:

a) right to receive income or distributions with respect to the Units held;

b) right to attend the annual general meeting and other meetings of the Unitholders of the Trust;

c) right to vote upon any matters/resolutions proposed in relation to the Trust;

d) right to receive periodic information having a bearing on the operation or performance of the Trust in accordance with the InvIT Regulations; and

e) right to apply to the Trustee to take up certain issues at meetings for Unitholders approval.

In accordance with the InvIT Regulations, no Unitholder shall enjoy superior voting or any other rights over any other Unitholder, and there shall not be multiple classes of Units. There shall be only one denomination of Units. Notwithstanding the above, subordinate Units may be issued only to the Sponsor and its Associates, where such subordinate Units shall carry only inferior voting or any other rights compared to the other Units.

Annual Meeting of Unitholders

An annual meeting of all Unitholders shall be held not less than once a year within 120 days from the end of financial year and the time between two meetings shall not exceed 15 months (the "**Annual Meeting**"). Any information that is required to be disclosed to the Unitholders and any issue that, in the ordinary course of business, may require approval of the Unitholders may be taken up in the Annual Meeting including:

a) latest annual accounts and performance of the Trust;

b) approval of the auditor of the Trust and fees of such auditor, as may be required;

c) latest valuation report;

d) appointment of the valuer of the Trust, as may be required; and

e) any other issue.

In relation to the aforesaid matters, an approval from the Unitholders shall be required where the votes cast in favour of the resolution shall be more than the votes cast against the resolution or such other percentage as may be prescribed under the InvIT Regulations.

Approval of Unitholders

In accordance with the InvIT Regulations, with respect to any matter requiring approval of the Unitholders:

a) a resolution shall be considered as passed when the votes cast by Unitholders, so entitled and voting, in favour of the resolution exceed a certain percentage (as specified in InvIT Regulations) of votes cast against;

b) the voting may also be done by postal ballot or electronic mode;

c) a notice of not less than 21 days shall be provided to the Unitholders; and

d) voting by any person who is a related party (as understood in accordance with the InvIT Regulations and applicable accounting standards) in such transaction as well as the voting by any Associates of such person(s), shall not be considered on the specific issue.

The Investment Manager shall be responsible for all the activities pertaining to conducting of a meeting of the Unitholders, subject to the Trustee's oversight. However, in accordance with Regulation 22(2) of the InvIT Regulations, the Trustee shall convene and handle all activities pertaining to conduct of the meetings in respect of issues pertaining to the Investment Manager, such as change, removal or change in control of the Investment Manager. Further, in respect of issues pertaining to the Trustee, including any change in the Trustee, the Trustee shall not be involved in any manner in the conduct of the meetings of the Unitholders.

Matters for Approval

An approval from the Unitholders shall be required where the votes cast in favour of the resolution shall be more than the votes cast against the resolution, with respect to the resolutions of the Unitholders on the following matters:

a) to increase the period for compliance with investment conditions under Regulation 18(5) of the InvIT Regulations to one year, in the event that the investment conditions specified with respect to (i) investment of not less than 80% of the value of the Trust Assets (proportionate to the holding of the Trust) in completed and revenue generating infrastructure projects subject to certain conditions, and (ii) investment of not more than 20% of the value of the Trust Assets (proportionate to the holding of the Trust) in, *inter alia*, listed or unlisted debt of companies or body corporates, equity shares of companies listed on a recognized stock exchange in India which derive not less than 80% of their operating income from the infrastructure sector as per their audited accounts of the previous Financial Year, government securities and money market instruments, liquid mutual funds or cash equivalents are breached due to market movements of the price of the underlying assets or securities, and the Investment Manager is unable to ensure that the aforesaid conditions are satisfied within six months of such breach;

b) after the Issue, to enter into subsequent transactions with any related party if (a) the total value of all related party transactions in a Financial Year pertaining to acquisition or sale of assets, whether directly or through a holding company or through an SPV, or investments into securities exceeds the prescribed percentage (presently 5%) of the value of the Trust Assets, or (b) the value of the funds borrowed from the related party exceeds the prescribed percentage (presently 5%) of the total consolidated borrowings of the Trust, as may be prescribed under the InvIT Regulations;

c) for any further borrowing if the aggregate consolidated borrowings and deferred payments of the Trust net of cash and cash equivalents to exceed the prescribed percentage (presently 25%) of the value of the Trust Assets;

d) for the purchase of any infrastructure project, whether directly or through a holding company or an SPV, where the asset is proposed to be purchased at a value greater than the prescribed percentage (presently 110%) of the value of such asset, as assessed by the valuer;

e) for the sale of any infrastructure project, whether directly or through a holding company or an SPV, where the asset is proposed to be sold at a value lesser than the prescribed percentage (presently 90%) of the value of such asset, as assessed by the valuer;

f) any transaction, other than any borrowing, where the value of such transaction is equal to or greater than the prescribed percentage (presently 25%) of the value of the Trust Assets;

g) any issue of Units after the Issue, in whatever form, other than any issue of Units which may be considered by SEBI under Regulation 22(5) of the InvIT Regulations;

h) any issue, which in the ordinary course of business, in the opinion of the Sponsor, the Trustee or the Investment Manager, is material and requires approval of the Unitholders;

i) any issue for which SEBI or the Stock Exchanges require the approval of the Unitholders under Regulation 22(4) of the InvIT Regulations; and

j) any issue taken up at the Annual Meeting, which requires approval of the Unitholders other than as specified in Regulation 22(6) of the InvIT Regulations.

An approval from the Unitholders shall be required where the votes cast in favour of the resolution shall not be less than one and a half times the votes cast against the resolution, with respect to the resolutions of the Unitholders upon the following matters:

a) any change in the Investment Manager, including removal or change in control of the Investment Manager;

b) any material change in the investment strategy of the Trust or its management fees;

c) any proposal by the Sponsor or the Investment Manager to seek delisting of the Units;

d) any issue, not in the ordinary course of business, which in the opinion of the Sponsor, the Investment Manager or the Trustee, requires approval of the Unitholders. In case of any failure to obtain an approval in relation to such an issue, the Sponsor or the Investment Manager or the Trustee, as the case may be, shall provide an exit option to the Unitholder to the extent and in the manner specified by SEBI;

e) any issue for which SEBI or the Stock Exchanges require the approval of the Unitholders under Regulation 22(5) of the InvIT Regulations;

f) any issue taken up at the request of not less than the prescribed percentage (presently 25%) of the Unitholders by value (other than any party related to such a transaction and its Associates), including:

   i) removal of the Investment Manager, and the appointment of another investment manager with respect to the Trust;

   ii) removal of the Auditor, and appointment of another auditor with respect to the Trust;

   iii) removal of the Valuers, and appointment of another valuer with respect to the Trust;

   iv) delisting of the Units, if the Unitholders have sufficient reason to believe that such delisting would act in their interest;

   v) any issue which the Unitholders have sufficient reason to believe is detrimental to their interest;

   vi) upon the receipt of applications from not less than the prescribed percentage (currently 60%) of the Unitholders by value, a change in the Trustee if the Unitholders have sufficient reason to believe that the acts of the Trustee are detrimental to their interests.

   In relation to any issue taken up at the request of not less than the prescribed percentage (presently 25%) of the Unitholders by value, as described hereinabove, the Trustee will require the Investment Manager to place the issue for voting in the manner specified in the InvIT Regulations on receipt of such applications.

g) Any alteration of the terms of the Units, including the terms of the Issue, which may adversely affect the interest of the Unitholders.

Periodic Information and Disclosures

The Investment Manager shall submit an annual report to all Unitholders, electronically or by physical copies, and to the Stock Exchanges within three months from the end of the Financial Year (the "**Annual Report**"). Further, the Investment Manager shall submit a half-yearly report to the Stock Exchanges within 45 days from the end of every half year ending March 31, and September 30. The Annual Report and the half-yearly report shall mandatorily contain the disclosures prescribed under Regulation 23(3) in the InvIT Regulations.

The Investment Manager shall disclose to the Stock Exchanges any information having a bearing on the operation or performance of the Trust as well as price sensitive information, which includes but is not restricted to information in relation to:

a) acquisition or disposal of any projects, directly or through a holding company or an SPV, the value of which exceeds the prescribed percentage (currently 5%) of value of the Trust Assets;

b) additional borrowing, at the level of a holding company or an SPV or the Trust, exceeding the prescribed percentage (currently 15%) of the value of the Trust Assets;

c) additional issue of Units by the Trust;

d) details of any credit rating obtained by the Trust and any change in such rating;

e) any issue which requires the approval of the Unitholders;

f) any legal proceedings which may have a significant bearing on the functioning of the Trust;

g) notices and results of the meetings of the Unitholders,

h) any instance of non-compliance with the InvIT Regulations, including any breach of any limits specified thereunder; and

i) any material issue that in the opinion of the Investment Manager or Trustee needs to be disclosed to the Unitholders.

Further, the Investment Manager (on behalf of the Trust) shall submit such information to the Stock Exchanges and Unitholders on a periodical basis as may be required under SEBI circular no. CIR/IMD/DF/127/2016 dated November 29, 2016, and the listing agreement to be entered into with the Stock Exchanges in relation to the listing of the Units.

For details of the responsibilities of the Investment Manager in relation to making periodic disclosures with respect to the valuation of the Trust Assets, and the computation and declaration of NAV of the Trust, see "*Valuation*" on page 324.

AUDITORS

The Investment Manager, in consultation with the Trustee, has appointed Chaturvedi & Shah, Chartered Accountants (Firm Registration No. 101720W) as the auditors of the Trust ("**Auditors**"), for a period of one year. The Auditors have audited the Condensed Combined Financial Statements, and their report in relation to such Condensed Combined Financial Statements dated December 13, 2016, has been included in this Draft Offer Document.

Policy for Appointment of Auditor(s)

The Investment Manager shall appoint an auditor of the Trust for a period of not more than five consecutive years, provided that an auditor, not being an individual, may be reappointed for a period of another five consecutive years, subject to the approval of the Unitholders in an Annual Meeting. With respect to the appointment of the auditor of the Trust and the fees of such an auditor, an approval from the Unitholders shall be required at the Annual Meeting in accordance with Regulation 22 of the InvIT Regulations, where the votes cast in favour of the resolution shall be more than the votes cast against the resolution or such other percentage as may be prescribed under the InvIT Regulations.

The Investment Manager shall ensure that the auditor carries out an audit of the accounts of the Trust not less than once in a year, and that a report in respect of such audit is submitted to the Stock Exchanges within 45 days of end of each financial year ending March 31, or any other such period as may be prescribed by applicable law.

In accordance with the InvIT Regulations, the auditor of the Trust shall:

a) conduct an audit of the accounts of the Trust and draft the audit report based on the accounts examined, after taking into account the relevant accounting and auditing standards, as may be specified by SEBI in this regard;

b) to the best of its information and knowledge, ensure that the accounts and financial statements give a true and fair view of the state of the affairs of the Trust, including profit or loss and cash flow for the period and such other matters as may be specified;

c) have a right of access at all times to the books of accounts and vouchers pertaining to activities of the Trust; and

d) have a right to require such information and explanation pertaining to activities of the Trust, as it may consider necessary for the performance of its duties as auditor from the employees of Trust or the Sponsor, the Investment Manager, the Project Manager or the Trustee or the Project SPVs or any other person in possession of such information.

Auditing Standards

The Auditors shall conduct an audit of the accounts of the Trust and issue the audit report based on the accounts examined, after taking into account the relevant accounting and auditing standards, as may be specified by SEBI and/or the ICAI, from time to time, in this regard.

VALUERS

The Investment Manager, in consultation with the Trustee, has appointed Walker Chandiok & Co LLP as the valuers of the Trust ("**Valuers**"), for a period of one year. In accordance with the InvIT Regulations, the Valuers have undertaken a financial valuation of the Project SPVs which are proposed to be acquired by the Trust pursuant to the Formation Transactions, and which will comprise the Trust Assets, and their report in relation to such valuation dated December 15, 2016, has been included in this Draft Offer Document.

The Valuers are not an Associate of the Sponsor, the Investment Manager or the Trustee, and have not less than five years of experience in the valuation of infrastructure assets.

SECTION V – PARTIES TO THE TRUST

THE SPONSOR

The Sponsor of the Trust is Reliance Infrastructure Limited. The Sponsor has settled the Trust pursuant to the Indenture of Trust dated September 12, 2016, and appointed the Trustee in accordance with the provisions of the InvIT Regulations.

The details of the Sponsor are as follows:

A. Details of the Sponsor

a) **Name:** Reliance Infrastructure Limited;

b) **Registered Office:** 'H' Block, 1st Floor Dhirubhai Ambani Knowledge City, Navi Mumbai-400710, Maharashtra;

c) **Correspondence Address:** 3rd Floor, North Wing, Reliance Centre, Santacruz (East), Mumbai 400055, Maharashtra;

d) **Telephone Number:** +91 22 3303 1000;

e) **Fax:** +91 22 3303 6664;

f) **Website:** www.rinfra.com

g) **E-mail:** rinfra.investor@relianceada.com

B. Details of the Contact Person of the Sponsor

a) **Name:** Mr. Aashay Khandwala;

b) **Telephone Number:** +91 22 3303 3550; and

c) **E-mail:** aashay.khandwala@relianceada.com

C. Background and Past Experience of the Sponsor

Our Sponsor is Reliance Infrastructure Limited, a private sector infrastructure development and construction company with a market capitalization of over Rs.127,077.00 million as of December 12, 2016 (*Source: www.bseindia.com*). The Sponsor has been listed on the Stock Exchanges since 1995. Excluding the toll-road assets that are being transferred by the Sponsor to us pursuant to the Formation Transactions (as described below), the Sponsor has one more toll-road project, which is currently under construction. For more information, please see the section headed "*Business*" in this Draft Offer Document. The Sponsor is also our Project Manager, and has a team of 45 persons to support its roads operations as of September 30, 2016.

The Sponsor has interests in energy, metro rail, infrastructure, EPC and defence projects. In the energy sector, the Sponsor, along with its associates and subsidiaries, engages in power generation, transmission, trading and distribution. The Sponsor, along with its subsidiary, also bids for and implements airport projects and has won lease rights to develop and operate five brown-field regional airports in Maharashtra. The Sponsor has received various industry recognitions, such as the "*Best Infrastructure Brand*" in 2016 by the Economic Times and the "*Best Metro of India*" for Mumbai metro in 2016 by the Indian Merchant Chambers.

In accordance with the eligibility criteria specified under the InvIT Regulations, the Sponsor had a net worth of more than Rs. 1,000.00 million as on March 31, 2016. The Sponsor has experience of at least five years and where the Sponsor has been a developer, at least two projects of the Sponsor have been completed.

Further, neither the Sponsor, nor its promoters or directors:

a) is debarred from accessing the securities market by the SEBI;

b) is a promoter, director or person in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or infrastructure investment trust which is debarred from accessing the capital market under any order or directions made by the SEBI; or

c) is in the list of the willful defaulters published by the RBI.

D. Details of the Holding or the Proposed Holding by Sponsor in the Trust

In accordance with Regulation 12 of the InvIT Regulations, the Sponsor shall hold not less than 15% of the total Units of the Trust after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units, subject to the following:

(i) the Sponsor would be resposible for all acts, omissions and representations/covenants of the Trust related to the formation of the Trust, the sale/transfer of the Project SPVs to the Trust;

(ii) the Trust/Trustee of the Trust shall also have recourse against the Sponsor for any breach in this regard;

(iii) the Project Manager shall be the Sponsor or an Associate of the Sponsor and shall continue to act in such capacity for a period of not less than three years from the date of listing of the Units unless a suitable replacement is appointed by the Unitholders through the Trustee.

Provided that the condition specified in (iii) herein above shall not be applicable where the Sponsor holds not less than 25% of the total Units of the Trust after the Issue, on a post-Issue basis, for a period of not less than three years from the date of listing of the Units.

Further, any Units in excess of 15% of the total Units after the Issue, or such other percentage as may be specified under applicable law, on a post-Issue basis, held by the Sponsor, shall be locked-in for a period of not less than one year from the date of listing of the Units, in accordance with Regulation 12 of the InvIT Regulations and applicable law.

For details in relation to the contractual lock-in applicable to the Sponsor, see "*Leverage - Lock-in on the Sponsor (Contractual)*" on page 309.

E. Summary of the Consolidated Financial Statements of the Sponsor

For a summary of the financial statements of the Sponsor, as derived from the consolidated financial statements of the Sponsor, prepared in accordance with Indian GAAP and the Companies Act, as of and for the financial years ended March 31, 2014, 2015, 2016, see "*Summary Financial Information*" on page 57.

F. Details of the Project Entity that is being retained by the Sponsor

The details of the Project Entity that is being retained by the Sponsor, namely DA Toll Road Private Limited, are as follows:

Name of Concessionaire	DA Toll Road Private Limited
Type of Concession	BOT or a DBFO pattern
Length (in Lane Kms)	179.50
Location	Haryana, Uttar Pradesh
Start of Concession Period under the Concession Agreement (Appointed Date)	October 16, 2012
Period of concession since the Appointed Date	26 Years

Estimated End of Concession Period under the Concession Agreement	October 15, 2038
Sponsors' Shareholding as on date	100.00%
Construction Completion Date or Scheduled Construction Completion Date under the Concession Agreement, as applicable	January 11, 2017
Provision of the Concession Agreement permitting divestment	Clause 5.3, Clause 7.1(k) and Clause 48.1 : Definition of "Change in Ownership"

THE INVESTMENT MANAGER

Reliance Nippon Life Asset Management Limited is the Investment Manager of the Trust, and has been designated as such pursuant to the Investment Management Agreement dated October 3, 2016. The Investment Manager is responsible for making investment decisions with respect to the underlying assets or projects of the Trust, including any further investment or divestment of its assets, in accordance with the InvIT Regulations and the Investment Management Agreement.

The details of the Invesment Manager are as follows:

A. Details of the Investment Manager

a) **Name:** Reliance Nippon Life Asset Management Limited (formerly Reliance Capital Asset Management Limited);

b) **Registered Office:** H Block, 1st Floor Dhirubhai Ambani Knowledge City, Koparkhairane, Navi Mumbai, Thane - 400710, Maharashtra;

c) **Correspondence Address:** Reliance Centre, 7th Floor (South Wing), Off. Western Express Highway, Santacruz (East), Mumbai – 40055, Maharashtra;

d) **Telephone Number:** +91 22 3303 7000;

e) **Fax:** +91 22 3303 7664;

f) **Website:** www.rnlam.com; and

g) **E-mail:** customercare.invit@relainceada.com

B. Details of the Contact Person of the Investment Manager

a) **Name:** Mr. Praveen Joshi;

b) **Telephone Number:** +91 22 3303 3550; and

c) **Email:** praveen.joshi@relianceada.com

C. Background and Past Experience of the Investment Manager

The Investment Manager is a subsidiary of Reliance Capital Limited, which is an affiliate of the Sponsor. The Investment Manager is one of the largest asset managers in India. The Investment Manager possesses more than 20 years of experience in fund management and advisory services, where it has a diversified business that includes mutual funds, portfolio management services and pension funds and an experienced equity and fixed income team. Its clients include retail investors and large institutional clients.

The net worth of the Investment Manager as on March 31, 2016 stood at Rs. 14,724.23 million. The Investment Manager has not less than two employees, who have at least five years of experience each, in fund management or advisory services, and not less than one employee who has at least five years of experience in the relevant sub-sector in which the Trust proposes to invest, namely road infrastructure projects in India. Further, not less than half the directors of the Investment Manager are independent, and are not directors or members of the governing board of another infrastructure investment trust. The Investment Manager proposes to conduct operations pertaining to the Trust from its corporate office in Mumbai. The Investment Manager, in consultation with the Trustee, shall appoint majority of the board of directors or governing board of the Project SPVs.

The Investment Manager confirms that it has, and undertakes to ensure that it will at all times maintain, adequate infrastructure, personnel and resources to perform its functions, duties and responsibilities with respect to the management of the Trust, in accordance InvIT Regulations, the Investment Management Agreement and applicable law.

Further, neither the Investment Manager, nor its promoters or directors:

a) is debarred from accessing the securities market by the SEBI;

b) is a promoter, director or person in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or infrastructure investment trust which is debarred from accessing the capital market under any order or directions made by the SEBI; or

c) is in the list of the willful defaulters published by the RBI.

D. Brief Profiles of the Investment Manager's Directors

a) **Mr. Kanu Doshi**

Mr. Kanu Doshi, aged 79 years, is an independent director of the Investment Manager. He holds a Bachelor's degree in Commerce. He is an associate of the Institute of Chartered Accountants of India. He is also the Professor Emeritus - Finance, at Welingkar Institute of Management Development and Research, Mumbai. Mr. Kanu Doshi is also a director on the board of various other companies such as Edelweiss Asset Management Limited, Motilal Oswal Asset Management Company Limited, Gartner India Research & Advisory Services Private Limited and Dalton Capital Advisors (India) Private Limited.

b) **Mr. S. C. Tripathi**

Mr. S. C. Tripathi, aged 70 years, is an independent director of the Investment Manager. He holds a degree of M.Sc. Physics (Electronics) and is enrolled with Bar Council of Delhi and is a member of the Supreme Court Bar Association. Further, he is a former IAS Officer, a member of the All India Management Association and he holds a postgraduate diploma in Development Studies. Mr. S. C. Tripathi is also a director on the board of various other companies such as IL&FS Infrastructure Development Corporation Limited, IL&FS Energy Development Company Limited, Kailash Healthcare Limited, Gammon Infrastructure Projects Limited, Motherson Sumi Systems Limited, Ginni Filaments Limited, Kailash Hospitals Limited and Samvardhana Motherson Polymers Limited.

c) **Ms. Ameeta Chatterjee**

Ms. Ameeta Chatterjee, aged 43 years, is an independent director of the Investment Manager. She holds a Bachelor's degree in Commerce (Honours Course) from the University of Delhi and a post graduate diploma in Management from Indian Institute of Management, Bangalore. She was a columnist with Times of India, writing on issues faced by working women. She also supports the cause of children's healthcare by way of funding through Ekam foundation. Ms. Ameeta Chatterjee is also a director on the board of various other companies such as Thukral Industrial Investments Private Limited, Sterling Transtel Limited, Upper Crust Builders Private Limited, Karat Diamond Private Limited, JSW Infrastructure Limited, JSW Jaigarh Port Limited, South West Port Limited, JSW Nandgaon Port Private Limited and Espandere Advisors Private Limited.

d) **General Ved Prakash Malik (Retd.)**

General Ved Prakash Malik (Retd.), aged 77 years, is an independent director of the Investment Manager. He has graduated from the National Defence Academy, Khadakwasla, and the Indian Military Academy, Dehradun. He was appointed General Officer Commanding, Mountain Division in December 1989 and in August 1992, he assumed command of a Corps in Punjab. He has worked in the Indian Army as the Chief of the Army Staff from October 1, 1997 to September 30, 2000. Concurrently, he was appointed as the Chairman, Chiefs of Staff Committee of India from January 1, 1999. He continues to be Honorary Colonel of the Sikh Light Infantry Regiment for life. During his service in Indian Army, General Malik was awarded the Param Vishist Seva Medal in 1996 and the Ati Vishishta Seva Medal. He has also received 'Excellence in Leadership Award' by Atur Foundation, Pune, and 'Distinguished Fellowship' by the Institute of Directors, New Delhi in 1999. Further, he was awarded the 'Pride of the Nation Award' by the Doon Citizens' Council in July

2000. He is also a director on the board of various other companies such as Reliance Nippon Life Insurance Company Limited, Hero Motocorp Limited and HMC MM Auto Limited.

e) **Mr. Soumen Ghosh**

Mr. Soumen Ghosh, aged 57 years, is a director of the Investment Manager. He holds a Bachelor's degree in Science (Engineering) from University of London. Further, he is an associate of the Institute of Chartered Accountants in Australia and a member of the Institute of Chartered Accountants in England and Wales. He currently serves as a whole-time director and the chief executive officer of Reliance Capital Limited, a financial services company that forms part of the Anil Dhirubhai Ambani Group since April 1, 2008. Mr. Soumen Ghosh is also a director on the board of various other companies such as Reliance General Insurance Company Limited, Reliance Nippon Life Insurance Company Limited, Reliance Home Finance Limited, Reliance Capital Pension Fund Limited, Reliance Exchnagenext Limited, Reliance AIF Management Company Limited, ANZBAI (Mumbai) Business Forum, Reliance Commercial Finance Limited and Reliance Securities Limited.

f) **Mr. Kazuhide Toda**

Mr. Kazuhide Toda, aged 53 years, is a director of the Investment Manager. He holds a degree of Bachelor of Economics from Sophia University. Presently, Mr. Toda is acting as an Executive Officer in Nissay Asset Management Corporation. He is as also a director with various other companies such as Nippon Life Global Investors Singapore Limited, Bangkok Life Assurance Public Company Limited, Nippon Life Asia Pacific (Regional HQ) Pte. Ltd and Reliance Nippon Life Insurance Company Limited.

g) **Mr. Tomonao Gotoda**

Mr. Tomonao Gotoda, aged 46 years, is a director of the Investment Manager. He holds a degree of Bachelor of Engineering from the University of Tokyo. He was appointed as Assistant Manager in Nippon Life Insurance Company, in the Finance Planning and Management Department in 1994. In 1998, he became Manager in the Securities Operations Department. Further, he joined NLI International Inc (New York) in 2001 and he joined the Nissay Asset Management Corporation in 2007. He is presently acting as the General Manager, International Planning and Operations Department at Nippon Life Insurance Company.

h) **Mr. Sundeep Sikka**

Mr. Sundeep Sikka, aged 44 years, holds a Master's degree in Business Administration from the University of Pune. He is the executive director and chief executive officer of the Investment Manager. He has also held both the position of Vice-Chairman and Chairman of the Association of Mutual Funds in India. Mr. Sundeep Sikka also serves on boards of various companies in India and overseas, including on the board of Association of Mutual Funds of India, Institution for Mutual Fund Intermediaries, Reliance Capital Pension Fund Limited, Reliance Asset Management (Mauritius) Limited, Institution for Mutual Fund Intermediaries, Reliance Asset Management (Singapore) Pte Limited and Reliance AIF Management Company Limited.

E. Brief Profiles of the Investment Manager's Key Personnel

a) **Mr. Sundeep Sikka**

For details in relation to Mr. Sundeep Sikka, see "- *Brief Profiles of the Investment Manager's Directors*".

b) **Mr. Ajay Patel**

Mr. Ajay Patel, aged 50 years, is the Head Banking Operations of the Investment Manager. He holds a Bachelor's degree in Commerce and is an associate member of the Institute of Chartered Accountants of India. He has over 17 years of professional experience. He has been associated with

the Investment Manager since 2001. Previously, he was working with BOB Asset Management Company Limited.

c) **Mr. Prateek Jain**

Mr. Prateek Jain, aged 44 years, is the Chief Financial Officer of the Investment Manager. He holds a Bachelor's degree in Commerce, and is also a qualified chartered accountant, a qualified company secretary, and a qualified cost and works accountant. He has been associated with the Investment Manager since 2013.

d) **Mr. Deepak Mukhija**

Mr. Deepak Mukhija, aged 37 years, is the Compliance Officer of the Trust. He holds a Bachelor's degree in Law and is a qualified company secretary. Previously, he was associated with Kotak Investment Advisors Limited.

F. Details of the Holding or the Proposed Holding by the Investment Manager and its Directors in the Trust

The Investment Manager and its directors do not hold any Units as on date. Further, neither the Investment Manager nor its directors propose to hold any Units in the Trust upon the conclusion of the Formation Transactions or subsequent to the Issue.

G. Summary of the Consolidated Financial Statements of the Investment Manager

For a summary of the consolidated financial statements of the Investment Manager, as derived from the standalone financial statements of the Investment Manager, prepared in accordance with Indian GAAP and the Companies Act, as of and for the financial years ended March 31, 2014, 2015, 2016, see "*Summary Financial Information*" on page 57.

G. Functions, Duties and Responsibilities of the Investment Manager

Below is the brief description of the functions, duties and responsibilities of the Investment Manager provided in the Investment Management Agreement in accordance with the InvIT Regulations, which *inter alia* include:

a) to manage the day-to-day business and affairs of the Trust and provide administrative services in accordance with the provisions of Investment Management Agreement;

b) to make all investment decisions, concerning the investigation, selection, development, negotiation, structuring, restructuring, commitment or monitoring the investment decisions with respect to the Trust Assets, including any further investment or divestment of the assets and the appointment of the various advisors and service providers in connection with such investments, in accordance with the Trust's investment strategy and applicable laws;

c) to be responsible for the management of the Trust Fund along with the Trustee in accordance with the provisions of Investment Management Agreement, the Trust Documents and applicable laws;

d) to consult with the Trustee with regard to the appointment of the Project Manager and the execution of the Project Implementation Agreement;

e) to oversee activities of the Project Manager with respect to compliance with the InvIT Regulations and the Project Implementation Agreement, and to obtain a compliance certificate from the Project Manager, on a quarterly basis;

f) to ensure that the Trust Assets have proper legal titles, if applicable, and that all the material contracts entered into on behalf of the Trust or the Project SPV are legal, valid, binding and enforceable by and on behalf of the Trust or the Project SPV;

g) to ensure that the Trust's investments are in accordance with the InvIT Regulations and the Trust's investment strategy;

h) to, in consultation with the Trustee, appoint, remove or replace the Valuers, Auditor, registrar and transfer agent, merchant banker, custodian and any other intermediary or service provider or agent as may be applicable with respect to activities pertaining to the Trust in a timely manner and in accordance with the Trust Documents and InvIT Regulations;

i) to maintain proper books of accounts, financial statements, documents and records with respect to the matters of the Trust in accordance with the InvIT Regulations, or appoint a service provider and cause such service provider to maintain such proper books of accounts, documents and records;

j) to arrange for adequate insurance coverage for the Trust Assets and the Project SPVs other than those assets that are required to be insured by any other person under any other agreement or applicable law;

k) to handle all activities relating to issue of Units including filing of private placement memorandum with SEBI and the relevant Stock Exchange, filing the Draft Offer Document, Offer Document, Final Offer Document with SEBI and the Stock Exchanges within the prescribed time period, filing of any other document (including any information memorandum) with the Stock Exchanges as may be required, dealing with all matters up to Allotment of Units to the Unitholders, obtaining in-principle approval and final listing and trading approvals from the Stock Exchanges, and signing of due diligence certificate in accordance with applicable law, and dealing with all matters relating to issue, listing and delisting of the Units specified under the InvIT Regulations;

l) to ensure that the disclosures made in the Draft Offer Document, Offer Document, Final Offer Document, private placement memorandum, or to the Trustee or the Unitholders or to SEBI or to the Stock Exchanges are material, true, correct, adequate, and in accordance with the InvIT Regulations and applicable law;

m) to declare and make distributions to the Unitholders in a timely manner in accordance with the InvIT Regulations;

n) to obtain the consent of the Unitholders, as may be required under applicable law;

o) to assist in the payment of all taxes, duties and any other statutory charges or levies that may be payable by the Trust or on behalf of the Unitholders from the Trust Fund, subject to the provisions of the Trust Documents;

p) to, in consultation with the Trustee, make any deductions of taxes, cess, fees, charges, assessments and duties that may be required to be deducted or withheld under applicable law before making any payment to any Unitholder, whether by way of distribution, redemption of any Units or otherwise;

q) to, in consultation with the Trustee, deduct any stamp duties or government taxes, registration fees or charges payable by the Trustee or for which the Trustee may be liable in respect of any payment to any Unitholder, whether by way of distribution, redemption of any Units or otherwise, or in connection with any documents executed in that regard;

r) to consult with the Trustee in relation to the distribution of the disposition proceeds *pro rata* to the total subscription amounts of a Unitholder in accordance with the provisions of the Trust Documents provided that such proceeds from disposition are not being used for investments in any the infrastructure projects in which the Trust is permitted to invest in, acquire or set up or the Project SPVs;

s) to assist the Trustee in relation to creating reserves from the Trust Fund in order to meet the operating expenses, liabilities or contingent liabilities of the Trust;

t) to review the related party transactions carried out between the Project Manager and its Associates, and where the Project Manager has advised that there may be a conflict of interest, to obtain

confirmation from the Auditors or the Valuers, as applicable, that such transaction is on arms-length basis;

u) To provide the Trustee with advice and recommendations regarding the extension of loans from the Trust Fund to the Project SPVs and also subscription to debt securities or quasi-debt securities or any similar kind of securities issued by the Project SPVs from the Trust Fund or extension of loans from the Trust Fund in compliance with applicable laws;

v) to ensure adequate and timely redressal of all Unitholders' grievances pertaining to activities of the Trust and provide quarterly reports regarding the same;

w) to provide to SEBI, the Stock Exchanges, where applicable, and the Unitholders, any such documents and information as may be sought by the SEBI, such stock exchanges or the Unitholder pertaining to the activities of the Trust, subject to any confidentiality obligations in relation to such information;

x) to ensure that the valuation of the Trust Assets is done by the Valuers in accordance with the InvIT Regulations;

y) to submit the following to the Trustee:

z) quarterly reports on the activities of the Trust including receipts for all funds received by it and for all payments made, position on compliance with the InvIT Regulations specifically compliance with respect to Regulations 18, 19 and 20 of InvIT Regulations, performance report, status of development of under-construction projects, within thirty days of end of such quarter;

i) valuation reports as required under the InvIT Regulations, within fifteen days of the receipt of the valuation report from the Valuers;

ii) any decision to acquire or sell or develop or bid for any asset or the infrastructure projects in which the Trust is permitted to invest in, acquire or set up or expand existing completed assets or projects along with rationale for the same;

iii) details of any action which requires approval from the Unitholders, as maybe required under the Trust Documents and applicable laws including the InvIT Regulations;

iv) details of any other material fact including change in its directors, change in its shareholding, any legal proceedings that may have a significant bearing on the activity of the Trust, within seven working days of such action;

v) details of any breach of the Trust’s investment strategy on account of market movements of the price of the Trust’s investments; and

vi) details of any borrowings exceeding such percentage of the value of the Trust Assets as may be prescribed by the InvIT Regulations on account of market movements of the price of the Trust’s investments.

aa) to coordinate with Trustee, as may be necessary, with respect to operations of the Trust;

bb) from time to time file, to file such reports as may be required by the SEBI or other governmental agency under applicable law, with respect to the activities carried on by the Trust;

cc) to collect the income due to the Trust and to provide the Trustee with a certificate on a quarterly basis detailing such income;

dd) to prepare the annual report and the half yearly report in accordance with the InvIT Regulations;

ee) to submit the annual report of the Trust to all the Unitholders, either electronically or by physical copies, and to the designated Stock Exchange, within three months from the end of the Financial Year;

ff) to submit the half-yearly report of the Trust to the designated Stock Exchange, within forty-five days from the end of every half year ending March 31st and September 30th of that year;

gg) to ensure computation and declaration of NAV of the Trust, based on the valuation done by the Valuers, not later than fifteen days from the date of valuation;

hh) to ensure audit of the accounts of the Trust by the Auditor is done in accordance with the InvIT Regulations, but not less than once in a year;

ii) to ensure that the Auditor's report shall be submitted to the designated Stock Exchange in accordance with any agreement with such Stock Exchange and applicable law, and within 45 days of the end of the Financial Year or any other such period as may be prescribed by applicable law;

jj) to designate one of its employees or directors as the compliance officer for monitoring of compliance with the InvIT Regulations, and intimating SEBI in case of any non-compliance;

kk) to effectuate any transfer of Units by the Unitholders in accordance with applicable law;

ll) to convene meetings of the Unitholders in accordance with the Trust Documents and applicable law and not less than once every year and the period between such meetings shall not exceed 15 months;

mm) to maintain records pertaining to the meetings in accordance with applicable law;

nn) to place, before its board of directors, a report on activity and performance of the Trust at least once every quarter within thirty days of end of every quarter;

oo) to ensure that all activities of the Valuers, Auditors, registrar and transfer agent, merchant banker, custodian and any other intermediary or service provider or agent appointed by it in accordance with Investment Management Agreement are in accordance with applicable law;

pp) to disclose, in the form and manner specified in any agreement entered into by the Trust with such Stock Exchange as well as specified under applicable law, to the Stock Exchanges, within such time period in any agreement entered into by the Trust with such Stock Exchange as well as specified under applicable law, all information having a bearing on the operation or performance of the Trust as well as price sensitive information which includes the following:

i) acquisition or disposal of any projects, directly or through a holding company or the Project SPV, value of which exceeds five per cent. of value of the Trust Assets;

ii) additional borrowing, at level of a holding company or the Project SPV or the Trust, exceeding 15 per cent of the value of the Trust Assets;

iii) additional issue of Units by the Trust;

iv) details of any credit rating obtained by the Trust and any change in such rating;

v) any issue which requires approval of the Unitholders;

vi) any legal proceedings which may have significant bearing on the functioning of the Trust;

vii) notices and results of meetings of Unitholders,

viii) any instance of non-compliance with the InvIT Regulations including any breach of limits specified under the InvIT Regulations; and

ix) any material issue that in the opinion of the Investment Manager or Trustee needs to be disclosed to the Unitholders;

qq) to execute such transaction documents in respect of the Trust's investments, as may be necessary, in accordance with the Trust's investment strategy and the Trust Documents and varying, amending or modifying the terms and conditions of the transaction documents in relation to such Investment, from time to time;

rr) to monitor the performance of the Trust's investments and, where appropriate, providing advice to the management of the Project SPVs during the life of the Investment;

ss) to actively manage the Trust's investments and exercising voting and other rights on behalf of the Trust in Project SPVs;

tt) to ensure that the Auditors follow all the rules and regulations under the InvIT Regulations and applicable law;

uu) appointing or advising the Trustee on the appointment of the Board observer / nominee / directors on the boards of the Project SPVs in accordance with the terms and conditions contained in the transaction documents of an investment and in accordance with the InvIT Regulations;

vv) to apply for and obtain the necessary approvals from relevant Governmental Agencies in relation to the Trust, its Investments and any of its activities;

ww) to make short term investments in accordance with the provisions of the Trust Documents;

xx) to maintain such books, records and accounts of the Trust in accordance with the Trust Documents and Indian GAAP;

yy) to issue Statement of Accounts or Unit Certificates (if requested) to the Unitholders on behalf of the Trustee. In case Unit Certificates have been issued to the Unitholders, to submit theses Units for dematerialisation and to make all applications and execute all documents with the depositories and depository participants as may be necessary in this regard;

zz) to maintain on-going relationships with the Unitholders and providing periodic reporting to keep the Unitholders abreast of the activities of the Trust;

aaa) to open, and operate bank accounts, demat accounts and any other accounts maintained by the Trust in accordance with the Trust Documents;

bbb) to exercise all due diligence and vigilance in carrying out its duties and in protecting the rights and interest of each Unitholder;

ccc) to generally evolve, formulate and adopt from time to time such policies and procedures in accordance with the Trust Documents as may be conducive for the effective management of the Trust and the attainment of the Trust's investment strategy;

ddd) to maintain a skilled fund management team in accordance with the InvIT Regulations;

eee) to cause the collection of all dividends, interests, properties and other payments due and receivable by the Trust and support the same, on a quarterly basis, with a compliance certificate from the Investment Manager in this regard;

fff) to ensure the payment of any money due to a Unitholder by cheque or by demand draft drawn on the bankers of the Trust and cause to be sent to the registered address of each Unitholder;

ggg) to ensure, at all times, that the assets and liabilities of the Trust shall be segregated from, the assets and liabilities of any other trusts / funds managed by the Trustee and / or the Investment Manager and / or any other service provider;

hhh) to appoint, at its discretion, a custodian to provide such services and perform such functions as may be authorised by the Trustee;

iii) to conduct its affairs and the affairs of the Trust in such a manner so as to ensure that no Unitholder has any personal liability or obligation with respect to the Trust;

jjj) to devote such time and resources to the management of the Trust and its investments as the Investment Manager reasonably determines shall be necessary to conduct the affairs of the Trust in an appropriate manner;

kkk) to provide the prescribed compliance certificate to the Trustee, on a quarterly basis;

lll) to intimate the Trustee on the occurrence of any event that may have a material impact on the Investment Manager and its ability to perform its obligations under Investment Management Agreement, including any change in control of the Investment Manager;

mmm) to perform any duties and comply with any other obligations otherwise agreed in writing between the Investment Manager and the Trustee;

nnn) to ensure that the public holding of the Trust is in accordance with the InvIT Regulations;

ooo) to ensure that it, or its Associates, shall not obtain any commission or rebate or any other remuneration by whatever name called, arising out of transactions pertaining to the Trust other than as specified in the Draft Offer Document, Offer Document, Final Offer Document or placement Mmemorandum or any other document as may be specified by the SEBI for the purpose of issue of Units;

ppp) To ensure that all taxes and statutory levies are paid in time;

qqq) to submit copies of the valuation report received from the Valuers to the Stock Exchanges within 15 days of receipt of such valuation report;

rrr) to ensure that any Related Party Transaction in which it is involved are conducted on an arm's length basis;

sss) to determine any change in name of the Trust along with the Trustee;

ttt) to determine, along with the Trustee, the location of the other offices of the Trust;

uuu) to carry on activities of the Trust, on the instructions of the Trustee, throughout India and outside India, subject to the approval of the appropriate Governmental Agency, if any;

vvv) from time to time, to advise the Trustee on any review, revision, amendment, variation or alteration of the Trust's investment strategy in accordance with the Indenture of Trust, subject however to the provisions of the Trust Documents and applicable law;

www) to advise the Trustee on termination of the Trust, in accordance with the Trust Documents;

xxx) to assist and advise the Trustee on all steps required to be taken and all acts required to be done in connection with making an application to SEBI for the grant of a certificate to the Trust to carry on the activity of a infrastructure investment trust under the InvIT Regulations, within such period from the Effective Date as may be reasonably practical and as permissible under the InvIT Regulations, along with payment of the requisite fees as stipulated in the InvIT Regulations;

yyy) to set up such systems and procedures, and submit such reports, as may be required by the Trustee as necessary for effective monitoring of the functioning of the Trust; and

zzz) to perform any other duties specified in the InvIT Regulations.

H. Investment Committee

The Investment Manager may constitute an investment committee in accordance with the provisions of the Investment Management Agreement, and in compliance with the provisions of the InvIT Regulations. The members of the investment committee will be nominated by the Investment Manager.

THE PROJECT MANAGER

The Trustee and the Investment Manager have appointed the Sponsor, namely Reliance Infrastructure Limited, as the Project Manager, to carry out operations and management of the Project SPVs in accordance with the Project Implementation Agreements, the relevant concession agreements and the InvIT Regulations.

For details of the Sponsor, its contact persons, its background and past experience, see "*The Sponsor*" on page 336.

Functions, Duties and Responsibilities of the Project Manager

The Sponsor (in its capacity as the Project Manager) has agreed to provide professional services to carry out operations and management of the Project SPVs, including making arrangements for the appropriate maintenance, either directly or through the appointment of appropriate agents, in accordance with the terms and conditions of the relevant concession agreement and project implementation agreement, and the InvIT Regulations.

Brief Profiles of the Project Manager's Key Personnel

a) **Mr. Kaushik Pal**

Mr. Kaushik Pal, is the CEO - Roads of the Sponsor. Mr. Pal holds a Bachelor's degree in Civil Engineering and a Post-Graduate Diploma in Business Management. He is a member of Institution of Civil Engineers, and is a Chartered Civil Engineer. He has experience in project investment, business development and project implementation. Prior to joining the Sponsor, he served as the COO at Essel Infraprojects Limited, and before that, as the General Manager – Projects at L&T Infrastructure Development Projects Limited.

b) **Mr. Abhijit Tripathy**

Mr. Abhijit Tripathy, is the Vice President - Roads of the Sponsor. Mr. Tripathy holds a Bachelor of Science (Engineering) degree in Civil Engineering. He has experience in the fields of design and construction of structures and construction of highways. Prior to joining the Sponsor, he was associated with GMR Jadcherla Expressways Private Limited.

c) **Mr. Pushkar Priyadarshi**

Mr. Pushkar Priyadarshi, is the Vice President of the Sponsor. He holds a Bachelor's degree in Engineering (Civil) and a Post Graduate Diploma in Construction Management. Mr. Priyadarshini has experience in roads construction and operation and management. Prior to joining the Sponsor, he was associated with GMR Jadcherla Expressways Private Limited.

THE TRUSTEE

The Sponsor has settled the Trust pursuant to the Indenture of Trust dated September 12, 2016, and appointed IDBI Trusteeship Services Limited (the "**Trustee**") in accordance with the provisions of the InvIT Regulations.

The details of the Trustee are as follows:

A. Details of the Trustee

a) **Name:** IDBI Trusteeship Services Limited;

b) **Registered Office:** Asian Building, Ground Floor, 17 R. Kamani Marg, Ballard Estate, Mumbai - 400 001;

c) **Correspondence Address:** Asian Building, Ground Floor, 17 R. Kamani Marg, Ballard Estate, Mumbai - 400 001;

d) **Telephone Number:** +91 22 4080 7000;

e) **Fax:** +91 22 6631 1776; and

f) **E-mail:** itsl@idbitrustee.com;

B. Details of the Contact Person of the Trustee

a) **Name:** Mr. Shivaji Gunware / Mr. Naresh Sachwani;

b) **Telephone Number:** +91 22 4080 7016; and

c) **E-mail:** sgunware@idbitrustee.com / naresh.sachwani@idbitrustee.com

C. Details of Trustee's Registration with SEBI

The Trustee registered with SEBI as a debenture trustee under the Debenture Trustees Regulations, having SEBI registration number IND000000460. The Trustee's SEBI registration certificate is valid until April 25, 2017.

D. Background of the Trustee

The Trustee is a trusteeship company, which has been registered with SEBI as a debenture trustee, and has been jointly promoted by IDBI Bank Limited, Life Insurance Corporation and General Insurance Corporation for providing corporate and other trusteeship services.

The Trustee is permitted to engage in the following activities:

i) Debenture / bond trustee;
ii) Security trustee/ facility agent;
iii) Securitization trustee;
iv) Share pledge trustee / share monitoring agent;
v) Escrow agent;
vi) VCF trustees/ AIF Trustees;
vii) Safe keeping / lockers services;
viii) Management of private trusts / execution of wills; and
ix) Special corporate services (e.g. provision of nominee directors)

The Trustee has experience in providing trusteeship services to a range of corporates and institutions.

The Trustee is not an Associate of the Sponsor or the Investment Manager. Further, Trustee (i) is not debarred from accessing the securities market by the SEBI; (ii) is not a promoter or person in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust which is debarred from accessing the capital market under any order or directions made by the SEBI; or (iii) is not in the list of the willful defaulters published by the RBI.

To the best of the knowledge of the Trustee, none of the promoters or directors of the Trustee (i) is debarred from accessing the securities market by SEBI; (ii) is a promoter, director or person in control of any other company or a sponsor, investment manager or trustee of an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; or (iii) is in the list of willful defaulters published by the RBI.

E. Names and Profiles of the Directors of the Trustee

The names and profiles of board of directors of the Trustee, in a tabular form, are as follows:

Sr. No.	Name	Designation	DIN
1.	Mr. G. M. Yadwadkar	Chairman	01432796
2.	Mr. Pankaj Kumar Gupta	Director	00085831
3.	Mr. Dilip Ticku	Director	03035310
4.	Mr. K.S. Nagnyal	Director	06857451
5.	Mrs. Mythili Balasubramanian	Director	00038005
6.	Mr. B. Balachandra	Managing Director and CEO	07424524

The Trustee confirms that it has, and undertakes to ensure that it will at all times maintain, adequate infrastructure, personnel and resources to perform its functions, duties and responsibilities with respect to the Trust, in accordance InvIT Regulations, the Indenture of Trust and applicable law.

F. Functions, Duties and Responsibilities of the Trustee

a) Change in Control of the Trustee

The Trustee shall obtain the prior approval of the Unitholders in the event of a proposed change in control of the Trustee or change in the Trustee, in accordance with the InvIT Regulations and applicable law.

b) Change in Control of the Investment Manager

The Trustee shall obtain the prior approval of the Unitholders in the manner specified under Regulation 22 of the InvIT Regulations (where the votes cast in favour of a resolution shall not be less than one and a half times the votes cast against such resolution) in the event of a proposed change in control of the Investment Manager.

c) Change in Control of the Project Manager

The Trustee is required to obtain the prior approval of the relevant concessioning authority, where applicable, and such other person as may be required under the InvIT Regulations.

d) Change or Removal of the Investment Manager

The Trustee is required to ensure that a new investment manager of the Trust is appointed within such period as may be prescribed under the InvIT Regulations. Further, the Trustee is required to ensure that all the conditions in connection with removal of an investment manager and appointment of a new investment manager as prescribed under the InvIT Regulations are adhered to.

e) Change or Removal of the Project Manager

The Trustee is required to do all such acts and take all such steps as may be prescribed in the InvIT Regulations in the event of any change in the Project Manager for removal or otherwise.

f) Interests of the Unitholders

The Trustee shall at all times exercise due diligence in carrying out its duties and protect the interests of the Unitholders. The Trustee shall make distributions and ensure that the Investment Manager makes declarations of distributions to the Unitholders in a timely manner, in accordance with Regulation 18 of the InvIT Regulations.

g) Income Due to the Trust

The Trustee shall ensure that the Investment Manager undertakes prompt and proper collection of the income due to the Trust. The Trustee shall also ensure that the Investment Manager provides the Trustee with a certificate on a quarterly basis detailing such income.

Any receipt signed by the Trustee for any monies, stocks, funds, shares, securities investment or property, paid, delivered or transferred to the Trustee under or by virtue of the Indenture of Trust or in exercise of the duties, functions and powers of the Trustee shall effectively discharge the Trustee or the person or persons paying, delivering or transferring the same therefrom or from being bound to see to the application thereof, or being answerable for the loss or misapplication thereof, provided that the Trustee and such persons shall have acted in good faith, without negligence and shall have used their best efforts in connection with such dealings and matters.

h) Transactions by Certain Persons

The Trustee shall ensure that all transactions executed and the activities carried out by the Investment Manager and any service provider to whom the Trustee has delegated any powers or duties, subject to the InvIT Regulations, are done in accordance with the Indenture of Trust, the Investment Management Agreement, the Project Implementation Agreements and any agreement executed with such service provider.

i) Trust Fund

The Trustee shall hold the Trust Fund in the name of the Trust and for the benefit of the Unitholders and shall also be responsible for opening and operating bank accounts on behalf of the Trust. The Trustee must ensure that the Trust Fund is held in a bank account opened in the name of the Trust.

j) Trust Assets

The Trustee shall hold the Trust Assets in the name of the Trust and for the benefit of the Unitholders and shall also be responsible for opening and operating bank accounts in the name of the Trust.

k) Subscription amounts

The Trustee shall ensure that the subscription amounts are kept in a separate bank account in the name of the Trust and are only utilised for adjustment against Allotment of Units or refund of money to the applicants till the time such Units are listed.

l) Books of Accounts

The Trustee shall ensure that the Investment Manager shall cause to be maintained, the books of accounts of the Trust in accordance with the Indenture of Trust and the InvIT Regulations.

m) Valuation of the Trust Assets

The Trustee shall ensure that the Investment Manager shall ensure that a detailed valuation is undertaken of the Trust Assets by the valuers at such intervals and in the manner as may be prescribed under the InvIT Regulations. The Trustee shall ensure that the remuneration of the Valuers is not linked to or based on the value of the Trust Assets being valued.

n) Statutory charges or levies payable by the Trust

The Trustee shall ensure that the Investment Manager shall pay all taxes, duties and any other statutory charges or levies that may be payable by the Trust or on behalf of the Unitholders from the Trust Fund.

o) Reports to be filed by the Trust

The Trustee shall, and shall ensure that Investment Manager does, from time to time file such reports as may be required by the SEBI or other governmental agency under applicable law, with respect to the activities carried on by the Trust.

p) Documents and information to be provided to Unitholders

The Trustee shall, and shall ensure that Investment Manager shall, from time to time provide such documents and information to the Unitholders, as may be required under applicable law, with respect to the activities carried on by the Trust.

q) Confidentiality

The Trustee and its directors, officers, employees and agents shall at all times maintain confidentiality with respect to all the investments and all matters connected with the investments, and shall not disclose any confidential information to any person or use such information in a manner prejudicial to the interest of the Trust, subject to disclosure of information to any court or tribunal or regulatory, supervisory, governmental or quasi-governmental authority where so required under applicable law.

r) Segregation of assets and liabilities

The assets and liabilities of the Trust shall at all times be segregated from, the assets and liabilities of any other trusts managed by the Trustee. The assets held in the name of the Trust shall be held for the exclusive benefit of the Unitholders of the Trust and such assets shall not be subject to the claims of any creditor or other person claiming under any other trust administered by the Trustee or managed by the Investment Manager, as the case may be.

s) Attainment of Objects of the Trust

The Trustee shall ensure that all acts, deeds and things are done with a view to attain the objects of the Trust in compliance with the Trust's investment strategy, applicable law, Indenture of Trust, Investment Management Agreement and Project Implementation Agreements in order to secure the best interests of the Unitholders.

t) Winding up of the Trust

The Trustee shall wind up the Trust only as set out in the Indenture of Trust and in accordance with applicable law. Upon winding up of or dissolution the Trust, the Trustee shall surrender the certificate of registration to the SEBI.

u) Investments by the Trustee

The Trustee shall not, and also its Associates shall not, invest in the Units unless permitted to do so under applicable law.

v) Grievance redressal

The Trustee shall periodically review the status of Unitholders' complaints and their redressal undertaken by the Investment Manager in accordance with the InvIT Regulations.

w) Delegation to Investment Manager

The Trustee shall delegate all such powers to the Investment Manager as may be required by the Investment Manager to carry out its obligations under the Investment Management Agreement and under applicable law.

The Trustee shall delegate all such powers to the relevant Project Manager as may be required by such Project Manager to carry out its obligations under the relevant Project Implementation Agreement and under applicable law.

x) Related Party Transactions

The Trustee shall review the transactions carried out between the Investment Manager and its Associates and obtain a certificate from the Auditors or the Valuers, as applicable, with respect to any related party transactions involving the Investment Manager and its Associates, where the Investment Manager has advised that there may be a conflict of interest, stating that such transactions have been done at an arms-length basis.

y) Monitoring

The Trustee may require the Investment Manager to set up such systems and procedures and submit such reports to the Trustee, as may be necessary for the effective monitoring or the functioning of the Trust. The Trustee shall oversee activities of the Investment Manager in the interest of the Unitholders, shall ensure that the Investment Manager is in compliance Regulation 10 of the InvIT Regulations at all times and shall obtain a compliance certificate from the Investment Manager. Further, the Trustee shall ensure that the Investment Manager complies with reporting and disclosure requirements in accordance with the InvIT Regulations and in case of any delay or discrepancy, the Trustee will ensure that the Investment Manager rectifies such delay or discrepancy on an urgent basis.

The Trustee shall also oversee the activities of the Project Manager with respect to compliance with the InvIT Regulations and the Project Implementation Agreement. The Trustee shall obtain a compliance certificate from the Project Manager in this regard.

z) Unitholders Meeting

The Trustee shall ensure that the Investment Manager convenes meetings of the Unitholders in accordance with the InvIT Regulations. The Trustee shall also oversee the voting by the Unitholders at such meetings. The Trustee shall ensure that the Investment Manager convenes meetings of Unitholders not less than once every year and the period between such meetings shall not exceed 15 months. In issues pertaining to the Investment Manager such as change in the Investment Manager, including removal of the Investment Manager or change in control of the Investment Manager, the Trustee shall convene and handle all activities pertaining to the conduct of such meetings. In respect of issues pertaining to the Trustee, including any change in the Trustee or change in control of the Trustee, the Trustee will not be involved in any manner in the conduct of such meetings. The Trustee may take up with the SEBI and/or the Stock Exchanges, any matter which has been approved in any meeting of the Unitholders, if the matter requires such action.

aa) Others

The Trustee shall ensure that the activity of the Trust is operated in accordance with the Indenture of Trust, InvIT Regulations, the Final Offer Document and Offer Document. In the event, any discrepancy is noticed by the Trustee, then the Trustee shall promptly inform the SEBI in writing. The Trustee shall provide to the SEBI and Stock Exchange such information as may be sought by the SEBI or the Stock Exchanges pertaining to the activity of the Trust.

The Trustee shall promptly inform the SEBI about any act which is detrimental to the interest of the Unitholders.

bb) Compliance Certificate

The Trustee shall obtain a compliance certificate in the form and manner prescribed under applicable law on a quarterly basis, from each of the Investment Manager and the Project Manager.

cc) Power to appoint the Investment Manager

The Trustee shall have the power to appoint the Investment Manager as the investment manager of the Trust. The Trustee shall have the power to execute the Investment Management Agreement or any other agreement or arrangement, from time to time, with the Investment Manager in this regard.

dd) Power to appoint the Project Manager

The Trustee shall in consultation with the Investment Manager have the power to appoint the Project Manager. The Trustee shall have the power to execute the Project Implementation Agreement or any other agreement or arrangement, from time to time, with the Project Manager and the Project SPV in this regard.

SECTION VI – FINANCIAL INFORMATION

FINANCIAL STATEMENTS

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RELIANCE INFRASTRUCTURE INVIT FUND

CONDENSED COMBINED FINANCIAL STATEMENTS

Half year ended September 30, 2016

(10 SPVs)

Independent Auditors' Report on Condensed Combined Financial Statements of proposed Project SPVs of the Reliance Infrastructure InvIT Fund in connection with the proposed Initial Public Offer of the Units.

To

IDBI Trusteeship Services
(As the Trustee of the Reliance Infrastructure InvIT Fund)
Asian Building, Ground Floor
17, R. Kamani Marg
Ballard Estate
Mumbai - 400 001
India.

Reliance Infrastructure InvIT Fund ("Fund")
502, Plot No. 91/94
Prabhat Colony
Santacruz (East)
Mumbai - 400 055
India.

Reliance Nippon Life Asset Management Limited
(As the Investment Manager the Reliance Infrastructure InvIT Fund)
'H' Block, 1st Floor
Dhirubhai Ambani Knowledge City
Koparkhairne, Navi Mumbai
Thane - 400 710
India.

Dear Sirs,

Report on Condensed Combined Financial Statements

We have audited the attached Condensed Combined Financial Statements of 10 subsidiaries of **Reliance Infrastructure Limited** ("Sponsor"), namely PS Toll Road Private Limited, GF Toll Road Private Limited, KM Toll Road Private Limited, HK Toll Road Private Limited, DS Toll Road Limited, NK Toll Road Limited, TK Toll Road Private Limited, TD Toll Road Private Limited, SU Toll Road Private Limited and JR Toll Road Private Limited respectively (together called as "Project SPVs" or "Project SPV Group" and individually a "Project SPV") which are proposed to be transferred from the Sponsor and other shareholders of Project SPV to **Reliance Infrastructure InvIT Fund** (the "Fund") pursuant to the proposed Initial Public Offering of Units of the Fund ('IPO'), which comprise the condensed combined balance sheet as at March 31, 2016, 2015, and 2014, and September 30, 2016 and September 30, 2015, the condensed combined statement of profit and loss, condensed combined statement of cash flows, combined statement of change in equity for the years ended March 31, 2016, 2015, and 2014, and half years ended September 30, 2016 and September 30, 2015, and the combined statement of total return at fair value for the year ended March 31, 2016 and period ended September 30, 2016 and combined statement of net assets at fair value as at September 30, 2016 and a summary of significant accounting policies, notes and other explanatory Information (collectively called the "Condensed Combined Financial Statements") annexed to this report for the purpose of inclusion in the draft offer document, prepared in connection with the proposed IPO.

These Condensed Combined Financial Statements have been prepared in accordance with the requirements of Securities and Exchange Board of India (Infrastructure Investment Trust) Regulations 2014, as amended from time to time including by any guidelines and circulars issued thereunder (the "InvIT Regulations"). Accordingly these Condensed Combined Financial Statements have been prepared, as if the Fund structure was in place and 100% interest of the Project SPVs was part of the Fund since April 1, 2013 and have been approved by the Investment Manager of the Fund.

Management's Responsibilities for the Condensed Combined Financial Statements

The Investment Manager of the Fund is responsible for the preparation of Condensed Combined Financial Statements that give a true and fair view of the condensed combined financial position, condensed combined financial performance, condensed combined cash flows, combined statement of change in equity in accordance with the Indian Accounting Standard ("Ind AS") prescribed under Section 133 of the Companies Act, 2013 read with relevant rules and other accounting principles generally accepted in India. The Management is also responsible for ensuring that the Fund complies with the requirements of InvIT Regulations.

The respective managements of the Project SPVs are responsible for the maintenance of adequate accounting records in accordance with the provisions of the Companies Act, 2013 for safeguarding the assets of the Project SPVs and for preventing and detecting frauds and other irregularities; the selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and the design, implementation and maintenance of adequate internal financial controls relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

For the purposes of preparation of the Ind AS condensed financial statements of each Project SPV, the financial statements prepared in accordance with Generally Accepted Accounting Principles of India ('Indian GAAP') including the Accounting Standards specified in Section 133 of the Companies Act, 2013 read with Rule 7 of the Companies (Accounts) Rules, 2014/ Section 211 (3C) of the Companies Act, 1956 for the years ended March 31, 2016, 2015, 2014 and audited by their respective auditors were converted by the respective managements of the Project SPVs in accordance with the Ind AS, which have been used for the purpose of preparation of the Condensed Combined Financial Statements by the Investment Manager of the Fund, as aforesaid.

The financial statements of each of the Project SPVs for the half year ended September 30, 2016 and September 30, 2015 is prepared as per Ind AS, and has been audited by their respective auditors of Project SPVs and have been used for the purpose of preparation of Condensed Combined Financial Statements by the Investment Manager of the Fund.

Auditor's Responsibility

Our responsibility is to express an opinion on these Condensed Combined Financial Statements based on our audit. While conducting the audit, we have taken into account (a) the terms of reference vide our engagement letter dated December 13, 2016 to carry out work on such financial information included in the draft offer document of the Fund in connection with its proposed IPO; (b) Guidance note on Combined and Carve-out financial statements and (c) the Guidance Note on Reports or Certificates for Special Purposes and Guidance Note on Reports in Company Prospectuses (Revised) issued by the Institute of Chartered Accountants of India, to the extent applicable to these Condensed Combined Financial Statements.

We conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the Condensed Combined Financial Statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and the disclosures in the Condensed Combined Financial Statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Condensed Combined Financial Statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the preparation of the Condensed Combined Financial Statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances.

An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of the accounting estimates made by the Investment Manager of Fund, as well as evaluating the overall presentation of the Condensed Combined Financial Statements.

We believe that the audit evidence obtained by us is sufficient and appropriate to provide a basis for our audit opinion on the Condensed Combined Financial Statements.

We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

Opinion

In our opinion and to the best of our information and according to the explanations given to us:

a) The condensed combined balance sheet gives a true and fair view of the state of affairs of the Project SPV Group as at the March 31, 2016, 2015 and 2014, and September 30, 2016 and September 30, 2015;

b) The condensed combined statement of profit and loss gives a true and fair view of the profits / losses of the Project SPV Group for the years / half year ended on March 31, 2016, 2015 and 2014 and September 30, 2016 and September 30, 2015;

c) The condensed combined cash flow statement gives a true and fair view of the cash movements of the Project SPV Group for the years / half year ended on March 31, 2016, 2015 and 2014, and September 3o, 2016 and September 30, 2015;

d) The combined statement of changes in equity gives a true and fair view of the movement of the equity holder's fund of the Project SPV Group for the years / half year ended on March 31, 2016, 2015 and 2014, and September 3o, 2016 and September 30, 2015;

e) The combined statement of net assets at fair value gives a true and fair view of the net assets of the Project SPV Group as at September 30, 2016; and

f) The combined statement of total return at fair value gives a true and fair view of the total return of the Project SPV Group for the for the year ended on March 31, 2016 and half year ended September 30, 2016.

Other matters

We have conducted the audit of Condensed Ind AS financial statements of each of the respective Project SPVs i.e. Audited Converted Financial Statements ("ACFS") in the accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. The financial statements of Project SPVs as at and for the years ended March 31, 2016, 2015 and 2014, which were drawn up in accordance with Indian GAAP including the Accounting Standards specified in Section 133 of the Companies Act, 2013 read with Rule 7 of the Companies (Accounts) Rules, 2014/Section 211 (3C) of the Companies Act, 1956 were audited by their respective statutory auditors' and have been relied upon by us (refer Standard on Auditing (SA) 600 "Using the Work of another Auditor" to the extent applicable) for our audit of ACFS.

The financial statements of each of the Project SPVs for the half year ended September 30, 2016 and September 30, 2015 is prepared as per Ind AS, and have been audited by their respective auditors of Project SPVs and have been used for the purpose of preparation of Condensed Combined Financial Statements by the Investment Manager of the Fund and have been relied upon by us (refer Standard on Auditing (SA) 600 "Using the Work of another Auditor" to the extent applicable) for our audit of ACFS.

The audit for the years ended March 31, 2014, March 31, 2015, March 31, 2016 and half year ended September 30, 2015 and September 30, 2016 was conducted by the respective auditors of Project SPV. The list of the same is as under:

Project SPV	Statutory Auditor
SU Toll Road Private Limited	MKPS & Associates
TD Toll Road Private Limited	MKPS & Associates
TK Toll Road Private Limited	MKPS & Associates
DS Toll Road Limited	Thakur,Vaidyanath Aiyar & Co.
NK Toll Road Limited	Thakur,Vaidyanath Aiyar & Co.
GF Toll Road Private Limited	Grewal & Singh
JR Toll Road Private Limited	MKPS & Associates
PS Toll Road Private Limited	MKPS & Associates
KM Toll Road Private Limited	MKPS & Associates
HK Toll Road Private Limited	T. R. Chadha & Co.

This report should not in any way be construed as a reissuance or re-dating of any of the previous reports issued by the SPV's Auditor nor should it be construed as a new opinion on any of the financial statements referred to herein.

Report on other Regulatory Requirements

We report that:

(i) We have obtained all information and explanations which, to the best of our knowledge and belief, were necessary for the purpose of our audit;

(ii) The condensed combined balance sheet, the condensed combined statement of profit and loss, condensed combined statement of cash flows, the combined statement of changes in equity for the years / half year ended March 31, 2016, 2015, 2014 and September 3o, 2016 and September 30, 2015 and the combined statement of total return at fair value for the year ended March 31, 2016 and half year ended September 30, 2016 and the combined statement of net assets at fair value as at September 30, 2016 are in agreement with the relevant books of account considering the adjustments required for preparation of ACFS as maintained for the purpose of preparation of Condensed Combined Financial Statements;

(iii) The Condensed Combined Financial Statements do not contain any extraordinary items.

(iv) There are no qualifications / reservations / remarks / adverse remarks / Emphasis of Matter in the auditors' reports on the ACFS of the Project SPVs as at and for each of the years ended March 31, 2016, 2015, and 2014 and September 30, 2016 and September 30, 2015 which require any adjustments to the Condensed Combined Financial Statements.

(v) We have also audited the following in the condensed combined financial information (the "Information") included in the draft offer document:

a. Operating cash flow from the Project SPVs (project-wise) for the years / half year ended March 31, 2016, 2015 and 2014, September 30, 2016 and September 30, 2015;

b. Debt payment history providing details on payment of interest and principal history for the years / half year ended March 31, 2016, 2015 and 2014, September 30, 2016 and September 30, 2015;

c. Capitalization Statement showing total debt, net worth, and the debt/equity ratios.

(vi) In our opinion, the Condensed Combined Financial Statements (including the Information) are in compliance with the requirements of InvIT Regulations and Ind AS.

We have no responsibility to update our report for events and circumstances occurring after the date of this report.

Restrictions on Use

This report is intended solely for your information and for inclusion in the Draft Offer Document prepared in connection with the proposed IPO of the Fund and is not to be used, referred to or distributed for any other purpose without our prior written consent. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this report is shown or into whose hands it may come.

For Chaturvedi & Shah
Chartered Accountants
Firm Registration Number: 101720W

Sd/-

Vijay Napawaliya
Partner
Membership No: 109859

Place: Mumbai
Date:

Reliance Infrastructure InvIT Fund
Condensed Combined Balance Sheet

` Millions

Particulars	Note	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
ASSETS							
Non-current assets							
(a) Intangible assets	4	97,723.50	65,715.72	78,809.42	63,851.48	55,818.16	42,447.25
(b) Intangible assets under development	4	7,673.25	30,937.76	25,033.89	28,078.80	29,751.60	30,453.34
(c) Financial Assets							
- Other Financial Assets	5f	281.47	899.99	506.79	993.60	1,262.77	1,829.17
(d) Deferred tax assets (net)	31	1,486.51	1,069.47	1,099.94	789.04	476.25	441.70
(e) Other non - current assets	6	905.63	1,233.92	958.53	1,547.30	4,681.57	8,187.74
		1,08,070.36	99,856.86	1,06,408.57	95,260.22	91,990.35	83,359.20
Current assets							
(a) Financial Assets							
(i) Investments	5a	226.94	162.77	166.56	158.34	147.78	172.86
(ii) Cash and cash equivalents	5b	475.20	411.53	516.76	331.62	1,182.47	358.66
(iii) Bank balances other than (ii) above	5c	277.30	205.88	277.30	198.88	7.50	5.00
(iv) Loans	5d	740.00	-	740.00	4,904.00	5,049.00	5,285.50
(v) Other financial assets	5e	659.48	1,085.48	344.39	2,022.33	1,501.03	1,012.26
(b) Current Tax Assets (Net)		18.62	49.95	75.59	93.09	60.90	14.77
(c) Other current assets	7	413.31	666.20	491.81	594.68	490.13	336.31
		2,810.85	2,581.81	2,612.41	8,302.94	8,438.81	7,185.36
Total Assets		**1,10,881.21**	**1,02,438.67**	**1,09,020.98**	**1,03,563.16**	**1,00,429.16**	**90,544.56**
EQUITY AND LIABILITIES							
EQUITY							
(a) Equity share capital	8	607.02	607.02	607.02	607.02	607.02	607.02
(b) Subordinated debt (in nature of Equity)	9a	23,379.79	20,463.64	21,241.54	18,416.14	7,794.12	3,000.81
(c) Other equity	9	8,143.98	10,300.25	8,904.70	10,288.53	10,555.77	10,649.04
Total Equity		32,130.79	31,370.91	30,753.26	29,311.69	18,956.91	14,256.87
LIABILITIES							
Non-current liabilities							
(a) Financial Liabilities							
(i) Borrowings	10a	41,952.58	42,351.29	43,568.37	40,111.89	37,412.62	33,849.27
(ii) Other financial liabilities	12b	25,063.00	20,558.77	25,619.80	20,257.05	19,762.07	18,929.68
(b) Provisions	13b	2,414.97	2,102.17	1,880.34	1,462.92	1,054.89	502.04
(c) Deferred tax liabilities (net)	31	1,647.29	1,538.92	1,702.76	1,665.09	1,483.64	1,046.20
(d) Other non - current liabilities	15	-	-	-	-	5,138.68	5,242.44
		71,077.84	66,551.16	72,771.27	63,496.94	64,851.90	59,569.63
Current liabilities							
(a) Financial Liabilities							
(i) Borrowings	10b	1,075.00	-	75.00	-	1,973.00	2,907.20
(ii) Trade payables	11	1,417.83	811.58	1,095.85	1,287.07	2,262.09	1,553.61
(iii) Other financial liabilities	12a	4,335.61	3,357.10	3,617.05	3,643.36	3,551.71	3,641.76
(b) Other current liabilities	14	14.96	25.47	64.30	5,381.05	8,804.90	8,614.73
(c) Provisions	13a	756.59	310.01	644.25	443.06	2.23	0.34
(d) Current tax liabilities (net)		72.59	12.45	-	-	26.42	0.42
		7,672.58	4,516.61	5,496.45	10,754.52	16,620.35	16,718.06
		78,750.42	71,067.76	78,267.72	74,251.47	81,472.25	76,287.69
Total Equity and Liabilities		**1,10,881.21**	**1,02,438.67**	**1,09,020.98**	**1,03,563.16**	**1,00,429.16**	**90,544.56**

The accompanying summary of significant accounting policies and other explanatory informtaion (notes) are an integral part of the Condensed Combined Financial Statements

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Condensed Combined Statement of Profit and Loss

` Millions

Particulars	Note	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Revenue	16	5,310.37	7,004.37	13,194.25	10,940.98	14,894.85
Other Income	17	113.90	172.70	263.28	871.60	934.45
Total Income		5,424.27	7,177.07	13,457.53	11,812.58	15,829.30
Expenses						
Toll Operation and Maintainence expenses	18	1,013.14	969.34	1,845.71	1,404.75	1,028.37
Construction cost		1,237.87	3,497.45	5,910.64	4,352.78	9,577.53
Employee benefits expense	19	66.10	65.37	146.70	115.93	105.76
Finance costs	20	3,262.06	2,147.90	5,214.03	4,495.34	2,795.52
Amortisation expense	4	807.81	638.83	1,440.48	1,088.54	766.29
Other expenses	21	145.54	173.38	426.00	448.16	497.35
Total expenses		6,532.52	7,492.27	14,983.56	11,905.50	14,770.82
Profit / (loss) before tax		**(1,108.25)**	**(315.20)**	**(1,526.03)**	**(92.92)**	**1,058.48**
Tax expense						
Current tax		91.67	77.36	129.53	240.07	173.71
Deferred tax charge/(credit)		(440.90)	(405.83)	(272.73)	(130.83)	402.68
Income tax for earlier years		(0.62)	-	-	-	-
		(349.85)	(328.47)	(143.20)	109.24	576.39
Profit/(Loss) after tax		**(758.40)**	**13.27**	**(1,382.83)**	**(202.16)**	**482.09**
Other Comprehensive Income						
(i) Items that will not be reclassified to profit or loss						
Remeasurements of net defined benefit plans : Gains / (Loss)		(3.45)	(2.30)	(1.50)	(1.72)	0.75
(ii) Income tax relating to items that will not be reclassified to profit or loss						
Remeasurements of net defined benefit plans		(1.13)	(0.75)	(0.50)	(0.51)	0.20
Other Comprehensive Income / (Loss)		**(2.32)**	**(1.55)**	**(1.00)**	**(1.21)**	**0.55**
Total Comprehensive Income / (Loss)		**(760.72)**	**11.72**	**(1,383.83)**	**(203.37)**	**482.64**
Profit/(Loss) after tax						
Attributable to:						
Equity holders		(758.40)	13.27	(1,382.83)	(202.16)	482.09
Total Comprehensive Income						
Attributable to:						
Equity holders		(760.72)	11.72	(1,383.83)	(203.37)	482.64
Earnings per equity share of `10 each						
Basic & Diluted	36	(12.49)	0.22	(22.78)	(3.33)	7.94

The accompanying summary of significant accounting policies and other explanatory informtaion (notes) are an integral part of the Condensed Combined Financial Statements

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Place : Mumbai
Date : December 13, 2016

Sd/-

Prateek Jain
Chief Financial Officer

Reliance Infrastructure InvIT Fund
Condensed Combined Cash flow Statement

` Millions

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
A CASH FLOW FROM OPERATING ACTIVITIES:					
Profit/(Loss) before tax	**(1,108.25)**	**(315.20)**	**(1,526.03)**	**(92.92)**	**1,058.48**
Adjustments for:					
Amortisation expenses	807.81	638.83	1,440.48	1,088.54	766.29
Interest income	(107.59)	(165.87)	(242.77)	(848.29)	(904.03)
Dividend income	(5.51)	(5.47)	(17.51)	(22.10)	(20.55)
Net (gain)/loss on sale of current investments	-	-	-	-	(1.80)
Interest expense	3,262.07	2,147.91	5,214.03	4,495.35	2,795.51
	2,848.53	**2,300.20**	**4,868.20**	**4,620.58**	**3,693.90**
Cash Generated from Operations before working capital changes					
Adjustments for:					
(Increase)/decrease in financial assets except for investments	4.46	199.28	581.49	315.96	885.61
(Increase)/decrease in other current assets	78.50	(71.52)	102.87	(104.55)	(153.82)
Increase/(decrease) in trade payables	321.98	(475.49)	(191.22)	(975.02)	708.48
Increase/(decrease) in other financial liabilities	(16.09)	0.56	25.99	(0.55)	(5.14)
Increase/(decrease) in provisions	493.61	413.01	437.16	721.64	496.37
Increase/(decrease) in other non- current liabilities	-	-	-	(5,138.68)	(103.75)
Increase/(decrease) in other current liabilities	(48.71)	(5,355.59)	(5,316.76)	(3,423.84)	190.17
	833.75	**(5,289.75)**	**(4,360.47)**	**(8,605.04)**	**2,017.92**
Cash generated from operations	**3,682.28**	**(2,989.55)**	**507.73**	**(3,984.46)**	**5,711.82**
Direct Taxes (paid) net of refunds	37.89	(21.77)	(112.03)	(298.68)	(193.85)
Net cash generated from / (used in) operating activities - [A]	**3,720.17**	**(3,011.32)**	**395.70**	**(4,283.14)**	**5,517.97**
B CASH FLOW FROM INVESTING ACTIVITIES:					
Purchase of intangible assets (including intangible assest under development)	(2,692.44)	(4,740.72)	(7,896.01)	(3,605.58)	(7,671.59)
(Purchase) / sale proceeds from current investments	(53.50)	4.25	(8.56)	(10.11)	26.98
Intercorporate deposits received	-	4,904.00	4,904.00	145.00	236.50
Intercorporate deposits given	-	-	(740.00)	-	-
Interest received	6.42	981.43	1,746.49	87.14	92.98
Dividend received	5.51	5.47	17.51	22.10	20.55
Net cash generated from / (used in) investing activities - [B]	(2,734.01)	1,154.44	(1,976.57)	(3,361.45)	(7,294.58)
C CASH FLOW FROM FINANCING ACTIVITIES:					
Proceeds from Sub-ordinated debt	2,138.25	2,047.50	2,825.40	10,558.13	4,217.40
Proceeds (net) from short term borrowings	1,000.00	-	75.00	(1,973.00)	(934.20)
Proceeds from long term borrowings	1,554.45	3,250.00	5,240.43	9,744.92	4,278.56
Repayment of long term borrowings	(3,144.37)	(842.57)	(1,258.13)	(6,695.04)	(455.41)
Interest paid	(2,576.03)	(2,518.13)	(5,116.69)	(4,841.27)	(4,505.93)
Net cash generated from / (used in) financing activities - [C]	(1,027.70)	1,936.80	1,766.01	6,793.74	2,600.42
Net increase/(decrease) in cash and cash equivalents - [A+B+C]	(41.54)	79.91	185.14	(850.85)	823.81
Add: Cash and cash equivalents at the beginning	516.76	331.62	331.62	1,182.47	358.66
Cash and cash equivalents at the end (Refer Note 5b)	475.20	411.53	516.76	331.62	1,182.47
Components of Cash and cash equivalents					
Balances with banks - in Current accounts	319.70	229.24	358.90	254.99	975.83
Deposits with maturity of less than three months	117.77	152.40	124.65	49.15	151.00
Cash on hand	37.73	29.89	33.21	27.48	55.64
Total Cash and cash equivalents	475.20	411.53	516.76	331.62	1,182.47

Note: The above Statement of Cash Flows has been prepared under the 'Indirect Method' as set out in Ind AS 7, 'Statement of Cash Flows'.

The accompanying summary of significant accounting policies and other explanatory informtaion (notes) are an integral part of the Condensed Combined Financial Statements

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Place : Mumbai
Date : December 13, 2016

Sd/-

Prateek Jain
Chief Financial Officer

Reliance Infrastructure InvIT Fund
Combined Statement of Changes in Equity

` Millions

A. EQUITY SHARE CAPITAL

Particulars	Notes	Balance at the beginning of the year / half year	Changes in equity share capital during the year / half year	Balance at the end of the year / half year
For the year ended March 31, 2014		607.02	-	607.02
For the year ended March 31, 2015		607.02	-	607.02
For the half year ended September 30, 2015		607.02	-	607.02
For the year ended March 31, 2016		607.02	-	607.02
For the half year ended September 30, 2016		607.02	-	607.02

` Millions

B. OTHER EQUITY

Particulars	Note	Share application money pending allotment (Note 9b)	Equity Component of compoud financial instruments (Note 9c)	Reserves and Surplus			Total
				Securities Premium Account (Note 9e)	Retained Earnings (Note 9d)	Debenture Redemption Reserve (Note 9f)	
As at April 1, 2013		639.80	146.50	6,813.56	3,049.18	-	**10,649.04**
Profit / (Loss) for the year		-	-	**-**	482.09	**-**	**482.09**
Debenture Redemption Reserve		-	-	**-**	-	**-**	**-**
Other comprehensive income for the year		-	-	**-**	0.55	**-**	**0.55**
Total comprehensive income for the year		**-**	**-**	**-**	**482.64**	**-**	**482.64**
Transaction with owners in their capacity as owners :							
Converted into Sub-ordinated debt	9b	(575.91)	-	**-**	**-**	**-**	**(575.91)**
Dividend Paid		**-**	**-**	**-**	**-**	**-**	**-**
		(575.91)	-	-	-	-	**(575.91)**
Balance at March 31, 2014		**63.89**	**146.50**	**6,813.56**	**3,531.82**	**-**	**10,555.77**
Balance at April 01, 2014		**63.89**	**146.50**	**6,813.56**	**3,531.82**	**-**	**10,555.77**
Profit / (Loss) for the year		-	-	-	(202.14)	-	**(202.14)**
Debenture Redemption Reserve	9f	-	-	**-**	(15.14)	**15.14**	**-**
Other comprehensive income for the year		-	-	-	(1.21)	-	**(1.21)**
Total comprehensive income for the year		**-**	**-**	**-**	**(218.49)**	**15.14**	**(203.35)**
Transaction with owners in their capacity as owners :							
Converted into Sub-ordinated debt	9b	(63.89)	-	-	-	-	**(63.89)**
Dividend Paid		-	-	-	-	-	**-**
		(63.89)	-	-	-	-	**(63.89)**
Balance at March 31, 2015		**-**	**146.50**	**6,813.56**	**3,313.33**	**15.14**	**10,288.53**
Balance at April 01, 2015		**-**	**146.50**	**6,813.56**	**3,313.33**	**15.14**	**10,288.53**
Profit / (Loss) for the half year		-	-	-	13.27	-	**13.27**
Debenture Redemption Reserve	9f	-	-	**-**	(8.84)	**8.84**	**-**
Other comprehensive income for the half year		-	-	-	(1.55)	-	**(1.55)**
Total comprehensive income for the half year		**-**	**-**	**-**	**2.88**	**8.84**	**11.72**
Transaction with owners in their capacity as owners :							
Converted into Sub-ordinated debt		-	-	-	-	-	**-**
Dividend Paid		-	-	-	-	-	**-**
		-	-	-	-	-	**-**
Balance at September 30, 2015		**-**	**146.50**	**6,813.56**	**3,316.21**	**23.98**	**10,300.25**

Reliance Infrastructure InvIT Fund
Combined Statement of Changes in Equity

` Millions

	Note	Share application money pending allotment	Equity Component of compoud financial instruments	Reserves and Surplus			Total
				Securities Premium Account	Retained Earnings	Debenture Redemption Reserve	
Balance at April 01, 2015		**-**	**146.50**	**6,813.56**	**3,313.33**	**15.14**	**10,288.53**
Profit / (Loss) for the year		-	-	-	(1,382.82)	-	**(1,382.82)**
Debenture Redemption Reserve	9f	-	-	**-**	(17.52)	17.52	**-**
Other comprehensive income for the year		-	-	-	(1.01)	-	**(1.01)**
Total comprehensive income for the year		**-**	**-**	**-**	**(1,401.35)**	**17.52**	**(1,383.83)**
Transaction with owners in their capacity as owners :							
Converted into Sub-ordinated debt		-	-	-	-	-	**-**
Dividend Paid		-	-	-	-	-	**-**
		-	-	-	-	-	**-**
Balance at March 31, 2016		**-**	**146.50**	**6,813.56**	**1,911.98**	**32.66**	**8,904.70**
Balance at April 01, 2016		**-**	**146.50**	**6,813.56**	**1,911.98**	**32.66**	**8,904.70**
Profit / (Loss) for the half year		-	-	-	(758.41)	-	**(758.41)**
Debenture Redemption Reserve	9f	-	-	**-**	(6.62)	6.62	**-**
Other comprehensive income for the half year		-	-	-	(2.31)	-	**(2.31)**
Total comprehensive income for the half year		**-**	**-**	**-**	**(767.34)**	**6.62**	**(760.72)**
Transaction with owners in their capacity as owners :							
Converted into Sub-ordinated debt		-	-	-	-	-	**-**
Dividend Paid		-	-	-	-	-	**-**
		-	-	-	-	-	**-**
Balance at September 30, 2016		**-**	**146.50**	**6,813.56**	**1,144.64**	**39.28**	**8,143.98**

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Combined Statement of Net Assets at Fair Value as at September 30, 2016

` Millions

	Particulars	Book value	Fair value
A	**Assets**		
	Non-current assets		
	Intangible assets	97,723.50	1,15,300.20
	Intangible assets under development	7,673.25	7,673.25
	Financial Assets	281.47	281.47
	Deferred tax assets	1,486.51	1,486.51
	Other non - current assets	905.63	905.63
		1,08,070.36	**1,25,647.06**
	Current assets		
	Financial Assets	2,378.92	2,378.92
	Current Tax Assets (Net)	18.62	18.62
	Other current assets	413.31	413.31
		2,810.85	**2,810.85**
	Total assets - A	**1,10,881.21**	**1,28,457.91**
B	**Liabilities**		
	Non current liabilities		
	Financial Liabilities	67,250.37	67,262.18
	Provisions	2,414.97	2,414.97
	Deferred tax liabilities (Net)	1,647.29	1,647.29
		71,312.63	**71,324.44**
	Current liabilities		
	Financial Liabilities	6,593.67	6,593.67
	Provisions	756.59	756.59
	Other current liabilities	14.96	14.96
	Current Tax Liabilities (Net)	72.57	72.57
		7,437.79	**7,437.79**
	Total Liabilities - B	**78,750.42**	**78,762.23**
	Net Assets (A - B)	**32,130.79**	**49,695.68**

Note : Since the number of units are not available, hence required disclosure of number of units and NAV are not given.

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Place : Mumbai
Date : December 13, 2016

Sd/-

Prateek Jain
Chief Financial Officer

Reliance Infrastructure InvIT Fund
Project-wise Fair Value of the Net Assets as at September 30, 2016

` Millions

Sr No	Particulars	Total Fair value	GF Fair value	JR Fair value	PS Fair value	SU Fair value	TK Fair value	TD Fair value	KM Fair value	DS Fair value	NK Fair value	HK Fair value
A	**Assets**											
	Non-current assets											
	Intangible assets	1,15,300.20	7,275.80	5,941.20	29,682.90	11,941.30	8,906.10	4,737.90	19,054.50	4,354.20	2,661.80	20,744.50
	Intangible assets under development	7,673.25	-	-	5,441.97	-	-	-	2,160.43	6.22	6.15	58.48
	Financial Assets	281.47	-	-	-	-	-	278.12	-	2.95	-	0.40
	Deferred tax assets	1,486.51	-	342.15	-	458.86	85.54	341.37	222.97	-	35.62	-
	Other non - current assets	905.63	0.31	-	746.00	0.16	30.52	0.07	8.41	64.21	0.22	55.73
		1,25,647.06	**7,276.11**	6,283.35	35,870.87	12,400.32	9,022.16	5,357.46	21,446.31	4,427.58	2,703.79	20,859.11
	Current assets											
	Financial Assets	2,378.92	36.63	9.44	249.65	657.03	94.59	87.01	39.20	917.46	262.86	25.05
	Current Tax Assets (Net)	18.62	0.05	1.42	-	-	2.16	-	-	2.72	9.80	2.47
	Other current assets	413.31	20.43	20.29	159.39	150.28	8.51	2.48	11.99	4.34	13.65	21.95
		2,810.85	**57.11**	**31.15**	409.04	**807.30**	**105.26**	89.49	**51.19**	**924.53**	286.31	**49.47**
	Total assets - A	**1,28,457.91**	**7,333.22**	**6,314.50**	**36,279.91**	**13,207.62**	**9,127.42**	**5,446.95**	**21,497.50**	**5,352.11**	**2,990.10**	**20,908.58**
B	**Liabilities**											
	Non current liabilities											
	Financial Liabilities	67,262.18	4,182.80	3,394.18	17,333.89	6,502.66	3,060.16	2,786.80	11,372.69	3,151.28	1,132.85	14,344.87
	Provisions	2,414.97	475.26	285.59	11.65	929.60	261.69	1.35	88.47	66.93	90.43	204.00
	Deferred tax liabilities (Net)	1,647.29	-	-	1,425.75	-	-	-	-	87.91	-	133.63
		71,324.44	**4,658.06**	**3,679.77**	**18,771.29**	**7,432.26**	**3,321.85**	**2,788.15**	**11,461.16**	**3,306.12**	**1,223.29**	**14,682.49**
	Current liabilities											
	Financial Liabilities	6,593.67	1,002.96	308.96	2,307.61	80.13	742.33	158.00	1,023.09	60.17	52.00	858.42
	Provisions	756.59	0.04	0.03	1.11	1.23	0.07	751.09	0.09	0.03	-	2.90
	Other current liabilities	14.96	1.20	0.30	2.00	2.32	0.50	4.93	2.37	0.26	0.75	0.33
	Current Tax Liabilities (Net)	72.57	-	-	33.51	13.59	-	3.60	11.89	-	9.98	-
		7,437.79	**1,004.20**	**309.29**	**2,344.23**	**97.27**	**742.90**	**917.62**	**1,037.44**	**60.46**	**62.73**	**861.65**
	Total Liabilities - B	**78,762.23**	**5,662.26**	**3,989.06**	**21,115.52**	**7,529.53**	**4,064.75**	**3,705.77**	**12,498.60**	**3,366.58**	**1,286.02**	**15,544.14**
	Net Assets (A - B)	**49,695.68**	**1,670.96**	**2,325.44**	**15,164.39**	**5,678.09**	**5,062.67**	**1,741.18**	**8,998.90**	**1,985.53**	**1,704.08**	**5,364.44**

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Combined statement of Total Return at Fair Value

` Millions

Particulars	Half Year Ended September 30, 2016	Year Ended March 31, 2016
Total comprehensive income (as per statement of profit and loss)	(760.72)	(1,383.83)
Add / Less : Other changes in fair value not recognised in total comprehensive income	-	-
Total return	(760.72)	(1,383.83)

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Notes to Condensed Combined Financial Statements

Note 1: Corporate information

The **Reliance infrastructure** InvIT Fund (the "Fund" / "Trust") is a trust constituted by "The Indenture of Trust" dated September 12, 2016 registered under the Registration Act, 1908 and registered vide Certificate of Registration dated November 24, 2016 under the Securities Exchange Board of India (Infrastructure Investment Trust) Regulations, 2014. The Fund is settled by the Sponsor, Reliance Infrastructure Limited ("Rinfra" or the "Sponsor"), an infrastructure development company in India. The Trustee to the Fund is IDBI Trusteeship Services Limited (the "Trustee"). Investment manager for the Fund is Reliance Nippon Life Asset Management Limited (the "Investment Manager").

The Fund has been formed to invest in infrastructure assets primarily being in the road sector in India. All of the Fund's road projects are implemented and held through special purpose vehicles ("Project SPVs" together as "Project SPV Group"). The Fund's portfolio subsequent to the completion of the proposed offering will comprise of Ten road projects as listed below:-

Project SPV Name	Residual Concession life*	Proposed Shareholding	Nature of Investment	Status	Principal Activities	Country of incorporation
DS Toll Road Limited (DS)	9 years 10 months 24 days	100%	Subsidiary	Operating	Construction and operation of road including toll collection	India
NK Toll Road Limited (NK)	9 years 10 months 24 days	100%	Subsidiary	Operating		India
GF Toll Road Private Limited (GF)	9 years 8 months 26 days	100 %	Subsidiary	Operating		India
HK Toll Road Private Limited (HK)	18 years 4 months	100 %	Subsidiary	Operating		India
PS Toll Road Private Limited (PS)	18 years	100% #	Subsidiary	Operating		India
KM Toll Road Private Limited (KM)	19 years	100%	Subsidiary	Operating		India
JR Toll Road Private Limited (JR)	11 years 11 months 8 days	100% #	Subsidiary	Operating		India
TD Toll Road Private Limited (TD)	21 years 4 months 6 days	100 %**	Subsidiary	Operating		India
TK Toll Road Private Limited (TK)	21 years 4 months 6 days	100 %**	Subsidiary	Operating		India
SU Toll Road Private Limited (SU)	16 years 11 months 8 days	100 %**	Subsidiary	Operating		India

*Represents residual concession life as at September 1, 2016 as per original concession period (without considering extension of concession period, if any).

**SU, TD & TK became subsidiary with 98% shareholding w.e.f September 28, 2016 and 100% shareholding w.e.f October 7, 2016 in case of TD& TK and 100% shareholding w.e.f November 8, 2016 in case of SU.

The Sponsor holds 74% shares in respective Project SPVs and the Investment Manager intends to acquire the balance 26% shares in the Project SPVs from their respective shareholders.

The Condensed Combined financial Statement of the Project SPV Group for the year/half year ended March 31, 2016, March 31, 2015, March 31, 2014, September 30, 2016 and September 30, 2015 were authorised for issue by the Committee appointed by the Board of Directors of the Investment Manager on December 13, 2016

Note 2: Basis of preparation

This special purpose Condensed Combined Financial Statements of Project SPV Group comprises of Condensed Combined Balance Sheets as at March 31, 2016, March 31, 2015 and March 31, 2014, September 30, 2016 and September 30, 2015 Condensed Combined Statement of Profit and Loss, Condensed Combined Cash Flow Statement and Combined Statement of Changes in Equity for the years ended March 31, 2016, March 31, 2015 and March 31, 2014 and half year ended September 30, 2016 and September 30, 2015 and Combined Statement of Net Assets at Fair Value as at September 30, 2016 and the Condensed Combined Statement of Total Return at fair value for the year ended March 31, 2016 and half year ended September 30, 2016, a summary of significant accounting policies, notes and other explanatory Information. The Condensed Combined Financial Statement has been prepared for inclusion in the draft Offer Document (the "Draft Offer document") to be issued in connection with the proposed offering (the "Offering") of the Fund.

The Condensed Combined Financial Statements of the Project SPV Group have been prepared in accordance with Indian Accounting Standards (Ind AS) as prescribed under Section 133 of Companies Act, 2013 read with relevant rules and other accounting principles. The Condensed Combined Financial Statements have been prepared on a historical cost basis, except for certain assets and liabilities which have been measured at fair value.

For all periods up to and including the year ended March 31, 2016 and half year ended September 30, 2016, the Project SPVs prepared its financial statements in accordance with accounting standards notified under the Section 133 of the Companies Act

2013 (the Act) [Companies(Indian Accounting Standards) Rules, 2015] and other relevant provisions of the act. For the purpose of preparation of these Condensed Combined Financial Statements, the transition date to Ind AS is considered as April 1, 2013 for the Project SPVs.
In accordance with the requirements of Securities and Exchange Board of India (Infrastructure Investment Trust) Regulations 2014, as amended from time to time including by any guidelines and circulars (the "InvIT Regulations"), since the Fund is newly set up on September 12, 2016, to present the financial position and performance of the proposed Project SPV Group, the historical Condensed Combined Financial Statements have been prepared, as if the Fund structure was in place and interests of the Project SPVs was part of the Fund since April 1, 2013.

The Condensed Combined Financial Statements are presented in ` Millions, except where otherwise indicated.

Accounting standards issued but not yet effective

Ind AS 115 'Revenue from contracts with customers' have been published by Ministry of Corporate Affairs (MCA) but are not yet effective. Ind AS 115 establishes principles for reporting useful information to users of the financial statements about the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contract with customers. Ind AS 115 supersedes other revenue standards i.e. Ind AS 11 and Ind AS 18 notified by MCA. Management has undertaken an assessment of the impact of this standard and does not believe that the impact would be material.

Basis of preparation of Condensed Combined Financial Statements

The Condensed Combined Financial Statements comprise the financial statements of the Project SPV Group prepared in accordance with the 'Guidance note on Condensed Combined/Carve Out Financial Statements' issued by Institute of Chartered accountants of India (ICAI).

Condensed Combined Financial Statements are prepared using uniform accounting policies for like transactions and other events in similar circumstances.

The financial statements of all Project SPVs used for the purpose of combination are drawn up to the same reporting date i.e. half year ended September 30 and year ended on March 31. Considering the proposed 100% acquisition of shares in Project SPV Group following combination procedures has been followed:

a) Combine like items of assets, liabilities, equity, income, expenses and cash flows of Project SPVs.

b) Eliminate in full intra Project SPVs assets and liabilities, income, expenses and cash flows relating to transactions between Project SPVs of the Project SPV Group (profits or losses resulting from intra Project SPV Group transactions that are recognized in assets). Profit or loss and each component of other comprehensive income (OCI) are attributed to the equity holders of the Project SPV Group.

Note 3: Summary of Significant accounting policies

3.1 Current versus non-current classification

The Project SPV Group presents assets and liabilities in the balance sheet based on current/ non-current classification.

An asset is treated as current when it is:
- Expected to be realised or intended to be sold or consumed in normal operating cycle
- Expected to be realised within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in normal operating cycle
- It is due to be settled within twelve months after the reporting period, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

All other liabilities are classified as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

The operating cycle is the time between the acquisition of assets for processing and their realization in cash and cash equivalents. The Project SPV Group has identified twelve months as its operating cycle.

3.2 **Foreign currencies**

Functional and presentation currency
Items included in the financial statements of each of the Project SPV Group's entities are measured using the currency of the

primary economic environment in which the entity operates ('the functional currency'). The condensed combined financial statements are presented in Indian Rupees (`) in Millions, which is the Project SPV Group's functional and presentation currency.

Transactions and balances
Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the Statement of Profit and Loss with an exception of the following:-

Under Ind AS 21 exchange differences arising on the translation/settlement of non-monetary item should be treated as income or loss in Statement of Profit and Loss. However, Ind AS 101 gives an exemption for existing long term foreign currency non-monetary items wherein the Project SPV Group can continue the policy adopted for treatment of exchange differences arising on long-term foreign currency monetary items pertaining to the acquisition of a depreciable asset for items recognized on or before March 31, 2013.

For any new long term foreign currency non-monetary item recognized from or after first Ind AS financial reporting period, deferral/amortization of exchange difference will not be allowed, rather the Project SPV Group will apply Ind AS 21 for recognition of gains and losses.

3.3 **Fair value measurement**

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Project SPV Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Project SPV Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1 - Quoted (unadjusted) market prices in active markets for identical assets or liabilities
Level 2- Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
Level 3 -Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Project SPV Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

The Project SPV Group's Management determines the policies and procedures for both recurring and non – recurring fair value measurement, such as derivative instruments and unquoted financial assets measured at fair value.

At each reporting date, the Management analyses the movements in the values of assets and liabilities which are required to be remeasured or re-assessed as per the Project SPV Group's accounting policies. For this analysis, the Management verifies the major inputs applied in the latest valuation by agreeing the information in the valuation computation to contracts and other relevant documents.

The management also compares the change in the fair value of each asset and liability with relevant external sources to determine whether the change is reasonable.

For the purpose of fair value disclosures, the Project SPV Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.

This note summarizes accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

Disclosures for valuation methods, significant estimates and assumptions of Financial instruments (including those carried at amortised cost) (note 27) and Quantitative disclosures of fair value measurement hierarchy (note 28).

3.4 **Revenue recognition**

Revenue is measured at the fair value of the consideration received or receivable. The Project SPV Group recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Project SPV Group's activities, as described below.

Toll revenue

The income from toll revenue from operations of the facility is accounted on receipt basis.

Contract revenue (construction contracts)

Contract revenue associated with the construction of road are recognized as revenue by reference to the stage of completion of the projects at the balance sheet date. The stage of completion of project is determined by the proportion that contract cost incurred for work performed up to the balance sheet date bears to the estimated total contract costs.

Contract cost includes costs that relate directly to the specific contract and allocated costs that are attributable to the construction of the toll roads. Cost that cannot be attributed to the contract activity such as general administration costs are expensed as incurred and classified as other operating expenses.

Others

Insurance and other claims are recognized as revenue on certainty of receipt basis.

Income on investment is recognized based on the terms of the investment. Income from mutual fund scheme having fixed maturity plans is accounted on declaration of dividend or on maturity of such investments. Interest income is recognised on a time proportion basis taking into account the amount outstanding and the rates applicable. For all other financial assets measured at amortised cost interest income is recorded using the Effective Interest Rate (EIR).

3.5 **Accounting of intangible assets under service concession arrangement**

Project SPV Group has Toll Road Concession rights where it Designs, Builts, Finances, Operates and Transfers (DBFOT) infrastructure used to provide public service for a specified period of time. These arrangements may include Infrastructure used in a public-to-private service concession arrangement for its entire useful life.

These arrangements are accounted for based on the nature of the consideration. The intangible asset model is used to the extent that the Project SPV Group receives a right (a license) to charge users of the public service. The financial asset model is used when the Project SPV Group has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services. When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for each component. If the Project SPV Group performs more than one service (i.e., construction or upgrade services and operation services) under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.

Intangible assets model
Intangible assets arising out of service concession arrangements are accounted for as intangible assets where the Project SPV Group has a contractual right to charge users of service when the projects are completed. Apart from above per the service concession agreement the Project SPV Group is obligated to pay the amount of premium to National Highways Authority of India (NHAI). This premium obligation has been treated as Intangible asset given it is paid towards getting the right to earn revenue by constructing and operating the roads during the concession period.

Hence, the total premium payable to the Grantor as per the Service Concession Agreement is also recognized as an 'Intangible Assets' and the corresponding obligation for committed premium is recognized as premium obligation.

The intangible assets is measured at the fair value of consideration transferred to acquire asset, which is the fair value of consideration received or receivable for the construction services delivered.

Amortization of concession intangible assets
The Intangible asset recognized are amortised over the concession period on the basis of projected toll revenue which reflects the pattern in which the assets economic benefits are consumed. The projected total toll revenue is based on the independent traffic volume projections; Amortization is revised in case of any material change in the expected pattern of economic benefits. Refer note no 33 for description and significant terms of the concession agreements.

Financial assets model
The financial asset model applies when the operator has an unconditional right to receive cash or another financial asset from the grantor in remuneration for concession services. In the case of concession services, the operator has such an unconditional right if the grantor contractually guarantees the payment of amount specified or determined in the contract or the shortfall, if any, between amounts received from users of public service and amounts specified or determined in the Contract.

Financial Assets resulting from application of Appendix A and Appendix B of Ind AS 11 are recorded in the condensed combined statement of financial position under the heading Other Financial Assets and recognized at amortised cost.
However in case of certain arrangements, the contract may include a payment commitment on the part of the concession grantor covering only part of investment, with the balance to be recovered from by charging users of service . In such arrangements the investment amount guaranteed by the concession grantor is recognized under the financial asset model and the residual balance is recognized under the Intangible asset model.

Any asset carried under concession arrangements is derecognized on disposal or when no future economic benefits are expected from its future use or disposal or when the contractual rights to the financial asset expire.

Maintenance obligations
Contractual obligations to maintain, replace or restore the infrastructure (principally resurfacing costs and major repairs and unscheduled maintenance which are required to maintain the Infrastructure asset in operational condition except for any enhancement element) are recognized and measured at the best estimate of the expenditure required to settle the present obligation at the balance sheet date for which next resurfacing would be required as per the concession arrangement .
The provision is discounted to its present value at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

3.6 **Taxes**

Current income tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in the countries where the Project SPV Group operates and generates taxable income. Current income tax relating to items recognized outside the Statement of Profit and Loss is recognized outside the Statement of Profit and Loss (either in other comprehensive income or in equity). Current tax items are recognized in correlation to the underlying transaction either in OCI or directly in equity. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred tax

Deferred tax is provided using the balance sheet approach on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities and assets are recognized for all taxable temporary differences

Deferred tax assets are recognized for unused tax losses to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax losses can be utilized.

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are re-assessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Deferred tax relating to items recognized outside the Statement of Profit and Loss is recognized outside the Statement of Profit and Loss (either in other comprehensive income or in equity). Deferred tax items are recognized in correlation to the underlying transaction either in OCI or directly in equity.

Deferred tax assets and deferred tax liabilities are offset if a legally enforceable right exists to set off current tax assets against current tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

3.7 **Borrowing costs**

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the asset. All other borrowing costs are expensed in the period in which they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds. Borrowing cost also includes exchange differences to the extent regarded as an adjustment to the borrowing costs.

3.8 **Leases**

Operating lease payments are recognized as an operating expense in the income statement on a straight line basis over the lease term.

3.9 **Premium Deferment**

Premium Deferral (i.e. premium payable less paid after adjusting premium deferment) is aggregated under premium deferred obligation in the balance sheet. The interest payable on the above is aggregated under deferred premium obligation. Interest on premium deferral is charged to the Statement of Profit and Loss.

3.10 **Contingent liabilities**

A contingent liability is a possible obligation that arises from past events whose existence will be confirmed by the occurrence or non-occurrence of one or more uncertain future events beyond the control of the Project SPV Group or a present obligation that is not recognised because it is not probable that an outflow of resources will be required to settle the obligation. A contingent liability also arises in extremely rare cases where there is a liability that cannot be recognised because it cannot be measured reliably. The contingent liability is not recognised in the books of account but its existence is disclosed in the Financial Statements.

3.11 **Impairment of non-financial assets**

Non-financial assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash inflows which are largely independent of the cash inflows from other assets or groups of assets (cash-generating units). Non-financial assets that suffered impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

3.12**Provisions**

Provisions are recognized when the Project SPV Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Project SPV Group expects some or all of a provision to be reimbursed the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the Statement of Profit and Loss net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost.

3.13 **Employee benefits**

(i) Short term obligations

Liabilities for wages and salaries, including non-monetary benefits that are expected to be settled wholly within 12 months after the end of the period in which the employees render the related service are recognized in respect of employees' services up to the end of the reporting period and are measured at the amounts expected to be paid when the liabilities are settled. The liabilities are presented as current employee benefit obligations in the balance sheet.

(ii) Leave obligations

The group provides sick leave and privilege leave to its employees.

Privilege and sick leave obligation is provided based on actuarial valuation which takes into account the estimated portion of leave that will be encashed, availed and the portion that will lapse. The portion that is expected to be encashed is provided for based on the basic salary of the employee and for the portion that is expected to be availed, the valuations are based on the employees' total compensation. The liability for earned leave is also classified as current where it is expected to be availed/ encashed during the next 12 months. The remaining portion is classified as non-current. The amounts of current and non-current liability are based on actuarial estimates.

(iii) Post - employment obligations

The group operates various post-employment schemes, including
(a) defined benefit plans such as gratuity
(b) defined contribution plans such as provident fund.

Gratuity Obligations

The liability or asset recognized in the balance sheet in respect of defined benefit gratuity plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method.

The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows by reference to market yields at the end of the reporting period on government bonds that have terms approximating to the terms of the related obligation.

The net interest cost is calculated by applying the discount rate to the net balance of the defined benefit obligation and the fair value of plan assets. This cost is included in employee benefit expense in the statement of profit and loss.

Re-measurement gains and losses arising from experience adjustments and changes in actuarial assumptions are

recognized in the period in which they occur, directly in other comprehensive income. They are included in retained earnings in the statement of changes in equity and in the balance sheet.

Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service cost.

Defined Contribution plans

The group pays provident fund contributions to publicly administered provident funds as per local regulations. The group has no further payment obligations once the contributions have been paid. The contributions are accounted for as defined contribution plans and the contributions are recognized as employee benefit expense when they are due. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

3.14 **Cash and cash equivalents**

Cash and cash equivalents in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Project SPVs cash management.

3.15 **Derivatives**

Derivatives are initially recognized at fair value on the date a derivative contract is entered into and are subsequently re-measured to their fair value at the end of each reporting period.

3.16 **Trade Payables**

Trade payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payable are classified as current liabilities if payment is due within one year or less (or in the normal operating cycle of the business if longer). If not, they are presented as non-current liabilities.

Trade payables are recognized initially at fair value and subsequently measured at amortised cost using the effective interest method.

3.17 **Financial instruments**

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial assets

Initial recognition and measurement

All financial assets are recognised initially at fair value, in the case of financial assets not recorded at fair value through Statement of Profit and Loss, net of directly attributable transaction cost to the acquisition of the financial asset. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognised on the trade date, i.e., the date that the Project SPV Group commits to purchase or sell the asset.

For purposes of subsequent measurement, financial assets are classified in following categories;

- at amortised cost
- at fair value through profit or loss (FVTPL)
- at fair value through other comprehensive income (FVTOCI)

Financial Assets at amortised cost

A financial assets are measured at the amortised cost if both the following conditions are met:

a) The asset is held within a business model whose objective is to hold assets for collecting contractual cash flows, and
b) Contractual terms of the asset give rise on specified dates to cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

This category is the most relevant to the Project SPV Group. All the Loans and other receivables under financial assets (except Investments) are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market.

After initial measurement such financial assets are subsequently measured at amortised cost using the Effective Interest Rate (EIR) method. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance income in the Statement of Profit and Loss. The losses arising from impairment are recognized in the Statement of Profit and Loss. This category generally applies to loans and

other receivables.

Financial Assets at Fair Value through Statement of Profit and Loss/Other Comprehensive Income

All investments in scope of Ind AS 109 are measured at fair value. Project SPVs has investment in Mutual fund which are held for trading, are classified as at FVTPL. The Project SPV Group makes such election on an instrument by instrument basis. The classification is made on initial recognition and is irrevocable.

If the Project SPV Group decides to classify an instrument as at FVTOCI, then all fair value changes on the instrument, excluding dividends, are recognized in the Other Comprehensive Income. There is no recycling of the amounts from Other Comprehensive Income (OCI) to the Statement of Profit and Loss, even on sale of investment. However, the Project SPV Group may transfer the cumulative gain or loss within equity. Instruments included within the FVTPL category are measured at fair value with all changes recognized in the Statement of Profit and Loss.

De-recognition

A financial asset (or, where applicable, a part of a financial asset or part of a Project SPV Group of similar financial assets) is primarily derecognized (i.e. removed from the Project SPV Group's balance sheet) when:

The rights to receive cash flows from the asset have expired, or

The Project SPV Group has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a 'pass-through' arrangement; and either (a) the Project SPV Group has transferred substantially all the risks and rewards of the asset, or (b) the Project SPV Group has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

When the Project SPV Group has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if and to what extent it has retained the risks and rewards of ownership. When it has neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the Project SPV Group continues to recognize the transferred asset to the extent of the Project SPV Group's continuing involvement. In that case, the Project SPV Group also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Project SPV Group has retained.

Impairment of financial assets

The Project SPV Group assesses on a forward looking basis the expected credit losses associated with its assets carried at amortised cost and FVOCI. The impairment methodology applied depends on whether there has been a significant increase in credit risk.

The Project SPV Group has three types of financial assets subject to Ind AS 109's expected credit loss model:

- Loans receivables measured at amortised cost
- Retentions receivable, grant receivable from NHAI
- Loans given to employees

The impairment methodology for each class of financial assets stated above is as follows:

Loans receivables measured at amortised cost: Loans receivables at amortised cost are generally short term in nature considered to be low risk, and thus the impairment provision is determined as 12 months expected credit losses.

Loans given to employees: For loans given to employees outstanding as on the reporting dates, the Group has determined reliably that assessing the probability of default at the initial recognition of each and every loan or receivable would result in undue cost and effort. As permitted by Ind AS 109, the credit provision will be determined based on whether credit risk is low only at each reporting date, until the loan is derecognized. Using the impairment methodology the Group has assessed that no loan loss allowance needs to be recorded in the books of accounts.

Expected credit loss ('ECL') impairment loss allowance (or reversal) recognized during the period is recognized as income/ expense in the Statement of Profit and Loss (P&L). This amount is reflected under the head 'other expenses' in the P&L. The balance sheet presentation for various financial instruments is described below:

Financial assets measured as at amortized cost and other contractual revenue receivables - ECL is presented as an allowance, i.e., as an integral part of the measurement of those assets in the balance sheet. The allowance reduces the net carrying amount. Until the asset meets write-off criteria, the Project SPV Group does not reduce impairment allowance from the gross carrying amount.

Financial Liabilities

Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through Statement of Profit and Loss, loans and borrowings, trade payables or other payables.

All financial liabilities are recognized initially at fair value.

The Project SPV Group's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts and other payables.

Subsequent measurement

The measurement of financial liabilities depends on their classification, as described below:

Loans and borrowings

This is the category most relevant to the Project SPV Group. After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortised cost using the EIR method. However, the Project SPVs has borrowings at floating rates. The impact of restatement of effective interest rate, year on year due to reset of interest rate, is not material. Gains and losses are recognized in Statement of Profit and Loss when the liabilities are derecognized as well as through the transaction cost amortization process.

Retention money payable

This is the category most relevant to the Project SPV Group. Retention money are measured at Fair value initially. Subsequently, they are measured at amortised cost using the EIR (Effective interest rate) method. Gains and losses are recognized in Statement of Profit and Loss when the liabilities are derecognized as well as through the EIR amortization process.

De-recognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the de-recognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the Statement of Profit and Loss.

Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

Derivative financial instruments

Initial recognition and subsequent measurement

The Project SPV Group uses derivative financial instruments –principal only swaps to hedge its foreign currency risks. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently re-measured at fair value. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Any gains or losses arising from changes in the fair value of derivatives are taken directly to Statement of Profit and Loss.

3.18 **Segment information**

The Project SPV Group is engaged in “Road Infrastructure Projects” which in the context of Ind AS 108 “Operating Segment" is considered as the only segment. The Project SPV Group’s activities are restricted within India and hence, no separate geographical segment disclosure is considered necessary.

3.19 **Critical accounting estimates and judgements**

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that may have a financial impact on the entity and that are believed to be reasonable under the circumstances.

The Project SPV Group makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities are disclosed below.

(i) Applicability of service concession arrangement accounting to toll roads concessionaire arrangements

The group has determined that Appendix A of Ind AS 11 'Service concession arrangements' is applicable to the Project SPV group which provides on accounting by the operators for public-to-private service concession arrangements. The Project SPV group has entered into concession arrangement with NHAI as per which the group would participate in the Design, Build, Finance, Operate and Transfer (DBFOT) basis the toll roads infrastructure. After the end of the concession arrangement, the Project SPV group has to transfer the infrastructure i.e. toll roads constructed to National Highway Authorities of India (NHAI).

Accordingly Project SPV Group has recognized the intangible assets recognized as per the accounting policy mentioned in Note no 3.5 'Accounting of intangible assets under service concessionaire arrangement'.

(ii) Income taxes

The Group has recognized deferred tax assets relating to carried forward tax losses to the extent there are sufficient taxable temporary differences relating to the same taxation authority against which the unused tax losses can be utilized. However, the utilization of tax losses also depends on the ability of the Project SPV Group to satisfy certain tests at the time the losses are recouped. Management has forecasted future taxable profits and has therefore recognized deferred tax assets in relation to tax losses.

(iii)Amortization of concession intangible assets

The Intangible asset recognized are amortised over the concession period on the basis of projected toll revenue which reflects the pattern in which the assets economic benefits are consumed. The projected total toll revenue is based on the independent traffic volume projections; Amortization is revised in case of any material change in the expected pattern of economic benefits.

(iv) Impairment of concession intangible assets

The Group tests intangible assets and cash generating units have suffered any impairment, in accordance with the accounting policy stated in note 3.11. The recoverable amount of each cash generating unit has been determined based on the greater of value-in-use and fair value less costs to sell calculations. These calculations require the use of assumptions regarding traffic flows, discount rates, growth rates and other factors affecting operating activities of the cash generating units.

(v) Fair valuation of derivatives and other financial instruments

The fair value of financial instruments that are not traded in an active market is determined using valuation techniques. The Group uses its judgments to select a variety of methods and makes assumptions that are mainly based on market conditions existing at each balance sheet date.

(vi) Provision for resurfacing obligation (major maintenance expenditure)

The Project SPV group records the resurfacing obligation for its present obligation as per the concession arrangement to maintain the toll roads at every five years during the concession period. The provision is included in the financial statements at the present value of the expected future payments. The calculations to discount these amounts to their present value are based on the estimated timing of expenditure occurring on the roads.

The discount rate used to value the resurfacing provision at its present value is determined through reference to the nature of provision and risk associated with the expenditure.

Note 4 - Intangible assets (including intangible assets under development)

` Millions

Particulars	Toll Collection rights (A)	Other intangible assets (NHAI Premium) (B)	Total Intangible Assets (A + B)	Intangible assets under development
Balance as at April 1, 2013	24,391.93	19,406.83	43,798.76	30,453.34
Year ended March 31, 2014				
Opening gross carrying amount	24,391.93	19,406.83	43,798.76	30,453.34
Additions	14,137.19	-	14,137.19	13,435.45
Capitalised	-	-	-	14,137.19
Closing gross carrying amount	38,529.12	19,406.83	57,935.95	29,751.60
Accumulated Amortisation				
Opening accumulated amortisation and impairment	730.85	620.66	1,351.50	-
Amortisation for the year	457.84	308.45	766.29	-
Capitalised	-	-	-	-
Closing accumulated amortisation	1,188.69	929.11	2,117.79	-
Net carrying amount	**37,340.43**	**18,477.72**	**55,818.16**	**29,751.60**
Year ended March 31, 2015				
Opening gross carrying amount	38,529.12	19,406.83	57,935.95	29,751.60
Additions	9,121.86	-	9,121.87	7,447.58
Capitalised	-	-	-	9,120.38
Closing gross carrying amount	47,650.98	19,406.83	67,057.82	28,078.80
Accumulated Amortisation				
Opening accumulated amortisation and impairment	1,188.69	929.11	2,117.80	-
Amortisation for the year	737.36	351.18	1,088.54	-
Capitalised	-	-	-	-
Closing accumulated amortisation	1,926.05	1,280.29	3,206.34	-
Net carrying amount	**45,724.93**	**18,126.54**	**63,851.48**	**28,078.80**
Half year ended September 30, 2015				
Opening gross carrying amount	47,650.98	19,406.83	67,057.81	28,078.80
Additions	2,599.57	-	2,599.57	5,458.53
Capitalised	96.50	-	96.50	2,599.57
Closing gross carrying amount	50,154.05	19,406.83	69,560.88	30,937.76
Accumulated Amortisation				
Opening accumulated amortisation and impairment	1,926.05	1,280.29	3,206.34	-
Amortisation for the half year	431.15	207.67	638.82	-
Capitalised	-	-	-	-
Closing accumulated amortisation	2,357.20	1,487.96	3,845.16	-
Net carrying amount	**47,796.85**	**17,918.87**	**65,715.72**	**30,937.76**
Year ended March 31, 2016				
Opening gross carrying amount	47,650.98	19,406.83	67,057.81	28,078.80
Additions	11,891.80	4,598.74	16,490.55	8,841.13
Capitalised	92.13	-	92.13	11,886.05
Closing gross carrying amount	59,450.65	24,005.57	83,456.23	25,033.88
Accumulated Amortisation				
Opening accumulated amortisation and impairment	1,926.05	1,280.29	3,206.34	-
Amortisation for the year	1,013.18	427.29	1,440.47	-
Capitalised	-	-	-	-
Closing accumulated amortisation	2,939.23	1,707.58	4,646.81	-
Net carrying amount	**56,511.42**	**22,297.99**	**78,809.42**	**25,033.88**
Half year ended September 30, 2016				
Opening gross carrying amount	59,450.65	24,005.57	83,456.22	25,033.88
Additions	19,731.24	-	19,731.25	2,366.77
Capitalised	9.35	-	9.35	19,727.40
Closing gross carrying amount	79,172.54	24,005.57	1,03,178.12	7,673.25
Accumulated Amortisation				
Opening accumulated amortisation and impairment	2,939.23	1,707.58	4,646.81	-
Amortisation for the half year	631.45	176.36	807.81	-
Capitalised	-	-	-	-
Closing accumulated amortisation	3,570.68	1,883.94	5,454.62	-
Net carrying amount	**75,601.86**	**22,121.63**	**97,723.50**	7,673.25

Reliance Infrastructure InvIT Fund
Notes to the Condensed Combined financial statements

Note 5 - Financial Assets - Current

` Millions

Note 5 (a) - Investments
(Investments at fair value through Profit and Loss)

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
Investment in mutual funds - Non trade						
Quoted						
Reliance Liquid Fund - Daily Dividend Plan *	171.52	162.77	166.56	158.34	147.78	-
September 30, 2016 : 153946.58 Units @ `1114.15						
March 31, 2016 : 149496.74 units @ `1114.15						
September 30, 2015 : 146094.29 units @ `1114.15						
March 31, 2015 : 142119.73 units @ `1114.15						
March 31, 2014 : 132634.80 units @ `1114.15						
Reliance Liquid Fund - Direct Growth Plan	-	-	-	-	-	165.36
April 1, 2013 : 87490.12 units @ `1890.05						
Reliance Liquid Fund - Growth Plan	-	-	-	-	-	7.50
April 1, 2013 : 3972.83 units @ `1887.82						
Reliance Liquidity Fund - Daily Dividend Plan	55.42	-	-	-	-	-
September 30, 2016 : 55397.11 Units @ `1000.51						
	226.94	**162.77**	**166.56**	**158.34**	**147.78**	**172.86**
* Investments restricted by way of lien						
Aggregate market value of investments	226.94	162.77	166.56	158.34	147.78	172.86

Note 5 (b) - Cash and Cash equivalents

Cash and cash equivalents						
Balances with banks						
- in current accounts	319.70	229.24	358.90	254.99	975.83	273.01
Deposits with original maturity of less than three months	117.77	152.40	124.65	49.15	151.00	50.00
Cash on hand	37.73	29.89	33.21	27.48	55.64	35.65
	475.20	**411.53**	**516.76**	**331.62**	**1,182.47**	**358.66**

Note 5 (c) - Other bank balances

Deposits with original maturity of more than three months but less than twelve months	277.30	205.88	277.30	198.88	7.50	5.00
	277.30	**205.88**	**277.30**	**198.88**	**7.50**	**5.00**

Cash balance not available for use:
Certain Project SPVs are required to maintain restricted cash which can only be used as a reserve for servicing the debt under financing arrangements. These restricted cash balances have not been included in the year/half year end cash balances for the purposes of preparation of Cash Flow Statement.

Cash held on restricted fixed deposits

Fixed Deposits	255.92	205.08	255.92	302.88	27.50	-
	255.92	**205.08**	**255.92**	**302.88**	**27.50**	**-**

Note 5 (d) - Loans

Unsecured, considered good, unless otherwise stated						
Loans to others	740.00	-	740.00	4,904.00	5,049.00	5,285.50
	740.00	-	740.00	4,904.00	5,049.00	5,285.50

` Millions

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
Note 5 (e) - Other financial assets - current						
Grant receivable from NHAI	194.94	106.87	192.49	231.59	352.72	352.94
Security deposits	13.72	3.66	2.29	1.97	1.75	1.43
Interest accrued on fixed deposits	16.88	13.31	2.32	6.81	0.07	0.95
Retention money receivable from NHAI	110.37	86.95	87.50	83.87	37.74	29.82
Interest accrued on loan	323.57	874.69	59.79	1,698.09	1,108.75	627.12
	659.48	**1,085.48**	**344.39**	**2,022.33**	**1,501.03**	**1,012.26**
Note 5 (f) - Other financial assets - Non - current						
Grant receivable from NHAI	278.12	788.00	503.41	880.11	1,260.49	1,826.84
Security Deposits	1.91	0.99	3.38	2.49	2.28	2.33
Deposits with original maturity of more than twelve months	1.44	111.00	-	111.00	-	-
	281.47	**899.99**	**506.79**	**993.60**	**1,262.77**	**1,829.17**
(Restricted fixed deposits included under cash held on restricted fixed deposits in Note 5c above)						
Note 6 - Other non-current assets						
Capital Advance	840.58	1,230.50	903.88	1,543.50	4,672.48	8,178.20
Duties and taxes receivable	-	-	-	-	5.18	4.48
Prepaid Expenses	63.37	1.64	52.87	1.83	1.73	4.21
Gratuity - Advance	1.68	1.78	1.78	1.97	2.18	0.85
	905.63	**1,233.92**	**958.53**	**1,547.30**	**4,681.57**	**8,187.74**
Note 7 - Other Current assets						
Advance to vendors	319.12	265.56	424.60	203.24	169.51	147.09
Advance to employees	7.17	8.74	6.51	5.70	4.32	2.40
Prepaid Expenses	48.44	22.35	31.40	47.60	43.66	22.20
Duties and taxes receivable	38.58	369.55	29.30	338.14	272.64	164.62
	413.31	**666.20**	**491.81**	**594.68**	**490.13**	**336.31**

Note 8 - Share Capital and Other equity

` Millions

Note 8a - Authorised Share Capital

	Nos of Shares	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
At the beginning of the year/half year	29,25,00,000	2,925.00	2,925.00	2,925.00	2,925.00	2,925.00	2,925.00
Add : Increase during the year/ half year	of `10 each	-	-	-	-	-	-
At the end of the year/half year		2,925.00	2,925.00	2,925.00	2,925.00	2,925.00	2,925.00

Note 8b - Issued, subscribed and paid-up equity share capital

At the beginning of the year/half year	6,07,02,358	607.02	607.02	607.02	607.02	607.02	585.16
Add : Shares issued during the year/ half year	of `10 each	-	-	-	-	-	21.86
At the end of the year/ half year		607.02	607.02	607.02	607.02	607.02	607.02

Note 8c - Terms and rights attached to equity shares

The Project SPVs have only one class of shares referred to as Equity Shares having a Par Value of `10/-.

Note 8d - Reconciliation of nos of Shares

Nos of Shares at the beginning of the year/ half year	6,07,02,358	6,07,02,358	6,07,02,358	6,07,02,358	6,07,02,358	5,85,16,158
Add : Nos of Shares issued during the year/ half year	-	-	-	-	-	21,86,200
Nos of Shares at the end of the year/ half year	6,07,02,358	6,07,02,358	6,07,02,358	6,07,02,358	6,07,02,358	6,07,02,358

Note 8e - Shares held by the Sponsor Company or their subsidiaries/associates

Reliance Infrastructure Limited (The Sponsor)	5,98,55,746	3,93,18,460	3,93,18,459	3,93,18,459	3,93,18,459	6,06,94,004

Note 8f - Details of Shareholders holding more than 5% shares in the Project SPVs

Reliance Infrastructure Limited						
Nos of Shares	5,98,55,746	3,93,18,460	3,93,18,459	3,93,18,459	3,93,18,459	6,06,94,004
% of holding	99%	65%	65%	65%	65%	99.99%
Space Trade Enterprises Private Limited						
Nos of Shares	-	68,47,153	68,47,153	68,47,153	68,47,153	-
% of holding		11%	11%	11%	11%	
Trustee : Space Trade Enterprises Private Limited(Trust: Reliance Toll Road Trust)						
Nos of Shares	8,41,039	8,41,039	8,41,040	8,41,040	8,41,040	-
% of holding	1%	1%	1%	1%	1%	
Spice Commerce and Trade Private Limited						
Nos of Shares	-	68,48,556	68,48,556	68,48,556	68,48,556	-
% of holding		11%	11%	11%	11%	
Skyline Global Trade Private Limited						
Nos of Shares	-	68,44,365	68,44,365	68,44,365	68,44,365	-
% of holding		11%	11%	11%	11%	

The Sponsor has pledged Equity Shares of the Project SPVs for availing various term loans.
Shares pledged are - NK : 3,626,370 shares, DS : 4,220,100 shares, GF : 588,330 shares, KM : 1,022,700 shares, HK : 1,113,300 shares, SU : 14,545,685 shares, JR : 2,462 shares, TD : 3,223,476 shares, TK : 3,826,695 shares, PS : 7,935 shares

` Millions

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
Note 9a - Sub-ordinated debt (in nature of equity)						
At the beginning of the year/ half year	21,241.54	18,416.14	18,416.14	7,794.12	3,000.81	4,348.91
Received during the year/ half year	2,138.25	2,047.50	2,825.40	10,690.02	4,793.31	1,156.80
Refund during the year/ half year	-	-	-	(68.00)	-	2,504.90
At the end of the year/ half year	23,379.79	20,463.64	21,241.54	18,416.14	7,794.12	3,000.81

Terms and rights attached to Sub-ordinated debts infused by Sponsor alongwith its Subsidiaries

i) Subordinated debt is the part of Sponsors Equity from the promoters of the Project SPVs for the project, which is unsecured and interest free as per Common Loan Agreement with the lenders;

ii) No repayment/redemption/interest servicing allowed during the moratorium period of the long term project loan.

Note 9b - Share application money pending allotment						
At the beginning of the year/ half year	-	-	-	63.89	639.80	639.80
Increase during the year/ half year	-	-	-	-	-	-
Converted into sub-ordinated debt during the year/ half year	-	-	-	63.89	575.91	-
At the end of the year/ half year	-	-	-	-	63.89	639.80
Note 9c - Corporate Guarantee (in nature of equity)						
At the beginning of the year/ half year	146.50	146.50	146.50	146.50	146.50	-
Increase / (decrease) during the year/ half year	-	-	-	-	-	146.50
At the end of the year/ half year	146.50	146.50	146.50	146.50	146.50	146.50

` Millions

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
Note 9d - Retained Earnings						
At the beginning of the year/half year	1,911.98	3,313.33	3,313.33	3,531.82	3,049.18	
Net Profit for the year / half year	(758.41)	13.27	(1,382.82)	(202.14)	482.09	
Items of other comprehensive income recognised directly in retained earnings						
- Remeasuremens of post-employements obligations (net of tax)	(2.31)	(1.55)	(1.01)	(1.21)	0.55	
Debenture Redemption Reserve (net)	(6.62)	(8.84)	(17.52)	(15.14)	-	
At the end of the year/half year	1,144.64	3,316.21	1,911.98	3,313.33	3,531.82	3,049.18
Note 9e - Securities Premium Account						
At the beginning of the year/half year	6,813.56	6,813.56	6,813.56	6,813.56	6,813.56	6,489.00
Premium on shares issued during the year/ half year	-	-	-	-	-	324.56
At the end of the year/half year	6,813.56	6,813.56	6,813.56	6,813.56	6,813.56	6,813.56
Note 9f - Debenture Redemption Reserve						
At the beginning of the year/half year	32.66	15.14	15.14	-	-	-
Reserve created during the year/half year	9.06	10.07	19.16	15.48	-	-
Reserve utilised during the year/half year	(2.44)	(1.23)	(1.64)	(0.34)	-	-
At the end of the year/half year	39.28	23.98	32.66	15.14	-	-

Nature and purpose of securities premium
Securities premium account is used to record the premium on issue of shares. The reserve is utilised in accordance with the provisions of the act.

Nature and purpose of Debenture Redemption Reserve

As per the Companies (Share Capital and Debentures) Rules, 2014 (amended), Project SPV's are required to create debenture redemption reserve out of profits equal to 25% of the amount of debentures issued. Accordingly the SPV's has appropriated 25% of the debentures issued which would be utilised for redemption of debentures during its maturity.

` Millions

Note 10 (a) - Borrowings - Non current

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
Secured						
Debentures						
Non convertible debentures (redeemable at par)	1,246.10	793.09	1,257.42	793.05	-	-
Term loans						
From banks						
Rupee term loan (including convertible buyers' credit : September 30, 2016 - `101.62 Million; September 30, 2015 - Nil; March 31, 2016 - `101.62 Million; March 31, 2015 - Nil; March 31, 2014 - Nil)	34,804.99	31,930.16	36,592.60	29,581.00	29,838.88	26,714.80
From financial institutions						
Rupee term loan	4,547.27	8,465.17	4,343.14	8,838.65	7,049.26	7,134.47
External Commercial Borrowings	1,354.22	1,162.87	1,375.21	899.19	524.48	-
Total	**41,952.58**	**42,351.29**	**43,568.37**	**40,111.89**	**37,412.62**	**33,849.27**

1) Debentures, Rupee Term Loan and External Commercial Borrowings (ECB) from Banks & Financial Institutions :

The Borrowings are secured by the way of terms stated in Common Loan Agreement entered between the all respective Project SPV's and Consortium of lenders, except in case of PS, which are as under:-

(i) a first ranking pari passu mortgage/charge over all the Borrower's immoveable and movable properties, both present and future, except the Project Assets. ;

(ii) a first ranking pari passu charge on all the Borrower's bank accounts including, but not limited to the Escrow Account/ its Sub-Accounts where all revenues, Disbursements, receivables shall be deposited and in all funds from time to time deposited therein and in all Permitted Investments or other securities representing all amounts credited to the Escrow Account.

(iii) a first ranking pari passu charge on all movable tangible and intangible assets of the Borrower (other than those specified in paragraphs (ii) above and (iv) below) including but not limited to its goodwill, undertaking and uncalled capital, both present and future, except the Project Assets.;

(iv) a first ranking pari passu charge over / assignment of the right, title, interests, benefits, claims and demands of the Borrower in, to and under any letter of credit, guarantees (except the guarantees issued in favour of NHAI) including contractor guarantees and liquidated damages and performance bond provided by any party to the Project Documents.

(v) the applicable interest rate for Rupee Term Loan varies from 10.00% to 13.00% p.a. and in case of ECB rate of interest is 4.30% + 3 month LIBOR rate.

In case of PS: Rupee Term Loans from Banks are secured by way of :-

(i) First ranking pari passu charge over all present & future non-current regulatory assets of the sponsor company.
(ii) Lien over the Operational and maintenance Account of PS.
(iii) Security mentioned under point a above shall provide a security cover of 1.40x ("Security Cover"), to be maintained during the entire tenor of the facility. Security Cover shall be calculated based on the value of Regulatory Assets recognized by Maharashtra Electricity Regulatory Commission (MERC).

(iv) The applicable interest rate for Rupee Term Loan varies from 11.00% to 13.50% p.a.

2) The Sponsor Company has provided Corporate Guarantee for PS and JR in form and manner satisfactory to the lenders as per Common Loan Agreement.

3) The Sponsor company has pledged 2,657,100 equity shares of DS, 2,283,270 equity shares of NK, 9,022,007 equity shares of SU and 5,470 equity shares of PS with the respective consortium lenders for availing various loans.

Note 10 (b) - Borrowings - Current

Unsecured						
Rupee term loan	-	-	-	-	1,560.00	1,560.00
Loan from Sponsor (Refer Note 31)	1,075.00	-	75.00	-	413.00	1,347.20
	1,075.00	**-**	**75.00**	**-**	**1,973.00**	**2,907.20**

` Millions

Note 11 - Trade Payables

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at April 1, 2013
Due to Micro and Small Enterprises	-	-	-	-	-	-
Due to other than Micro and Small Enterprises	1,417.83	811.58	1,095.85	1,287.07	2,262.09	1,553.61
	1,417.83	**811.58**	**1,095.85**	**1,287.07**	**2,262.09**	**1,553.61**

Dues to Micro and Small Enterprises:

Disclosure of payable to vendors as defined under the "Micro, Small and Medium Enterprise Development Act, 2006" is based on the information available with the Project SPVs regarding the status of registration of such vendors under the said Act, as per the intimation received from them on requests made by the Project SPVs. There are no overdue principal amounts/interest payable amounts for delayed payments to such vendors at the Balance Sheet date. There are no delays in payment made to such suppliers during the year / quarter or for any earlier years and accordingly there is no interest paid or outstanding interest in this regard in respect of payments made during the year/quarter or brought forward from previous years.

Note 12 (a) - Other financial liabilities - current

Current Maturities of long term debt	1,537.66	1,124.32	1,509.04	959.28	681.10	426.40
NHAI Premium Payable	1,082.35	1,044.51	1,101.64	1,175.08	1,253.42	1,336.98
Security Deposits	6.42	5.12	6.62	5.12	5.83	10.76
Interest accrued but not due	29.72	3.02	25.32	3.02	-	-
Creditors for Capital expenditure	770.84	1,178.88	949.25	1,500.17	1,610.83	1,866.88
Other payable	9.29	1.25	25.18	0.69	0.53	0.74
Retention money payable	899.33	-	-	-	-	-
Total	**4,335.61**	**3,357.10**	**3,617.05**	**3,643.36**	**3,551.71**	**3,641.76**

Note 12 (b) - Other financial liabilities - Non - current

Non - Current						
NHAI Premium Payable	25,063.00	19,474.57	24,556.76	19,221.40	18,568.26	17,959.03
Retention money payable	-	1,084.20	1,063.04	1,035.64	1,193.81	970.65
Total	**25,063.00**	**20,558.77**	**25,619.80**	**20,257.05**	**19,762.07**	**18,929.68**

Note 13 (a) - Provisions - Current

Current						
Provision for employee benefits (Refer note 34)						
- Gratuity	-	-	-	-	-	-
- Leave encashment	5.55	4.60	3.43	2.73	2.23	0.34
Others						
- Resurfacing expenses	751.04	305.41	640.82	440.33	-	-
	756.59	**310.01**	**644.25**	**443.06**	**2.23**	**0.34**

Note 13 (b) - Provisions - Non - Current

Provision for employee benefits (Refer note 34)						
- Gratuity	4.51	3.22	0.02	0.16	0.06	-
- Leave encashment	15.51	11.08	15.78	11.15	9.00	9.36
Others						
- Resurfacing expenses	2,394.95	2,087.87	1,864.54	1,451.61	1,045.83	492.68
	2,414.97	**2,102.17**	**1,880.34**	**1,462.92**	**1,054.89**	**502.04**

Movement of Resurfacing provisions is as follows:

At the beginning of the year/half year	2,505.37	1,891.95	1,891.95	1,045.83	492.68	
Charged / (credited) to Statement of Profit and Loss	86.34	79.61	115.43	129.84	75.28	
Provision made during the year/half year	404.38	330.84	697.81	590.78	418.75	
unwinding of discount	149.91	90.88	179.94	125.50	59.12	
Amount utilised during the year/half year	-	-	(379.76)	-	-	
At the end of the year/half year	3,146.00	2,393.28	2,505.37	1,891.95	1,045.83	492.68

Resurfacing provisions - significant estimates

As per the service concession arrangement with NHAI, the Project SPV Group is obligated to carry out resurfacing of the roads under concession. The Project SPV Group estimates the likely provision required towards resurfacing and accrues the costs on a straight line basis over the period at the end of the which resurfacing would be required, in the Statement of Profit and Loss in accordance with Ind AS 37 ' Provisions, Contingent Liabilities and Contingent Assets.

Note 14 - Other current liabilities

Advances from Customers	7.24	5.25	32.38	32.78	4.98	1.03
Duties and taxes payable	7.72	20.22	31.92	23.28	37.27	76.94
Unearned revenue from Sponsor	-	-	-	5,324.99	8,762.65	8,536.76
	14.96	**25.47**	**64.30**	**5,381.05**	**8,804.90**	**8,614.73**

Note 15 - Other non - current liabilities

Unearned revenue from Sponsor	-	-	-	-	5,138.68	5,242.43
	-	-	-	-	5,138.68	5,242.43

` Millions

	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Note 16 - Revenue					
Operating income					
- Construction income	1,262.51	3,567.38	6,028.71	4,439.67	9,768.90
- Income from toll collections	4,046.93	3,436.33	7,163.66	6,421.62	5,103.54
Other Operating income	0.93	0.66	1.88	79.69	22.41
	5,310.37	**7,004.37**	**13,194.25**	**10,940.98**	**14,894.85**
Note 17 - Other income					
Dividend Income on current investment	5.51	5.47	17.51	22.10	20.55
Profit on redemption of current investments	-	-	-	-	1.80
Interest income on -					
- financial assets carried at amortised cost	80.70	147.56	209.74	811.53	900.91
- fixed deposits	16.12	7.42	27.59	34.63	1.43
- Others	10.77	10.90	5.45	2.12	1.69
Excess provision for Gratuity written back (Refer note 34)	0.02	0.03	-	0.02	0.01
Insurance claim received	-	0.49	1.78	0.24	4.40
Miscellaneous income	0.78	0.83	1.21	0.96	3.64
	113.90	**172.70**	**263.28**	**871.60**	**934.45**
Note 18 - Toll Operation and Maintainence expenses					
Subcontracting expenses	207.35	146.04	437.82	302.77	213.97
Maintainence of Roads	690.12	731.98	1,119.16	895.08	635.96
Electricity expenses	36.91	31.76	75.33	59.54	45.17
Other miscellaneous expenses	6.47	3.25	13.22	9.46	8.17
Site and other direct expenses	72.29	56.31	200.18	137.90	125.10
	1,013.14	**969.34**	**1,845.71**	**1,404.75**	**1,028.37**

` Millions

Note 19 - Employee benefits expenses	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Salaries wages and bonus	55.80	57.88	128.20	102.17	95.84
Contribution to provident funds and other funds	3.80	2.94	6.27	4.83	4.38
Gratuity Expenses (Refer note 34)	1.74	0.75	2.33	2.20	2.30
Leave encashment (Refer note 34)	2.48	2.17	6.42	4.44	1.72
Staff welfare expenses	2.29	1.63	3.48	2.29	1.52
	66.10	**65.37**	**146.70**	**115.93**	**105.76**
Note 20 - Finance Costs					
Interest on loans from banks/financial institutions	2,103.22	1,826.15	3,865.13	3,513.35	2,666.94
Interest unwinding on premium deferment	870.63	169.16	987.91	682.55	-
Unwinding of discount on provisions	149.91	90.88	179.94	125.50	59.12
Other finance charges	78.81	34.55	117.49	123.47	30.49
Unwinding of discount on retention money	59.49	27.16	63.56	50.47	38.97
	3,262.06	**2,147.90**	**5,214.03**	**4,495.34**	**2,795.52**
Note 21 - Other expenses					
Rent	2.56	2.01	4.08	3.39	3.90
Rates & taxes	1.25	0.08	1.69	0.29	0.11
Insurance	25.56	43.24	92.84	74.70	56.57
Legal and Professional Charges	83.60	87.88	237.86	176.12	183.31
Expenditure towards Corporate Social responsibility	-	0.01	0.22	0.01	-
Auditors Remuneration (to Project SPVs Auditors)	2.99	1.47	4.99	4.54	5.13
Travelling and Conveyance	3.63	5.18	10.01	10.00	18.45
Other miscellaneous expenses	25.95	33.51	74.32	179.11	229.88
	145.54	**173.38**	**426.00**	**448.16**	**497.35**

Reliance Infrastructure Ltd InvIT Fund

Notes to Condensed Combined Financial Statements

Note 16A : Gross toll collection and details of revenue share to NHAI

` Millions

Half year ending September 2016

Particulars	DS	NK	TD	TK	SU	GF	JR	HK	KM	PS	Total
Toll collection (gross)	314.66	164.61	165.16	280.11	449.78	323.77	222.44	622.96	389.84	1,122.00	4,055.33
Less: revenue share to NHAI	-	-	-	10.40	-	-	-	-	-	-	10.40
Toll collection (net) (A)	314.66	164.61	165.16	269.71	449.78	323.77	222.44	622.96	389.84	1,122.00	4,044.92
Toll collection for additional stretch as per supplementary agreement with NHAI	-	-	-	12.41	-	-	-	-	-	-	12.41
Less: payment to NHAI	-	-	-	10.40	-	-	-	-	-	-	10.40
Toll collection charges (net) (B)	-	-	-	2.01	-	-	-	-	-	-	2.01
Income from toll collection (net of revenue share) (A+B)	314.66	164.61	165.16	271.72	449.78	323.77	222.44	622.96	389.84	1,122.00	4,046.93

Half year ending September 2015

Particulars	DS	NK	TD	TK	SU	GF	JR	HK	KM	PS	Total
Toll collection (gross)	303.25	163.85	151.22	272.58	416.93	289.27	209.51	592.53	-	1,045.61	3,444.74
Less: revenue share to NHAI	-	-	-	10.42	-	-	-	-	-	-	10.42
Toll collection (net) (A)	303.25	163.85	151.22	262.16	416.93	289.27	209.51	592.53	-	1,045.61	3,434.32
Toll collection for additional stretch as per supplementary agreement with NHAI	-	-	-	12.43	-	-	-	-	-	-	12.43
Less: payment to NHAI	-	-	-	10.42	-	-	-	-	-	-	10.42
Toll collection charges (net) (B)	-	-	-	2.01	-	-	-	-	-	-	2.01
Income from toll collection (net of revenue share) (A+B)	303.25	163.85	151.22	264.17	416.93	289.27	209.51	592.53	-	1,045.61	3,436.33

Reliance Infrastructure Ltd InvIT Fund

Notes to Condensed Combined Financial Statements

Note 16A : Gross toll collection and details of revenue share to NHAI

` Millions

Year ending March 2016

Particulars	DS	NK	TD	TK	SU	GF	JR	HK	KM	PS	Total
Toll collection (gross)	586.78	319.60	290.14	522.47	824.65	604.07	438.54	1,173.02	296.58	2,123.86	7,179.72
Less: revenue share to NHAI	-	-	-	19.90	-	-	-	-	-	-	19.90
Toll collection (net) (A)	586.78	319.60	290.14	502.57	824.65	604.07	438.54	1,173.02	296.58	2,123.86	7,159.82
Toll collection for additional stretch as per supplementary agreement with NHAI	-	-	-	23.75	-	-	-	-	-	-	23.75
Less: payment to NHAI	-	-	-	19.90	-	-	-	-	-	-	19.90
Toll collection charges (net) (B)	-	-	-	3.85	-	-	-	-	-	-	3.85
Income from toll collection (net of revenue share) (A+B)	586.78	319.60	290.14	506.42	824.65	604.07	438.54	1,173.02	296.58	2,123.86	7,163.67

Year ending March 2015

Particulars	DS	NK	TD	TK	SU	GF	JR	HK	KM	PS	Total
Toll collection (gross)	568.94	324.45	285.70	474.93	772.60	507.08	410.57	1,168.20	-	1,923.64	6,436.11
Less: revenue share to NHAI	-	-	-	17.96	-	-	-	-	-	-	17.96
Toll collection (net) (A)	568.94	324.45	285.70	456.97	772.60	507.08	410.57	1,168.20	-	1,923.64	6,418.15
Toll collection for additional stretch as per supplementary agreement with NHAI	-	-	-	21.43	-	-	-	-	-	-	21.43
Less: payment to NHAI	-	-	-	17.96	-	-	-	-	-	-	17.96
Toll collection charges (net) (B)	-	-	-	3.47	-	-	-	-	-	-	3.47
Income from toll collection (net of revenue share) (A+B)	568.94	324.45	285.70	460.44	772.60	507.08	410.57	1,168.20	-	1,923.64	6,421.62

Year ending March 2014

Particulars	DS	NK	TD	TK	SU	GF	JR	HK	KM	PS	Total
Toll collection (gross)	521.74	279.46	280.63	49.85	569.04	463.99	253.55	958.55	-	1,728.28	5,105.09
Less: revenue share to NHAI	-	-	-	1.91	-	-	-	-	-	-	1.91
Toll collection (net) (A)	521.74	279.46	280.63	47.94	569.04	463.99	253.55	958.55	-	1,728.28	5,103.18
Toll collection for additional stretch as per supplementary agreement with NHAI	-	-	-	2.29	-	-	-	-	-	-	2.29
Less: payment to NHAI	-	-	-	1.91	-	-	-	-	-	-	1.91
Toll collection charges (net) (B)	-	-	-	0.38	-	-	-	-	-	-	0.38
Income from toll collection (net of revenue share) (A+B)	521.74	279.46	280.63	48.32	569.04	463.99	253.55	958.55	-	1,728.28	5,103.56

Note 22 – Contingent liabilities **` Millions**

Sr No.	Particulars	September 30, 2016
1	**Income-tax matters:** In case of NK – Income tax department under section 156 had levied penalty of `17.74 Million for A.Y 2012-13. NK has appealed against the same and has paid ` 8.87 Million out of the same under protest	**17.74**
2	In case of TD - As per Assessment order for AY 2013-14, a demand of ` 1.14 Million was raised by IT department. TD had defended the demand and approached to CIT Appeals and an amount of ` 0.41 Million was deposited under protest.	**1.14**
3	Differences in balances as per bank loan confirmations and books of accounts mainly on account of interest rate resetting are under reconciliation with the bankers. The Project SPVs expect to settle these soon and do not anticipate any further liability on account of interest.	**73.03**

Note 23 – Arbitration Claims by Project SPVs

DS and NK had initiated arbitration process against National Highways Authority of India (NHAI) for disputes arising out of non-payment of various claims inter alia the extended stay costs, loss of revenue, and interest for delay on the release of grant etc. wherein DS claimed `1,649.95 millions and NK claimed ` 1,058.70 millions. After the arbitration proceedings, an arbitration tribunal award issued in favour of DS for ` 1,017.35 millions (including interest of ` 531.69 millions till the date of award), and NK for ` 699.41 millions (including interest of ` 363.59 millions). NHAI has preferred an appeal before the High Court of Delhi against the order of the arbitration tribunal on July 7, 2016 in case of DS and August 31, 2016 in case of NK, but still not admitted.

Further, TD has also initiated similar arbitration proceedings against NHAI for ` 2,821.66 millions. GF initiated arbitration proceedings against Haryana PWD of ` 945.92 millions. In turn, Haryana PWD has filed a counter claim of ` 1,606.90 millions towards various issues which are under consideration of the arbitration tribunal.

The management of the Project SPV's believes that their claims are tenable and are confident that the arbitration award would be in their favour.

EPC Contractors have made various claims against the Project SPVs viz. ` 1,305.74 millions on DS, ` 953.55 millions on NK, ` 2,968.58 millions on TD, and ` 3,384.15 millions on GF. However, it has been agreed between the EPC contractors and Project SPV's that the payments for the claims would be made only to the extent such claims have been accepted by NHAI or upon their final determination after any dispute resolution, if applicable.

In order to mitigate the risk of EPC Contractor claims and other counterclaims against Project SPVs and Reliance Infrastructure InvIT Fund (InvIT), Reliance Infrastructure Ltd. has agreed to indemnify Project SPVs and InvIT, from all the consequences of the aforesaid arbitral proceedings with NHAI and Haryana PWD, as well as from the claims made by the EPC Contractor. This indemnity will come into effect upon execution of a share purchase agreement inter alia between Reliance Infrastructure Ltd., the respective Project SPV and InvIT, as a precursor to the proposed public issue of the InvIT, resulting in the transfer of shareholding of Project SPVs into InvIT. In consideration, the InvIT and Project SPVs have agreed that the outcome of the arbitration proceedings will be to the account of Reliance Infrastructure Ltd. upon receiving necessary approvals and consents.

Note 24 – Capital Commitments

` Millions

Particulars	September 30, 2016
Estimated value of capital contract remaining to be executed for construction of toll roads (net of advances)	1,906.51
Total	1,906.51

Note 25 – Foreign currency exposure

Foreign currency exposures not hedged by derivative instrument or otherwise:

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Borrowings (including interest accrued but not due) in USD in Millions	20.55	17.76	20.96	14.63	9.02
Borrowings (including interest accrued but not due) in INR in Millions	1,369.12	1,165.09	1,388.96	914.62	540.24

Note 26 – Expenditure in Foreign Currency

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Interest on External Commercial Borrowings (ECB)	34.87	24.94	54.17	38.76	5.51
Agency fees on External Commercial Borrowings (ECB)	0.22	2.17	2.25	0.57	10.67
Total	35.09	27.11	56.42	39.33	16.18

Note 27 – Fair value measurements

Financial Instruments by category

a) Significance of financial instruments

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Financial assets					
At amortized Cost:					
Loans	740.00	-	740.00	4,904.00	5,049.00
Grant receivable from NHAI	473.05	894.87	695.90	1,111.70	1,613.21
Security Deposits	15.63	4.65	5.67	4.47	4.03
Fixed deposits with maturity of more than 12 months	6.44	116.00	5.00	116.00	7.50
Interest accrued on fixed deposits	16.88	13.31	2.32	6.81	0.07
Interest accrued on loan	323.58	874.70	59.79	1,698.09	1,108.75
Retention Money receivable from NHAI	110.37	86.95	87.50	83.87	37.74
Cash and Cash equivalent	475.20	411.53	516.76	331.62	1,182.47
Other bank balances	272.30	200.88	272.30	193.88	-
At Fair value through profit & loss					
Mutual fund Investments	226.94	162.77	166.56	158.34	147.78
Total financial assets	2,660.39	2,765.66	2,551.80	8,608.78	9,150.55
Financial liabilities					
At amortized Cost					
Floating Rate Borrowings	43,294.17	42,682.52	43,894.98	40,278.11	40,066.73
Debentures	1,271.09	793.09	1,257.42	793.05	-
Trade Payables	1,417.83	811.58	1,095.85	1,287.07	2,262.09
Retention money payable	899.32	1,084.20	1,063.04	1,035.65	1,193.81
NHAI Premium Payable	26,145.35	20,519.08	25,658.40	20,396.48	19,821.68
Security Deposits	6.42	5.12	6.62	5.12	5.83
Interest accrued but not due	29.72	3.02	25.32	3.02	-
Other payables	9.29	1.25	25.18	0.69	0.53
Creditors for capital expenditure	770.84	1,178.88	949.25	1,500.17	1,610.83
Total financial liabilities	73,844.04	67,078.74	73,976.06	65,299.36	64,961.50

Note 28 – Fair value Hierarchy

a)Fair value hierarchy - Recurring fair value measurements

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Financial assets					
At Fair value through profit & loss					
Level 1					
Mutual fund Investments	226.94	162.77	166.56	158.34	147.78
Total financial assets	226.94	162.77	166.56	158.34	147.78

b) Fair value hierarchy - Assets and liabilities which are measured at amortized cost for which fair values are disclosed

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Financial assets					
Level 3					
Grant receivable from NHAI	473.05	894.87	695.90	1,111.70	1,613.21
Total financial assets	473.05	894.87	695.90	1,111.70	1,613.21
Financial liabilities					
Level 3					
Floating Rate Borrowings	43,307.27	42,715.72	43,912.88	40,313.71	40,076.03
Debentures	1,271.09	793.09	1,257.42	793.05	-
Retention money payable	899.32	1,084.20	1,063.04	1,035.65	1,193.81
NHAI Premium Payable	26,145.35	20,519.08	25,658.40	20,396.48	19,821.68
Total financial liabilities	71,623.04	65,112.09	71,891.74	62,538.89	61,091.52

Recognized fair value measurements

Level 1: Level 1 hierarchy includes financial instruments measured using quoted prices. This includes mutual funds that have quoted price. The mutual funds are valued using the closing NAV.

Level 2: The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined using valuation techniques which maximize the use of observable market data and rely as little as possible on entity-specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in level 2.

Level 3: If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3. This is the case for borrowings, debentures, Retention money payable included in level 3

c) Fair value of financial assets and liabilities measured at amortised cost

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Financial assets					
Carrying value of financial assets at amortised cost					
Grant receivable from NHAI	473.05	894.87	695.90	1,111.70	1,613.21
Total Financial assets at amortised cost	473.05	894.87	695.90	1,111.70	1,613.21
Fair value of financial assets carried at amortised cost					
Grant receivable from NHAI	473.05	894.87	695.90	1,111.70	1,613.21
Total Fair value of financial assets	473.05	894.87	695.90	1,111.70	1,613.21
Financial liabilities					
Carrying value of financial liabilities at amortised cost					
Borrowings	43,294.17	42,682.52	43,894.98	40,278.11	40,066.73
Debentures	1,271.09	793.09	1,257.42	793.05	-
Retention money	899.32	1,084.20	1,063.04	1,035.65	1,193.81
NHAI Premium Payable	26,145.35	20,519.08	25,658.40	20,396.48	19,821.68
Total	71,609.94	65,078.89	71,873.84	62,503.29	61,082.22
Fair value of financial liabilities carried at amortised cost					
Borrowings	43,307.27	42,715.72	43,912.88	40,313.71	40,076.03
Debentures	1,271.09	793.09	1,257.42	793.05	-
Retention money	899.32	1,084.20	1,063.04	1,035.65	1,193.81
NHAI Premium Payable	26,145.35	20,519.08	25,658.40	20,396.48	19,821.68
Total	71,623.04	65,112.09	71,891.74	62,538.89	61,091.52

The carrying value amounts of fixed deposits, interest accrued on deposits, retention money receivable, cash and cash equivalents, trade payables, interest accrued, employee benefits payable and creditors for capital expenditure approximate their fair value due to their short term nature.

For financial assets and liabilities that are measured at fair value, the carrying amounts are equal to the fair values.

Note 29 – Financial risk management

The group activities exposes it to market risk, liquidity risk and credit risk.
This note explains the source of risk which the entity is exposed to and how the entity is manage the risk.

Risk	Exposure arising from	Measurement	Management
Credit risk	Cash and cash equivalents, trade receivables, financial assets measured at amortised cost.	Aging analysis Credit ratings	Diversification of bank deposits, credit limits and letters of credit
Market risk — foreign exchange	Recognized financial assets and liabilities not denominated in Indian rupee (INR)	Cash flow forecasting Sensitivity analysis	Actively Managed
Market risk — interest rate	Long-term borrowings at variable rates	Sensitivity analysis	Actively Managed
Liquidity risk	Borrowings and other liabilities	Rolling cash flow forecasts	Availability of committed credit lines and borrowing facilities

The group`s risk management is carried out by a project finance team and central treasury team (group treasury) under policies approved by board of directors. Group treasury identifies, evaluates and hedges financial risk in close co-operation with the group`s operating units. The Management of the Project SPV Group provides written principles for overall risk management, as well as policies covering specific areas, such as foreign exchange risk, interest rate risk, and credit risk, use of derivative financial instrument and non-derivative financial instrument, and investments of excess liquidity.

Currency risk:

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. The Project SPV 's exposure to the risk of changes in foreign exchange rates relates to Project SPV 's foreign currency loan i.e. External Commercial Borrowings (ECB). One SPV has an aggregate of USD 20.51 mn ECBs

Foreign currency risk exposure

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Financial liabilities					
Interest Accrued but not due on foreign borrowings	2.85	2.22	2.24	2.12	1.01
External commercial borrowings	1,366.27	1,162.87	1,386.72	912.50	539.23
Total	1,369.12	1,165.09	1,388.96	914.62	540.24

Sensitivity analysis:

The following tables demonstrate the sensitivity to a reasonably possible change in USD exchange rates, with all other variables held constant. The impact on the Project SPV 's profit before tax is due to changes in the fair value of monetary liabilities. The Project SPV has used exemption under Ind AS 101 for existing long term foreign currency non-monetary items. The Project SPV continue to apply the policy adopted for treatment of exchange differences arising on long-term foreign currency monetary items pertaining to the acquisition of a depreciable asset for items recognized on or before March 31, 2013 and hence, not considered in disclosure of foreign currency sensitivity. With all other variables held constant, the Project SPV 's profit before tax is affected through the impact on change of foreign currency rate on interest accrued but not due on ECB loans, as follows

Sensitivity

` Millions

Impact on profit after tax	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
INR/USD closing exchange rate	67.53	63.65	66.26	62.50	59.92
INR/USD increase by 6%	(0.14)	(0.11)	(0.11)	(0.10)	(0.05)
INR/USD decrease by 6%	0.14	0.11	0.11	0.10	0.05

Commodity risk:

The Project SPV requires for implementation (construction, operation and maintenance) of the projects, such as cement, bitumen, steel and other construction materials. For which, the Project SPV entered into fixed price contract with the EPC contractor and O&M Contractor so as to manage our exposure to price increases in raw materials. Hence, the sensitivity analysis is not required.

Market risk — interest rate risk

The Bank loans in various SPVs follows floating rates with resets defined under various agreements. While interest rate fluctuations carry a risk on financials, the SPVs earn toll income which is linked to WPI thus providing a natural hedge to the interest rate risk. Further around `1300 million of Debt is in form of Debentures which follow interest rates fixed rates of interest.

a) Interest rate risk exposure

` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Variable rate borrowings	42,219.17	42,682.52	43,819.98	40,278.11	39,653.73
Fixed rate borrowings	1,271.09	793.09	1,257.42	793.05	-
Total borrowings	43,490.26	43,475.61	45,077.40	41,071.16	39,653.73

b) Sensitivity analysis

Profit or loss is sensitive to higher/lower interest income from borrowings as a result of changes in interest rates.

` Millions

Impact on profit after tax	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Interest rate increases by 100 basis points	(333.53)	(337.19)	(346.77)	(318.20)	(316.53)
Interest rate decreases by 100 basis points	333.53	337.19	346.77	318.20	316.53

Liquidity risk:

Liquidity risk is the risk that the Project SPV may not be able to meet its present and future cash and collateral obligations without incurring unacceptable losses. The Project SPV's objective is to, at all times maintain optimum levels of liquidity to meet its cash and collateral requirements. The Project SPV closely monitors its liquidity position and deploys a robust cash management system. It maintains adequate sources of financing including debt from banks at an optimized cost. The liquidity risk is managed on the basis of expected maturity dates of the financial liabilities. The average credit period taken to settle trade payables is about 30 to 60 days. The carrying amounts are assumed to be a reasonable approximation of fair value. The following table analyses financial liabilities by remaining contractual maturities.

The table below analyses the group's non-derivative financial liabilities. The amounts disclosed in the table are the contractual undiscounted cash flows.

` Millions

As at September 30, 2016	Less than 3 months	Between 3 months and 1 year	Between 1 year and 2 years	Between 2 years and 5 years	Over 5 years	Total
Non-derivatives						
Borrowings	741.52	1,577.66	2,746.29	20,880.04	17,833.85	43,779.36
Trade and other payables	354.46	1,063.37	-	-	-	1,417.83
Other financial liabilities	-	16,251.92	1,291.55	4,233.83	6,122.74	27,900.04
Total non-derivatives	1,095.98	18,892.95	4,037.84	25,113.87	23,956.59	73,097.23

` Millions

As at September 30, 2015	Less than 3 months	Between 3 months and 1 year	Between 1 year and 2 years	Between 2 years and 5 years	Over 5 years	Total
Non-derivatives						
Borrowings	271.63	1,018.30	2,074.67	9,909.06	30,512.22	43,785.88
Trade and other payables	202.89	608.68	-	-	-	811.57
Other financial liabilities	7.12	10,409.01	2,396.05	4,034.49	6,164.07	23,010.74
Total non-derivatives	481.64	12,035.99	4,470.72	13,943.55	36,676.29	67,608.19

` Millions

As at March 31, 2016	Less than 3 months	Between 3 months and 1 year	Between 1 year and 2 years	Between 2 years and 5 years	Over 5 years	Total
Non-derivatives						
Borrowings	544.00	1,359.85	2,489.42	11,262.73	28,133.41	43,789.41
Trade and other payables	273.96	821.89	-	-	-	1,095.85
Other financial liabilities	-	16,029.76	2,209.23	4,233.83	5,395.17	27,867.99
Total non-derivatives	817.96	18,211.50	4,698.65	15,496.56	33,528.58	72,753.25

` Millions

As at March 31, 2015	Less than 3 months	Between 3 months and 1 year	Between 1 year and 2 years	Between 2 years and 5 years	Over 5 years	Total
Non-derivatives						
Borrowings	177.32	714.02	1,770.65	9,017.44	28,128.73	39,808.16
Trade and other payables	321.77	965.30	-	-	-	1,287.07
Other financial liabilities	-	11,338.42	1,476.72	4,945.98	5,452.30	23,213.42
Total non-derivatives	499.09	13,017.74	3,247.37	13,963.42	33,581.03	64,308.65

` Millions

As at March 31, 2014	Less than 3 months	Between 3 months and 1 year	Between 1 year and 2 years	Between 2 years and 5 years	Over 5 years	Total
Non-derivatives						
Borrowings	1,704.84	493.94	1,021.16	7,392.79	28,304.95	38,917.68
Trade and other payables	565.52	1,696.57	-	-	-	2,262.09
Other financial liabilities	34.94	10,969.40	1,290.03	5,240.03	5,473.06	23,007.46
Total non-derivatives	2,305.30	13,159.91	2,311.19	12,632.82	33,778.01	64,187.23

Note 30 - Capital risk management

The group's objectives when managing capital are to

- safeguard their ability to continue as a going concern, so that they can continue to provide returns for shareholders and benefits for other stakeholders, and
- Maintain an optimal capital structure to reduce the cost of capital.

For the purpose of the Project SPV's capital management, capital includes issued equity capital, share premium, sub-debts and all other equity reserves attributable to the equity holders of the parent. The primary objective of the Project SPV's capital management is to maximize the shareholder value.

The Project SPV manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Project SPV may adjust the dividend payment to shareholders, return capital to shareholders or issue interest free sub-ordinate debt. The Project SPV monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Project SPV's policy is to keep optimum gearing ratio. The Project SPV includes within net debt, interest bearing loans and borrowings, trade payables, less cash and cash equivalents.

In order to achieve this overall objective, the Project SPV's capital management, amongst other things, aims to ensure that it meets financial covenants attached to the interest-bearing loans and borrowings that define capital structure requirements. No changes were made in the objectives, policies or processes for managing capital during the years ended March 31, 2016, March 31, 2015 and March 31, 2014 and half year ended September 30, 2016 and September 30, 2015.

Consistent with others in the industry, the group monitors capital on the basis of the following gearing ratio:

Net debt including total borrowings (net of cash and cash equivalents)

divided by

Equity

The group's strategy is to maintain a debt to equity ratio within 1.86 to 4.00.The debt equity and gearing ratios at September 30, 2016, September 30, 2015, March 31, 2016, March 31, 2015 and March 31, 2014 were as follows:

` Millions

Debt Equity ratio	**September 30, 2016**	**September 30, 2015**	**March 31, 2016**	**March 31, 2015**	**March 31, 2014**
Net debt (a)	44,090.06	43,064.07	44,635.65	40,739.54	38,884.26
Equity (b)	32,130.80	31,370.91	30,753.26	29,311.69	18,956.91
Net debt to equity ratio (a) / (b)	1.37	1.37	1.45	1.39	2.05

` Millions

Gearing Ratio	**September 30, 2016**	**September 30, 2015**	**March 31, 2016**	**March 31, 2015**	**March 31, 2014**
Net debt (a)	44,090.06	43,064.07	44,635.65	40,739.54	38,884.26
Equity (b)	32,130.80	31,370.91	30,753.26	29,311.69	18,956.91
Nebt debt plus Equity (c = a+b)	76,220.86	74,434.98	75,388.91	70,051.23	57,841.17
Gearing ratio (a) / (c)	0.58	0.58	0.59	0.58	0.67

Note 31 - Deferred tax (liability) / Asset

` Millions

The balance comprises temporary differences attributable to :

Particulars		As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014	As at March 31, 2013
Deferred tax liabilities on account of:							
Intangible assets including Intangible assets under development		(12,397.30)	(9,624.63)	(11,996.47)	(9,484.75)	(8,673.92)	(7,571.34)
Grant receivable from NHAI		(173.23)	(319.22)	(250.36)	(394.26)	(536.88)	(721.47)
Borrowings recognised at amortised cost		-	(79.84)	(65.44)	(73.13)	(46.93)	(47.66)
Other items		(149.08)	-	(98.19)	-	(0.02)	-
Deferred tax assets on account of:							
Unused tax losses carried forward		2,671.40	1,795.34	2,328.43	1,564.55	1,195.22	1,023.79
NHAI Premium payable		8,636.09	6,853.60	8,523.23	6,804.06	6,616.12	6,418.01
Borrowings recognised at amortised cost		6.53	-	-	-	-	-
Unwinding impact of retention money payable		1,238.87	861.76	950.96	626.18	436.49	290.34
Retirement benefit obligation		5.94	3.98	5.02	4.36	2.53	2.53
Other items		-	39.56	-	76.94	-	1.30
Net deferred tax (liability)/asset		**(160.78)**	**(469.45)**	**(602.82)**	**(876.05)**	**(1,007.39)**	**(604.50)**

Reliance Infrastructure InvIT Fund
Notes to the Condensed Combined financial statements

Note 32 - Related Party Transactions

As per accounting standard Ind AS 23 as prescribed under the Companies (Accounting Standard) Rules, 2015, the InvIT's related parties and transactions are disclosed below :

(i) Sponsor Company
Reliance Infrastructure Limited

(ii) Key Management Personnel
Kaushik Pal - Chief executive officer (w.e.f. October 1, 2015)
Sudhir R Hoshing - Chief executive officer (till February 28, 2015)
Madan Biyani - Chief financial officer (w.e.f. March 31, 2015)
Shreelata Gopal - Company secretary (w.e.f August 8, 2015)
Prachi Potnis - Company secretary (w.e.f March 31, 2015)

(iii) Person having singificant influence on the Sponsor Company
Shri Anil .D. Ambani

(iv) Enterprises over which person described in (iii) above has significant influence
Reliance Communications Enterprises Private Limited (formerly AAA Communications Private Limited (RCEPL))

(v) Fellow subsidiaries
Spice Commerce and Trade Private Limited (SCTPL) upto September 27, 2016
Space Trade Enterprises Private Limited (STEPL) alongwith trustee : Space Trade Enterprise Private Limited (Trust : Reliance Toll Road Trust) upto September 27, 2016
Skyline Global Trade Private Limited (SGTPL) upto September 27, 2016

(vi) Investment Manager
Reliance Nippon Life Asset Management Limited

Details of transactions and closing balance : ` Millions

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Transactions during the year / half year :					
Material/services received towards EPC contract					
R Infra	-	-	-	1.63	235.42
Toll operation and maintainence expenses (including project execution support services)					
R Infra	51.07	37.64	125.35	127.79	165.40
Reimbursement of expenditure paid by					
R Infra	0.87	4.71	26.35	8.36	4.29
Sub-debts received (in nature of equity)					
R Infra	2,138.25	2,047.50	2,825.40	10,690.02	4,793.31
Sub-debts paid (in nature of equity)					
R Infra	-	-	-	68.00	-
Inter-corporate deposit received					
R Infra	-	-	75.00	-	35.00
Inter-corporate deposit repaid					
R Infra	1,000.00	-	-	413.00	895.70
Closing Balances :					
Inter-corporate deposit					
R Infra	1,075.00	-	75.00	-	413.00
Retention Money					
R Infra	523.00	523.00	357.74	367.83	402.68
Other current liabilities					
R Infra	346.66	240.68	310.57	6,093.31	9,778.87
Sub-debts (in nature of equity)					
R Infra	23,379.79	20,463.64	21,241.54	18,416.14	7,794.12
Share Application Money pending allotment					
R Infra	-	-	-	-	63.89
Equity share capital (excluding premium)					
R Infra	545.91	393.18	393.18	393.18	393.18
SCTPL	-	68.49	68.49	68.49	68.49
RECPL	0.03	0.03	0.03	0.03	0.03
STEPL	-	68.44	68.44	68.44	68.44
SGTPL	-	68.44	68.44	68.44	68.44
Trustee : Space Trade Enterprise private limited (Trust : Reliance Toll Road Trust) (RT Trust)	8.38	8.38	8.38	8.38	8.38

Note: Since there are no transactions with related parties involving acquisition or disposal of an InvIT Asset, hence no information pursuant to the InvIT Regulations is given in the Condensed Combined Financial Statements

Note 33 - Concession arrangements - Main features

Name of entity	Description of the arrangement	Significant terms of the arrangement	Intangible Assets		Financial Asset
			Gross book value	Net book value	
DS Toll Road Limited	Financing, design, building and operation of 53 kilometre long four lane toll road between Dindugal and Samyanallore on National Highway 7	Period of concession: 2006 - 2026 Remuneration : Toll Investment grant from concession grantor : Yes Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** 3,888.94 **March 31, 2016** 3,888.94 **September 30, 2015** 3,888.94 **March 31, 2015** 3,888.94 **March 31, 2014** 3,888.94	**September 30, 2016** 3,026.38 **March 31, 2016** 3,104.87 **September 30, 2015** 3,172.56 **March 31, 2015** 3,247.55 **March 31, 2014** 3,385.78	**September 30, 2016** - **March 31, 2016** - **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -
GF Toll Road Private Limited	Financing, design, building and operation of 66 kilometre long four lane toll road between Gurgaon and Faridabad and Ballabhgarh Sohna Road.	Period of concession: 2009 - 2026 Remuneration : Toll Investment grant from concession grantor : Negative grant Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Once in 3 years Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** 7,712.20 **March 31, 2016** 7,712.20 **September 30, 2015** 7,712.20 **March 31, 2015** 7,712.20 **March 31, 2014** 7,712.20	**September 30, 2016** 7,063.59 **March 31, 2016** 7,191.11 **September 30, 2015** 7,335.33 **March 31, 2015** 7,416.84 **March 31, 2014** 7,536.28	**September 30, 2016** - **March 31, 2016** - **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -
HK Toll Road Private Limited	Financing, design, building and operation of 60 kilometre long six lane toll road between Hosur and Krishnagiri on National Highway 7	Period of concession: 2011 - 2035 Remuneration : Toll Investment grant from concession grantor : Nil Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Yes	**September 30, 2016** 11,438.90 **March 31, 2016** 11,438.90 **September 30, 2015** 11,719.94 **March 31, 2015** 9,120.37 **March 31, 2014** 0.00	**September 30, 2016** 11,140.79 **March 31, 2016** 11,211.88 **September 30, 2015** 11,587.13 **March 31, 2015** 9,042.47 **March 31, 2014** 0.00	**September 30, 2016** - **March 31, 2016** - **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -
JR Toll Road Private Limited	Financing, design, building and operation of 52 kilometre long four lane toll road between Jaipur and Reengus on National Highway 11	Period of concession: 2010 - 2028 Remuneration : Toll Investment grant from concession grantor : Yes Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** 4,685.50 **March 31, 2016** 4,685.50 **September 30, 2015** 4,167.34 **March 31, 2015** 4,167.34 **March 31, 2014** 4,167.34	**September 30, 2016** 4,321.75 **March 31, 2016** 4,392.71 **September 30, 2015** 3,941.60 **March 31, 2015** 3,999.22 **March 31, 2014** 4,103.54	**September 30, 2016** (0.00) **March 31, 2016** (0.00) **September 30, 2015** (0.00) **March 31, 2015** 17.86 **March 31, 2014** 84.25
KM Toll Road Private Limited	Financing, design, building and operation of 71 kilometre long four lane toll road between Kandla and Mundra on National Highway 8A	Period of concession: 2010 - 2035 Remuneration : Toll Investment grant from concession grantor : Nil Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Yes	**September 30, 2016** 9,049.39 **March 31, 2016** 9,049.35 **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -	**September 30, 2016** 8,906.83 **March 31, 2016** 8,988.83 **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -	**September 30, 2016** - **March 31, 2016** - **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -

Name of entity	Description of the arrangement	Significant terms of the arrangement	Intangible Assets		Financial Asset
			Gross book value	Net book value	
NK Toll Road Limited	Financing, design, building and operation of 41 kilometre long four lane toll road between Namakkal and Karur on National Highway 7	Period of concession: 2006 - 2026 Remuneration : Toll Investment grant from concession grantor : Yes Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** 3,183.42 **March 31, 2016** 3,179.62 **September 30, 2015** 3,179.62 **March 31, 2015** 3,179.62 **March 31, 2014** 3,179.62	**September 30, 2016** 2,674.48 **March 31, 2016** 2,717.59 **September 30, 2015** 2,758.71 **March 31, 2015** 2,803.08 **March 31, 2014** 2,891.12	**September 30, 2016** - **March 31, 2016** - **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -
PS Toll Road Private Limited	Financing, design, building and operation of 137 kilometre long six lane toll road between Pune and Satara on National Highway 4	Period of concession: 2010 - 2034 Remuneration : Toll Investment grant from concession grantor : Nil Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Yes	**September 30, 2016** 16,537.79 **March 31, 2016** 34,263.96 **September 30, 2015** 31,144.52 **March 31, 2015** 28,021.40 **March 31, 2014** 24,372.46	**September 30, 2016** 15,170.59 **March 31, 2016** 32,978.69 **September 30, 2015** 29,990.38 **March 31, 2015** 27,026.54 **March 31, 2014** 23,638.12	**September 30, 2016** - **March 31, 2016** - **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -
SU Toll Road Private Limited	Financing, design, building and operation of 136 kilometre long six lane toll road between Salem and Ulunderput on National Highway 68	Period of concession: 2008 - 2033 Remuneration : Toll Investment grant from concession grantor : Yes Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** 8,604.42 **March 31, 2016** 8,604.42 **September 30, 2015** 8,604.42 **March 31, 2015** 8,604.42 **March 31, 2014** 8,604.42	**September 30, 2016** 8,115.27 **March 31, 2016** 8,204.08 **September 30, 2015** 8,277.43 **March 31, 2015** 8,358.13 **March 31, 2014** 8,502.67	**September 30, 2016** 164.00 **March 31, 2016** 323.39 **September 30, 2015** 465.71 **March 31, 2015** 608.03 **March 31, 2014** 941.99
TD Toll Road Private Limited	Financing, design, building and operation of 87 kilometre long six lane toll road between Trichy and Dindigul on National Highway 45	Period of concession: 2008 - 2038 Remuneration : Toll Investment grant from concession grantor : Yes Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** 3,906.56 **March 31, 2016** 3,906.56 **September 30, 2015** 3,900.81 **March 31, 2015** 3,900.81 **March 31, 2014** 3,899.32	**September 30, 2016** 3,790.71 **March 31, 2016** 3,805.41 **September 30, 2015** 3,812.19 **March 31, 2015** 3,825.43 **March 31, 2014** 3,848.03	**September 30, 2016** 309.06 **March 31, 2016** 372.51 **September 30, 2015** 429.16 **March 31, 2015** 485.81 **March 31, 2014** 586.97
TK Toll Road Private Limited	Financing, design, building and operation of 61 kilometre long six lane toll road between Trichi and Karur on National Highway 67	Period of concession: 2008 - 2038 Remuneration : Toll Investment grant from concession grantor : Yes Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** 6,975.82 **March 31, 2016** 6,985.17 **September 30, 2015** 6,980.79 **March 31, 2015** 7,077.29 **March 31, 2014** 7,077.29	**September 30, 2016** 6,860.59 **March 31, 2016** 6,894.95 **September 30, 2015** 6,911.89 **March 31, 2015** 7,032.22 **March 31, 2014** 7,073.02	**September 30, 2016** - **March 31, 2016** - **September 30, 2015** - **March 31, 2015** - **March 31, 2014** -

Note 34- Gratuity and other post-employment benefit plans ` Millions

a) Defined contribution plan

The following amount recognized as an expense in Statement of profit and loss on account of provident fund and other funds. There are no other obligations other than the contribution payable to the respective authorities.

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Contribution to provident fund and other funds	2.52	2.11	4.27	3.65	4.06
Total	**2.52**	**2.11**	**4.27**	**3.65**	**4.06**

a) Defined benefit plan

The Project SPV Group has a defined benefit plan (Gratuity) for its employees. The gratuity plan is governed by the Payment of Gratuity Act, 1972. Under the Act, employee who has completed five years of service is entitled to specific benefit. The level of benefits provided depends on the member's length of service and salary at retirement age. Every employee who has completed five years or more of service gets a gratuity on departure at 15 days salary (last drawn salary) for each completed year of service as per the provision of the Payment of Gratuity Act, 1972 with total ceiling on gratuity of Rs.1,000,000/-. The said gratuity plan is funded.

The following tables summaries the The amounts recognised in the balance sheet and the movements in the net defined benefit obligation over the year are as follows:

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Opening defined benefit liability / (assets)	19.50	13.86	13.86	10.09	8.24
Net employee benefit expense recognised in the employee cost					
Current service cost	1.71	1.41	2.84	2.43	2.54
Past service cost	-	-	-	-	-
Interest cost on benefit obligation	0.71	0.50	1.07	0.88	0.65
(Gain) / losses on settlement	-	-	-	-	-
Net benefit expense	2.42	1.91	3.91	3.31	3.19
Amount recorded in Other Comprehensive Income (OCI)					
Measurement during the period due to :					
Return on plan assets, excluding amounts included in interest expense/(income)	-	-	-	-	-
Actuarial loss / (gain) arising from change in financial assumptions	1.77	0.21	0.11	1.53	(1.10)
Actuarial loss / (gain) arising on account of demographic assumptions	(0.64)	0.44	0.05	0.20	(0.04)
Experience (gains)/losses	2.77	1.90	1.57	0.03	(0.02)
Amount recognized in OCI	3.90	2.55	1.73	1.76	(1.16)
Benefits payments from plan	0.73	(0.26)	-	(1.30)	(0.18)
Closing net defined benefit liability / (asset)	26.55	18.06	19.50	13.86	10.09

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Opening fair value of plan assets	21.47	16.04	16.04	12.49	10.37
Net employee benefit expense recognised in the employee cost					
Interest cost / (income) on plan asset	0.87	0.66	1.31	1.15	0.90
(Gain) / losses on settlement	-	-	-	-	-
Net benefit expense	0.87	0.66	1.31	1.15	0.90
Amount recorded in Other Comprehensive Income (OCI)					
Measurement during the period due to :					
Return on plan assets, excluding amounts included in interest expense/(income)	(0.01)	(0.02)	(0.04)	0.50	(0.34)
Actuarial loss / (gain) arising from change in financial assumptions	-	-	-	-	-
Actuarial loss / (gain) arising on account of demographic assumptions	-	-	-	-	-
Experience (gains)/losses	-	-	-	-	-
Asset ceiling not recognised as an asset	0.47	0.27	0.27	(0.45)	(0.06)
Amount recognized in OCI	0.46	0.25	0.23	0.05	(0.40)
Employer contributions/premiums paid	0.27	0.12	3.89	3.65	1.44
Benefits Paid	0.73	(0.26)	-	(1.30)	(0.18)
Assets aquired / (settled)	-	-	-	-	0.36
Closing fair value of plan assets	23.80	16.81	21.47	16.04	12.49

The net (liability)/asset disclosed above relates to funded plan is as follows:

` Millions

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Present value of funded obligations	26.55	18.06	19.50	13.86	10.09
Fair value of plan assets	23.80	16.81	21.47	16.04	12.49
Amount not recognised as an asset (asset ceiling)	0.06	0.18	0.20	0.22	0.28
	2.81	1.43	(1.77)	(1.96)	(2.12)
Net liability is bifurcated as follows :					
Current	-	-	-	-	-
Non-current	2.81	1.43	(1.77)	(1.96)	(2.12)
Total	**2.81**	**1.43**	**(1.77)**	**(1.96)**	**(2.12)**

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Discount rate	0.08	0.08	0.08	0.08	0.09
Expected rate of return on plan assets (p.a.)					
Salary escalation rate (p.a.)	0.08	0.08	0.08	0.08	0.08
Mortality pre-retirement	Indian Assured Lives Mortality (2006-08)	Indian Assured Lives Mortality (2006-08)	Indian Assured Lives Mortality (2006-08)	Indian Assured Lives Mortality (2006-08)	Indian Assured Lives Mortality (2006-08)

A quantitative analysis for significant assumption is as shown below:

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Assumptions -Discount rate					
Sensitivity Level	50 bp	50 bp	50 bp	50 bp	50 bp
Impact on defined benefit obligation -in % increase	(0.05)	(0.06)	(0.05)	(0.06)	(0.06)
Impact on defined benefit obligation -in % decrease	0.05	0.06	0.05	0.06	0.06
Assumptions -Future salary increases					
Sensitivity Level	50 bp	50 bp	50 bp	50 bp	50 bp
Impact on defined benefit obligation -in % increase	0.05	0.06	0.05	0.06	0.06
Impact on defined benefit obligation -in % decrease	(0.05)	(0.06)	(0.05)	(0.06)	(0.06)

The table below shows the expected cash flow profile of the benefits to be paid to the current membership of the plan based on past service of the employees as at the valuation date:

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Within the next 12 months (next annual reporting period)	0.76	0.53	0.57	0.48	0.29
Between 2 and 5 years	3.55	2.46	2.68	1.87	1.53
Between 6 and 9 years	8.79	6.16	6.57	4.36	2.05
For and Beyond 10 years	49.55	36.51	40.99	29.70	26.27
Total expected payments	**62.65**	**45.66**	**50.81**	**36.41**	**30.14**
The average duration of the defined benefit plan obligation at the end of the reporting period	10.56 years	11.54 years	10.47 years	11.56 years	12.09 years

Plan Assets Composition

	As at September 30, 2016	As at September 30, 2015	As at March 31, 2016	As at March 31, 2015	As at March 31, 2014
Non Quoted					
Insurer Managed Funds	23.80	16.81	21.47	16.04	12.49
	23.80	**16.81**	**21.47**	**16.04**	**12.49**

A reconciliation of the asset ceiling during the inter-valuation period is given below:

Opening value of asset ceiling	(0.01)	0.26	0.50	0.09	-
Add : Interest on opening balance on asset ceiling	0.03	0.04	0.07	0.04	0.03
Remeasurement due to :					
Changes in surplus/deficiet	(0.64)	(0.31)	(0.31)	0.37	0.06
closing value of asset ceiling	**(0.62)**	**(0.01)**	**0.26**	**0.50**	**0.09**

Note 35 - Capitalisation of exchange differences on long term foreign currency monetary item

The Project SPV Group has opted to defer / capitalize exchange differences arising on long-term foreign currency monetary item in accordance with para 46A of AS 11 of Previous GAAP. Ind AS 21 requires all exchange gain/losses arising on foreign currency monetary to be recognized under Statement of profit and loss. Project SPV Group has availed option available under Ind AS 101 as per which it has it can continue the Indian GAAP policy for accounting of exchange gain/loss arising on account of translation of long term foreign currency item recognized before transition date i.e. March 31, 2013. However exchange gain / loss arising on any new long-term foreign currency monetary item recognized after the transition date i.e. March 31, 2013 would be recognized to statement of profit and loss as required under Ind AS 21.

Note 36 – Earnings per share

Particulars	September 30, 2016	September 30, 2015	March 31, 2016	March 31, 2015	March 31, 2014
Profit / (Loss) attributable to equity shareholders (` Millions) (A)	(758.40)	13.27	(1,382.83)	(202.16)	482.09
Weighted average number of equity shares for basic and diluted earnings per share (B)	6,07,02,358	6,07,02,358	6,07,02,358	6,07,02,358	6,07,02,358
Earnings / (Loss) per share (Basic and diluted) (`) (A/B)	(12.49)	0.22	(22.78)	(3.33)	7.94
Nominal value of equity shares (`)	10.00	10.00	10.00	10.00	10.00

Note 37 – Capitalisation Statement

Particulars	Pre Issue as at September 30, 2016	` Millions Post Issue as at #
Total Debt	**44,565.25**	
Unit holders' Funds-		
Unit Capital	-	
Equity Share Capital	607.02	
Subordinated debt (in nature of Equity)	23,379.79	
Other Equity	8,143.98	
Net Worth	32,130.80	
Debt/Equity Ratio	**1.39**	

corresponding details post IPO are not available, hence the required disclosures in respect of the same have not been provided in the above table.

Note 38 – DS, NK, SU, TD, TK, JR, KM, GF, HK had received provisional COD for the full stretch, pending completion of punch list items and tolling for the same had commenced. In view of capitalisation being on provisional basis, effect of necessary changes, if any, at the time of completion of punch list item shall be given in the year in which the same is completed.

Further SU, TD, TK, JR, KM, GF, HK had executed supplementary agreements with NHAI under which the scheduled dates in some cases have been revised. In view of the same, the Project SPVs do not anticipate any demand from NHAI for non-achievement of Milestone.

Note 39 - In KM as per the concession agreement, premium is payable to NHAI. KM has completed partial stretch for which it has received provisional COD and commenced toll operations on the same. In view of losses of KM, it has also applied for deferment of premium payable to NHAI under the provisions of the concession agreement.

Note 40 - During the year ended March 31, 2016, there have been heavy floods in the state of Tamil Nadu which had an impact on the Project SPVs SU, TD, TK, DS, NK & HK. The project SPVs had preferred claim for the loss due to the same. Pending settlement of the same, amounts paid for restoration of damages at site have been booked under claims receivable.

Note 41 - First time adoption of Ind AS

The Project SPV Group has prepared this Condensed Combined Financial Statements which comply with Ind AS applicable for the periods ending March 31, 2016 and half year ended September 2016 together with the Comparative period data as at and for the year/half year ended March 31, 2015, March 31, 2014 and half year ended September 30, 2015 as described in the summary of significant accounting policies. In preparing these financial statements, the Project SPV Group has considered April 01, 2013 as the date of transition and has adjusted the amounts reported previously in the financial statements prepared in accordance with the accounting standards notified under Companies (Accounting Standard) Rules, 2006 (as amended) and other relevant provisions of the act (previous GAAP or Indian GAAP)

The adoption of Ind AS has been carried out in accordance with Ind AS 101, First-time Adoption of Indian Accounting Standards.

In preparing these Ind AS financial statements, the Project SPV Group has availed certain exemptions and exceptions in accordance with Ind AS 101, as explained below. The resulting difference between the carrying values of the assets and liabilities in the financial statements as at the transition date under Ind AS and Previous GAAP have been recognized directly in equity (retained earnings).

This note explains the adjustments made by the Project SPV Group in restating its previous GAAP financial statements, including the Balance Sheet as at April 01, 2013.

A. Exemption from retrospective application

Ind AS 101 allows first-time adopters certain exemptions from retrospective application of certain requirements under Ind AS. The Project SPV Group has elected to apply the following optional exemptions from retrospective application of Ind AS:

(a) Long term foreign currency monetary item

The Project SPV Group has used exemption under Ind AS 101 for existing long term foreign currency monetary item. The Project SPV Group continues to apply the policy adopted for treatment of exchange differences arising on long term foreign currency monetary items pertaining to acquisition of depreciable assets for the items recognized on or before March 31, 2013.

(b) Amortization of intangible assets arising from service concession arrangements

The Project SPV Group has used exemption under Ind AS 101 and has continue to adopt the accounting policy of previous GAAP for amortization for intangible assets arising from service concession arrangements relating to concession toll roads intangible assets recognized in the financial statements.

B. Exceptions from retrospective application

The Project SPV Group has applied the following exceptions from full retrospective application of IndAS as mandatorily required under IndAS 101:

(a) Estimates

On assessment of the estimates made under the Previous GAAP financial statements, the Project SPV Group has concluded that there is no necessity to revise the estimates under Ind AS, as there is no objective evidence that those estimates were in error. However, estimates, that were required under Ind AS but not required under Previous GAAP, are made by the Project SPV Group for the relevant reporting dates, reflecting conditions existing as at that date.

(b) Classification and measurement of financial assets

The classification of financial assets to be measured at amortised cost or fair value through other comprehensive income is made on the basis of the facts and circumstances that existed on the date of transition to Ind AS.

C. Transition to Ind AS – Reconciliations

Ind AS 101 requires an entity to reconcile equity, cash flows for the prior periods. The following table represents the reconciliations from previous Indian GAAP to Ind AS for the year ended March 31, 2013.

I. Reconciliation of equity as at the date of transition
II. Reconciliation of total equity as at the date of transition

I. Reconciliation of equity as at the date of transition (April 01, 2013)

` Millions

Particulars	Notes to first time adoption	Indian GAAP*	Ind AS adjustments	Ind AS
Assets				
Non-current assets				
(a) Intangible assets	Note (i) & (iv)	27,477.50	14,969.75	42,447.25
(b) Intangible assets under development	Note (i)	30,240.42	212.92	30,453.34
(c) Financial Assets				
- Other Financial Assets		2.33	1,826.84	1,829.17
(d) Deferred tax assets (net)	Note (iii)	-	441.70	441.70
(e) Other non - current assets		8,187.52	0.22	8,187.74
Current assets				
(a) Financial Assets				
(i) Investments	Note (ii)	172.93	(0.07)	172.86
(ii) Cash and cash equivalents		358.66	-	358.66
(iii) Bank balances other than (ii) above		5.00	-	5.00
(iv) Loans		5,285.50	-	5,285.50
(v) Other financial asset		754.41	257.85	1,012.26
(b) Current Tax Assets (Net)		14.75	-	14.75
(c) Other current assets		336.31	-	336.31
Total assets		72,835.33	17,709.21	90,544.54
Equity and Liabilities				
Equity				
(a) Equity share capital		607.02	-	607.02
(b) Subordinated debt (in nature of Equity)	Note (v)	-	3,000.81	3,000.81
(c) Other equity		13,061.79	(2,412.75)	10,649.04
Liabilities				
Non-current liabilities				
(a) Financial Liabilities				
(i) Borrowings	Note (v) & (vi)	37,110.39	(3,261.12)	33,849.27
(ii) Other financial liabilities	Note (iv) & (viii)	1,423.46	17,506.22	18,929.68
(b) Provisions	Note (vii)	9.36	492.68	502.04
(c) Deferred tax liabilities (Net)	Note (iii)	-	1,046.20	1,046.20
(d) Other non - current liabilities		5,242.44	-	5,242.44
Current liabilities				
(a) Financial Liabilities				
(i) Borrowings		2,907.20	-	2,907.20
(ii) Trade payables		1,553.61	-	1,553.61
(iii) Other financial liabilities	Note (iv) & (viii)	2,304.78	1,336.98	3,641.76
(b) Other current liabilities		8,614.51	0.19	8,614.70
(c) Provisions		0.34	-	0.34
(d) Current tax liabilities (Net)		0.43	-	0.43
Total Equity and Liabilities		72,835.33	17,709.21	90,544.54

II. Reconciliation of total equity as on April 01, 2013

Particulars	Notes to first time adoption	April 01, 2013
Total equity (shareholder's funds as per Indian GAAP)		13,668.81
Adjustments:		
Discounting of Retention money payable	Note (viii)	145.90
Retrospective application of service concessionaire arrangements	Note (i)	(808.99)
Premium Obligation recognized as per concession agreement (including unwinding of discounting on premium deferment)	Note (iv)	3,137.56
Capital Reserve recognized as financial asset	Note (i)	(5,758.64)
Discounting impact of Financial assets recognized under concessionaire Arrangement	Note (i)	1,927.27
Amortization of intangible assets	Note (i)	(120.38)
Others		68.11
Resurfacing provision recognized as per Ind AS 37 (including unwinding of discount on resurfacing provision)	Note (vii)	(364.96)
Sub-ordinated debt in nature of equity	Note (v)	3,000.81
Borrowings	Note (vi)	125.21
Tax effects on adjustments	Note (iii)	(763.83)
Total adjustments		588.06
Total equity (shareholder's funds as per Ind AS)		14,256.87

*The presentation requirements under Previous GAAP differs from and hence the Previous GAAP information has been regrouped for ease of reconciliation with Ind AS. The regrouped Previous GAAP information is derived based on the audited financial statements of the Project SPVs for the year ended 31st March, 2013.

Notes to First time adoption of Ind AS

Note (i) - Application of service concessionaire arrangement as per Appendix A of Ind AS 11

Appendix A of Ind AS 11 'Service Concessionaire Arrangement' is applicable to Project SPV's Companies which provides guidance on accounting by the operators of public-to-private service concession arrangements under which private sector entities participate in the development, financing, operation and maintenance of infrastructure for provision of public services. All the Project SPV's are engaged in to Design, Build, Finance, Operate and Transfer (DBFOT) basis the toll roads including operation and maintenance thereof during the concession period. After the expiry of the concession period all the Project SPV's are required to handover the infrastructure i.e. the toll roads to the grantor i.e. National Highway Authorities of India (NHAI).

As per the salient feature of the concession arrangement, the operator has a twofold activity based on which revenue is recognized in the financial statements which is in line with the requirement of Appendix A of Ind AS 11.

- a construction activity in respect of its obligation to design, build and finance an asset that it makes available the grantor : revenue is recognized on a stage of completion basis in accordance with Ind AS 11 during the construction phase of the toll roads.
- an operating and maintenance activity in respect of the assets under the concession during the operational : revenue is recognized in accordance with Ind AS 18.

In return of its activities, the Project SPV's Group receives consideration from users of toll roads as right to receive toll for usage of toll roads in consideration for the financing and construction of the infrastructure for which an intangible assets is recognized in the financial statements. Also as per the concession arrangement in case of some of the project SPV's SU, JR & TD part of the project cost is covered by an unconditional right to receive payments from the grantor i.e. NHAI which has been recognized as an 'Grant receivable from NHAI' under the head 'financial asset' and intangible assets has been recognized to the extent of unguaranteed balance, of which the amount is dependent on the extent of use of the infrastructure.

Retrospective application of 'Service Concessionaire arrangement' has led to change in the accounting policy of the Project SPV Group as on the transition date for classification, recognition and measurement of construction of assets and maintenance obligations under the service concession arrangements.

On account of above there has been decrease in intangible assets arising on account of toll collection rights by `5,758.64 Millions wherein the Project SPV's SU & TD has an unconditional right to receive payments from the grantor i.e. NHAI which has been deducted from the cost of intangible assets and recognized as an financial assets amounting to `5,758.64 Millions which earlier under the Indian GAAP was considered as a promoter's contribution and was recognized as 'Capital Reserve' in accordance with AS 12 'Accounting for Government grants'.

Further, discounting impact of financial assets recognised under concessionaire arrangement amounting to `1,927.27 Millions

Moreover there has been decrease in intangible assets arising on account of application of service concession arrangement in case of certain Project SPVs by `808.99 Millions wherein the Project SPVs have no guaranteed amount receivable from NHAI.

Also there has been decrease in intangible assets arising on account of amortisation of NHAI premium in case of HK by `120.38 Millions.

Note (ii) - Fair value of mutual fund investments

Ind AS 109 requires mutual fund investments to be measured at fair value. The resulting fair value changes in these investments have been recognized in the retained earnings as on the transition date and subsequently in the statement of profit & loss account.

Under the previous GAAP, investments in mutual funds were classified as current investment and were carried at lower of cost and fair value.

On account of above there has been decrease in value of investments by `0.07 Million with a corresponding adjustment to retained earnings for recognition of fair value change of mutual fund investment as on the transition date.

Note (iii) - Recognition of deferred tax assets/liability as per Ind AS 12

Ind AS 12 requires an entity to recognize deferred tax using balance sheet approach, which is based on the temporary differences between the tax base of an asset or liability and its carrying amount in the financial statements. Deferred tax is provided in full for all temporary differences arising between the tax bases of assets and liabilities and their carrying amount in the financial statements. Project SPV group recognizes deferred tax assets for all deductible temporary differences including unused tax losses carried forward to the extent that it is probable that taxable profits would be available against which the deductible temporary differences can be utilized.
Under Indian GAAP deferred tax was recognized based on income approach and deferred tax assets in case of unused tax losses carried forward are recognized if there is virtual certainty that sufficient future taxable income will be available to realize the same. Hence on account of above deferred tax assets was not recognized under the Indian GAAP.

On account of above there has been increase in deferred tax liability (net) by `763.83 Million mainly on account of Ind AS adjustments pertaining to retrospective application of service concession arrangement and deferred tax asset recognized for unused tax losses carried forward as per Ind AS 12.

Note (iv) - Premium obligation recognized upfront as per service concessionaire arrangement

As per the service concession arrangement, Project SPVs PS, KM and HK are obligated to pay an annual fixed amount of premium to National Highway Authorities of India (NHAI). The Premium Obligation has been treated as intangible asset and has been capitalised upfront under Ind AS as on the transition date with a corresponding impact to liability recognized upfront for premium payable to National Highway authorities of India (NHAI) over the concession period as the same is paid towards right to earn revenue by constructing and operating the roads during the concession period.

Under Indian GAAP the same was expensed out to statement of profit and loss as and when it was incurred.

On account of above there has been increase in retained earnings by `3,137.56 Million and decrease in financial liability by `3,137.56 Million on account of premium payable to NHAI on the transition date.

Note (v)- Classification of subordinate debt Instruments (in nature of equity)

Ind AS 32 requires classification of financial instruments issued into financial liabilities or equity. Subordinate debt instruments issued do not meet the definition of a financial liability, as the terms do not cast a contractual obligation on the Project SPVs to make any payment of principal and accrued interest thereon in cash or other financial asset. Further, since the instruments are non-convertible, the Project SPVs are not required to settle the contracts by issuance of their own equity instruments.

Under Indian GAAP, these instruments are reported as borrowings of the Project SPVs.

On account of above there has been decrease by `3,000.81 Million in borrowings of certain Project SPVs with a corresponding increase in other equity of the Company by `3,000.81 Million.

Note (vi) - Borrowings

Ind AS 109 requires transaction costs incurred towards origination of borrowings to be deducted from the carrying amount of borrowings on initial recognition. The same is recognized as interest as part of the effective interest rate method over the period of the borrowing. Under Indian GAAP, these were capitalised to intangible assets as per AS 16 'Borrowing cost' as and when incurred. Accordingly, borrowings as on 31 March 2013 have been reduced by `125.21 Million with a corresponding adjustment to intangible assets.

Note (vii) - Resurfacing obligation recognized as per Ind AS 37

As per service concession arrangement, the Project SPVs is obligated to carry out resurfacing of the roads under the concession period every five years. The Project SPV's group estimates the likely provision required towards resurfacing and accrues the costs on an straight line basis over the period at the end of which resurfacing would be required in the Statement of Profit and Loss.

Under Indian GAAP the same obligation was recognized in the year in which resurfacing was required as per the concession arrangement.

On account of above there has been increase in provisions by `364.96 Million as on the transition date.

Note (viii) - Discounting of Retention money

Ind AS 109 requires financial instruments to be measured at fair value at initial recognition in case for financial liability not at fair value through profit or loss, however if the fair value of the financial liability at initial recognition differs from transaction price i.e. fair value of the consideration given or received than the entity shall recognize the instruments at its fair value. In the Present case Project SPVs have discounted the retention money payable in order to reflect the fair value of the retention money at initial recognition. After initial measurement subsequently the liabilities would be recognized at amortised cost.

Under Indian GAAP retention money was recognized at historical cost and no discounting was required to be done under the GAAP.

On account of above there has been decrease in retention money payable by `145.90 Million.

Note 42 – Events after reporting period

There are no subsequent event after the reporting period which required adjustments to the Combined Financial Statements.

As per our attached report of even date

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Place : Mumbai
Date : December 13, 2016

Sd/-

Prateek Jain
Chief Financial Officer

Reliance Infrastructure InvIT Fund
Details on Debt payment history of interest and principal payments of InvIT

Sr.No

1 GF Toll Road Pvt Ltd

` Millions

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	4,858.57	5,147.79	5,147.79	5,436.86	5,647.32
Add: Loan availed	0.00	(0.00)	(0.00)	0.00	0.00
Less : Repayments	248.20	146.00	292.00	292.00	213.50
Less : Other adjustment	(1.33)	(1.42)	(2.78)	(2.93)	(3.04)
Closing Balance	**4,611.70**	**5,003.21**	**4,858.57**	**5,147.79**	**5,436.86**

Details of Interest:

Particulars					
Interest paid	276.97	304.07	589.43	637.68	663.04
Interest Cost - P&L	314.51	333.14	649.42	680.46	692.60
Interest Cost - CWIP	-	-	-	-	-
Total Interest cost	314.51	333.14	649.42	680.46	692.60

2 JR Toll Road Pvt Ltd

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	3,657.32	3,781.67	3,781.67	3,837.92	3,451.35
Add: Loan availed	0.00	0.00	0.00	(0.00)	427.30
Less : Repayments	87.56	38.92	126.48	58.38	41.96
Less : Other adjustment	(1.06)	(1.07)	(2.13)	(2.13)	(1.23)
Closing Balance	**3,570.82**	**3,743.82**	**3,657.32**	**3,781.67**	**3,837.92**

Details of Interest:

Particulars					
Interest paid	222.55	224.97	468.25	476.95	419.42
Interest Cost - P&L	242.34	230.21	475.36	459.16	297.80
Interest Cost - CWIP	-	8.73	20.17	35.47	136.87
Total Interest cost	242.34	238.94	495.53	494.63	434.67

3 PS Toll Road Pvt Ltd

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	6,571.41	3,626.49	3,626.49	2,847.00	2,827.34
Add: Loan availed	2,550.75	1,970.30	3,433.90	830.00	11.00
Less : Repayments	2,500.00	500.00	500.00	-	-
Less : Other adjustment	(36.69)	0.10	(11.02)	50.51	(8.67)
Closing Balance	**6,658.85**	**5,096.69**	**6,571.41**	**3,626.49**	**2,847.01**

Details of Interest:

Particulars					
Interest paid	370.74	288.02	679.03	448.66	394.06
Interest Cost - P&L	202.29	2.44	23.32	51.14	4.88
Interest Cost - CWIP	331.66	306.25	709.56	386.28	423.39
Total Interest cost	533.95	308.69	732.88	437.42	428.27

Reliance Infrastructure InvIT Fund
Details on Debt payment history of interest and principal payments of InvIT

4 TK Toll Road Pvt Ltd

` Millions

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	3,573.92	3,674.04	3,674.04	3,805.23	4,583.21
Add: Loan availed	0.00	(0.00)	75.00	0.00	(0.00)
Less : Repayments	131.70	87.80	175.60	131.70	778.50
Less : Other adjustment	(0.23)	(0.25)	(0.49)	(0.51)	(0.52)
Closing Balance	**3,442.45**	**3,586.49**	**3,573.93**	**3,674.04**	**3,805.23**

Details of Interest:

Particulars					
Interest paid	192.62	210.33	410.20	435.96	448.70
Interest Cost - P&L	214.32	224.66	439.38	452.96	49.41
Interest Cost - CWIP	-	-	-	-	401.23
Total Interest cost	214.32	224.66	439.38	452.96	450.64

5 SU Toll Road Pvt Ltd

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	6,558.82	6,603.35	6,603.35	6,451.21	6,441.70
Add: Loan availed	0.00	0.00	0.00	6,649.60	135.80
Less : Repayments	24.20	24.20	48.40	6,468.65	127.36
Less : Other adjustment	(1.92)	(1.94)	(3.87)	28.82	(1.08)
Closing Balance	**6,536.54**	**6,581.09**	**6,558.82**	**6,603.34**	**6,451.22**

Details of Interest:

Particulars					
Interest paid	375.05	381.57	766.59	783.29	600.71
Interest Cost - P&L	422.37	411.85	827.15	785.33	612.57
Interest Cost - CWIP	-	-	-	-	-
Total Interest cost	422.37	411.85	827.15	785.33	612.57

6 TD Toll Road Pvt Ltd

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	2,931.67	2,995.74	2,995.74	3,059.79	3,203.83
Add: Loan availed	-	-	-	-	-
Less : Repayments	48.36	32.24	64.48	64.48	144.48
Less : Other adjustment	(0.21)	(0.22)	(0.41)	(0.43)	(0.44)
Closing Balance	**2,883.52**	**2,963.72**	**2,931.67**	**2,995.74**	**3,059.79**

Details of Interest:

Particulars					
Interest paid	161.78	171.55	334.38	352.22	355.58
Interest Cost - P&L	202.07	199.31	389.97	385.96	374.29
Interest Cost - CWIP	-	-	-	-	-
Total Interest cost	202.07	199.31	389.97	385.96	374.29

Reliance Infrastructure InvIT Fund
Details on Debt payment history of interest and principal payments of InvIT

7 KM Toll Road Pvt Ltd ` Millions

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	7,026.40	5,734.15	5,734.15	4,365.77	2,435.58
Add: Loan availed	(0.00)	716.97	1,227.63	1,359.07	1,967.83
Less : Repayments	28.08	-	-	33.29	-
Less : Other adjustment	(7.57)	(50.48)	(64.63)	(42.59)	37.64
Closing Balance	**7,005.89**	**6,501.59**	**7,026.41**	**5,734.14**	**4,365.77**

Details of Interest:

Particulars					
Interest paid	371.81	344.19	711.23	582.27	489.55
Interest Cost - P&L	573.05	1.41	247.85	1.72	17.12
Interest Cost - CWIP	82.11	355.74	491.34	607.79	475.92
Total Interest cost	655.16	357.15	739.19	609.51	493.04

8 HK Toll Road Pvt Ltd ` Millions

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	5,497.70	4,994.03	4,994.03	4,143.66	2,392.97
Add: Loan availed	-	515.43	519.29	868.14	1,760.13
Less : Repayments	3.33	3.33	13.32	13.32	6.66
Less : Other adjustment	0.56	-	-	(0.15)	0.48
Closing Balance	**5,493.81**	**5,506.13**	**5,500.00**	**4,998.63**	**4,145.96**

Details of Interest:

Particulars					
Interest paid	322.76	322.89	645.79	564.37	410.89
Interest Cost - P&L	851.74	483.95	1,648.41	1,098.80	0.11
Interest Cost - CWIP	-	37.28	44.05	474.19	1,372.54
Total Interest cost	851.74	521.23	1,692.46	1,572.99	1,372.65

9 DS Toll Road Ltd

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	3,230.59	3,262.84	3,262.84	3,308.65	3,310.94
Add: Loan availed	-	-	-	-	-
Less : Repayments	39.81	8.88	33.11	43.82	3.32
Less : Other adjustment	39.49	7.68	(0.86)	1.98	(1.03)
Closing Balance	**3,151.29**	**3,246.28**	**3,230.59**	**3,262.85**	**3,308.65**

Details of Interest:

Particulars					
Interest paid	204.36	193.24	355.63	386.32	394.95
Interest Cost - P&L	166.11	186.30	374.71	399.98	406.84
Interest Cost - CWIP	-	-	-	-	-
Total Interest cost	166.11	186.30	374.71	399.98	406.84

10 NK Toll Road Ltd

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015	Year ended March 31, 2016	Year ended March 31, 2015	Year ended March 31, 2014
Opening Balance	1,173.91	1,178.98	1,178.98	2,740.84	2,821.14
Add: Loan availed	-	-	-	-	-
Less : Repayments	33.12	1.20	4.74	1,562.40	73.83
Less : Other adjustment	0.21	0.98	0.33	(0.54)	6.47
Closing Balance	**1,140.58**	**1,176.80**	**1,173.91**	**1,178.98**	**2,740.84**

Details of Interest:

Particulars					
Interest paid	64.20	71.81	131.25	154.29	329.01
Interest Cost - P&L	73.27	74.62	138.47	179.84	339.90
Interest Cost - CWIP	-	-	-	-	-
Total Interest cost	73.27	74.62	138.47	179.84	339.90

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Place : Mumbai
Date : December 13, 2016

Sd/-

Prateek Jain
Chief Financial Officer

Reliance Infrastructure InvIT Fund
Operating Cash Flow for the Project SPVs for the half year ended September 30,2016

PARTICULARS	Total	DS	NK	TD	SU	TK	GF	JR	HK	KM	PS
CASH FLOW FROM OPERATING ACTIVITIES:											
Profit before exceptional items and tax	**(1,108.25)**	**67.00**	**1.96**	**(132.00)**	**(237.43)**	**(64.94)**	**(297.29)**	**(197.44)**	**(471.99)**	**(408.62)**	**632.50**
Adjustments for:											
Depreciation and amortisation expenses	807.81	78.49	46.91	14.70	88.82	25.01	127.51	70.97	123.28	124.28	107.84
Interest income	(107.59)	(38.30)	(7.51)	(22.66)	(30.37)	(0.42)	(0.21)	(0.08)	(0.73)	(4.07)	(3.24)
Dividend income	(5.51)	(3.07)	(1.36)	(0.45)	(0.54)	(0.07)	-	-	-	(0.02)	-
Net (gain)/loss on sale of investments	-	-	-	-	-	-	-	-	-	-	-
Interest expense	3,262.07	166.10	73.27	202.07	422.37	214.32	314.51	242.34	851.74	573.05	202.30
Cash Generated from Operations before working capital changes	**2,848.53**	**270.22**	**113.27**	**61.66**	**242.85**	**173.90**	**144.52**	**115.79**	**502.30**	**284.62**	**939.40**
Adjustments for:											
(Increase)/decrease in financial assets except for investments	4.46	(1.43)	-	48.75	60.89	(74.22)	-	(0.11)	-	(6.81)	(22.61)
(Increase)/decrease in other current assets	78.50	(0.35)	(10.41)	13.54	39.79	78.31	(12.62)	(1.24)	(5.31)	2.29	(25.50)
Increase/(decrease) in trade payables	321.98	4.60	8.57	8.15	1.08	1.05	21.91	8.61	(47.93)	229.08	86.86
Increase/(decrease) in other financial liabilities	(16.09)	0.05	(0.16)	(1.73)	(1.00)	(1.14)	(1.57)	(0.96)	0.05	(4.15)	(5.48)
Increase/(decrease) in provisions	493.61	15.75	23.55	71.41	127.05	53.07	58.52	46.02	47.30	48.57	2.37
Increase/(decrease) in other current liabilities	(48.71)	(1.31)	(1.06)	(1.14)	(32.82)	(4.26)	(1.38)	(1.37)	(2.24)	2.22	(5.35)
	833.75	**17.31**	**20.49**	**138.98**	**194.99**	**52.81**	**64.86**	**50.95**	**(8.13)**	**271.20**	**30.29**
Cash generated from operations	**3,682.28**	**287.53**	**133.76**	**200.64**	**437.84**	**226.71**	**209.38**	**166.74**	**494.17**	**555.82**	**969.69**
Taxes (paid) net of refunds	37.86	16.06	11.68	(2.12)	(1.31)	(2.49)	(0.02)	(0.01)	16.49	13.68	(14.10)
Net cash generated from operating activities	**3,720.14**	**303.59**	**145.44**	**198.52**	**436.53**	**224.22**	**209.36**	**166.73**	**510.66**	**569.50**	**955.59**

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Operating Cash Flow for the Project SPVs for the half year ended September 30,2015

PARTICULARS	Total	DS	NK	TD	SU	TK	GF	JR	HK	KM	PS
CASH FLOW FROM OPERATING ACTIVITIES:											
Profit before exceptional items and tax	**(315.20)**	**(22.89)**	**(105.01)**	**(140.88)**	**(210.94)**	**(68.61)**	**(250.69)**	**(154.15)**	**(80.54)**	**(26.82)**	**745.33**
Adjustments for:											
Depreciation and amortisation expenses	638.83	75.00	44.37	13.24	80.70	23.83	81.51	57.61	103.30	-	159.27
Interest income	(165.87)	(51.96)	(36.51)	(29.64)	(40.49)	(0.05)	(0.01)	(3.27)	(0.70)	(0.45)	(2.79)
Dividend income	(5.47)	(1.62)	(1.09)	(0.18)	(1.37)	(0.45)	(0.38)	(0.38)	-	-	-
Net (gain)/loss on sale of investments	-	-	-	-	-	-	-	-	-	-	-
Interest expense	2,147.91	186.32	74.62	199.31	411.85	224.66	333.14	230.21	483.95	1.41	2.44
Cash Generated from Operations before working capital changes	**2,300.20**	**184.85**	**(23.62)**	**41.85**	**239.75**	**179.38**	**163.57**	**130.02**	**506.01**	**(25.86)**	**904.25**
Adjustments for:											
(Increase)/decrease in financial assets except for investments	199.28	(32.01)	25.00	86.19	111.93	0.05	1.54	21.12	(13.79)	(1.29)	0.54
(Increase)/decrease in other current assets	(71.52)	(19.57)	(3.99)	(0.19)	(10.37)	(3.62)	(16.17)	(5.56)	(4.41)	2.36	(10.00)
Increase/(decrease) in trade payables	(475.49)	(328.95)	(187.66)	1.93	2.46	(93.69)	10.05	(3.07)	111.26	12.84	(0.66)
Increase/(decrease) in other financial liabilities	0.56	0.03	-	0.04	-	0.03	0.05	0.02	0.21	(0.10)	0.28
Increase/(decrease) in provisions	413.01	13.47	23.55	76.88	113.86	47.27	52.56	41.03	42.59	0.43	1.37
Increase/(decrease) in Non current liabilities	-	-	-	-	-	-	-	-	-	-	-
Increase/(decrease) in other current liabilities	(5,355.59)	(2,897.80)	(2,419.89)	(0.24)	(32.20)	(0.10)	(1.07)	(0.49)	(0.50)	(0.05)	(3.25)
	(5,289.75)	**(3,264.83)**	**(2,562.99)**	**164.61**	**185.68**	**(50.06)**	**46.96**	**53.05**	**135.36**	**14.19**	**(11.72)**
Cash generated from operations	**(2,989.55)**	**(3,079.98)**	**(2,586.61)**	**206.46**	**425.43**	**129.32**	**210.53**	**183.07**	**641.37**	**(11.67)**	**892.53**
Taxes (paid) net of refunds	(21.77)	(0.38)	22.29	0.81	(1.18)	0.68	(1.39)	9.76	(1.98)	0.73	(51.11)
Net cash generated from operating activities	**(3,011.32)**	**(3,080.36)**	**(2,564.32)**	**207.27**	**424.25**	**130.00**	**209.14**	**192.83**	**639.39**	**(10.94)**	**841.42**

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Operating Cash Flow for the Project SPVs for the year ended March 31,2016

PARTICULARS	Total	DS	NK	TD	SU	TK	GF	JR	HK	KM	PS
CASH FLOW FROM OPERATING ACTIVITIES:											
Profit before exceptional items and tax	**(1,526.03)**	**11.18**	**49.97**	**(298.26)**	**(493.48)**	**(154.79)**	**(581.30)**	**(354.09)**	**(933.87)**	**(156.51)**	**1,385.12**
Adjustments for:											
Depreciation and amortisation expenses	1,440.48	142.68	85.49	25.77	154.05	45.15	225.73	124.67	255.08	91.46	290.40
Interest income	(242.77)	(54.70)	(33.53)	(59.16)	(82.16)	(0.10)	(0.01)	(3.29)	(2.29)	(1.26)	(6.27)
Dividend income	(17.51)	(6.40)	(2.94)	(0.67)	(5.03)	(0.86)	(0.66)	(0.50)	-	(0.45)	-
Net (gain)/loss on sale of investments	-	-	-	-	-	-	-	-	-	-	-
Interest expense	5,214.03	374.70	138.47	389.97	827.15	439.38	649.42	475.36	1,648.41	247.85	23.32
Cash Generated from Operations before working capital changes	**4,868.20**	**467.46**	**237.46**	**57.65**	**400.53**	**328.78**	**293.18**	**242.15**	**967.33**	**181.09**	**1,692.57**
Adjustments for:											
(Increase)/decrease in financial assets except for investments	581.49	122.40	85.04	172.57	205.67	(0.75)	0.03	20.50	0.28	0.97	(25.22)
(Increase)/decrease in other current assets	102.87	20.19	14.06	2.37	(59.31)	(64.54)	26.89	18.48	10.62	18.35	115.76
Increase/(decrease) in trade payables	(191.22)	(384.10)	(163.61)	8.89	14.02	(98.97)	17.97	(36.20)	100.83	286.92	63.03
Increase/(decrease) in other financial liabilities	25.99	0.75	-	1.76	1.95	2.18	3.12	0.96	0.40	4.33	10.54
Increase/(decrease) in provisions	437.16	(131.04)	(217.23)	154.20	227.88	94.02	104.78	82.07	84.88	36.55	1.05
Increase/(decrease) in Non current liabilities	-	-	-	-	-	-	-	-	-	-	-
Increase/(decrease) in other current liabilities	(5,316.76)	(2,900.17)	(2,424.49)	0.63	0.11	4.20	0.56	1.01	1.21	(0.37)	0.55
	(4,360.47)	**(3,271.97)**	**(2,706.23)**	**340.42**	**390.32**	**(63.86)**	**153.35**	**86.82**	**198.22**	**346.75**	**165.71**
Cash generated from operations	**507.73**	**(2,804.51)**	**(2,468.77)**	**398.07**	**790.85**	**264.92**	**446.53**	**328.97**	**1,165.55**	**527.84**	**1,858.28**
Taxes (paid) net of refunds	(112.03)	(1.03)	3.55	(1.09)	(7.76)	(1.08)	0.12	9.95	(2.08)	0.65	(113.26)
Net cash generated from operating activities	**395.70**	**(2,805.54)**	**(2,465.22)**	**396.98**	**783.09**	**263.84**	**446.65**	**338.92**	**1,163.47**	**528.49**	**1,745.02**

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Operating Cash Flow for the Project SPVs for the year ended March 31,2015

PARTICULARS	Total	DS	NK	TD	SU	TK	GF	JR	HK	KM	PS
CASH FLOW FROM OPERATING ACTIVITIES:											
Profit before exceptional items and tax	**(92.92)**	**329.09**	**193.92**	**(255.48)**	**(371.51)**	**(190.44)**	**(528.69)**	**(281.72)**	**(260.47)**	**(28.35)**	**1,300.73**
Adjustments for:											
Depreciation and amortisation expenses	1,088.54	138.22	88.04	24.09	144.54	40.80	119.44	104.33	168.56	-	260.52
Interest income	(848.29)	(374.96)	(258.29)	(70.94)	(118.95)	-	(0.15)	(10.45)	(0.71)	(0.74)	(13.10)
Dividend income	(22.10)	(6.90)	(2.23)	(1.72)	(2.43)	(0.89)	(0.99)	(1.53)	(3.23)	(2.18)	-
Net (gain)/loss on sale of investments	-	-	-	-	-	-	-	-	-	-	-
Interest expense	4,495.35	399.98	179.84	385.96	785.33	452.96	680.46	459.16	1,098.80	1.72	51.14
Cash Generated from Operations before working capital changes	**4,620.58**	**485.43**	**201.28**	**81.91**	**436.98**	**302.43**	**270.07**	**269.79**	**1,002.95**	**(29.55)**	**1,599.29**
Adjustments for:											
(Increase)/decrease in financial assets except for investments	315.96	(125.20)	(85.93)	171.87	322.18	(0.49)	(0.03)	96.40	2.12	(0.95)	(64.01)
(Increase)/decrease in other current assets	(104.55)	(4.13)	34.31	(3.67)	(108.50)	(5.13)	(12.85)	(17.53)	9.52	(10.04)	13.47
Increase/(decrease) in trade payables	(975.02)	1.41	2.47	2.61	13.32	10.38	27.57	0.90	(16.54)	-	(1,017.14)
Increase/(decrease) in other financial liabilities	(0.55)	0.03	-	0.02	0.11	(0.04)	(2.70)	1.78	(0.03)	0.10	0.18
Increase/(decrease) in provisions	721.64	28.50	44.55	137.24	202.84	84.26	93.19	73.13	57.11	0.39	0.43
Increase/(decrease) in Non current liabilities	(5,138.68)	(2,893.77)	(2,244.91)	-	-	-	-	-	-	-	-
Increase/(decrease) in other current liabilities	(3,423.84)	2,837.10	2,227.08	(0.08)	33.65	(0.13)	1.32	(0.70)	(3.44)	(8.34)	(8,510.30)
	(8,605.04)	**(156.06)**	**(22.43)**	**307.99**	**463.60**	**88.85**	**106.50**	**153.98**	**48.74**	**(18.84)**	**(9,577.37)**
Cash generated from operations	**(3,984.46)**	**329.37**	**178.85**	**389.90**	**900.58**	**391.28**	**376.57**	**423.77**	**1,051.69**	**(48.39)**	**(7,978.08)**
Taxes (paid) net of refunds	(298.68)	(83.62)	(92.64)	(3.10)	(5.45)	(0.47)	1.52	5.40	(19.06)	(0.07)	(101.19)
Net cash generated from operating activities	**(4,283.14)**	**245.75**	**86.21**	**386.80**	**895.13**	**390.81**	**378.09**	**429.17**	**1,032.63**	**(48.46)**	**(8,079.27)**

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

Reliance Infrastructure InvIT Fund
Operating Cash Flow for the Project SPVs for the year ended March 31,2014

PARTICULARS	Total	DS	NK	TD	SU	TK	GF	JR	HK	KM	PS
CASH FLOW FROM OPERATING ACTIVITIES:											
Profit before exceptional items and tax	**1,058.48**	**305.64**	**46.65**	**(215.14)**	**(228.68)**	**(52.37)**	**(493.73)**	**(206.06)**	**837.58**	**(46.49)**	**1,111.08**
Adjustments for:											
Depreciation and amortisation expenses	766.29	126.85	75.70	23.53	59.62	4.27	104.07	63.79	74.39	-	234.07
Interest income	(904.03)	(374.01)	(266.17)	(81.72)	(141.18)	(0.04)	(0.54)	(38.98)	-	-	(1.39)
Dividend income	(20.55)	(7.45)	(2.22)	(1.07)	(1.66)	(0.11)	(1.12)	(0.83)	(4.03)	(2.06)	-
Net (gain)/loss on sale of investments	(1.80)	(0.26)	-	(0.05)	(0.12)	-	-	(0.13)	(1.21)	(0.03)	-
Interest expense	2,795.51	406.83	339.90	374.29	612.57	49.41	692.60	297.80	0.11	17.12	4.88
Cash Generated from Operations before working capital changes	**3,693.90**	**457.60**	**193.86**	**99.84**	**300.55**	**1.16**	**301.28**	**115.59**	**906.84**	**(31.46)**	**1,348.64**
Adjustments for:											
(Increase)/decrease in financial assets except for investments	885.61	-	-	175.83	377.13	4.62	52.08	277.67	(3.14)	1.42	-
(Increase)/decrease in other current assets	(153.82)	(2.49)	(41.89)	(1.15)	(5.49)	(0.85)	(7.67)	(3.48)	(12.36)	(9.46)	(68.98)
Increase/(decrease) in trade payables	708.48	(9.59)	12.48	(1.64)	3.60	(10.50)	3.47	59.09	7.78	-	643.79
Increase/(decrease) in other financial liabilities	(5.14)	(0.17)	0.01	0.02	(0.21)	0.04	0.10	(4.03)	0.08	(0.01)	(0.97)
Increase/(decrease) in provisions	496.37	29.00	46.46	122.56	157.78	6.49	83.44	49.14	0.40	0.41	0.69
Increase/(decrease) in Non current liabilities	(103.75)	(65.06)	(38.69)	-	-	-	-	-	-	-	-
Increase/(decrease) in other current liabilities	190.17	56.27	35.73	4.77	(1.14)	0.09	(0.36)	(11.92)	(6.74)	(7.79)	121.26
	2,017.92	**7.96**	**14.10**	**300.39**	**531.67**	**(0.11)**	**131.06**	**366.47**	**(13.98)**	**(15.43)**	**695.79**
Cash generated from operations	**5,711.82**	**465.56**	**207.96**	**400.23**	**832.22**	**1.05**	**432.34**	**482.06**	**892.86**	**(46.89)**	**2,044.43**
Taxes (paid) net of refunds	(193.85)	(60.03)	-	(3.50)	(8.00)	0.03	(1.66)	(8.75)	(30.50)	(1.22)	(80.22)
Net cash generated from operating activities	**5,517.97**	**405.53**	**207.96**	**396.73**	**824.22**	**1.08**	**430.68**	**473.31**	**862.36**	**(48.11)**	**1,964.21**

For Chaturvedi & Shah
Firm Registration No: 101720 W
Chartered Accountants

Sd/-

Vijay Napawaliya
Partner
Membership No. 109859

Place : Mumbai
Date : December 13, 2016

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

Sd/-

Sundeep Sikka
Executive Director & CEO

Sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 13, 2016

DA TOLL ROAD PVT LTD

SPECIAL PURPOSE FINANCIAL STATEMENTS

Half year ended September 30, 2016

DA Toll Road Private Limited
Condensed Balance Sheet

` Millions

Particulars	Note	As at September 30, 2016	As at September 30, 2015
ASSETS			
Non-current assets			
(a) Intangible assets	4	-	-
(b) Intangible assets under development	4	17,355.55	10,161.50
(c) Financial Assets			
- Other Financial Assets	5f	280.18	417.60
(d) Deferred tax assets (net)	28	137.62	112.06
(e) Other non - current assets	6	595.09	1,713.55
Current assets			
(a) Financial Assets			
(i) Investments	5a	-	-
(ii) Cash and cash equivalents	5b	77.76	116.68
(iii) Bank balances other than (ii) above	5c	-	-
(iv) Loans	5d	-	-
(v) Other financial asset	5e	559.28	0.69
(b) Current Tax Assets (Net)		20.15	-
(c) Other current assets	7	120.88	181.09
Total Assets		**19,146.52**	**12,703.17**
EQUITY AND LIABILITIES			
EQUITY			
(a) Equity share capital	8	90.18	90.18
(b) Subordinated debt (in nature of Equity)	9a	4,449.10	2,726.65
(c) Other equity	9	4,475.14	3,085.60
LIABILITIES			
Non-current liabilities			
(a) Financial Liabilities			
(i) Borrowings	10a	6,914.78	3,153.02
(ii) Other financial liabilities	12b	228.85	541.14
(b) Provisions	13b	14.18	6.69
(c) Deferred tax liabilities (Net)	28	-	-
(d) Other non - current liabilities	15	-	-
Current liabilities			
(a) Financial Liabilities			
(i) Borrowings	10b	154.40	54.30
(ii) Trade payables	11	80.07	105.79
(iii) Other financial liabilities	12a	2,737.08	2,902.57
(b) Other current liabilities	14	2.40	8.04
(c) Provisions	13a	0.34	0.16
(d) Current Tax Liabilities (Net)		-	29.03
Total Equity and Liabilities		**19,146.52**	**12,703.17**

The accompanying summary of significant accounting policies and other explanatory informtaion (notes) are an integral part of the Condensed Financial Statements.

This is the Condensed Balance Sheet referred to in our report of even date.

For TR Chadha & Co LLP
Chartered Accountants
Firm Regn. No. 006711N/N500028

sd/-

Pramod Tilwani
Partner
Membership No. : 76650

Date: December 5,2016
Place: Mumbai

For and on behalf of the Board

sd/-

Kaushik Pal
Director & CEO
DIN:05237230

Madan Biyani
Director & CFO
DIN:07130371

Date: December 5,2016
Place: Mumbai

DA Toll Road Pvt Ltd
Condensed Statement of Profit and Loss

` Millions

Particulars	Note	Half year ended September 30, 2016	Half year ended September 30, 2015
Revenue from Operations	16	5,129.64	4,182.07
Other Income	17	56.68	20.86
Total Income		5,186.32	4,202.93
Expenses			
Toll Operation and Maintainence expenses	18	94.33	164.57
Construction cost		4,194.65	3,299.51
Employee benefits expense	19	33.87	25.04
Finance costs	20	11.75	35.32
Depreciation and amortization expense	4	0.00	0.00
Other expenses	21	39.20	39.70
Total expenses		4,373.80	3,564.14
Profit / (loss) before tax		**812.52**	**638.79**
Tax expense			
Current tax		-	131.43
Deferred tax charge/(credit)		(1.15)	(16.43)
Profit/(Loss) for the period (IX + XII)		**813.68**	**523.79**
Other Comprehensive Income			
(i) Items that will not be reclassified to profit or loss			
Remeasurements of net defined benefit plans : Gains / (Loss)		(3.33)	(1.87)
(ii) Income tax relating to items that will not be reclassified to profit or loss			
Remeasurements of net defined benefit plans		(1.15)	(0.65)
Other Comprehensive Income for the year		**(2.18)**	**(1.22)**
Total Comprehensive Income for the year		**811.50**	**522.57**
Earnings per equity share of Rs. 10 each			
Basic & Diluted	33	90.23	58.08
		-	-

The accompanying summary of significant accounting policies and other explanatory informtaion (notes) are an integral part of the Condensed Financial Statements.

This is the Condensed Statement of Profit and Loss referred to in our report of even date.

For TR Chadha & Co LLP
Chartered Accountants
Firm Regn. No. 006711N/N500028

sd/-

Pramod Tilwani
Partner
Membership No. : 76650

Date: December 5,2016
Place: Mumbai

For and on behalf of the Board

sd/-

Kaushik Pal
Director & CEO
DIN:05237230

Madan Biyani
Director & CFO
DIN:07130371

Date: December 5,2016
Place: Mumbai

DA Toll Road Pvt Ltd
Condensed Cash flow Statement

` Millions

	Half year ended September 30, 2016	Half year ended September 30, 2015
A CASH FLOW FROM OPERATING ACTIVITIES:		
Profit before exceptional items and tax	**812.52**	**638.79**
Adjustments for:		
Depreciation and amortisation expenses	0.00	0.00
Interest income	(2.55)	(1.44)
Interest expense	11.75	35.32
Mark-to-market (gain)/loss on derivative financial instruments	(5.94)	-
	815.78	**672.67**
Cash Generated from Operations before working capital changes		
Adjustments for:		
(Increase)/decrease in financial assets except for investments	(147.40)	(106.25)
(Increase)/decrease in other current assets	(13.86)	102.94
Increase/(decrease) in trade payables	1.96	90.92
Increase/(decrease) in other financial liabilities	(16.65)	0.16
Increase/(decrease) in provisions	2.99	1.17
Increase/(decrease) in other current liabilities	(10.59)	(1.20)
	(183.55)	**87.74**
Cash generated from operations	**632.23**	**760.41**
Taxes (paid) net of refunds	(5.95)	(142.50)
Net cash generated from operating activities - [A]	**626.28**	**617.91**
B CASH FLOW FROM INVESTING ACTIVITIES:		
Purchase/sale proceeds of intangible assets (including intangible assest under development)	(3,607.98)	(3,868.13)
Purchase of current investments (net of proceeds)	-	-
Interest received	2.55	1.44
Net cash (used in) / generated from investing activities - [B]	(3,605.43)	(3,866.69)
C CASH FLOW FROM FINANCING ACTIVITIES:		
Proceeds from Sub-debt	1,572.55	123.80
Proceeds from inter-corporate deposits (short term borrowings)	39.90	27.50
Proceeds from long term borrowings	1,748.59	3,062.80
Repayment of long term borrowings	-	-
Interest paid	(319.38)	(168.46)
Net cash used in financing activities - [C]	3,041.66	3,045.64
Net increase/(decrease) in cash and cash equivalents - [A+B+C]	62.52	(203.15)
Add: Cash and cash equivalents at the beginning of the year	15.24	319.83
Cash and cash equivalents at the end of the year	77.76	116.68
Components of Cash and cash equivalents		
Balances with banks - in Current accounts	12.79	60.48
Deposits with maturity of less than three months	60.00	50.00
Cash on hand	4.98	6.20
Total Cash and cash equivalents	77.76	116.68

Note: The above Condensed Statement of Cash Flows has been prepared under the 'Indirect Method' as set out in Ind AS 7, 'Statement of Cash Flows'.

The accompanying summary of significant accounting policies and other explanatory informtaion (notes) are an integral part of the Condensed Financial Statements.

This is the Condensed Cash Flow Statement referred to in our report of even date.

For TR Chadha & Co LLP
Chartered Accountants
Firm Regn. No. 006711N/N500028

sd/-

Pramod Tilwani
Partner
Membership No. : 76650

Date: December 5,2016
Place: Mumbai

For and on behalf of the Board

sd/-

Kaushik Pal
Director & CEO
DIN:05237230

Madan Biyani
Director & CFO
DIN:07130371

Date: December 5,2016
Place: Mumbai

DA Toll Road Pvt Ltd
Statement of Changes in Equity

A. EQUITY SHARE CAPITAL ` Millions

	Balance at the beginning of the year / half year	Changes in equity share capital during the year / half year	Balance at the end of the year / half year
For the half year ended September 30, 2015	90.18	-	90.18
For the half year ended September 30, 2016	90.18	-	90.18

B. OTHER EQUITY ` Millions

	Share application money pending allotment (Note 9b)	Equity Component of compoud financial instruments (Note 9c)	Reserves and Surplus		Total
			Securities Premium Account (Note 9e)	Retained Earnings (Note 9d)	
Balance at April 01, 2015	**-**	**-**	**810.72**	**1,751.11**	**2,561.83**
Profit for the year				523.79	**523.79**
Other comprehensive income for the year				- 1.22	**- 1.22**
Total comprehensive income for the year	**-**	**-**	**-**	**522.57**	**522.57**
Transaction with owners in their capacity as owners :					
Issue of equity shares		1.20			**1.20**
Dividend Paid					**-**
	-	1.20	-	-	**1.20**
Balance at September 30, 2015	**-**	**1.20**	**810.72**	**2,273.68**	**3,085.60**
Balance at April 01, 2016	**-**	**1.20**	**810.72**	**2,851.71**	**3,663.63**
Profit for the year				813.68	**813.68**
Other comprehensive income for the year				- 2.18	**- 2.18**
Total comprehensive income for the year	**-**	**-**	**-**	**811.50**	**811.50**
Transaction with owners in their capacity as owners :					
Issue of equity shares		-			**-**
Dividend Paid					**-**
	-	-	-	-	**-**
Balance at September 30, 2016	**-**	**1.20**	**810.72**	**3,663.22**	**4,475.14**

This is statement of change of equity referred to in our report of even date.

For TR Chadha & Co LLP
Chartered Accountants
Firm Regn. No. 006711N/N500028

sd/-

Pramod Tilwani
Partner
Membership No. : 76650

Date: December 5,2016
Place: Mumbai

For and on behalf of the Board

sd/-

Kaushik Pal
Director & CEO
DIN:05237230

Date: December 5,2016
Place: Mumbai

sd/-

Madan Biyani
Director & CFO
DIN:07130371

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 1: Corporate information

DA Toll Road Private Limited (the " Project SPV") has been awarded to carry on the business of design, engineer, procure, construct, fabricate, build, improve, strengthen, operate, maintain and provide infrastructural facilities of all types including roads, bridges, culverts, over bridges, underpasses, flyovers, toll plaza, traffic management systems and equipment, buildings and other infrastructures and collect toll, fees, or charges, carry out surveys, investigations, polls and regulate traffic in connection with the project to be taken up by the Company on Design, Build, Operate and Transfer (DBFOT) basis under the Concession Agreement dated July 26, 2010 with National Highways Authority of India. The Concession Agreement is for a period of 26 years from appointed date for Design, Engineering, Construction, Operation and Maintenance for Six laning of Delhi to Agra section of National Highway – 2 (km 20.50 to km 200.00) in the state of Haryana/Uttar Pradesh or otherwise.

Note 2: Basis of preparation

This special purpose Condensed Financial Statements of Project SPV comprises of Condensed Balance Sheets as at September 30, 2016 and September 30, 2015 Condensed Statement of Profit and Loss, Condensed Cash Flow Statement and Statement of Changes in Equity for the half year ended September 30, 2016 and September 30, 2015 and Statement of Net Assets at Fair Value as at September 30, 2016 and the Condensed Statement of Total Return at fair value for the half year ended September 30, 2016, a summary of significant accounting policies, notes and other explanatory Information. The Condensed Financial Statement has been prepared for the purpose of Condensed Financial Statements of Reliance Infrastructure InvIT Fund (the "Fund") for inclusion in the draft Offer Document (the "Draft Offer document") to be issued in connection with the proposed offering (the "Offering") of the Fund.

The Condensed Financial Statements of the Project SPV have been prepared in accordance with Indian Accounting Standards (Ind AS) as prescribed under Section 133 of Companies Act, 2013 read with relevant rules and other accounting principles. The Condensed Financial Statements have been prepared on a historical cost basis, except for certain assets and liabilities which have been measured at fair value.

For half year ended September 30, 2016 and September 30, 2015, the Project SPV prepared its financial statements in accordance with accounting standards notified under the Section 133 of the Companies Act 2013 (the Act) [Companies(Indian Accounting Standards) Rules, 2015] and other relevant provisions of the act. For the purpose of preparation of these Condensed Financial Statements, the transition date to Ind AS is considered as April 1, 2013 for the Project SPV.

The Condensed Financial Statements are presented in ` Millions, except where otherwise indicated.

Accounting standards issued but not yet effective

Ind AS 115 'Revenue from contracts with customers' have been published by Ministry of Corporate Affairs (MCA) but are not yet effective. Ind AS 115 establishes principles for reporting useful information to users of the financial statements about the nature, amount, timing and uncertainty of revenue and cash flows arising from an entity's contract with customers. Ind AS 115 supersedes other revenue standards i.e. Ind AS 11 and Ind AS 18 notified by MCA. Management has undertaken an assessment of the impact of this standard and does not believe that the impact would be material.

Note 3: Summary of Significant accounting policies

3.1 Current versus non-current classification

The Project SPV presents assets and liabilities in the balance sheet based on current/ non-current classification.

An asset is treated as current when it is:

- Expected to be realised or intended to be sold or consumed in normal operating cycle
- Expected to be realised within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in normal operating cycle
- It is due to be settled within twelve months after the reporting period, or

- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period

All other liabilities are classified as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

The operating cycle is the time between the acquisition of assets for processing and their realization in cash and cash equivalents. The Project SPV has identified twelve months as its operating cycle.

3.2 **Foreign currencies**

Functional and presentation currency
Items included in the financial statements of the Project SPV are measured using the currency of the primary economic environment in which the entity operates ('the functional currency'). The condensed financial statements are presented in Indian Rupees (`) in Millions, which is the Project SPV's functional and presentation currency.

Transactions and balances
Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the Statement of Profit and Loss with an exception of the following:-

Under Ind AS 21 exchange differences arising on the translation/settlement of non-monetary item should be treated as income or loss in Statement of Profit and Loss. However, Ind AS 101 gives an exemption for existing long term foreign currency non-monetary items wherein the Project SPV can continue the policy adopted for treatment of exchange differences arising on long-term foreign currency monetary items pertaining to the acquisition of a depreciable asset for items recognized on or before March 31, 2013.

For any new long term foreign currency non-monetary item recognized from or after first Ind AS financial reporting period, deferral/amortization of exchange difference will not be allowed, rather the Project SPV will apply Ind AS 21 for recognition of gains and losses.

3.3 **Fair value measurement**

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Project SPV.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Project SPV uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair
value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1 - Quoted (unadjusted) market prices in active markets for identical assets or liabilities
Level 2- Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
Level 3 -Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Project SPV determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

The Project SPV's Management determines the policies and procedures for both recurring and non – recurring fair value measurement, such as derivative instruments and unquoted financial assets measured at fair value.

At each reporting date, the Management analyses the movements in the values of assets and liabilities which are required to be re-measured or re-assessed as per the Project SPV's accounting policies. For this analysis, the Management verifies the major inputs applied in the latest valuation by agreeing the information in the valuation computation to contracts and other relevant documents.

The management also compares the change in the fair value of each asset and liability with relevant external sources to determine whether the change is reasonable.

For the purpose of fair value disclosures, the Project SPV has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.

This note summarizes accounting policy for fair value. Other fair value related disclosures are given in the relevant notes.

Disclosures for valuation methods, significant estimates and assumptions of Financial instruments (including those carried at amortised cost) (note 22) and Quantitative disclosures of fair value measurement hierarchy (note 23).

3.4 **Revenue recognition**

Revenue is measured at the fair value of the consideration received or receivable. The Project SPV recognizes revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for the Project SPV's activities, as described below.

Toll revenue

The income from toll revenue from operations of the facility is accounted on receipt basis.

Contract revenue (construction contracts)

Contract revenue associated with the construction of road are recognized as revenue by reference to the stage of completion of the projects at the balance sheet date. The stage of completion of project is determined by the proportion that contract cost incurred for work performed up to the balance sheet date bears to the estimated total contract costs.

Contract cost includes costs that relate directly to the specific contract and allocated costs that are attributable to the construction of the toll roads. Cost that cannot be attributed to the contract activity such as general administration costs are expensed as incurred and classified as other operating expenses.

Others

Insurance and other claims are recognized as revenue on certainty of receipt basis.

Income on investment is recognized based on the terms of the investment. Income from mutual fund scheme having fixed maturity plans is accounted on declaration of dividend or on maturity of such investments. Interest income is recognised on a time proportion basis taking into account the amount outstanding and the rates applicable. For all other financial assets measured at amortised cost interest income is recorded using the Effective Interest Rate (EIR).

3.5 **Accounting of intangible assets under service concession arrangement**
Project SPV has Toll Road Concession rights where it Designs, Builts, Finances, Operates and Transfers (DBFOT) infrastructure used to provide public service for a specified period of time. These arrangements may include Infrastructure used in a public-to-private service concession arrangement for its entire useful life.

These arrangements are accounted for based on the nature of the consideration. The intangible asset model is used to the extent that the Project SPV receives a right (a license) to charge users of the public service. The financial asset model is used when the Project SPV has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services. When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for each component. If the Project SPV performs more than one service (i.e., construction or upgrade services and operation services) under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.

Intangible assets model
Intangible assets arising out of service concession arrangements are accounted for as intangible assets where the Project SPV has a contractual right to charge users of service when the projects are completed. Apart from above per the service concession agreement the Project SPV is obligated to pay the amount of premium to National Highways Authority of India (NHAI). This premium obligation has been treated as Intangible asset given it is paid towards getting the right to earn revenue by constructing and operating the roads during the concession period.

Hence, the total premium payable to the Grantor as per the Service Concession Agreement is also recognized as an 'Intangible Assets' and the corresponding obligation for committed premium is recognized as premium obligation.

The intangible assets is measured at the fair value of consideration transferred to acquire asset, which is the fair value of consideration received or receivable for the construction services delivered.

Amortization of concession intangible assets
The Intangible asset recognized are amortised over the concession period on the basis of projected toll revenue which reflects the pattern in which the assets economic benefits are consumed. The projected total toll revenue is based on the independent traffic volume projections; Amortization is revised in case of any material change in the expected pattern of economic benefits. Refer note no 24 for description and significant terms of the concession agreements.

Financial assets model
The financial asset model applies when the operator has an unconditional right to receive cash or another financial asset from the grantor in remuneration for concession services. In the case of concession services, the operator has such an unconditional right if the grantor contractually guarantees the payment of amount specified or determined in the contract or the shortfall, if any, between amounts received from users of public service and amounts specified or determined in the Contract.

Financial Assets resulting from application of Appendix A and Appendix B of Ind AS 11 are recorded in the condensed statement of financial position under the heading Other Financial Assets and recognized at amortised cost.

However in case of certain arrangements, the contract may include a payment commitment on the part of the concession grantor covering only part of investment, with the balance to be recovered from by charging users of service . In such arrangements the investment amount guaranteed by the concession grantor is recognized under the financial asset model and the residual balance is recognized under the Intangible asset model.

Any asset carried under concession arrangements is derecognized on disposal or when no future economic benefits are expected from its future use or disposal or when the contractual rights to the financial asset expire.

Maintenance obligations
Contractual obligations to maintain, replace or restore the infrastructure (principally resurfacing costs and major repairs and unscheduled maintenance which are required to maintain the Infrastructure asset in operational condition except for any enhancement element) are recognized and measured at the best estimate of the expenditure required to settle the present obligation at the balance sheet date for which next resurfacing would be required as per the concession arrangement. The provision is discounted to its present value at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

3.6 **Taxes**

Current income tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in the countries where the Project SPV operates and generates taxable income. Current income tax relating to items recognized outside the Statement of Profit and Loss is recognized outside the Statement of Profit and Loss (either in other comprehensive income or in equity). Current tax items are recognized in correlation to the underlying transaction either in OCI or directly in equity. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred tax

Deferred tax is provided using the balance sheet approach on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities and assets are recognized for all taxable temporary differences

Deferred tax assets are recognized for unused tax losses to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax losses can be utilized.

The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are re-assessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date.

Deferred tax relating to items recognized outside the Statement of Profit and Loss is recognized outside the Statement of Profit and Loss (either in other comprehensive income or in equity). Deferred tax items are recognized in correlation to the underlying transaction either in OCI or directly in equity.

Deferred tax assets and deferred tax liabilities are offset if a legally enforceable right exists to set off current tax assets against current tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

3.7 **Borrowing costs**

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the asset. All other borrowing costs are expensed in the period in which they occur. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds. Borrowing cost also includes exchange differences to the extent regarded as an adjustment to the borrowing costs.

3.8 **Leases**

Operating lease payments are recognized as an operating expense in the income statement on a straight line basis over the lease term.

3.9 **Premium Deferment**

Premium Deferral (i.e. premium payable less paid after adjusting premium deferment) is aggregated under premium deferred obligation in the balance sheet. The interest payable on the above is aggregated under deferred premium obligation. Interest on premium deferral is charged to the Statement of Profit and Loss.

3.10 **Contingent liabilities**

A contingent liability is a possible obligation that arises from past events whose existence will be confirmed

by the occurrence or non-occurrence of one or more uncertain future events beyond the control of the Project SPV or a present obligation that is not recognised because it is not probable that an outflow of resources will be required to settle the obligation. A contingent liability also arises in extremely rare cases where there is a liability that cannot be recognised because it cannot be measured reliably. The contingent liability is not recognised in the books of account but its existence is disclosed in the Financial Statements.

3.11 **Impairment of non-financial assets**

Non-financial assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash inflows which are largely independent of the cash inflows from other assets or groups of assets (cash-generating units). Non-financial assets that suffered impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

3.12**Provisions**

Provisions are recognized when the Project SPV has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Project SPV expects some or all of a provision to be reimbursed the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the Statement of Profit and Loss net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost.

3.13 **Employee benefits**

(i) Short term obligations

Liabilities for wages and salaries, including non-monetary benefits that are expected to be settled wholly within 12 months after the end of the period in which the employees render the related service are recognized in respect of employees' services up to the end of the reporting period and are measured at the amounts expected to be paid when the liabilities are settled. The liabilities are presented as current employee benefit obligations in the balance sheet.

(ii) Leave obligations

The Project SPV provides sick leave and privilege leave to its employees.

Privilege and sick leave obligation is provided based on actuarial valuation which takes into account the estimated portion of leave that will be encashed, availed and the portion that will lapse. The portion that is expected to be encashed is provided for based on the basic salary of the employee and for the portion that is expected to be availed, the valuations are based on the employees' total compensation. The liability for earned leave is also classified as current where it is expected to be availed/ encashed during the next 12 months. The remaining portion is classified as non-current. The amounts of current and non-current liability are based on actuarial estimates.

(iii) Post - employment obligations

The Project SPV operates various post-employment schemes, including
(a) defined benefit plans such as gratuity
(b) defined contribution plans such as provident fund.

Gratuity Obligations

The liability or asset recognized in the balance sheet in respect of defined benefit gratuity plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method.

The present value of the defined benefit obligation is determined by discounting the estimated future

cash outflows by reference to market yields at the end of the reporting period on government bonds that have terms approximating to the terms of the related obligation.

The net interest cost is calculated by applying the discount rate to the net balance of the defined benefit obligation and the fair value of plan assets. This cost is included in employee benefit expense in the statement of profit and loss.

Re-measurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognized in the period in which they occur, directly in other comprehensive income. They are included in retained earnings in the statement of changes in equity and in the balance sheet.

Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service cost.

Defined Contribution plans

The Project SPV pays provident fund contributions to publicly administered provident funds as per local regulations. The group has no further payment obligations once the contributions have been paid. The contributions are accounted for as defined contribution plans and the contributions are recognized as employee benefit expense when they are due. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

3.14 **Cash and cash equivalents**

Cash and cash equivalents in the balance sheet comprise cash at banks and on hand and short-term deposits with an original maturity of three months or less, which are subject to an insignificant risk of changes in value.

For the purpose of the statement of cash flows, cash and cash equivalents consist of cash and short-term deposits, as defined above, net of outstanding bank overdrafts as they are considered an integral part of the Project SPVs cash management.

3.15 **Derivatives**

Derivatives are initially recognized at fair value on the date a derivative contract is entered into and are subsequently re-measured to their fair value at the end of each reporting period.

3.16 **Trade Payables**

Trade payables are obligations to pay for goods or services that have been acquired in the ordinary course of business from suppliers. Accounts payable are classified as current liabilities if payment is due within one year or less (or in the normal operating cycle of the business if longer). If not, they are presented as non-current liabilities.

Trade payables are recognized initially at fair value and subsequently measured at amortised cost using the effective interest method.

3.17 **Financial instruments**

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial assets

Initial recognition and measurement

All financial assets are recognised initially at fair value, in the case of financial assets not recorded at fair value through Statement of Profit and Loss, net of directly attributable transaction cost to the acquisition of the financial asset. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognised on the trade date, i.e., the date that the Project SPV commits to purchase or sell the asset.

For purposes of subsequent measurement, financial assets are classified in following categories;

- at amortised cost
- at fair value through profit or loss (FVTPL)

- at fair value through other comprehensive income (FVTOCI)

Financial Assets at amortised cost

Financial assets are measured at the amortised cost if both the following conditions are met:

a) The asset is held within a business model whose objective is to hold assets for collecting contractual cash flows, and
b) Contractual terms of the asset give rise on specified dates to cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

This category is the most relevant to the Project SPV. All the Loans and other receivables under financial assets (except Investments) are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market.

After initial measurement such financial assets are subsequently measured at amortised cost using the Effective Interest Rate (EIR) method. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortization is included in finance income in the Statement of Profit and Loss. The losses arising from impairment are recognized in the Statement of Profit and Loss. This category generally applies to loans and other receivables.

Financial Assets at Fair Value through Statement of Profit and Loss/Other Comprehensive Income

All investments in scope of Ind AS 109 are measured at fair value. Project SPVs has investment in Mutual fund which are held for trading, are classified as at FVTPL. The Project SPV makes such election on an instrument by instrument basis. The classification is made on initial recognition and is irrevocable.

If the Project SPV decides to classify an instrument as at FVTOCI, then all fair value changes on the instrument, excluding dividends, are recognized in the Other Comprehensive Income. There is no recycling of the amounts from Other Comprehensive Income (OCI) to the Statement of Profit and Loss, even on sale of investment. However, the Project SPV may transfer the cumulative gain or loss within equity. Instruments included within the FVTPL category are measured at fair value with all changes recognized in the Statement of Profit and Loss.

De-recognition

A financial asset (or, where applicable, a part of a financial asset or part of a Project SPV of similar financial assets) is primarily derecognized (i.e. removed from the Project SPV's balance sheet) when:

The rights to receive cash flows from the asset have expired, or

The Project SPV has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a 'pass-through' arrangement; and either (a) the Project SPV has transferred substantially all the risks and rewards of the asset, or (b) the Project SPV has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

When the Project SPV has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if and to what extent it has retained the risks and rewards of ownership. When it has neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the Project SPV continues to recognize the transferred asset to the extent of the Project SPV's continuing involvement. In that case, the Project SPV also recognizes an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Project SPV has retained.

Impairment of financial assets

The Project SPV assesses on a forward looking basis the expected credit losses associated with its assets carried at amortised cost and FVOCI. The impairment methodology applied depends on whether there has been a significant increase in credit risk.

The Project SPV has three types of financial assets subject to Ind AS 109’s expected credit loss model:

- Loans receivables measured at amortised cost
- Retentions receivable, grant receivable from NHAI
- Loans given to employees

The impairment methodology for each class of financial assets stated above is as follows:

Loans receivables measured at amortised cost: Loans receivables at amortised cost are generally short term in nature considered to be low risk, and thus the impairment provision is determined as 12 months expected credit losses.

Loans given to employees: For loans given to employees outstanding as on the reporting dates, the has determined reliably that assessing the probability of default at the initial recognition of each and every loan or receivable would result in undue cost and effort. As permitted by Ind AS 109, the credit provision will be determined based on whether credit risk is low only at each reporting date, until the loan is derecognized. Using the impairment methodology the Group has assessed that no loan loss allowance needs to be recorded in the books of accounts.

Expected credit loss ('ECL') impairment loss allowance (or reversal) recognized during the period is recognized as income/ expense in the Statement of Profit and Loss (P&L). This amount is reflected under the head ‘other expenses’ in the P&L. The balance sheet presentation for various financial instruments is described below:

Financial assets measured as at amortized cost and other contractual revenue receivables - ECL is presented as an allowance, i.e., as an integral part of the measurement of those assets in the balance sheet. The allowance reduces the net carrying amount. Until the asset meets write-off criteria, the Project SPV does not reduce impairment allowance from the gross carrying amount.

Financial Liabilities

Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through Statement of Profit and Loss, loans and borrowings, trade payables or other payables.

All financial liabilities are recognized initially at fair value.

The Project SPV's financial liabilities include trade and other payables, loans and borrowings including bank overdrafts and other payables.

Subsequent measurement

The measurement of financial liabilities depends on their classification, as described below:

Loans and borrowings

This is the category most relevant to the Project SPV. After initial recognition, interest-bearing loans and borrowings are subsequently measured at amortised cost using the EIR method. However, the Project SPVs has borrowings at floating rates. The impact of restatement of effective interest rate, year on year due to reset of interest rate, is not material. Gains and losses are recognized in Statement of Profit and Loss when the liabilities are derecognized as well as through the transaction cost amortization process.

Retention money payable

This is the category most relevant to the Project SPV. Retention money are measured at Fair value initially. Subsequently, they are measured at amortised cost using the EIR (Effective interest rate) method. Gains and losses are recognized in Statement of Profit and Loss when the liabilities are derecognized as well as through the EIR amortization process.

De-recognition

A financial liability is derecognized when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the de-recognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in the Statement of Profit and Loss.

Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet if there is a currently enforceable legal right to offset the recognized amounts and there is an intention to settle on a net basis, to realize the assets and settle the liabilities simultaneously.

Derivative financial instruments

Initial recognition and subsequent measurement

The Project SPV uses derivative financial instruments –principal only swaps to hedge its foreign currency risks. Such derivative financial instruments are initially recognized at fair value on the date on which a derivative contract is entered into and are subsequently re-measured at fair value. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Any gains or losses arising from changes in the fair value of derivatives are taken directly to Statement of Profit and Loss.

3.18 **Segment information**

The Project SPV is engaged in "Road Infrastructure Project" which in the context of Ind AS 108 "Operating Segment" is considered as the only segment. The Project SPV's activities are restricted within India and hence, no separate geographical segment disclosure is considered necessary.

3.19 **Critical accounting estimates and judgements**

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that may have a financial impact on the entity and that are believed to be reasonable under the circumstances.

The Project SPV makes estimates and assumptions concerning the future. The resulting accounting estimates will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities are disclosed below.

(i) Applicability of service concession arrangement accounting to toll roads concessionaire arrangements

The Project SPV has determined that Appendix A of Ind AS 11 'Service concession arrangements' is applicable to the Project SPV which provides on accounting by the operators for public-to-private service concession arrangements. The Project SPV has entered into concession arrangement with NHAI as per which the group would participate in the Design, Build, Finance, Operate and Transfer (DBFOT) basis the toll roads infrastructure. After the end of the concession arrangement, the Project SPV has to transfer the infrastructure i.e. toll roads constructed to National Highway Authorities of India (NHAI).

Accordingly Project SPV has recognized the intangible assets recognized as per the accounting policy mentioned in Note no 3.5 'Accounting of intangible assets under service concessionaire arrangement'.

(ii) Income taxes

The Project SPV has recognized deferred tax assets relating to carried forward tax losses to the extent there are sufficient taxable temporary differences relating to the same taxation authority against which the unused tax losses can be utilized. However, the utilization of tax losses also depends on the ability of the Project SPV to satisfy certain tests at the time the losses are recouped. Management has forecasted future taxable profits and has therefore recognized deferred tax assets in relation to tax losses.

(iii)Amortization of concession intangible assets

The Intangible asset recognized are amortised over the concession period on the basis of projected toll revenue which reflects the pattern in which the assets economic benefits are consumed. The projected total toll revenue is based on the independent traffic volume projections; Amortization is revised in case of any material change in the expected pattern of economic benefits.

(iv) Impairment of concession intangible assets

The Project SPV tests intangible assets and cash generating units have suffered any impairment, in accordance with the accounting policy stated in note 3.11. The recoverable amount of each cash generating unit has been determined based on the greater of value-in-use and fair value less costs to sell calculations. These calculations require the use of assumptions regarding traffic flows, discount rates, growth rates and other factors affecting operating activities of the cash generating units.

(v) Fair valuation of derivatives and other financial instruments

The fair value of financial instruments that are not traded in an active market is determined using valuation techniques. The Project SPV uses its judgments to select a variety of methods and makes assumptions that are mainly based on market conditions existing at each balance sheet date.

(vi) Provision for resurfacing obligation (major maintenance expenditure)

The Project SPV records the resurfacing obligation for its present obligation as per the concession arrangement to maintain the toll roads at every five years during the concession period. The provision is included in the financial statements at the present value of the expected future payments. The calculations to discount these amounts to their present value are based on the estimated timing of expenditure occurring on the roads.

The discount rate used to value the resurfacing provision at its present value is determined through reference to the nature of provision and risk associated with the expenditure.

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 4 - Intangible assets (including intangible assets under development) ` Millions

Particulars	Toll Collection rights (A)	Other intangible assets (NHAI Premium) (B)	Total Intangible Assets (A + B)	Intangible assets under development
Half year ended September 30, 2015				
Opening gross carrying amount	-	-	-	6,719.41
Additions	-		-	3,442.09
Disposals	-		-	-
Closing gross carrying amount	-	-	-	10,161.50
Accumulated depreciation and impairment				
Opening accumulated depreciation and impairment	-		-	
Depreciation charge for the year	-		-	
Disposals	-		-	
Closing accumulated depreciation and impairment	-	-	-	-
Net carrying amount	**-**	**-**	**-**	**10,161.50**
Half year ended September 30, 2016				
Opening gross carrying amount	-	-	-	12,777.87
Additions	-	-	-	4,577.69
Disposals	-	-	-	-
Closing gross carrying amount	-	-	-	17,355.55
Accumulated depreciation and impairment				
Opening accumulated depreciation and impairment	-	-	-	-
Depreciation charge for the year	-	-	-	-
Disposals	-	-	-	-
Closing accumulated depreciation and impairment	-	-	-	-
Net carrying amount	**-**	**-**	**-**	**17,355.55**

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 5 - Financial Assets - Current ` Millions

Note 5 (a) - Investments -

Particulars	**As at September 30, 2016**	**As at September 30, 2015**
Investment in mutual funds		
Quoted		
Reliance Liquidity Fund - Daily Dividend Plan	-	-
	-	**-**

Note 5 (b) - Cash and Cash equivalents

Cash and cash equivalents		
Balances with banks		
- in current accounts	12.79	60.48
Deposits with maturity of less than three months	60.00	50.00
Cash on hand	4.98	6.20
	77.76	**116.68**

Note 5 (c) - Other bank balances

Deposits with maturity of more than three months but less than twelve months	-	-
	-	**-**

Note 5 (d) - Loans

Unsecured, considered good		
Loans to others	-	-
	-	-

Note 5 (e) - Other financial assets - current

Grant receivable from NHAI	532.16	-
Security deposits	0.13	0.30
Interest accrued on fixed deposits	-	-
Retention money receivable from NHAI	-	0.32
Others	26.99	0.07
	559.28	**0.69**

Note 5 (f) - Other financial assets - Non - current

Grant receivable from NHAI	263.80	417.60
Security Deposits	-	-
Deposits with maturity of more than three months but less than twelve months	-	-
Derivative financial assets	16.39	-
	280.18	**417.60**

Note 6 - Other non-current assets

Capital Advance	595.09	1,713.55
Duties and taxes receivable	-	-
Prepaid Expenses	-	-
	595.09	**1,713.55**

Note 7 - Other Current assets

Advance to vendors	52.23	54.53
Advance to employees	2.84	3.99
Prepaid Expenses	3.79	7.40
Duties and taxes receivable	62.02	115.17
	120.88	**181.09**

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 8 - Share Capital and Other equity

Note 8a - Authorised Share Capital

` Millions

Particulars	Nos of Shares	September 30, 2016	September 30, 2015
At the beginning of the year/quarter	1,00,00,000	100.00	100.00
Add : Increase during the year/quarter	-	-	-
At the end of the year/quarter	1,00,00,000	100.00	100.00

Note 8b - Issued, subscribed and paid-up equity share capital

At the beginning of the year/quarter	90,18,000	90.18	90.18
Add : Increase during the year/quarter	-	-	-
At the end of the year/quarter	90,18,000	90.18	90.18

Note 8c - Terms and rights attached to equity shares

The Company has only one class of shares referred to as Equity Shares having a Par Value of Rs.10/-.

Note 8d - Reconciliation of nos of Shares

Particulars	As at September 30, 2016	As at September 30, 2015
Nos of Shares at the beginning of the year/quarter	90,18,000	90,18,000
Add : Nos of Shares issued during the year/quarter	-	-
Nos of Shares at the end of the year/quarter	90,18,000	90,18,000

Note 8e - Shares held by the Sponsor Company or their subsidiaries/associates

Reliance Infrastructure Limited (Immediate and Ultimate Holding Company)	90,18,000	90,18,000

Note 8f - Details of Shareholders holding more than 5% shares

Reliance Infrastructure Limited		
Nos of Shares	90,18,000	90,18,000
% of holding	100%	100%

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 9a - Sub-ordinated debt (in nature of equity)

Particulars	As at September 30, 2016	As at September 30, 2015
At the beginning of the year/quarter	2,876.55	2,602.85
Increase / (decrease) during the year/quarter	1,572.55	123.80
At the end of the year/quarter	4,449.10	2,726.65

Terms and rights attached to Sub-ordinated debts infused by Sponsor alongwith its Subsidiaries
i) Subordinated debt is the part of Sponsors Equity from the promoters of the Project SPVs for the project, which is unsecured and interest free as per Common Loan agreement with the lenders;

ii) No repayment/redemption/interest servicing allowed during the moratorium period of the long term project loan.

Note 9b - Share application money pending allotment

Particulars	As at September 30, 2016	As at September 30, 2015
At the beginning of the year/quarter	-	-
Increase during the year/quarter	-	-
Decreae during the year/quarter	-	-
At the end of the year/quarter	-	-

Note 9c - Corporate Guarantee (in nature of equity)

At the beginning of the year/quarter	1.20	-
Increase / (decrease) during the year/quarter	-	1.20
At the end of the year/quarter	1.20	1.20

DA Toll Road Private Limited
Notes to Condensed Financial Statements

` Millions

Particulars	As at September 30, 2016	As at September 30, 2015
Note 9d - Retained Earnings		
At the beginning of the year/quarter	2,851.71	1,751.11
Net Profit for the Period	813.68	523.79
Items of other comprehensive income recognised directly in retained earnings		
- Remeasuremens of post-employements obligations (net of tax)	(2.18)	(1.22)
Dividends paid during the year	-	-
At the end of the year/quarter	3,663.22	2,273.68
Note 9e - Securities Premium Account		
At the beginning of the year/quarter	810.72	810.72
Premium on shares issued during the year	-	-
At the end of the year/quarter	810.72	810.72

Nature and purpose of securities premium
Securities premium reserve is used to record the premium on issue of shares. The reserve is utilised in accordance with the provisions of the act.

Note 9f - Debenture Redemption Reserve		
At the beginning of the year/quarter	-	-
Reserve created during the year/quarter	-	-
Reserve utilised during the year/quarter	-	-
At the end of the year/quarter	-	-

Note 10 (a) - Borrowings - Non current

` Millions

Particulars	As at September 30, 2016	As at September 30, 2015
Secured		
Term loans		
From banks		
Rupee term loan	2,792.00	828.87
Foreign currency loan	2,692.58	2,025.35
From financial institutions		
Rupee term loan	1,430.20	298.80
Total	**6,914.78**	**3,153.02**

Rupee Term Loan and External Commercial Borrowings (ECB) from Banks & Financial Institutions :

The Borrowings are secured by the way of terms stated in Common Loan Agreement entered between the Project SPV and Consortium of lenders:-

(i) a first ranking pari passu mortgage/charge over all the Borrower's immoveable and movable properties, both present and future, except the Project Assets. ;

(ii) a first ranking pari passu charge on all the Borrower's bank accounts including, but not limited to the Escrow Account/ its Sub-Accounts where all revenues, Disbursements, receivables shall be deposited and in all funds from time to time deposited therein and in all Permitted Investments or other securities representing all amounts credited to the Escrow Account.

(iii) a first ranking pari passu charge on all movable tangible and intangible assets of the Borrower (other than those specified in paragraphs (ii) above and (iv) below) including but not limited to its goodwill, undertaking and uncalled capital, both present and future, except the Project Assets.;

(iv) a first ranking pari passu charge over / assignment of the right, title, interests, benefits, claims and demands of the Borrower in, to and under any letter of credit, guarantees (except the guarantees issued in favour of NHAI) including contractor guarantees and liquidated damages and performance bond provided by any party to the Project Documents.

(v) the applicable interest rate for Rupee Term Loan varies from 10.00% to 13.00% p.a.

Note 10 (b) - Borrowings - Current

Particulars	As at September 30, 2016	As at September 30, 2015
Unsecured		
Loan from Sponsor	154.40	54.30
	154.40	**54.30**

Note 11 - Trade Payables

Due to Micro and Small Enterprises	-	-
Due to other than Micro and Small Enterprises	80.07	105.79
	80.07	**105.79**

(a) Dues to Micro and Small Enterprises

Disclosure of payable to vendors as defined under the "Micro, Small and Medium Enterprise Development Act, 2006" is based on the information available with the Company regarding the status of registration of such vendors under the said Act, as per the intimation received from them on requests made by the company. There are no overdue principal amounts/interest payable amounts for delayed payments to such vendors at the Balance Sheet date. There are no delays in payment made to such suppliers during the year or for any earlier years and accordingly there is no interest paid or outstanding interest in this regard in respect of payments made during the year or brought forward from previous years.

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 12 (a) - Other financial liabilities - current

Particulars	As at September 30, 2016	As at September 30, 2015
Current Maturities of long term debt	-	-
NHAI Premium Payable	-	-
Security Deposits	0.00	0.00
Interest Accrued	0.88	-
Creditors for Capital expenditure	2,735.38	2,901.85
Employee benfits payable	0.81	0.71
Total	**2,737.08**	**2,902.57**

Note 12 (b) - Other financial liabilities - Non - current

Non - Current		
NHAI Premium Payable	-	-
Retention money payable	228.85	541.14
Total	**228.85**	**541.14**

Note 13 (a) - Provisions - Current

Current		
Provision for employee benefits		
- Gratuity	-	0.00
- Leave encashment	0.34	0.16
	0.34	**0.16**

Note 13 (b) - Provisions - Non - Current

Provision for employee benefits		
- Gratuity	3.63	2.34
- Leave encashment	10.55	4.36
	14.18	**6.69**

Note 14 - Other current liabilities

Advances from Customers	-	-
Duties and taxes payable	2.40	8.04
Unearned revenue	-	-
	2.40	**8.04**

Note 15 - Other non - current liabilities

Other	-	-
	-	**-**

DA Toll Road Private Limited
Notes to Condensed Financial Statements

` Millions

	Half year ended September 30, 2016	Half year ended September 30, 2015
Note 16 - Revenue		
Operating income		
- Construction income	4,278.54	3,365.50
- Income from toll collections	851.10	816.57
Other Operating income	-	-
	5,129.64	4,182.07
Note 17 - Other income		
Dividend Income on current investment	-	-
Profit/Loss on redemption of mutual fund	-	-
Mark to market gain on derivaties instrument	5.94	-
Interest income		
- On financial assets carried at amortised cost	48.18	19.42
- On fixed deposits	2.55	1.44
- Others	-	-
Insurance claim received	-	-
Miscellaneous income	-	0.01
	56.68	20.86
Note 18 - Toll Operation and Maintainence expenses		
Subcontracting expenses	35.50	23.43
Maintainence of Roads	21.26	108.07
Electricity expenses	2.92	2.42
Handling Charges	2.04	1.57
Site and other direct expenses	32.61	29.09
	94.33	164.57
Note 19 - Employee benefits expenses		
Salaries wages and bonus	26.76	21.85
Contribution to provident funds and other funds	1.85	1.32
Gratuity	0.79	0.47
Leave encashment	3.70	0.75
Staff welfare expenses	0.77	0.65
	33.87	25.04
Note 20 - Finance Costs		
Interest on loan	11.75	5.73
Interest unwinding on premium deferment	-	-
Unwinding of discount on provisions	-	-
Other finance charges	-	29.59
Derivative hedging cost	-	-
Unwinding of discount on retention money	-	-
	11.75	35.32
Note 21 - Other expenses		
Rent	5.47	2.71
Rates & taxes	0.33	0.02
Insurance	8.06	10.49
Legal and Professional Charges	19.50	19.79
Expenditure toward Corporate Social responsibility	0.00	-
Auditors Remuneration	0.19	0.19
Travelling and Conveyance	1.61	1.27
Other miscellaneous expenses	4.05	5.22
Exchange loss on borrowing	-	-
	39.20	**39.70**

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 16A : Gross toll collection and details of revenue share to NHAI

` Millions

Particulars	Sep-16		Sep-15
Toll collection (gross)	851.10		816.57
Less: revenue share to NHAI	-		-
Toll collection (net) (A)	851.10		816.57
Toll collection for additional stretch as per supplementary agreement with NHAI	-		-
Less: payment to NHAI	-		-
Toll collection charges (net) (B)	-		-
Income from toll collection (net of revenue share) (A+B)	851.10		816.57

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 22 - Fair value measurements

Financial Instruments by category ` Millions

Signficance of financial instruments

Particulars	As at September 30, 2016	As at September 30, 2015
Financial assets		
At amortised Cost		
Loans	-	-
Grant receivable from NHAI	795.96	417.60
Security Deposits	0.13	0.30
Fixed deposits with maturity of more than 12 months	-	-
Interest accrued on fixed deposits	-	-
Insurance Claim receivables	26.99	0.07
Retention Money receivable from NHAI	-	0.32
Cash and Cash equivalent	77.76	116.68
Other bank balances	-	-
At Fair value through profit & loss		
Mutual fund Investments	-	-
Foreign currency forward exchange contracts	16.39	-
Total financial assets	**917.23**	**534.97**
Financial liabilities		
At amortised Cost		
Floating Rate Borrowings	6914.78	3153.02
Debentures	-	-
Trade Payables	80.07	105.79
Retention money payable	228.85	541.14
NHAI Premium Payable	-	-
Security Deposits	0.00	0.00
Interest accrued but not due	0.88	-
Employee Benefits Payable	0.81	0.71
Creditors for capital expenditure	2,735.38	2,901.85
At Fair value through profit & loss		
Foreign currency forward exchange contracts	-	-
Total financial liabilities	**9960.78**	**6702.52**

(c) Fair value of financial assets and liabilities measured at amortised cost

Particulars	As at September 30, 2016	As at September 30, 2015
Financial assets		
Carrying value of financial assets at amortised cost		
Grant receivable from NHAI	795.96	417.60
Total Financial assets at amortised cost	**795.96**	**417.60**
Fair value of financial assets carried at amortised cost		
Grant receivable from NHAI	795.96	417.60
Total Fair value of financial assets at amortised cost	**795.96**	**417.60**
Financial liabilities		
Carrying value of financial liabilities at amortised cost		
Floating rate borrowigns	6,914.78	3,153.02
Debentures	-	-
Retention money	228.85	541.14
NHAI Premium Payable	-	-
	7,143.63	**3,694.15**
Fair value of financial liabilities carried at amortised cost		
Floating rate borrowigns	6,914.78	3,153.02
Debentures	-	-
Retention money	228.85	541.14
NHAI Premium Payable	-	-
	7,143.63	**3,694.15**

The carrying value amounts of fixed deposits, interest accrued on depoists, retention money receivable, insurance claim receivable, cash and cash equivalents,

trade payables, interest accrued, employee benefits payable and creditors for capital expenditure approximate their fair value due to their short term nature.

For financial assets and liabilities that are measured at fair value, the carrying amounts are equal to the fair values.

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 23 - Fair value Hierarchy

(a) Fair value hierarchy - Recurring fair value measurements ` Millions

Particulars	As at September 30, 2016	As at September 30, 2015
Financial assets		
At Fair value through profit & loss		
Level 1		
Mutual fund Investments	-	-
Derivatives not designated as hedges		
Level 2		
Principal swap	16.39	-
Total financial assets	**16.39**	**-**

(b) Fair value hierarchy - Assets and liabilities which are measured at amortised cost for which fair values are disclosed

Particulars	As at September 30, 2016	As at September 30, 2015
Financial assets		
Level 3		
Grant receivable from NHAI	795.96	417.60
Total financial assets	**795.96**	**417.60**
Financial liabilities		
Level 3		
Floating Rate Borrowings	6,914.78	3,153.02
Debentures	-	-
Retention money payable	228.85	541.14
NHAI Premium Payable	-	-
Total financial liabilities	**7143.63**	**3694.15**

Recognised fair value measurements

Level 1: Level 1 hierarchy includes financial instruments measured using quoted prices. This includes mutual funds that have quoted price. The mutual funds are valued using the closing NAV.

Level 2: The fair value of financial instruments that are not traded in an active market (for example, over-the-counter derivatives) is determined using valuation techniques which maximise the use of observable market data and rely as little as possible on entity-specific estimates. If all significant inputs required to fair value an instrument are observable, the instrument is included in level 2.

Level 3: If one or more of the significant inputs is not based on observable market data, the instrument is included in level 3. This is the case for borrowings, debentures, Rerention money payable and hedging derivative included in level 3

Valuation technique used to determine fair value

Specific valuation techniques used to value financial instruments include:

• the use of quoted market prices or dealer quotes for similar instruments

• the fair value of forward foreign exchange contracts and principal swap is determined using forward exchange rates at the balance sheet date

• the fair value of the remaining financial instruments is determined using discounted cash flow analysis.

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 24 - Concession arrangements - Main features

Name of entity	Description of the arrangement	Significant terms of the arrangement	Intangible Assets		Financial Asset
			Gross book value	Net book value	
DA Toll Road Private Limited	Financing, design, building and operation of 180 kilometre long six lane toll road between Delhi and Agra on National Highway 2	Period of concession: 2012 - 2038 Remuneration : Toll Investment grant from concession grantor : Yes Infrastructure return at the end of concession period : Yes Investment and renewal obligations : Nil Re-pricing dates : Yearly Basis upon which re-pricing or re-negotiation is determined : Inflation Premium payable to grantor : Nil	**September 30, 2016** - **September 30, 2015** -	**September 30, 2016** - **September 30, 2015** -	**September 30, 2016** 795.96 **September 30, 2015** 417.60

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 25 - Foreign currency exposure

a) Particulars of derivative Instruments

Amounts in USD in millions

Particulars	As at September 30, 2016	As at September 30, 2015
Principal only Swap	24.49	23.09
	24.49	23.09
No of instruments		
No derivative instruments are acquired for speculation purpose.	3	2

b) Foreign currency exposures not hedged by derivative instrument or otherwise:

Particulars	As at September 30, 2016	As at September 30, 2015
Borrowings (including interest accrued but not due) in USD in millions	56.36	38.57
Borrowings (including interest accrued but not due) in INR in millions	3,754.65	2,529.99
	3,754.65	**2,529.99**

Note 26 - Expenditure in Foreign Currency

Amounts Rs in millions

Particulars	As at September 30, 2016	As at September 30, 2015
Interest on External Commercial Borrowings (ECB)	61.29	33.45
Agency fees on External Commercial Borrowings (ECB)	13.47	101.98
	74.77	135.43

Note 27 - Capitalisation of exchange differences on long term foreign currency monetary item

The Project SPV Group has opted to defer / capitalize exchange differences arising on long-term foreign currency monetary item in accordance with para 46A of AS 11 of Previous GAAP. Ind AS 21 requires all exchange gain/losses arising on foreign currency monetary to be recognized under Statement of profit and loss. Project SPV Group has availed option available under Ind AS 101 as per which it has it can continue the Indian GAAP policy for accounting of exchange gain/loss arising on account of translation of long term foreign currency item recognized before transition date i.e. March 31, 2013. However exchange gain / loss arising on any new long-term foreign currency monetary item recognized after the transition date i.e. March 31, 2013 would be recognized to statement of profit and loss as required under Ind AS 21.

Note 28 - Deferred tax (liability) / Asset

` Millions

The balance comprises temporary differences attributable to :

Particulars	As at September 30, 2016	As at September 30, 2015
Unused tax losses carried forward	-	-
Intangible assets		
Toll collection rights	-	-
Premium deferement	-	-
Intangible assets under development	501.79	348.63
NHAI Premium payable	-	-
Other items		
Derivatives	(5.57)	
Grant receivable from NHAI	(270.55)	(141.94)
Borrowings	(81.61)	(80.06)
Retention Money Payable	(10.14)	(16.10)
Retirement benefit obligation	3.70	1.53
Other items	-	-
Net deferred tax (liability)/asset	**137.62**	**112.06**

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 29 – Financial risk management

The group activities exposes it to market risk, liquidity risk and credit risk. In order to minimize any adverse effects on the financial performance of the group, derivative financial instruments, such as principal only swaps are entered to hedge certain foreign currency risk exposure. Derivatives are used exclusively for hedging purpose and not as trading or speculative instruments

This note explains the source of risk which the entity is exposed to and how the entity is manage the risk.

Risk	Exposure arising from	Measurement	Management
Credit risk	Cash and cash equivalents, trade receivables, financial assets measured at amortised cost.	Aging analysis Credit ratings	Diversification of bank deposits, credit limits and letters of credit
Market risk — foreign exchange	Recognized financial assets and liabilities not denominated in Indian rupee (INR)	Cash flow forecasting Sensitivity analysis	Actively Managed
Market risk — interest rate	Long-term borrowings at variable Rates	Sensitivity analysis	Actively Managed
Liquidity risk	Borrowings and other liabilities	Rolling cash flow forecasts	Availability of committed credit lines and borrowing facilities

The Project SPV`s risk management is carried out by a project finance team and central treasury team (group treasury) under policies approved by board of directors. Group treasury identifies, evaluates and hedges financial risk in close co-operation with the group`s operating units. The Management of the project SPV provides written principles for overall risk management, as well as policies covering specific areas, such as interest rate risk and credit risk, use of derivative financial instrument and non-derivative financial instrument, and investments of excess liquidity.

Commodity risk:

The Project SPV requires for implementation (construction, operation and maintenance) of the projects, such as cement, bitumen, steel and other construction materials. For which, the Project SPV entered into fixed price contract with the EPC contractor and O&M Contractor so as to manage our exposure to price increases in raw materials. Hence, the sensitivity analysis is not required

Market risk — interest rate risk

The Bank loans follows floating rates with resets defined under agreements. While interest rate fluctuations carry a risk on financials, the project SPV earn toll income which is linked to WPI thus providing a natural hedge to the interest rate risk.

a) Interest rate risk exposure

` Millions

Particulars	As at September 30, 2016	As at September 30, 2015
Variable Rate Borrowings	6,914.78	3,153.02
Fixed Rate Borrowings	-	-
Total	**6,914.78**	**3,153.02**

Sensitivity

Profit or loss is sensitive to higher/lower interest income from borrowings as a result of changes in interest rates.

Impact on profit/loss after tax	As at September 30, 2016	As at September 30, 2015
Interest rates (increase) by 1 basis points	(54.63)	(24.91)
Interest rates decrease by 1 basis points	54.63	24.91

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 29 – Financial risk management

Currency risk:

Foreign currency risk is the risk that the fair value or future cash flows of an exposure will fluctuate because of changes in foreign exchange rates. The Project SPV exposure to the risk of changes in foreign exchange rates relates to Project SPV foreign currency loan i.e. External Commercial Borrowings (ECB). Project SPV has an aggregate of USD 50 mn ECBs

Foreign currency risk exposure

` Millions

Particulars	As at September 30, 2016	As at September 30, 2015
Financial liabilities		
Interest Accrued but not due on foreign borrowings	0.90	0.24
External commercial borrowings	2,692.58	2,025.35
Total	**2,693.48**	**2,025.59**

Sensitivity analysis:

The following tables demonstrate the sensitivity to a reasonably possible change in USD exchange rates, with all other variables held constant. The impact on the Project SPV 's profit before tax is due to changes in the fair value of monetary liabilities. The Project SPV has used exemption under Ind AS 101 for existing long term foreign currency non-monetary items. The Project SPV continue to apply the policy adopted for treatment of exchange differences arising on long-term foreign currency monetary items pertaining to the acquisition of a depreciable asset for items recognized on or before March 31, 2013 and hence, not considered in disclosure of foreign currency sensitivity. With all other variables held constant, the Project SPV 's profit before tax is affected through the impact on change of foreign currency rate on interest accrued but not due on ECB loans, as follows

Sensitivity

` Millions

Impact on profit after tax	As at September 30, 2016	As at September 30, 2015
INR/USD closing exchange rate	66.62	65.59
INR/USD (increase) by 6%	(127.67)	(96.01)
INR/USD decrease by 6%	127.67	96.01

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 29 – Financial risk management

Liquidity risk - Table

Liquidity risk is the risk that the Project SPV may not be able to meet its present and future cash and collateral obligations without unacceptable losses. The Project SPV objective is to, at all times maintain optimum levels of liquidity to meet its cash and requirements. The Project SPV closely monitors its liquidity position and deploys a robust cash management system. It maintains sources of financing including debt from banks at an optimized cost. The liquidity risk is managed on the basis of expected maturity the financial liabilities. The average credit period taken to settle trade payables is about 30 to 60 days. The carrying amounts are ass be a reasonable approximation of fair value. The following table analyses financial liabilities by remaining contractual maturities.

The table below analyses the group's non-derivative financial liabilities and net-settled derivative financial liabilities into relevant maturity groupings based on the remaining period at the balance sheet date to the contractual maturity date. Derivative financial liabilities are included in the analysis if their contractual maturities are essential for an understanding of the timing of the cash flows. The amounts disclosed in the table are the contractual undiscounted cash flows.

` I

As at September 30, 2016	Less than 3 months	Between 3 months and 1 year	Between 1 year and 2 years	Between 2 years and 5 years	Over 5 years	T
Non-derivatives						
Borrowings	-	-	284.64	1,898.23	4,972.00	7
Trade and other payables	20.02	60.06				
Other financial liabilities	108.70	2,887.08	-	-	-	2
Total non-derivatives	**128.72**	**2,947.13**	**284.64**	**1,898.23**	**4,972.00**	10
Derivatives						
Foreign exchange forward contracts						
	-	**-**	**-**	**-**	**-**	

As at September 30, 2015	Less than 3 months	Between 3 months and 1 year	Between 1 year and 2 years	Between 2 years and 5 years	Over 5 years	T
Non-derivatives						
Borrowings	-	-	-	1,351.25	2,039.58	3
Trade and other payables	26.45	79.34	-	-	-	
Other financial liabilities	-	3,249.42	241.66	-	-	3
Total non-derivatives	**26.45**	**3,328.76**	**241.66**	**1,351.25**	**2,039.58**	6

Note 30 - Capital risk management

The Project SPV objectives when managing capital are to

- safeguard their ability to continue as a going concern, so that they can continue to provide returns for shareholders and benefits for other stakeholders, and
- Maintain an optimal capital structure to reduce the cost of capital.

For the purpose of the project SPV capital management, capital includes issued equity capital, share premium, sub-debts and all other equity reserves attributable to the equity holders of the parent. The primary objective of the project SPV capital management is to maximize the shareholder value.

The Project SPV manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Project SPV may adjust the dividend payment to shareholders, return capital to shareholders or issue interest free sub-ordinate debt. The Project SPV monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Project SPV policy is to keep optimum gearing ratio. The Project SPV includes within net debt, interest bearing loans and borrowings, trade payables, less cash and cash equivalents.

In order to achieve this overall objective, the project SPV capital management, amongst other things, aims to ensure that it meets financial covenants attached to the interest-bearing loans and borrowings that define capital structure requirements. No changes were made in the objectives, policies or processes for managing capital for half year ended September 30, 2016 and September 30, 2015.

Consistent with others in the industry, the group monitors capital on the basis of the following gearing ratio:

Net debt including total borrowings (net of cash and cash equivalents)

divided by

Total 'equity' (as shown in the balance sheet).

The project SPV strategy is to maintain a debt to equity ratio within 1.86 to 4.00.The gearing ratios at September 30, 2016 and September 30, 2015 were as follows:

		` Millions
Particulars	**As at September 30, 2016**	**As at September 30, 2015**
Net debt (a)	6,991.42	3,090.64
Equity (b)	9,014.42	5,902.43
Net debt to equity ratio (a) / (b)	0.78	0.52

		` Millions
Particulars	**As at September 30, 2016**	**As at September 30, 2015**
Net debt (a)	6,991.42	3,090.64
Equity (b)	9,014.42	5,902.43
Nebt debt plus Equity (c = a+b)	16,005.83	8,993.07
Gearing ratio (a) / c	0.44	0.34

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 31- Gratuity and other post-employment benefit plans ` Millions

a) Defined contribution plan

The following amount recognized as an expense in Statement of profit and loss on account of provident fund and other funds. There are no other obligations other
than the contribution payable to the respective authorities.

	As at September 30, 2016	As at September 30, 2015
Contribution to provident fund and other funds	1.26	0.93
Total	**1.26**	**0.93**

a) Defined benefit plan

The Project SPV Group has a defined benefit plan (Gratuity) for its employees. The gratuity plan is governed by the Payment of Gratuity Act, 1972. Under the Act,
employee who has completed five years of service is entitled to specific benefit. The level of benefits provided depends on the member's length of service and salary
at retirement age. Every employee who has completed five years or more of service gets a gratuity on departure at 15 days salary (last drawn salary) for each
completed year of service as per the provision of the Payment of Gratuity Act, 1972 with total ceiling on gratuity of Rs.1,000,000/-. The said gratuity plan is funded.

The following tables summaries the The amounts recognised in the balance sheet and the movements in the net defined benefit obligation over the year are as follows:

	As at September 30, 2016	As at September 30, 2015
Opening defined benefit liability / (assets)	8.51	3.51
Net employee benefit expense recognised in the employee cost		
Current service cost	0.80	0.48
Past service cost	-	-
Interest cost on benefit obligation	0.33	0.14
(Gain) / losses on settlement	-	-
Net benefit expense	1.12	0.62
Amount recorded in Other Comprehensive Income (OCI)		
Measurement during the period due to :		
Return on plan assets, excluding amounts included in interest expense/(income)	-	-
Actuarial loss / (gain) arising from change in financial assumptions	0.88	0.07
Actuarial loss / (gain) arising on account of demographic assumptions	-	-
Experience (gains)/losses	2.45	1.79
Amount recognized in OCI	3.33	1.86
Benefits payments from plan	(0.55)	-
Closing net defined benefit liability / (asset)	12.42	5.99

	As at September 30, 2016	As at September 30, 2015
Opening fair value of plan assets	8.46	3.51
Net employee benefit expense recognised in the employee cost		
Interest cost / (income) on plan asset	0.33	0.15
(Gain) / losses on settlement	-	-
Net benefit expense	0.33	0.15
Amount recorded in Other Comprehensive Income (OCI)		
Measurement during the period due to :		
Return on plan assets, excluding amounts included in interest expense/(income)	0.00	(0.00)
Actuarial loss / (gain) arising from change in financial assumptions	-	-
Actuarial loss / (gain) arising on account of demographic assumptions	-	-
Experience (gains)/losses	-	-
Asset ceiling not recognised as an asset	-	-
Amount recognized in OCI	0.00	(0.00)
Employer contributions/premiums paid	0.55	-
Benefits Paid	(0.55)	-
Closing fair value of plan assets	8.79	3.66

Note 31- Gratuity and other post-employment benefit plans ` Millions

The net (liability)/asset disclosed above relates to funded plan is as follows:

	As at September 30, 2016	As at September 30, 2015
Present value of funded obligations	12.42	5.99
Fair value of plan assets	8.79	3.66
Amount not recognised as an asset (asset ceiling)		
	3.63	2.33
Net liability is bifurcated as follows :		
Current	-	-
Non-current	3.63	2.33
Total	**3.63**	**2.33**
Discount rate	7.10%	7.75%
Expected rate of return on plan assets (p.a.)		
Salary escalation rate (p.a.)	7.50%	7.50%
Mortality pre-retirement	Indian Assured Lives Mortality (2006-08)	Indian Assured Lives Mortality (2006-08)

A quantitative analysis for significant assumption is as shown below:

Assumptions -Discount rate		
Sensitivity Level	50 bp	50 bp
Impact on defined benefit obligation -in % increase	-5.15%	-5.59%
Impact on defined benefit obligation -in % decrease	5.54%	6.06%
Assumptions -Future salary increases		
Sensitivity Level	50 bp	50 bp
Impact on defined benefit obligation -in % increase	5.50%	6.05%
Impact on defined benefit obligation -in % decrease	-5.16%	-5.63%

The table below shows the expected cash flow profile of the benefits to be paid to the current membership of the plan based on past service of the employees as at the valuation date:

	As at September 30, 2016	As at September 30, 2015
Within the next 12 months (next annual reporting period)	0.38	0.20
Between 2 and 5 years	2.26	1.27
Between 6 and 9 years	4.77	2.00
For and Beyond 10 years	22.47	14.01
Total expected payments	**29.87**	**17.48**
The average duration of the defined benefit plan obligation at the end of the reporting period	10.69 years	11.64 years

Plan Assets Composition

	As at September 30, 2016	As at September 30, 2015
Non Quoted		
Insurer Managed Funds	8.79	3.66
	8.79	**3.66**

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 32 - Related Party Transactions

As per accounting standard Ind AS 23 as prescribed under the Companies (Accounting Standard) Rules, 2015, the disclosed below :

Sponsor Company
Reliance Infrastructure Limited

Key Management Personnel
Kaushik Pal - Chief executive officer (w.e.f. October 1, 2015)
Sudhir R Hoshing - Chief executive officer (till February 28, 2015)
Madan Biyani - Chief financial officer (w.e.f. March 31, 2015)

Person having singificant influence on the Sponsor Company

Shri Anil .D. Ambani

Enterprises over which person described in (iii) above has significant influence
Reliance Communications Enterprises Private Limited (formerly AAA Communications Private Limited (RCEPL))

Details of transactions and closing balance ` Millions

Particulars	**Sep 30, 2016**	**Sep 30, 2015**
Transactions during the year :		
Toll operation and maintainence expenses (including project execution support services)		
R Infra	24.73	13.95
Reimbursement of expenditure paid by		
R Infra	-	-
Assets acquired		
R Com	-	-
Sub-debts received (in nature of equity)		
R Infra	1,572.55	125.00
Sub-debts paid (in nature of equity)		
R Infra	-	-
Inter-corporate deposit received during the year		
R Infra	39.90	27.50
Inter-corporate deposit repaid during the year		
R Infra	-	-
Share application money received during the year		
R Infra	-	-
Balances at the year end		
Inter-corporate deposit		
R Infra	154.40	54.30
Other current liabilities		
R Infra	107.44	56.02
Sub-debts (in nature of equity)		
R Infra	4,449.10	2,727.85
Equity share capital (excluding premium)		
R Infra	90.18	90.18
Gurantees issued on behalf of the company		
R Infra	-	-

DA Toll Road Private Limited
Notes to Condensed Financial Statements

Note 33 - Earning Per Share

` Millions

Particulars	Half year ended September 30, 2016	Half year ended September 30, 2015
Profit / Loss attributable to equity shareholders (Rs Millions) (A)	813.68	523.79
Weighted average number of equity shares for basic and diluted earnings per share (B)	90,18,000	90,18,000
Earnings / (Loss) per share (Basic and diluted) (Rupees) (A/B)	**90.23**	**58.08**
Nominal value of equity shares (Rupees)	10.00	10.00

Note 34 - Capital Commitments and other commitments

` Millions

Particulars	Half year ended September 30, 2016
Estimated value of capital contract remaining to be executed for construction of toll roads (net of advances)	8,388.97

Note 35 – Events after reporting period

There are no subsequent event after the reporting period which required adjustments to the Condensed Financial Statements.

Previous period figures have been regrouped and re-arranged wherever necessary to make them comparable to those for current period.

As per our attached report of even date

For TR Chadha & Co LLP
Chartered Accountants
Firm Regn. No. 006711N/N500028

sd/-

Pramod Tilwani
Partner
Membership No. : 76650

Date: December 5,2016
Place: Mumbai

For and on behalf of the Board

sd/-

Kaushik Pal
Director & CEO
DIN:05237230

Madan Biyani
Director & CFO
DIN:07130371

Date: December 5,2016
Place: Mumbai

DA Toll Road Pvt Ltd

Details on Debt payment history of interest and principal payments

` Millions

Particulars	Sep-16	Sep-15
Opening Balance	5,251.06	269.40
Add: Loan Availed during the year	1,788.49	3,090.30
Less : Repayment During the year	-	-
Less : Other adjustment	-29.63	152.38
Closing Balance	**7,069.18**	**3,207.32**

Details of Interest

Particulars	Sep-16	Sep-15
Interest paid During the year	319.38	168.46
Interest Costs during the year - P&L	11.75	35.32
Interest Costs during the year - CWIP	352.18	81.57
Interest Costs during the year	363.93	116.88

For TR Chadha & Co LLP
Chartered Accountants
Firm Regn. No. 006711N/N500028

sd/-

Pramod Tilwani
Partner
Membership No. : 76650

Date: December 5,2016
Place: Mumbai

For and on behalf of the Board

sd/-

Kaushik Pal
Director & CEO
DIN:05237230

Madan Biyani
Director & CFO
DIN:07130371

Date: December 5,2016
Place: Mumbai

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion of the Project SPVs' financial condition and results of operations together with their Combined Financial Statements as of and for the financial years 2014, 2015 and 2016 and as of and for the six months ended September 30, 2015, and 2016, including the schedules and notes thereto and report thereon included elsewhere in this Draft Offer Document. The Combined Financial Statements include the historical combined revenues, expenses and other financial information of the Project SPVs. The Combined Financial Statements are prepared in accordance with Ind AS, which differs in certain material respects with Indian GAAP, U.S. GAAP and International Financial Reporting Standards.

Since our registration, we have not had any corporate activity and therefore do not believe that a discussion of our results of operations would be meaningful. Accordingly, the following discussion includes a discussion and analysis of the financial condition and results of operations of the Project SPVs on a combined basis for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016.

This discussion contains forward-looking statements and reflects our current views with respect to future events and financial performance. Actual results may differ materially from those anticipated in these forward-looking statements as a result of certain factors such as those set forth in the section headed "Risk Factors" included elsewhere in this Draft Offer Document.

The Project SPVs financial year ends on March 31 of each year. Accordingly, all references to a particular financial year are to the 12-month period ended March 31 of that year.

Overview

We are a registered infrastructure investment trust under the InvIT Regulations. We primarily intend to own, operate and maintain a portfolio of ten toll-road assets in the Indian states of Maharashtra, Karnataka, Gujarat, Rajasthan, Haryana and Tamil Nadu. These toll roads are operated and maintained pursuant to concessions granted by either the NHAI or, in the case of the Gurgaon Faridabad Project, the HPWD.

Our Sponsor is Reliance Infrastructure Limited, a leading private sector infrastructure development and construction company with a market capitalization of over Rs.127,077.00 million as of December 12, 2016 (*Source: www.bseindia.com*). The Sponsor has been listed on the Stock Exchanges since 1995. Excluding the toll-road assets that are being transferred by the Sponsor to us pursuant to the Formation Transactions (as described below), the Sponsor has one more toll-road asset, DA, which is currently under construction. For more information, please see the section headed "- *The Delhi-Agra Project*" and "*Parties to the Trust – The Sponsor*" in this Draft Offer Document.

We will acquire an initial portfolio comprising the Project SPVs, all of which are currently either wholly or majority owned by the Sponsor, subject to the receipt of requisite approvals.

The Formation Transactions

The Trustee (on behalf of the Trust) intends to acquire the equity shares of the Project SPVs after the Bid/Issue Closing Date and prior to the Allotment in the Issue (for each such Project SPV, the "**Acquisition Date**"). Subject to the receipt of requisite approvals, the Trust intends to acquire 100% of the equity shares in each of DS, GF, HK, JR, KM, NK, PS, SU, TD and TK. However, the Sponsor currently holds only 74% of the equity shares of PS and its ability to acquire the residual 26% of the equity shares from the other shareholder of PS, and consequently, its ability to transfer any additional equity shares of PS (post-acquisition from the other shareholder of PS) to the Trust, is subject to the approval of NHAI.

As consideration for the acquisition of the equity shares of the Project SPVs, the Trust will issue Units to the Sponsor on or around the Acquisition Date. The Securities Purchase Agreements for each Project SPV will be executed after the Bid/Issue Closing Date and prior to the Acquisition Date. Pursuant to the Securities Purchase Agreements, the Sponsor has undertaken to complete the construction works remaining in respect of certain Project SPVs. For additional information about the Formation Transactions, please see the section headed "*About the Trust – Background and Structure of the Trust – Formation Transactions*" in this Draft Offer Document.

There are certain other agreements that the Trustee on behalf of the Trust intends to enter into with the Sponsor and other parties, such as the ROFO and Future Assets Agreement. These will be executed on or about the Acquisition Date. For further information on the ROFO and Future Assets Agreement, see the sections headed "- *The Delhi-Agra Project*" and "*Related Party Transactions – Details of Related Party Transactions Proposed to be Undertaken* - ROFO and Future Assets Agreement" in this Draft Offer Document.

As of September 30, 2016, the Project SPVs owned, operated and maintained the following toll road assets comprising 723.09 km of constructed and operational roads and 45.95 km of roads under construction:

- the Dindigul Samayanallore Project: an approximately 53.05 km section of NH 7 between Dindigul and Samayanallore in Tamil Nadu, which is held by DS;

- the Namakkal Karur Project: an approximately 41.37 km section of NH 7 between Namakkal and Karur in Tamil Nadu, which is held by NK;

- the Salem Ulundurpet Project: an approximately 136.36 km section of NH 68 between Salem and Ulundurpet in Tamil Nadu, which is held by SU;

- the Trichy Dindigul Project: an approximately 87.27 km section of NH 45 between Trichy and Dindigul in Tamil Nadu, which is held by TD;

- the Hosur Krishnagiri Project: an approximately 59.87 km section of NH 7 between Hosur and Krishnagiri in Tamil Nadu, which is held by HK;

- the Trichy Karur Project: an approximately 61.35 km section of NH 67 between Trichy and Karur in Tamil Nadu, which is held by TK;

- the Jaipur Reengus Project: an approximately 51.84 km section of NH 11 between Jaipur and Reengus in Rajasthan, which is held by JR;

- the Gurgaon Faridabad Project: an approximately 66.19 km section in Gurgaon and Faridabad in Haryana, including stretches of Crusher Zone Road, Pali-Bhakri Road, Ballabgarh-Lukhawas junction Road and MCF road, which is held by GF;

- the Kandla Mundra Port Project: an approximately 71.40 km section of NH-8A (Extension) between Gandhidham (Kandla) and Mundra Port in Gujarat, which is held by KM and of which 55.80 km is operational; and

- the Pune Satara Project: an approximately 140.35 km section of NH 4 between Pune and Satara in Maharashtra, which is held by PS and of which 110.0 km is operational.

Factors affecting Results of Operations

The Project SPVs' business, prospects, results of operations and financial condition are affected by a number of factors, including the following key factors:

Stage of construction of our under-construction projects

The Trust comprises ten Project SPVs, two of which are partially complete and four (TK, JR, KM and HK) of which have been completed in the past three financial years. Our results of operations for the past three financial years and the six months ended September 30, 2016 include construction costs and construction income from our under-construction projects.

We recognise the costs incurred in the construction of our under-construction projects (by reference to the stage of completion of the projects at the balance sheet date). Further, in accordance with our accounting policies, we recognise construction income as the construction costs incurred by reference to the stage of completion of the project at the balance sheet date, plus a 2% margin. For financial year 2014, 2015 and 2016 and for the six months ended September 30, 2016, construction income amounted to 65.59%, 40.58%, 45.69% and 23.77% of the Project SPVs' revenue from operations As we complete the construction of our various under-construction projects, we will no longer recognize construction income from such projects. On the other hand, as our under-construction projects become operational, we will increasingly receive toll income from our projects that were earlier under construction.

Further, construction costs are the most significant component of our total expenses. For financial year 2014, 2015 and 2016 and for the six months ended September 30, 2016, construction costs amounted to 64.94%, 36.56%, 39.45% and 18.95% of the Project SPVs' total expenses. Our construction costs comprise costs paid to our EPC contractors for the construction of roads. As we complete the construction of our under-construction projects, our construction costs will decrease.

The terms of the concession agreements and traffic volumes

For financial year 2014, 2015 and 2016 and for the six months ended September 30, 2016, income from toll collection amounted to 34.26%, 58.69%, 54.29% and 76.21% of the Project SPVs' revenue from operations. BOT and DBFOT projects restrict the Project SPVs' operational and financial flexibility. Toll fees are typically pre-determined with the relevant government entity and cannot be modified to reflect prevailing circumstances, other than annual adjustments to account for inflation as specified in the concession agreements. However, in the case of DA, the revision is at predetermined rates once every three years, in accordance with the concession agreement. Significant costs during the concession period include toll operation and maintenance expenses such as periodic maintenance of roads which is required to be performed as specified in the concession agreement. Periodic maintenance involves the repair of wear and tear of the roads and highways, including overlaying the surface of the roads and highways, if required. For further details on the maintenance requirements for each of our projects, see the section headed "*The Trust's Business— Details of the Project SPVs and the Initial Road Assets*" in this Draft Offer Document. Our inability to effectively manage such operating and maintenance expenses during the concession period may have a material adverse effect on our profitability, financial condition and results of operations.

The Project SPVs are substantially dependent on the accuracy of the traffic volume forecasts for their respective projects. Projects undertaken on a BOT or DBFOT basis involve concession agreements that are long-term in nature, usually between 12 to 30 years. The agreed consideration for each of the Project SPVs projects was based on forecasts of traffic volumes and expected revenues over the concession period. Any material shortfall between the actual traffic volume and the forecast traffic volume for a project could have a material adverse effect on their cash flows, results of operations and financial condition.

Further, all long-term projects have inherent risks associated with them and involve variables that may not necessarily be within the Project SPVs' control. Accordingly, we may be exposed to a variety of operation and maintenance and other risks, including unanticipated cost increases and overruns, inability to negotiate satisfactory arrangements with third parties, and disagreements with third parties. In addition, the long-term nature of the Project SPVs contracts may expose them to increased risk of unforeseen business and industry changes and developments which could have a material adverse effect on their business, financial condition and results of operations.

General economic conditions in India and the level of investment and activity in the infrastructure development sector

Demand for toll roads is primarily dependent on sustained economic development in the regions that the Project SPVs operate in and government policies relating to infrastructure development. It also significantly depends on budgetary allocations made by the Government and State Governments for the roads and highways sector, as well as funding provided by international and multilateral development finance institutions for infrastructure projects. Investment by the private sector in infrastructure projects is dependent on the potential returns from such projects

and is, therefore, linked to Government and State Government policies relating to private sector participation and sharing of risks and returns from such projects.

We believe that the Government's and State Governments' focus on, and sustained increases in budgetary allocation for, infrastructure, and the development of comprehensive infrastructure policies that encourage greater private sector participation and funding for infrastructure projects should further result in large infrastructure projects in India. We believe that we are likely to benefit from the Government and State Governments making infrastructure development a top policy priority, which may lead to corresponding significant investment in the roads and highways sector. Since the Project SPVs focus on the roads and highways sector, macroeconomic factors in India relating to this sector will have a significant impact on their prospects and results of operations. As the roads and highways sector is driven by increases in agriculture and manufacturing, any slowdown or perceived slowdown in the Indian economy, or in specific sectors of the Indian economy, could materially and adversely impact the Project SPVs business and financial performance.

Project acquisitions

In addition to the Initial Road Assets that are being transferred by the Sponsor to the Trust pursuant to the Formation Transactions, the Sponsor (through its wholly owned subsidiary DA) also operates the Delhi-Agra Project, which is an approximately 179.50 km section of NH 2 between Delhi and Agra, in the state of Haryana/Uttar Pradesh. As of September 30, 2016, six-laning of 115 km out of total project stretch of 179.50 km is completed. The Trust (acting through the Trustee) will enter into the ROFO and Future Assets Agreement with the Sponsor to enable the Trust to acquire the Delhi-Agra Project upon the completion of certain milestones. For further information on the ROFO and Future Assets Agreement, see the section headed "- *The Delhi-Agra Project*" and "*Related Party Transactions – Details of Related Party Transactions Proposed to be Undertaken - ROFO and Future Assets Agreement*" in this Draft Offer Document.

Further, the Investment Manager intends to further expand our portfolio by identifying and selectively acquiring additional toll road projects that meet our investment criteria. Pursuant to the ROFO and Future Assets Agreement, the Sponsor has agreed to provide us with a right of first offer with respect to Future Assets and a right of first refusal with respect to Future Mature Assets located in India which may be acquired or developed by the Sponsor or its existing or future subsidiaries, limited liability partnerships or other entities that are controlled by or under common control with the Sponsor.

The success of our portfolio expansion is limited by the availability of, and competition for, suitable projects, by our financial resources, including our available cash and borrowing capacity, by our ability to integrate such acquired projects into our business and by other factors, some of which may be beyond our control. For more details, please see the section headed "*Risk Factors—Risks Related to Our Business and Industry—Our failure to extend the applicable concession agreement or our inability to identify and acquire new road assets that generate comparable or higher revenue or profits than the Project SPVs, may have a material adverse impact on our business, financial condition and results of operations*" in this Draft Offer Document.

Competition

The Project SPVs operate in a competitive environment. The competition for toll road and other infrastructure projects varies depending on the size, nature and complexity of the project and on the geographical region in which the project is to be executed. Some of their competitors have greater financial resources, economies of scale and operating efficiencies than the Project SPVs do. There can be no assurance that they can effectively compete with their competitors in the future, and this failure to compete effectively may have a material adverse effect on the Project SPVs financial condition and results of operations.

Discussion on Quality of Earnings

Toll revenue

The income from toll revenue from operations of the facility is accounted on a receipt basis. Toll revenue will be collected up to the end of the concession period of the respective Project SPV. The increase or decrease in toll revenue is dependent on the increase or decrease of tariff and traffic volumes. Tariff changes for all our projects, excluding GF, are notified by NHAI every year based on a formula relating to WPI in the case of NHAI projects. Any GF tariff changes are notified by the PWD every three years based on a formula relating to WPI.

Revenue is measured at the fair value of the consideration received or receivable. The Project SPV Group recognizes revenue when the amount of revenue can be reliably measured, when it is probable that future economic benefits will flow to the entity, and when specific criteria have been met for each of the Project SPV Group's activities, as described below.

Contract revenue (construction contracts)

Contract revenue associated with the construction of road is recognized as revenue by reference to the stage of completion of the projects at the balance sheet date. The stage of completion of project is determined by the proportion that contract cost incurred for work performed up to the balance sheet date bears to the estimated total contract costs. No further construction revenue will be accounted for post completion of the construction of the road.

Contract cost includes costs that relate directly to the specific contract and allocated costs that are attributable to the construction of the toll roads. Cost that cannot be attributed to the contract activity such as general administration costs are expensed as incurred and classified as other operating expenses. No further construction cost will be accounted for post completion of construction of the road.

Others

Insurance and other claims are recognized as revenue on certainty of receipt basis.

Income on investment is recognized based on the terms of the investment. Income from mutual fund scheme having fixed maturity plans is accounted on declaration of dividend or on maturity of such investments. Interest income is recognised on a time proportion basis taking into account the amount outstanding and the rates applicable. For all other financial assets measured at amortised cost interest income is recorded using the Effective Interest Rate ("**EIR**").

Critical Accounting Policies

The preparation of financial statements in conformity with Ind AS, applicable accounting standards and the Companies Act requires our management to make judgments, estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent liabilities at the date of the financial statements and the results of operations during the reporting period end. By their nature, these judgments are subject to a degree of uncertainty. Although these estimates are based upon management's best knowledge of current events and actions, actual results could differ from these estimates.

While all aspects of the Project SPVs' Combined Financial Statements should be read and understood in assessing their current and expected financial condition and results, we believe that the following critical accounting policies warrant particular attention:

Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability, or in the absence of a principal market, in the most advantageous market for the asset or liability The principal or the most advantageous market must be accessible by the Project SPV Group.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest. A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Project SPV Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs. All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 - Quoted (unadjusted) market prices in active markets for identical assets or liabilities;
- Level 2- Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable; and
- Level 3 -Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Project SPV Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

The Project SPV Group's management determines the policies and procedures for both recurring fair value measurement, such as derivative instruments and unquoted financial assets measured at fair value, and for non-recurring measurement, such as assets held for distribution in discontinued operations.

At each reporting date, the management analyses the movements in the values of assets and liabilities which are required to be re-measured or re-assessed as per the Project SPV Group's accounting policies. For this analysis, the management verifies the major inputs applied in the latest valuation by agreeing the information in the valuation computation to contracts and other relevant documents.

The management also compares the change in the fair value of each asset and liability with relevant external sources to determine whether the change is reasonable. For the purpose of fair value disclosures, the Project SPV Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.

Revenue recognition

Revenue is measured at the fair value of the consideration received or receivable, and represents amounts receivable for goods supplied, stated net of discounts, returns and value added taxes. The Project SPV Group recognises revenue when the amount of revenue can be reliably measured; when it is probable that future economic benefits will flow to the entity; and when specific criteria have been met for each of the Project SPV Group's activities, as described below. The Project SPV Group bases its estimate of return on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

Toll revenue

The income from toll revenue from operations of the facility is accounted on receipt basis.

Contract revenue (construction contracts)

Contract revenue associated with the construction of road are recognized as revenue by reference to the stage of completion of the projects at the balance sheet date. The stage of completion of project is determined by the proportion that contract cost incurred for work performed up to the balance sheet date bears to the estimated total contract costs.

The Project SPV Group operations involve levying of VAT on the construction work. Sales tax/ value added tax (VAT) is not received by the Project SPV on its own account. Rather, it is tax collected on value added to the commodity by the seller on behalf of the government. Accordingly, it is excluded from revenue.

Others

Insurance and other claims are recognised as revenue on certainty of receipt on prudent basis.

Income on investment is recognised based on the terms of the investment. Income from mutual fund scheme having fixed maturity plans is accounted on declaration of dividend or on maturity of such investments. Interest income is recognised on a time proportion basis taking into account the amount outstanding and the rates applicable. For all debt instruments measured at amortised cost interest income is recorded using the effective interest rate.

Intangible assets

The Group's toll road concession arrangements are accounted for based on the nature of the consideration under the arrangements. The intangible asset model is used to the extent that the relevant Project SPV receives a right (a license) to charge users of the public service. The financial asset model is used when the relevant Project SPV has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services. When the unconditional right to receive cash covers only part of the service, the two models are combined to account separately for each component. If the Project SPV performs more than one service (i.e., construction or upgrade services and operation services) under a single contract or arrangement, consideration received or receivable is allocated by reference to the relative fair values of the services delivered, when the amounts are separately identifiable.

Intangible Assets Model

Intangible assets arising out of service concession arrangements are accounted for as intangible assets where the relevant Project SPV has a contractual right to charge users for service when the projects are completed. Apart from above the total premium payable to the grantor as per the service concession agreement is also recognized as an intangible asset and the corresponding obligation for committed premium is recognized as premium obligation.

The intangible assets are measured at the fair value of consideration transferred to acquire assets, which is the fair value of consideration received or receivable for the construction services delivered.

The intangible assets recognized are amortised using the straight line method to allocate the cost of concessions over their useful lives except in case of toll road concessionaire arrangements where the cost is amortised over the concession period on the basis of projected toll revenue which reflects the pattern in which the assets economic benefits are consumed. The projected total toll revenue is based on the independent traffic volume projections and amortization is revised in case of any material change in the expected pattern of economic benefits.

Financial Assets Model

The financial assets model applies when the operator has an unconditional right to receive cash or another financial asset from the grantor in remuneration for concession services. In the case of concession services, the operator has such an unconditional right if the grantor contractually guarantees the payment of amount specified or determined in the contract or the shortfall, if any, between amounts received from users of public service and amounts specified or determined in the Contract.

However, in case of certain arrangements, the contract may include a payment commitment on the part of the concession grantor covering only a part of investment, with the balance to be recovered by charging users of service. In such arrangements, the investment amount guaranteed by the concession grantor is recognized under the financial asset model and the residual balance is recognized under the intangible asset model.

Any asset carried under concession arrangements is derecognised on disposal or when no future economic benefits are expected from its future use or disposal or when the contractual rights to the financial asset expire.

Maintenance obligations

Contractual obligations to maintain, replace or restore the infrastructure (principally resurfacing costs and major repairs and unscheduled maintenance which are required to maintain the infrastructure asset in operational condition except for any enhancement element) are recognised and measured at the best estimate of the expenditure required to settle the present obligation at the balance sheet date. The provision is discounted to its present value at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

Premium to NHAI

As per the service concession agreement, PS, HK & KM are obligated to pay fixed amounts of premium to the National Highway Authorities of India. This premium obligation has been treated as an intangible asset given it is paid towards getting the right to earn revenue by constructing and operating the roads during the concession period.

Hence, total premium payable as per the service concession agreement has been upfront capitalized at the date of transition. Intangible assets are assessed for impairment whenever there is an indication that the intangible asset may be impaired.

Other intangible assets are stated at cost of acquisition net of tax/duty/credits availed, if any, less accumulated amortisation / depletion.

Premium Deferment

Premium Deferral (i.e. premium payable less paid after adjusting premium deferment) is aggregated under premium deferred obligation in the balance sheet. The interest payable on the above is aggregated under deferred premium obligation. Interest on premium deferral is charged to the statement of profit and loss.

Provisions

Provisions are recognised when the Group has a present obligation (legal or constructive) as a result of a past event, and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. When the Group expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognised as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit and loss net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost.

Current income tax

Current income tax assets and liabilities are measured at the amount expected to be recovered from or paid to the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in the countries where the Project SPV Group operates and generates taxable income. Current income tax relating to items recognized outside the Statement of Profit and Loss is recognized outside the Statement of Profit and Loss (either in other comprehensive income or in equity). Current tax items are recognized in correlation to the underlying transaction either in other comprehensive income or directly in equity. Management periodically evaluates positions taken in the tax returns with respect to situations in which applicable tax regulations are subject to interpretation and establishes provisions where appropriate.

Deferred tax

Deferred tax is provided using the balance sheet approach on temporary differences between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes at the reporting date.

Deferred tax liabilities and assets are recognized for all taxable temporary differences. Deferred tax assets are recognized for unused tax losses to the extent that it is probable that taxable profit will be available against which the deductible temporary differences, and the carry forward of unused tax losses can be utilized. The carrying amount of deferred tax assets is reviewed at each reporting date and reduced to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilized. Unrecognized deferred tax assets are re-assessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax asset to be recovered.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the reporting date. Deferred tax relating to items recognized outside the Statement of Profit and Loss is recognized outside the Statement of Profit and Loss (either in other comprehensive income or in equity). Deferred tax items are recognized in correlation to the underlying transaction either in other comprehensive incomr or directly in equity.

Deferred tax assets and deferred tax liabilities are offset if a legally enforceable right exists to set off current tax assets against current tax liabilities and the deferred taxes relate to the same taxable entity and the same taxation authority.

Principal Components of Combined Statement of Profit and Loss

Income items

The Project SPVs' income consists of revenue from operations and other income. Revenue from operations primarily consists of construction income and income from toll collection. We recognise the costs incurred in the construction of our under-construction projects (by reference to the stage of completion of the projects at the balance sheet date) as construction costs. Further, in accordance with our accounting policies, we recognise construction income as the construction costs incurred by reference to the stage of completion of the project at the balance sheet date, plus a 2% margin.

Toll income is the income derived from the tolling operations by the operational Project SPVs. In addition, other operating income is the income that we derive from leasing advertising space on our toll roads. Other income primarily consists of interest income on financial assets carried at amortised cost and also includes dividend income on current investment, interest income on fixed deposits, other interest income, insurance claims received and other miscellaneous income.

Expense items

Expenses consist of (i) toll operation and maintenance expenses, (ii) construction costs, (iii) employee benefits expense, (iv) finance costs, (v) depreciation and amortization expense and (vi) other expenses.

Toll operation and maintenance expenses

Toll operation and maintenance expenses primarily comprise expenses towards the maintenance of roads and also subcontracting expenses (i.e., primarily charges paid to subcontractors that carry out route patrolling and other security related functions at our projects), electricity expenses, handling charges (i.e., charges paid to agencies that carry out administrative functions at our projects) and site and other direct expenses.

Employee benefits expenses

Employee benefits expenses primarily comprise salaries, wages and bonus paid to employees and also contribution towards provident fund and other funds, gratuity expenses, leave encashment and staff welfare expenses.

Depreciation and amortisation

Depreciation and amortisation includes depreciation on property, plant and equipment and amortisation of intangible assets.

Finance costs

Finance costs primarily comprises interest on loans from banks/financial institutions, and also includes interest unwinding on premium deferment, unwinding of discount on provisions, other finance charges, derivative hedging cost and unwinding of discount on retention money.

Construction cost

Construction cost are the costs paid to EPC contractors for the construction of toll roads at our under-construction projects.

Other expenses

Other expenses include various administration costs such as rent, rates and taxes, insurance, travel and conveyance expenses, expenditure towards corporate social responsibility, auditor's remuneration, legal and professional expenses and other miscellaneous expenses.

Results of Operations

The following table sets forth certain information with respect to the Project SPVs results of operations for the periods indicated:

	Six months ended September 30,		Financial year ended March 31,		
	2016	**2015**	**2016**	**2015**	**2014**
			(Rs. Millions)		
Revenue from operations	5,310.37	7,004.37	13,194.25	10,940.98	14,894.85
Other income	113.90	172.70	263.28	871.60	934.45
Total Income	5,424.27	7,177.07	13,457.53	11,812.58	15,829.30
Expenses					
Toll operation and maintenance expenses	1,013.14	969.34	1,845.71	1,404.75	1,028.37
Construction cost	1,237.87	3,497.45	5,910.64	4,352.78	9,577.53
Employee benefits expense	66.10	65.37	146.70	115.93	105.76
Finance costs	3,262.06	2,147.90	5,214.03	4,495.34	2,795.52
Depreciation and amortization expense	807.81	638.83	1,440.48	1,088.54	766.29
Other expenses	145.54	173.38	426.00	448.16	497.35
Total expenses	6,532.52	7,492.27	14,983.56	11,905.50	14,770.82
Profit / (loss) before exceptional items and tax	(1,108.25)	(315.20)	(1,526.03)	(92.92)	1,058.48
Exceptional Items	-	-	-	-	-
Profit / (loss) before tax	(1,108.25)	(315.20)	(1,526.03)	(92.92)	1,058.48
Tax expense					
Current tax	91.67	77.36	129.53	240.07	173.71
Deferred tax charge/(credit)	(440.90)	(405.83)	(272.73)	(130.83)	402.68
Income tax for earlier years	(0.62)	-	-	-	-
Total Tax expense	(349.85)	(328.47)	(143.20)	109.24	576.39
Profit/(Loss) for the period	(758.40)	13.27	(1,382.83)	(202.16)	482.09
Other Comprehensive Income					
(i) Items that will not be reclassified to profit or loss					
Remeasurements of net defined benefit plans : Gains / (Loss)	(3.45)	(2.30)	(1.50)	(1.72)	0.75
(ii) Income tax relating to items that will not be reclassified to profit or loss					
Remeasurements of net defined benefit plans	(1.13)	(0.75)	(0.50)	(0.51)	0.20
Other Comprehensive Income for the year	(2.32)	(1.55)	(1.00)	(1.21)	0.55
Total Comprehensive Income for the year	(760.72)	11.72	(1,383.83)	(203.37)	482.64

Six months ended September 30, 2016 compared to six months ended September 30, 2015

Income

Revenue from operations

Revenue from operations decreased by Rs. 1,694.00 million, or 24.18%, from Rs. 7,004.37 million for the six months ended September 30, 2015 to Rs. 5,310.37 million for the six months ended September 30, 2016, primarily due to the decrease in our construction income.

Construction income decreased by Rs. 2,304.87 million or 64.61% from Rs. 3,567.38 million for the six months ended September 30, 2015 to Rs. 1,262.51 million for the six months ended September 30, 2016 primarily due to the completion of construction activity in HK in financial year 2016 and decrease in construction in PS by Rs. 1057.11 million and in KM by Rs. 664.23 million in the six months ended September 30, 2016 compared to the six months ended September 30, 2015.

Income from toll collections increased by Rs. 610.60 million, or 17.77%, from Rs. 3,436.33 million for the six months ended September 30, 2015 to Rs. 4,046.93 million for the six months ended September 30, 2016 primarily due to commencement of toll, generating toll income from KM where the tolling operations commenced from November 7, 2015. Income from toll collections represented 47.89% and 74.62% of our total income for the six months ended September 30, 2015 and September 30, 2016, respectively.

Increase in revenue from operations for each of our Project SPVs, resulted from an increase in toll income due to traffic growth over the first half of financial year 2017. The traffic growth over that period is primarily attributed to GDP growth and increasing per capital income, which has led to an increase in the number of vehicles and the utilization of vehicles, rising agricultural output and mining activities, which has led to an increase in the usage of transportation vehicles and further total traffic. Revenue for NK, DS, TK and HK were also negatively impacted in September 2016 due to civil unrest which impacted traffic in each of these projects. Total tollable traffic for the JR project decreased from the first half of financial year 2016 to first half of financial year 2017, as a result of a mining ban in the state of Rajasthan.

In financial year 2017, tariff rates for NK, DS, TD, SU, TK and HK, our six Project SPVs with projects located in Tamil Nadu, were adjusted and toll rates were revised with effect from September 1, 2016, to account for negative inflation. For JR, GF and PS, marginal tariff increases in financial year 2017 also contributed to an increase in revenue from operations for each of these projects.

The table below sets forth the changes in revenue from operations for each of the Project SPVs from the six months ended September 2015 to the six months ended September 2016.

	For the six months ended September 30, *(Rs. Millions)*		**Percentage change (%)**
Project	**2015**	**2016**	
NK	163.85	164.61	0.46
DS	303.25	314.66	3.76
TD	151.22	165.16	9.22
SU	416.93	449.78	7.88
TK	264.18	271.72	2.85
HK	592.53	622.96	5.14
JR	209.51	222.44	6.17
GF	289.27	323.77	11.93
PS	1,045.61	1,122.00	7.31
KM	Nil	389.84	N/A

The table below sets forth the total tollable traffic count for each of the Project SPVs from the six months ended September 2015 to the six months ended September 2016.

	For the six months ended September 30,		**Percentage change (%)**
Project	**2015**	**2016**	
NK	1,845,551	1,910,159	3.50

DS	2,747,777	2,939,759	6.99
TD	1,012,687	1,103,619	8.98
SU	1,695,532	1,858,170	9.59
TK	1,928,293	1, 989,006	3.15
HK	4,650,278	4,872, 235	4.77
JR	3,240,050	2,935,524	(9.40)
GF	8,020,488	9,151,683	14.10
PS	4,383,901	4,576,777	4.40
KM	Nil	1,259,680	N/A

The table below sets forth the total tollable annual average daily traffic for PCUs for each of the Project SPVs from the six months ended September 2015 to the six months ended September 2016.

	For the six months ended September 30,		Percentage change (%)
Project	**2015**	**2016**	
NK	20,961	21,375	1.98
DS	30,689	32,574	6.14
TD	9,822	10,669	8.62
SU	17, 054	18,281	7.19
TK	24,822	25, 314	1.98
HK	53,077	54,602	2.87
JR	26,850	24,329	(9.39)
GF	57,836	63,515	9.82
PS	42,768	44,506	4.06
KM	Nil	28,001	N/A

For the six months ended September 30, 2016, other operating income increased by Rs. 0.27 million, or 40.95%, from Rs. 0.66 million in 2015 to Rs. 0.93 million in 2016, primarily due to increase in income from the leasing of advertising space.

Other income

Other income decreased by Rs. 58.81 million, or 34.05%, from Rs. 172.70 million for the six months ended September 30, 2015 to Rs. 113.90 million for the six months ended September 30, 2016 primarily due to a decrease in interest income on financial assets carried at amortised amount. Interest income on financial assets carried at amortised cost decreased by Rs. 66.86 million, or 45.31%, from Rs. 147.56 million for the six months ended September 30, 2015 to Rs. 80.70 million for the six months ended September 30, 2016, due to decrease in interest on reduced NPV of grants in the six months ended September 30, 2016 compared to the six months ended September 30, 2015. In addition, interest on fixed deposits increased by Rs. 8.70 million, or 117.320%, from Rs. 7.42 million for the six months ended September 30, 2015 to Rs. 16.12 million for the six months ended September 30, 2016 due to more higher deposits in the six months ended September 30, 2016 compared to the six months ended September 30, 2015.

Other income represented 2.41% and 2.10% of total income for the six months ended September 30, 2015 and September 30, 2016, respectively.

Expenses

Total expenses decreased by Rs. 959.75 million, or 12.81%, from Rs. 7,492.27 million for the six months ended September 30, 2015 to Rs. 6,532.32 million for the six months ended September 30, 2016 primarily due to a decrease in construction costs, which was partially offset by an increase in finance costs. Total expenses represented 104.39% and 120.43% of total income for the six months ended September 30, 2015 and September 30, 2016, respectively.

Toll operation and maintenance expenses

Toll operation and maintenance expenses increased by Rs. 43.81 million, or 4.52%, from Rs. 969.34 million for the six months ended September 30, 2015 to Rs. 1,013.14 million for the six months ended September 30, 2016,

primarily due to increase in towards maintenance of roads. Toll operation and maintenance expenses represented 13.51% and 18.68% of total income for the six months ended September 30, 2015 and September 30, 2016, respectively.

Expenses towards maintenance of roads decreased by Rs. 41.86 million, or 5.72%, from Rs. 731.98 million for the six months ended September 30, 2015 to Rs. 690.12 million for the six months ended September 30, 2016 primarily due to more MMR provision made in previous period in DS and NK.

Sub-contracting expenses increased by Rs. 61.31 million, or 41.98% from Rs. 146.04 million for the six months ended September 30, 2015 to Rs. 207.35 million for the six months ended September 30, 2016 primarily due to the COD of KM and the commencement of operational expenses at the project and additional manpower in GF for additional lane.-

Electricity expenses increased by Rs. 5.15 million, or 16.22%, from Rs. 31.76 million for the six months ended September 30, 2015 to Rs. 36.91 million for the six months ended September 30, 2016, primarily due to the COD of KM and the commencement of operational expenses of the project.

Handling charges increased by Rs. 3.22 million, or 99.27%, from Rs. 3.25 million for the six months ended September 30, 2015 to Rs. 6.47 million for the six months ended September 30, 2016, primarily due to the COD of KM and the commencement of operational expenses at the project and the levy of higher handling charges in PS at the project.

Site and other direct expenses, relating primarily to route patrolling and TMS maintenance increased by Rs. 15.98 million, or 28.38% from Rs. 56.31 million for the six months ended September 30, 2015 to Rs. 72.29 million for the six months ended September 30, 2016 primarily due to the COD of KM and commencement of operational expenses at the project and commencement of AMC of toll management systems at various other projects.

Construction cost

Construction cost decreased by Rs. 2,259.58 million or 64.61% from Rs. 3,497.45 million for the six months ended September 30, 2015 to Rs. 1,237.87 million for the six months ended September 30, 2016 due to the completion of construction activity in HK in financial year 2016 and decreased construction by Rs. 1,036.29 million in PS and Rs. 651.20 in KM in the six months ended September 30, 2016 compared to the six months ended September 30, 2015.

Employee benefits expenses

Employee benefits expenses increased by Rs. 0.74 million, or 1.13%, from Rs. 65.37 million for the six months ended September 30, 2015 to Rs. 66.10 million for the six months ended September 30, 2016. Employee benefits expenses represented 0.91% and 1.22% of our total income for the six months ended September 30, 2015 and September 30, 2016, respectively.

Finance costs

Finance costs increased by Rs. 1,114.16 million, or 51.87%, from Rs. 2,147.90 million for the six months ended September 30, 2015 to Rs. 3,262.06 million for the six months ended September 30, 2016, primarily due to the partial COD of KM (which led to the charging of finance costs in relation to KM that were earlier capitalized to the combined statement of profits and losses), increase in interest unwinding on premium deferment.

Interest on loans taken increased by Rs. 277.07 million, or 15.17%, from Rs. 1,826.15 million for the six months ended September 30, 2015 to Rs. 2,103.22 million for the six months ended September 30, 2016 due to interest on loans taken by KM (that were earlier capitalized being charged to the combined statement of project and loss). Interest unwinding on premium deferment increased by Rs 701.47 million, or 414.67%, from Rs. 169.16 million for the six months ended September 30, 2015 to Rs. 870.63 million in the six months ended September 30, 2016, due to increase in unwinding on premium deferment of KM, PS and HK by Rs 267.68, 95.47 & 338.33 million respectively. Unwinding of discount on provisions increased by Rs. 59.03 million, or 64.95%, from Rs. 90.88 million for the six months ended September 30, 2015 to Rs. 149.91 million for the six months ended September 30, 2016, due to increase in resurfacing provisions in operational SPVs. Other finance costs increased by Rs. 44.26 million, or by 128.10% from Rs. 34.55 million for the six months ended September 30, 2015 to Rs. 78.81 million for the six months ended September 30, 2016, due to other finance costs in relation to PS being charged to the combined statement of profits and losses. Unwinding of discount on retention money increased by Rs.32.33 million, or 119.04%, from Rs. 27.16 million for the six months ended September 30, 2015 to Rs. 59.49 million

for the six months ended September 30, 2016, due to increase in retention in relation to PS & KM being charged to the combined statement of profits and losses. Finance costs represented 29.93% and 60.14% of our total income for the six months ended September 30, 2015 and 2016 respectively.

Depreciation and amortization

Depreciation and amortization expenses increased by Rs. 168.98 million, or 26.45%, from Rs. 638.83 million for the six months ended September 30, 2015 to Rs. 807.81 million for the six months ended September 30, 2016, due to depreciation charged to the combined statement of profit and loss with respect to the partial COD of KM and additional capitalization of HK and JR. Depreciation and amortization expenses represented 8.90% and 14.89% of our total income for the six months ended September 30, 2015 and 2016, respectively.

Other expenses

Other expenses decreased by Rs. 27.84 million, or 16.06%, from Rs. 173.88 million for the six months ended September 30, 2015 to Rs. 145.54 million for the six months ended September 30, 2016, primarily due to a decrease in Insurance expenses. Other expenses, expressed represented 2.42% and 2.68% of our total income for the six months ended September 30, 2015 and 2016 respectively.

Profit / Loss before tax

As a result of the foregoing, our loss before tax was Rs. 315.20 million for the six months ended September 30, 2015 and our loss before tax was Rs. 1,108.25 million for the six months ended September 30, 2016.

Tax expenses

Current tax expense increased by Rs. 14.31 million, or 18.50%, from Rs. 77.36 million for the six months ended September 30, 2015 to Rs. 91.67 million for the six months ended September 30, 2016, due to greater tax provision in current period. Deferred tax credit increased by Rs. 35.07 million from Rs. 405.83 million for the six months ended September 30, 2015 to Rs. 440.90 million for the six months ended September 30, 2016, due to capitalisation of PS and KM and charge of amortisation post partial COD.

Profit/(loss) for the period

As a result of the foregoing, profit for the six months ended September 30, 2015 was Rs. 13.27 million and loss for the six months ended September 30, 2016 was Rs. 758.40 million.

Other comprehensive income

Other comprehensive loss increased by Rs 0.77 million, or 49.68%, from Rs. 1.55 million for the six months ended September 30, 2015 to Rs. 2.32 million for the six months ended September 30, 2016

Total comprehensive income

As a result of the foregoing, total comprehensive Income amounted to Rs. 11.72 million for the six months ended September 30, 2015 and a loss of Rs. 760.72 million for the six months ended September 30, 2016.

Financial Year 2016 Compared to Financial Year 2015

Income

Revenue from operations

Revenue from operations increased by Rs. 2,253.27 million, or 20.59%, from Rs. 10,940.98 million for the financial year 2015 to Rs. 13,194.25 million for the financial year 2016.

Construction income increased by Rs. 1,589.04 million, or by 35.79%, from Rs. 4,439.67 million for the financial year 2015 to Rs. 6,028.71 million for the financial year 2016 due to the significant increase in construction in PS by Rs 2275.95 million in financial years 2016 compared to financial year 2015.Construction income represented 37.59% and 44.80% of our total income for the financial years 2015 and 2016, respectively.

Income from toll collections increased by Rs. 742.04 million, or 11.56%, from Rs. 6,421.62 million for the financial year 2015 to Rs. 7,163.66 million for the financial year 2016, primarily due to the commencement of

toll collection and the generation of toll income from KM, which began tolling operations from November 7, 2015. Income from toll collections represented 54.37% and 53.23% of our total income for the financial years 2015 and 2016, respectively.

Increase in revenue from operations for all of our Project SPVs, other than NK resulted from an increase in toll income due to traffic growth from financial year 2015 to financial year 2016. The traffic growth over this period is primarily attributed to GDP growth and increasing per capital income, which has led to an increase in the number of vehicles and the utilization of vehicles, rising agricultural output and mining activities, which has led to an increase in the usage of transportation vehicles and further total traffic. However, the total tollable traffic and revenue for NK, DS, TD, SU, TK and HK financial year 2016 was also negatively impacted by the stoppage of toll collection for a period of 15 days due to floods in Tamil Nadu in December 2015.

In financial year 2016, there was a negative revision in tariff rates for NK and DS, which negatively impacted revenue from operations for these projects and led to an overall decrease in revenue for NK. For the remaining eight projects, tariff rates were increased in financial year 2016 to account for inflation, which contributed to an increase in revenue from operations for each of these projects.

The table below sets forth the changes in revenue from operations for each of the Project SPVs for the financial year ended March 31, 2015 to the financial year ended March 31, 2016.

	FY ended March 31, *(Rs. Millions)*		**Percentage change (%)**
Project	**2015**	**2016**	
NK	324.45	319.60	(1.49)
DS	568.94	586.78	3.14
TD	285.70	290.14	1.55
SU	772.60	824.65	6.74
TK	460.44	506.41	9.98
HK	1,168.20	1,173.02	0.41
JR	410.57	438.54	6.81
GF	507.08	604.07	19.13
PS	1,923.64	2,123.86	10.41
KM	Nil	296.58	N/A

The table below sets forth the total tollable traffic count for each of the Project SPVs for the financial year ended March 31, 2015 to the financial year ended March 31, 2016.

	FY ended March 31,		**Percentage change (%)**
Project	**2015**	**2016**	
NK	3,583,755	3, 633, 108	1.38
DS	5,142,634	5,378,567	4.59
TD	1,933,764	1,955, 639	1.13
SU	3,098,948	3,292, 919	6.26
TK	3,486,148	3,656,474	4.89
HK	8,843,698	9, 294,667	5.10
JR	6,448,484	6,442,455	0.09
GF	14, 583,665	16,452,511	12.81
PS	8,041,642	8,846,387	10.01
KM	Nil	1,044,536	N/A

The table below sets forth the total tollable annual average daily traffic for PCUs for each of the Project SPVs for the financial year ended March 31, 2015 to the financial year ended March 31, 2016.

	FY ended March 31,		**Percentage change (%)**
Project	**2015**	**2016**	
NK	21,219	21,504	1.34
DS	29,396	31,271	6.38
TD	9,503	9, 759	2.69

SU	16,265	17,392	6.93
TK	22,396	24,582	9.76
HK	53, 847	54,941	2.03
JR	26,978	26, 937	0.45
GF	54,192	58,681	8.28
PS	39,607	42,842	8.17
KM	Nil	29,271	N/A

For the financial year 2016, other operating income decreased by Rs. 77.80 million, or 97.63%, from Rs. 79.69 million in 2015 to Rs. 1.89 million in 2016, primarily due to contract income in DS, NK and PS in relation to operation and maintenance contracts entered into with the sponsor.

Other income

Other income decreased by Rs. 608.32 million, or 69.78%, from Rs. 871.60 million for the financial year 2015 to Rs. 263.28 million for the financial year 2016 primarily due to a decrease in interest income on financial assets carried at amortised amount.

Interest income on financial assets carried at amortised cost decreased by Rs. 601.79 million, or 74.15%, from Rs. 811.53 million for the financial year 2015 to Rs. 209.74 million for the financial year 2016 mainly due to lower interest income on inter corporate deposits in DS and NK financial year 2016 compared to financial year 2015. In addition, interest on fixed deposits decreased by Rs. 7.05 million, or 20.35%, from Rs. 34.63 million for the financial year 2015 to Rs. 27.59 million for the financial year 2016 due to decrease in fixed deposits in DS and NK.

Other income represented 7.38% and 1.96% of our total income for the financial years 2015 and 2016, respectively.

Expenses

Total expenses increased by Rs. 3,078.56 million, or 25.85%, from Rs. 11,905.50 million for the financial year 2015 to Rs. 14,983.56 million for the financial year 2016 primarily due to increases in construction costs, finance costs and toll operation and maintenance expenses. Our total expenses, expressed as a percentage of our total income, were 100.79% and 111.34% for the financial year 2015 and 2016, respectively.

Toll operation and maintenance expenses

Toll operation and maintenance expenses increased by Rs. 440.96 million, or 31.39%, from Rs. 1,404.75 million for the financial year 2015 to Rs. 1,845.71 million for the financial year 2016, primarily due to increases in subcontracting expenses and expenses relating to maintenance of roads. Toll operation and maintenance expenses expressed as a percentage of our total income, increased from 11.89% for the financial year 2015 to 13.72% for the financial year 2016.

Sub-contracting expenses increased by Rs. 135.05 million, or 44.60% from Rs. 302.77 million for the financial year 2015 to Rs. 437.82 million for the financial year 2016 due to the partial COD of KM and commencement of its sub-contracting expenses. We also incurred sub-contracting expenses in relation to the commencement of operations on an additional lane in GF.

Maintenance expenses increased by Rs. 224.07 million, or 25.03%, from Rs. 8,95.08 million for the financial year 2015 to Rs. 1,119.16 million for the financial year 2016 due to the partial COD of KM and commencement of its sub-contracting expenses and greater provision of resurfacing expenses in financial year 2016 compared to financial year 2015.

Electricity expenses increased by Rs. 15.79 million, or 26.51%, from Rs.59.94 million for the financial year 2015 to Rs. 75.33 million for the financial year 2016, due to the partial COD of KM and commencement of its electricity expenses and higher electricity expenses in other project SPVs in financial year 2016, compared to financial year 2015.

Handling charges increased by Rs. 3.76 million, or 39.74%, from Rs. 9.46 million for the financial year 2015 to Rs. 13.22 million for the financial year 2016, due to the partial COD of KM and commencement of handling charges in relation to the project and higher handling charges incurred in PS in financial year 2016, compared to financial year 2015.

Site and other direct expenses, relating primarily to temporary contract labour and miscellaneous site expenses, increased by Rs. 62.28 million, or 45.16% from Rs. 137.90 million for the financial year 2015 to Rs. 200.18 million for the financial year 2016 due to the partial COD of KM and commencement of its site and other direct expenses and increase in annual maintenance charges of the Toll Management System ("**TMS**").

Construction Costs

Construction costs increased by Rs. 1,557.86 million, or by 35.79%, from Rs. 4,352.78 million for the financial year 2015 to Rs. 5,910.64 million for the financial year 2016 due to significant increase in construction in PS by Rs. 2,231.31 million in financial year 2016 compared to financial year 2015. Construction costs, expressed as a percentage of our total income, increased from 36.85% for the financial year 2015 to 43.92% for the financial year 2016.

Employee benefits expenses

Employee benefits expenses increased by Rs. 30.77 million, or 26.54%, from Rs. 115.93 million for the financial year 2015 to Rs. 146.70 million for the financial year 2016, primarily due to increases in salaries, wages and bonus. Salaries, wages and bonus increased by Rs. 26.02 million, or 25.47%, from Rs. 102.17 million for the financial year 2015 to Rs. 128.20 million for the financial year 2016, primarily due to increase in employees in PS and annual increments in salaries. Employee benefits expenses, expressed as a percentage of our total income, increased from 0.98% and 1.09% for the financial year 2015 and 2016, respectively.

Finance costs

Finance costs increased by Rs. 718.69 million, or 15.99%, from Rs. 4,495.24 million for the financial year 2015 to Rs. 5,214.03 million for the financial year 2016 primarily due to an increase in interest on loan taken, unwinding on premium deferment and unwinding of discount on provisions. Finance costs, expressed as a percentage of our total income, decreased from 38.06% for the financial year 2015 to 38.74% for the financial year 2016.

Interest on loans taken increased by Rs. 351.77 million, or 10.01%, from Rs. 3,513.25 million for the financial year 2015 to Rs. 3,865.13 million for the financial year 2016 due to the partial COD of KM (which led to the charging of finance costs in relation to KM that were earlier capitalized to the combined statement of profit and loss). Unwinding of discount on provisions increased by Rs. 305.36 million, or 44.74%, from Rs. 682.55 million for the financial year 2015 to Rs. 987.91 million for the financial year 2016 due to increase in interest on unwinding on premium deferment in HK. Unwinding of discount on retention money increased by Rs. 13.09 million, or 25.94%, from Rs. 50.47 million for the financial year 2015 to Rs. 63.56 million for the financial year 2016 due to increase in retention held from contractors.

Depreciation and amortization

Depreciation and amortization expenses increased by Rs. 351.94 million, or 32.33%, from Rs. 1,088.54 million for the financial year 2015 to Rs. 1,440.48 million for the financial year 2016 due to the partial COD of KM and higher amortization in GF in financial year 2016. Depreciation and amortization costs, expressed as a percentage of our total income for the financial years 2015 and 2016, increased from 9.22% for the financial year 2015 to 10.70% for the financial year 2016.

Other expenses

Other expenses decreased by Rs. 22.16 million, or 4.94%, from Rs. 448.16 million for the financial year 2015 to Rs. 426 million for the financial year 2016 due to decrease in other miscellaneous expenses in KM. Other expenses, expressed as a percentage of our total income, decreased from 3.79% for the financial year 2015 to 3.17% for the financial year 2016.

Profit / Loss before tax

As a result of the foregoing, the Project SPVs' loss before tax was Rs. 92.92 million for the financial year 2015 and loss before tax was Rs. 1526.03 million for the financial year 2016.

Tax expenses

Current tax decreased by Rs. 110.54 million, or 46.04%, from Rs. 240.07 million for the financial year 2015 to Rs. 129.53 million for the financial year 2016, primarily due to decrease in current tax by 126.28 million in DS

and NK compared to financial year 2015 due to decrease in interest income on inter-company deposit, and deferred tax credit increased by Rs. 141.90 million from Rs. 130.83 million for the financial year 2015 to a credit of Rs. 272.73 million for the financial year 2016 primarily due to increase in deferred tax credit in HK.

Profit/(loss) for the period

As a result of the foregoing, loss for financial year 2015 was Rs. 202.16 million and loss for financial year 2016 was Rs. 1382.83 million.

Other comprehensive income

Other comprehensive loss decreased by Rs 0.21 million, or 17.36%, from Rs. 1.21 million for the financial year 2015 and Rs. 1.00 million for the financial year 2016.

Total comprehensive income

As a result of the foregoing, total comprehensive loss amounted to Rs. 203.37 million for financial year 2015 and a loss of Rs. 1,383.83 million for financial year 2016.

Financial Year 2015 Compared to Financial Year 2014

Income

Revenue from operations

Revenue from operations decreased by Rs. 3,953.87 million, or 26.55%, from Rs. 14,894.85 million for the financial year 2014 to Rs. 10,940.98 million for the financial year 2015 primarily due to a decrease in construction income. Construction income decreased by Rs. 5,329.23 million, or by 54.55%, from Rs. 9,768.90 million for the financial year 2014 to Rs. 4,439.67 million for the financial year 2015 due to a decrease in construction by 2256.63 million in HK, Rs. 250.50 million in JR, Rs. 138.92 Million in SU and Rs. 368.56 in TK, due to completion of construction and also decrease in construction in PS and due to slow construction in KM in financial year 2015 compared to financial year 2014. Income from construction represented 61.72% and 37.59% of our total income for the financial years 2014 and 2015, respectively.

Income from toll collections increased by Rs. 1,318.08 million, or 25.83%, from Rs. 5,103.54 million for the financial year 2014 to Rs. 6,421.62 million for the financial year 2015 primarily due to the full period of toll collections in JR and TR in financial year 2015 and the addition of a third toll plaza in SU during financial year 2014. Income from toll collections represented 32.24% and 54.37% of our total income for the financial years 2014 and 2015, respectively.

Increase in revenue from operations for all of our Project SPVs, (other than KM, which commenced toll operations from November 7, 2015), resulted from an increase in toll income due to traffic growth from financial year 2014 to financial year 2015. The traffic growth over this period is primarily attributed to GDP growth and increasing per capital income, which has led to an increase in the number of vehicles and the utilization of vehicles, rising agricultural output and mining activities, which has led to an increase in the usage of transportation vehicles and further total traffic. However, the total tollable traffic and revenue for TD in financial year 2015 was also negatively impacted primarily due to a temporary stoppage on heavy vehicle traffic.

In financial year 2015, there was an increase in tariff rates for all Project SPVs, with the exception of TK, in which there was no change in the tariff, which contributed to an increase in revenue from operations for these projects.

The table below sets forth the changes in revenue from operations for each of the Project SPVs for the financial year ended March 31, 2014 to the financial year ended March 31, 2015.

	FY ended March 31, *(Rs. Millions)*		**Percentage change (%)**
Project	**2014**	**2015**	
NK	279.46	324.45	16.10
DS	521.74	568.94	9.05
TD	280.63	285.70	1.81
SU	569.04	772.60	35.77
TK	48.31	460.44	853.09

HK	958.55	1,168.20	21.91
JR	253.55	410.57	61.93
GF	463.99	507.08	9.29
PS	1,728.28	1,923.64	11.30
KM	N/A	N/A	N/A

The table below sets forth the total tollable traffic count for each of the Project SPVs for the financial year ended March 31, 2014 to the financial year ended March 31, 2015.

	FY ended March 31,		Percentage change (%)
Project	**2014**	**2015**	
NK	3,360,051	3,583,755	6.66
DS	5,006,301	5,142,634	2.72
TD	1,977,434	1,933,764	-2.21
SU	2,827,659	3,098,948	9.59
TK	339,892	3,486,148	925.66
HK	7,847,466	8,843,698	12.69
JR	3,925,902	6,448,484	64.25
GF	12,920,496	14, 583,665	12.87
PS	7,800,643	8,041,642	3.09
KM	N/A	N/A	N/A

The table below sets forth the total tollable annual average daily traffic for PCUs for each of the Project SPVs for the financial year ended March 31, 2014 to the financial year ended March 31, 2015.

	FY ended March 31,		Percentage change (%)
Project	**2014**	**2015**	
NK	19,290	21,219	10.01
DS	28,604	29,396	2.77
TD	9,978	9,503	-4.76
SU	15,085	16,265	7.82
TK	23,445	22,396	-4.47
HK	46,653	53, 847	15.42
JR	24,199	26,978	11.48
GF	48, 362	54,192	12.05
PS	38,006	39,607	4.21
KM	N/A	N/A	N/A

For the financial year 2015, other operating income increased by Rs. 57.27 million, or 255.53%, from Rs. 22.41 million in 2014 to Rs. 79.69 million in 2015, primarily due to contract income in DS, PS and NK relating to operation and maintenance contracts entered into with the sponsor.

Other income

Other income decreased by Rs. 62.85 million, or 6.73%, from Rs. 934.45 million for the financial year 2014 to Rs. 871.60 million for the financial year 2015 primarily due to a decrease in interest income on financial assets carried at amortised cost and in interest income from bank deposits. Other income represented 5.90% and 7.38% of our total income for the financial years 2014 and 2015, respectively.

Interest income on financial assets carried at amortised cost decreased by Rs. 89.38 million, or 9.92%, from Rs. 900.91 million for the financial year 2014 to Rs. 811.53 million for the financial year 2015 due to reduced interest on inter corporate deposits in financial year 2015 compared to financial year 2014. In addition, interest on fixed deposits increased by Rs. 33.20 million, or 2,316.15%, from Rs. 1.43 million for the financial year 2014 to Rs. 34.63 million for the financial year 2015 due to increase in fixed deposits placed for major maintenance reserve ("**MMR**") and the creation of the debt service reserve account creation in NK, DS and SU.

Expenses

Total expenses decreased by Rs. 2,865.32 million, or 19.40%, from Rs. 14,770.82 million for the financial year 2014 to Rs. 11,905.50 million for the financial year 2015 primarily due to a decrease in construction costs. Total expenses, expressed as a percentage of our total income, were 93.31% and 100.79% for the financial year 2014 and 2015, respectively.

Toll operation and maintenance expenses

Toll operation and maintenance expenses increased by Rs. 376.37 million, or 36.60%, from Rs. 1,028.37 million for the financial year 2014 to Rs. 1,404.75 million for the financial year 2015 primarily due to increases in subcontracting expenses and expenses relating to maintenance of roads. Toll operation and maintenance expenses, expressed as a percentage of our total income, increased from 6.50% for the financial year 2014 to 11.89% for the financial year 2015.

Sub-contracting expenses increased by Rs. 88.80 million, or 41.50% from Rs. 213.97 million for the financial year 2014 to Rs. 302.77 million for the financial year 2015 due to the partial COD of JR and TK and the commencement of toll operation expenses at those projects.

Maintenance expenses increased by Rs. 259.12 million, or 40.74%, from Rs. 635.96 million for the financial year 2014 to Rs. 895.08 million for the financial year 2015 due to partial COD of JR and TK, the commencement of toll operation expenses at those two SPVs and additional provisions for resurfacing expenses in HK, TK, SU and JR.

Electricity expenses increased by Rs. 14.38 million, or 31.83%, from Rs. 45.17 million for the financial year 2014 to Rs. 59.54 million for the financial year 2015, due to the partial COD of JR and TK and the commencement of toll operations at these projects, which led to higher electricity expenses at these projects.

Handling charges increased by Rs. 1.29 million, or 15.77%, from Rs. 8.17 million for the financial year 2014 to Rs. 9.46 million for the financial year 2015, due to the partial COD of JR and TK and the commencement of toll operations at these projects, which led to higher electricity expenses at these projects.

Site and other direct expenses, relating primarily to temporary contract labour and miscellaneous site expenses, increased by Rs. 12.80 million, or 10.23% from Rs. 125.10 million for the financial year 2014 to Rs. 137.90 million for the financial year 2015 due to the partial COD of JR and TK and start of toll operations at these projects, which led to higher electricity expenses at these projects.

Construction costs

Construction costs decreased by Rs. 5,224.75 million, or by 54.55%, from Rs. 9,577.53 million for the financial year 2014 to Rs. 4,352.78 million for the financial year 2015 primarily due to decrease in construction by Rs. 2,211.44 million in HK, Rs. 245.59 million in JR, Rs. 136.20 million in SU and Rs. 361.23 million in TK, due to completion of construction and also a decrease in construction costs in PS and KM due to slow construction in financial year 2015 compared to financial year 2014. Construction costs expressed as a percentage of our total income, decreased from 60.51% for the financial year 2014 to 36.85% for the financial year 2015.

Employee benefits expenses

Employee benefits expenses increased by Rs. 10.17 million, or 9.62%, from Rs. 105.76 million for the financial year 2014 to Rs. 115.93 million for the financial year 2015, primarily due to increases in salaries, wages and bonus. Salaries, wages and bonus increased by Rs. 6.34 million, or 6.61%, from Rs. 95.84 million for the financial year 2014 to Rs. 102.17 million for the financial year 2015 primarily due to annual increments in salaries. Employee benefits expenses, expressed as a percentage of our total income, increased from 0.67% for the financial year 2014 to 0.98% for the financial year 2015.

Finance costs

Finance costs increased by Rs. 1,699.82 million, or 60.81%, from Rs. 2,795.52 million for the financial year 2014 to Rs. 4,495.34 million for the financial year 2015, primarily due to increases in interest on loans taken and interest unwinding on premium deferment. Interest on loans taken increased by Rs. 846.42 million, or by 31.74%, from Rs. 2,666.94 million for the financial year 2014 to Rs. 3,513.35 million for the financial year 2015 due to partial the COD of JR and TK (which led to the charging of interest on loans taken in relation to these projects that were

earlier capitalized to the combined statement of profit and loss). Unwinding of discount on interest unwinding on premium deferment increased from Nil to Rs. 682.55 million for the financial year 2016 due to interest on unwinding on the premium deferment of HK.

Unwinding of discount on provisions increased by Rs. 66.38 million, or 112.27%, from Rs. 59.12 million for the financial year 2014 to Rs. 125.50 million for the financial year 2015 due to increase in resurfacing provisions. Unwinding of discount on retention money increased by Rs. 11.50 million, or 29.51%, from Rs. 38.97 million for the financial year 2014 to Rs. 50.47 million for the financial year 2015 due to increase in retention held from contractors. Other finance charges increased by Rs. 92.99 million, or by 305.52%, from Rs. 30.49 million for the financial year 2014 to Rs. 123.47 million for the financial year 2015 due to the partial COD of JR and TK (which led to the charging of interest on loans taken in relation to these projects that were earlier capitalized to the combined statement of profit and loss) and the financing expenses related to refinancing of SU, which was incurred in Financial year 2015. Finance costs, expressed as a percentage of our total income, increased from 17.66% for the financial year 2014 to 38.06% for the financial year 2015.

Depreciation and amortization

Depreciation and amortization expenses increased by Rs. 322.25 million, or 42.05%, from Rs. 766.29 million for the financial year 2014 to Rs. 1,088.54 million for the financial year 2015 due to the partial COD of JR and TK. Depreciation and amortization expenses, expressed as a percentage of our total income, increased from 4.84% for the financial year 2014 to 9.22% for the financial year 2015.

Other expenses

Other expenses decreased by Rs. 49.20 million, or 9.88%, from Rs. 497.35 million for the financial year 2014 to Rs. 448.16 million for the financial year 2015. Other expenses, expressed as a percentage of our total income, increased from 3.14% for the financial year 2014 to 3.79% for the financial year 2015.

Profit / Loss before tax

As a result of the foregoing, profit before tax decreased by Rs. 1151.39 million from Rs. 1,058.48 million for the financial year 2014 to Rs. (92.92) million for the financial year 2015.

Tax expenses

Current tax increased by Rs. 66.36 million, or 38.20%, from Rs. 173.71 million for the financial year 2014 to Rs. 240.07 million for the financial year 2015 primarily due to an increase in current tax in financial year 2015 in DS, NK and PS, and deferred tax credit increased by Rs. 533.51 million from Rs. (402.68) million for the financial year 2014 to Rs. 130.83 million for the financial year 2015 due to capitalisation of HK and TK and amortisation post partial COD due to the partial the COD HKJR and TK.

Profit/(loss) for the period

As a result of the foregoing, profit for financial year 2014 was Rs. 482.09 million and loss for financial year 2015 was Rs. 202.16 million.

Other comprehensive income

Other comprehensive loss increased by Rs 1.76 million, or 320%, from Rs. (0.55) million for the financial year 2014 and Rs. 1.21 million for the financial year 2015.

Total comprehensive income

As a result of the foregoing, total comprehensive income amounted to Rs. 482.64 million for financial year 2014 and Rs. (203.37) million for financial year 2015.

Liquidity and Capital Resources

The Project SPVs operate in a capital intensive industry and their principal liquidity requirements have been to finance their capital expenditures. To fund these costs, they have relied on equity contributions, short term and long term borrowings, advances and grants from the NHAI and cash from operating activities.

The Project SPVs' funding and treasury activities are conducted consistent with corporate policies designed to enhance investment returns while maintaining appropriate liquidity for our requirements. Their short-term liquidity requirements relate to servicing our debt and funding working capital requirements. Sources of short-term liquidity include cash balances, receipts from our operations and working capital loans. Their long-term liquidity requirements include partial funding of investments in new projects, funding equity contributions in Project SPVs and repayment of long-term debt under our credit facilities. Sources of funding for our long-term liquidity requirements include loans, equity issuances or debt issues. Our principal uses of cash have been, and are expected to continue to be, construction, development, implementation and maintenance costs of our BOT projects.

Cash Flows

The following table sets forth certain information relating to the Project SPVs cash flows on a combined basis for the periods indicated:

	For the six months ended September 30,		Financial year ended March 31,		
	2016	**2015**	**2016**	**2015**	**2014**
	(Rs. in millions)				
Net cash flow from operating activities	3,720.12	(3,011.32)	395.70	(4,283.14)	5,517.97
Net cash from/(used in) investing activities	(2,733.98)	1,154.43	(1,976.57)	(3,361.45)	(7,294.58)
Net cash from/(used in) financing activities	(1,027.70)	1,936.80	1,766.01	6,793.74	2,600.42
Cash and cash equivalents at the end	475.20	411.53	516.76	331.62	1,182.47

Operating activities

Net cash flow from operating activities for the six months ended September 30, 2016 was Rs. 3,720.15 million. Cash generated from operations before working capital changes amounted to Rs. 2,848.53 million, which was a result of loss before tax of Rs. 1,108.25 million and adjustments primarily for interest expense of Rs. 3,262.07 million and amortization expenses of Rs. 807.81 million. The adjustments for working capital were primarily attributable to a increase in provisions of Rs. 493.61 million due to increase in provisions for resurfacing and an increase in trade payable of Rs. 321.98 million due to increase in creditors in current period.

Net cash flow from operating activities for the financial year 2016 was Rs. 395.70 million. Cash generated from operations before working capital changes amounted to Rs. 4,868.20 million, which was a result of loss before tax of Rs. 1526.03 million and adjustments primarily for interest expense of Rs. 5,214.03 million and depreciation and amortization expenses of Rs. 1,440.48 million. The adjustments for working capital were primarily attributable to decrease in other current liabilities of Rs. 5,316.76 million due to reduction in unearned revenue of O&M contracts of DS, NK and PS and also increase in provisions of Rs. 437.16 million due to increase in provisions for resurfacing.

Net cash flow used in operating activities for the financial year 2015 was Rs. 4,283.14 million. Cash generated from operations before working capital changes amounted to Rs. 4,620.58 million, which was a result of loss before tax of Rs. 92.92 million and adjustments primarily for interest expense of Rs. 4,495.35 million and depreciation and amortization expenses of Rs. 1,088.54 million. The adjustments for working capital were primarily attributable to decrease in trade payables of Rs. 9,75.02 million due to payments of outstanding trade payables on previous year. These changes were offset in part by an increase in provision of Rs. 721.64 million due to increase in provisions for resurfacing and an decrease in other non-current liabilities of Rs 5,138.68 million due to reclassification of unearned revenue from non-current to current liabilities and a decrease in current liabilities of Rs 3,423.84 million due to the cancellation of O&M contracts for DS, NK and PS.

Net cash flow from operating activities for the financial year 2014 was Rs. 5,517.97 million. Cash generated from operations before working capital changes amounted to Rs. 3,693.90 million, which was a result of profit before

tax of Rs. 1,058.48 million and adjustments primarily for interest expense of Rs. 2,795.51 million and depreciation and amortization expenses of Rs. 766.29 million. The adjustments for working capital were primarily attributable to increase in trade payables of Rs. 708.48 million due to increase in outstanding trade payables and an increase in provision of Rs. 496.37 million due to increase in provisions for resurfacing.

Investing activities

Net cash flow used in investing activities for the six months ended September 30, 2016 was Rs. 2,734.01 million, primarily relating to purchase/sale proceeds of intangible assets (including intangible assets under development) of Rs. 2,692.44 million in PS and KM.

Net cash flow used in investing activities for the financial year 2016 was Rs. 1,976.57 million, primarily relating to purchase/sale proceeds of intangible assets (including intangible assets under development) of Rs. 7,896.01 million in PS, KM and HK, intercorporate deposits of Rs. 4,164 million received from DS and NK and interest received from intercorporate deposits by Rs. 1746.49 million.

Net cash flow from investing activities for the financial year 2015 was Rs. 3,361.45 million, primarily relating to purchase/sale proceeds of intangible assets (including intangible assets under development) of Rs. 3,605.58 million in PS, KM, HK and JR.

Net cash flow used in investing activities for the financial year 2014 was Rs. 7,294.58 million, primarily relating to purchase/sale proceeds of intangible assets (including intangible assets under development) of Rs. 7,671.59 million in PS, KM, HK, JR and TK.

Financing activities

Net cash flow used in financing activities for the period ended September 2016 was Rs. 1,027.69 million, primarily resulting from interest paid amounting to Rs.2,576.02 million, repayment of long term borrowing of Rs 3,144.37 million which was partially offset by proceeds from subordinated debt of Rs. 2,138.25 and Rs. 1,000 million respectively.

Net cash flow from financing activities for the financial year 2016 was Rs. 1,766.01 million; primarily resulting from proceeds from long term borrowings of Rs. 5,240.43 million and proceeds from subordinated debt of Rs 2,825.40, partially offset by interest paid amounting to Rs. 5,116.69 million and repayment of long term borrowing of Rs. 1,258.13 million.

Net cash flow from financing activities for the financial year 2015 was Rs. 6,793.74 million, primarily resulting from proceeds from subordinated debt of Rs. 10,558.13 million and proceeds from long term borrowing of Rs 9,744.92 million, partially offset by interest paid amounting to Rs. 4,841.27 million and repayment of borrowing of Rs. 6,695.04 million.

Net cash flow from financing activities for the financial year 2014 was Rs. 2,600.42 million, primarily resulting from proceeds from subordinated debt of Rs. 4,217.40 million and proceeds from long term borrowings of Rs. 4,278.56 million, partially offset by interest paid amounting to Rs. 4,505.93 million and repayment of long term borrowing of Rs. 455.41 million.

Capital Expenditure

The Project SPVs capital expenditures have historically been principally for the construction and maintenance of the Initial Road Assets. In the financial year 2014, 2015 and 2016, their capital expenditures were Rs. 13,435.45 million, Rs. 7,447.58 million and Rs. 8,841.13 million, respectively.

We currently expect to incur capital expenditures of Rs. 5,175 million (Rs 750 million for KM and Rs 4,425 million for PS) for the financial year 2017 including those amounts that have been contracted but not provided for. We do not expect to incur capital expenditure in financial year 2018.

The Project SPVs have in the past relied principally on internal cash flow and other funds, affiliate loans, bank borrowings and equity contributions to fund its capital expenditures. Infrastructure projects are typically capital intensive and require high levels of debt financing. Our available financial resources for implementing and maintaining these projects, based on our internal studies and estimates, may be inadequate and any project may face cost overruns. The Project SPVs have in the past been able to arrange for debt financing for their projects on acceptable terms at the Project SPV level, but there can be no assurance that going forward the Project SPVs or

the Trust will be able to arrange for debt financing on acceptable terms or at all. For more information, see the section headed "*Financial Indebtedness*" in this Draft Offer Document.

Indebtedness

The following table provides the types and amounts of the Project SPVs outstanding indebtedness as of September 30, 2016:

Borrowings – Non Current	**(Rs. Millions)**
Secured	**As at September 30, 2016**
Debentures	1,246.10
Term loans from Banks:	
Rupee term loan	34,804.99
Term loans from financial institutions:	
Rupee term loan	4,547.27
External Commercial Borrowings	1,354.22
Current Maturities of long term debt (included in Other financial liabilities):	1,537.66
Total	**43,490.24**

Borrowings – Current	**(Rs. Millions)**
Unsecured	**As at September 30, 2016**
(unsecured, repayable on demand and interest free)	
Loan from related parties	1,075.00
Total	**1,075.00**

As September 30, 2016, the Project SPVs had total borrowings aggregating to Rs. 44,565.24 million (comprising unsecured loans of Rs. 1,075 million and secured loans of Rs. 43490.24 million). Most of the Project SPVs financing arrangements are secured by their movable and immovable assets, including a charge on their equipment as well as on their intangible assets relating to toll collection rights under the various projects.

For further details regarding the loans to which we are a party, including their terms and interest rates, see the section headed "*Financial Indebtedness*" in this Draft Offer Document.

Interest coverage ratio

The Project SPVs interest coverage ratio (equal to the total of cash profit after tax but before finance costs divided by finance costs) as of March 31, 2014, 2015 and 2016 was 1.59, 1.17 and 0.96 respectively.

Contractual Obligations and Commitments

The following table sets forth certain information relating to future payments due under contractual commitments as of September 30, 2016, aggregated by type of contractual obligation:

As at September 30, 2016	**Less than 3 months**	**Between 3 months and 1 year**	**Between 1 year and 2 years**	**Between 2 years and 5 years**	**Over 5 years**	**Total**
Borrowings	741.52	1,577.66	2,746.29	20,880.04	1,7833.85	43,779.36
Trade and other payables	354.46	1,063.37	-	-	-	1,417.83
Other financial liabilities	-	16,251.92	1,291.55	4,233.83	6,122.74	27,900.04
Total	1,095.98	18,892.95	4,037.84	25,113.87	23,956.59	73,097.23

Contingent Liabilities and other Off-Balance Sheet Arrangements

The following table sets forth certain information relating to our contingent liabilities as of September 30, 2016:

Particulars	(Rs. Millions)
Income-tax matters: In case of NK – Income tax department under section 156 had levied penalty of Rs. 17.74 million for assessment year 2012-13. NK has appealed against the same and has paid Rs. 8.87 million out of the same under protest.	17.74
In case of TD - As per Assessment order for assessment year 2013-14, a demand of Rs. 1.14 million was raised by IT department. NK had defended the demand and approached to CIT Appeals and an amount of Rs. 0.41 Million was deposited under protest.	1.14
Differences in balances as per bank loan confirmations and books of accounts mainly on account of interest rate resetting are under reconciliation with the bankers. The Project SPVs expect to settle these soon and do not anticipate any further liability on account of interest.	73.03
Total	**91.91**

There are no other off-balance sheet arrangements that have or are reasonably likely to have an adverse effect on our financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that we believe are material to investors.

Transactions with Related Parties

The Project SPVs have in the course of their business entered into various transactions with related parties. These transactions include operation and maintenance charges paid for operation and maintenance activities sub-contracted, loans and advances, certain road work expenses for work road work contracted to various Sponsor entities in similar businesses.

For further information on the Project SPVs related party transactions, please refer to the section headed "*Related Party Transactions"* in this Draft Offer Document.

Significant Post-Balance Sheet Events

Except as disclosed in this Draft Offer Document, we are not aware of any circumstances that have arisen since September 30, 2016, that materially and adversely affect, or are likely to affect, our or the Project SPVs operations or profitability, the value of our or their respective assets, or our or the Project SPVs ability to pay our or their respective liabilities within the next 12 months.

The Trust and the Investment Manager confirm that there has been no material change in the contingent liabilities since September 30, 2016, being the date of latest financial information included by way of the Combined Financial Statements.

The Trust and the Investment Manager confirm that there has been no material change in the capital and other commitments since September 30, 2016, being the date of latest financial information included by way of the Combined Financial Statements.

The Trust and the Investment Manager confirm that working capital requirements to fulfill the present requirements of the Trust, have been arranged for a period of up to twelve months from date of listing.

Quantitative and Qualitative Disclosure about Market Risk

Interest rate risk

As the infrastructure development and construction business is capital intensive, the Project SPVs are exposed to interest rate risk. Interest rates for borrowings have been volatile in India in recent periods. The Project SPVs infrastructure development and construction projects were funded to a large extent by debt and increases in interest expense could have an adverse effect on their results of operations and financial condition. The Project SPVs current debt facilities carry interest at variable rates as well as fixed rates with the provision for periodic reset of interest rates. As of September 30, 2016, the majority of the Project SPVs total indebtedness was subject to variable rates. Although from time to time we may engage in interest rate hedging transactions or exercise any rights available to us under these financing arrangements to terminate the existing debt financing arrangement on

the respective reset dates and enter into new financing arrangements, there can be no assurance that we will be able to do so on commercially reasonable terms, that our counterparties will perform their obligations, or that these agreements, if entered into, will protect us adequately against interest rate risks.

Foreign currency exchange rate risk

The Project SPVs have entered into certain interest and principal swap transactions with respect to their external commercial borrowings whereby adverse movements in international interest rates in the U.S. dollar may adversely impact their results of operations. Similarly in respect of the principal swaps any depreciation of the Rupee against the U.S. dollar may impact them adversely. In addition, we may in the future enter into financing arrangements for foreign currency borrowings. We cannot assure you that we will be able to effectively mitigate the adverse impact of currency fluctuations and increases in international interest rates on our results of operation.

FINANCIAL INDEBTEDNESS

The following is a summary of the indebtedness of the Project SPVs, together with a brief description of certain material covenants of the relevant financing agreements. For additional details in relation to the indebtedness of the Project SPVs, investors should also refer to the sections entitled "Use of Proceeds" and "Financial Statements", on pages 78 and 355, respectively.

The Project SPVs have primarily availed loans, for financing, in part, the project costs in relation to the construction and development of their respective underlying road infrastructure asset. Certain Project SPVs have availed further financing, as necessary, for refinancing existing loans or with respect to the repayment obligations under previously availed loans.

Set forth below is a brief summary of the aggregate borrowings of the Project SPVs (in accordance with Ind-AS), on a standalone basis, as of November 30, 2016:

Category of Borrowing	Aggregate Amount (Rs. in Millions)	Outstanding Amount as on November 30, 2016 (Rs. in Millions)
DS		
Term Loans		
Secured	3,320.00	3,167.95
Sub-Total	**3,320.00**	**3,167.95**
GF		
Term Loans		
Secured	5,840.00	4,710.70
Sub-Total	**5,840.00**	**4,710.70**
HK		
Term Loans		
Secured	5,550.00	5,501.32
Sub-Total	**5,550.00**	**5,501.32**
JR		
Term Loans		
Secured	3,890.00	3,598.22
Sub-Total	**3,890.00**	**3,598.22**
KM		
Term Loans		
Secured	7,890.00	7,121.96
Sub-Total	**7,890.00**	**7,121.96**
NK		
Term Loans/Debentures		
Secured	1,200.00	1,142.88
Other		
Commercial Paper	1,500.00	1,500.00
Sub-Total	**2,700.00**	**2,642.88**
PS		
Term Loans		
Secured	7,900.00	6,036.75
Unsecured (from Sponsor)	20.00	20.00
Sub-Total	**7,920.00**	**6,056.75**
SU		
Term Loans/Debentures		
Secured	6,680.00	6,573.28
Sub-Total	**6,680.00**	**6,573.28**
TD		
Term Loans		
Secured	3,224.00	2,891.65
Sub-Total	**3,224.00**	**2,891.65**

Category of Borrowing	Aggregate Amount (Rs. in Millions)	Outstanding Amount as on November 30, 2016 (Rs. in Millions)
TK		
Term Loans		
Secured	4,390.00	3,373.12
Unsecured (from Sponsor)	75.00	75.00
Sub-Total	**4,465.00**	**3,448.12**
Total	**51,479.00**	**45,712.83**

Principal Terms of the Borrowings availed by the Project SPVs

1. **Interest and commissions:** In terms of the loans availed by the Project SPVs, the interest rate is either (a) a base rate specified by the lender plus applicable spread, if any, per annum or (b) at a fixed rate per annum.

2. **Maturity and Repayment:** The final maturity period of the loans availed by the Project SPVs ranges from financial year 2021 to financial year 2030. These loans are repayable in accordance with the repayment schedule specified in the relevant financing agreements, which typically prescribe quarterly instalments. However, some of the borrowing agreements entered into by the Project SPVs contain mandatory prepayment clauses, which require the utilization of cash surplus towards the prepayment of loans, if the debt service coverage ratio at the Project SPVs is above specified thresholds, or the Project SPV is in receipt of any proceeds of any arbitral or judicial award in connection with any of its project agreements.

3. **Security:** In terms of borrowings where security needs to be created, the Project SPVs are typically required to create:

    a. a first ranking mortgage and charge over all the Project SPV's immovable properties, both present and future, excluding the project assets;

    b. A first charge by way of hypothecation of all Project SPV's movables, including moveable plant and machinery, machinery spares, tools and accessories, furniture, fixtures, vehicles and all other movable assets, present and future, excluding the project assets;

    c. A first ranking *pari passu* charge on all accounts of the Project SPV, including, *inter alia*, the escrow account, book debts and the other retention accounts (or any account in substitution thereof that may be opened in accordance with the facility agreement/debenture trust deed and the supplementary escrow agreement or any other project document), and all funds pertaining to operating cash flows, commission, all amounts received in relation to insurance policies, revenue of whatsoever nature to be deposited from time to time and all receivables and authorized investments or other securities representing all amounts credited thereto for the purpose of being applied to the extent of the waterfall of priority specified in the concession agreement

    d. A first ranking charge on the Project SPVs intangibles, including but not limited to intellectual property rights, goodwill, rights, undertaking and uncalled capital, present and future, excluding the project assets;

    e. A first charge/assignment by way of security in:

        i. all the right, title, interest, benefits, claims and demands whatsoever of the Project SPV under the project documents;

        ii. the right, title and interest of the Project SPV to and under all the government approvals;

        iii. all the right, title, interest, benefits, claims and demands whatsoever of the Project SPV in any letter of credit, guarantee including contractor guarantees and liquidated damages and performance bond provided by any party to the project documents; and

        iv. all the right, title, interest, benefits, claims and demands whatsoever of the Project SPV under all insurance contracts.

f. A substitution agreement, as may be executed between NHAI, the Project SPV and its respective lenders, whereby NHAI may substitute the Project SPV by a selectee of its respective lenders, for the purpose of securing the payment of lender dues;

g. A state support agreement;

h. A pledge of a certain specified percentage of the equity shares of the Project SPVs that are held by the Sponsor (directly or indirectly), more specifically:

   i. a pledge of 51% of the equity shares of NK (currently held by the Sponsor);

   ii. a pledge of 51% of the equity shares of DS (currently held by the Sponsor);

   iii. a pledge of 51% of the equity shares of PS (currently held by the Sponsor); and

   iv. a pledge of 49% of the equity shares of SU (currently held by the Sponsor)

i. An irrevocable and unconditional corporate guarantees from the Sponsor; and

j. An irrevocable and unconditional shortfall undertaking or corporate governance from the Sponsor to meet shortfall (if any) between outstanding obligations and termination payments received from NHAI in case of termination of the concession agreement for any reason, repayment of debt due to senior lenders in the event termination payments are not received within a specified time from the termination of the concession agreement and repayment of debt due to senior lenders in case of an event of default which is also a concessionaire default under the concession agreement.

4. **Negative Lien/Non-Disposal Undertaking:** Certain borrowing arrangements entered into by the Project SPVs contain provisions restricting the Project SPV from recognising or registering any transfer of shares that will cause the collective shareholding of the Sponsor to fall below 51% and the same shall stand reduced to the extent of 26% upon repayment of 75% of the amounts outstanding under the relevant borrowing arrangement, provided that there is no outstanding event of default under the relevant borrowing arrangement.

5. **Covenants:** Borrowing arrangements entered into by the Project SPVs contain certain restrictive conditions and covenants restricting certain corporate actions and the respective Project SPV is required to take the prior approval of the lender before carrying out such activities. Each of the Project SPVs are also required to adhere to certain financial covenants, which include but are not limited to, maintaining a prescribed debt to equity ratio during the currency of the loan, maintaining a minimum debt service coverage ratio, maintaining a debt service reserve account and maintaining a major maintenance reserve account.

   A Project SPV is required to intimate and/or obtain prior written permission of its lenders, *inter alia*, in the following instances:

   a. Effecting any change in capital structure (including shareholding pattern);

   b. Selling, leasing, transferring or otherwise disposing off its assets;

   c. amending, modifying or supplementing its memorandum of association and articles of association in any material manner;

   d. Making any capital expenditure other than permitted investments;

   e. Creation of any security interest in any property of the Project SPV;

   f. Incurrence of any other indebtedness, including the issue of debentures other than permitted indebtedness;

   g. Raising any equity or preference share capital;

h. Repayment or prepayment of any subordinated loans except loans by the Project SPVs from the Sponsor during the construction period for meeting shortfall in internal accruals or to meet the gap on account of non-receipt of grant or change of scope;

i. Establishing and/or opening any account other than the escrow account under the relevant borrowing arrangement;

j. Undertake or permit any scheme of arrangement or compromise with its creditors or shareholders; and

k. Any proposed change in the nature or scope of the project.

6. **Events of Default:** Borrowing arrangements entered into by the Project SPVs contain standard events of default, including:

a. Non-payment of principal amount by the Project SPV;

b. Non-payment of interest, additional interest, liquidated damages, free or other amount by the Project SPV;

c. Default by the borrower in creation of security interest to the satisfaction of the lenders within the period stipulated;

d. Default or breach in the performance of any covenants and/or covenants under the agreement by the Project SPV;

e. Misrepresentation made by the Project SPV under the agreement or any financing document provided in connection with the loan;

f. Invalidity of financial documents;

g. Sale, disposal or creation of any charge or encumbrance on any of the land, building, structures or plant and machinery of the Project SPVs in breach of any of the provisions of the relevant project agreements, without prior written approval of the relevant lenders;

h. Undertaking any action for reorganization of the Project SPV without the approval of the relevant lenders;

i. Default in performance or observance of any covenant, condition, warranty or provision contained in any other financing agreement entered into by the Project SPV;

j. In the event of cross default by the Project SPV;

k. Failure on the part of the Project SPV to maintain adequate insurances in accordance with the terms of the transaction documents;

l. Failure to maintain required balance in the escrow account;

m. The Project SPV ceasing or threatening to cease to carry on its business or giving notice of its intention to do so;

n. The Project SPV abandoning its project;

o. Violation or breach of any environmental, health and safety standards requirement; and

p. The Project SPV ceasing or threatening to cease to carry on its business or giving notice of its intention to do so or it becoming unlawful for the borrower to carry on its business.

The descriptions above are indicative, and there may be additional terms and conditions with respect to security, financial or other covenants and events of default under the various borrowing arrangements entered into by the Project SPVs. The Project SPVs are required to ensure that the aforementioned events of default and other events of default, as specified under the various documents and agreements entered into by such Project SPV for the purpose of availing of loans, are not triggered.

Consents from the Lenders of the Project SPVs

The Project SPVs have applied to their respective lenders to undertake the various activities that are proposed by way of the Formation Transactions and the investment by the Trust in the Project SPVs by way of an infusion of debt, including but not limited to a change in management and disposal of Sponsor's shareholding in the Project SPVs to the Trust, temporary release of pledge of the equity shares of the Project SPVs, release of corporate guarantees provided by the Sponsor, availing debt financing from the Trust out of the proceeds of the Issue to repay the unsecured subordinate debt advanced by the Sponsor to the Project SPVs and replace it with debt financing from the Trust and the creation of a *pari passu* charge with respect to the Secured Trust Financing. For additional details, see "*Use of Proceeds*" and "*Background and Structure of the Trust*" on page 79 and page 110, respectively.

Set forth below is a brief summary of the status of the lender's consents with respect to Project SPVs, as of the date of the Draft Offer Document:

Sr. No.	Name of Lender	Nature of Borrowing and details of documentation	Status / Details of Lender's Consent	Conditions Specified (if any)
DS				
1.	Infrastructure Development Finance Company Limited	Rupee Loan Agreement dated March 26, 2012	Applied for and Pending Receipt	-
2.	India Infrastructure Finance Company Limited	Takeout agreement dated January 13, 2015	Applied for and Pending Receipt	-
GF				
1.	Allahabad Bank	Common loan agreement dated August 26, 2009	Applied for and Pending Receipt	-
2.	Axis Bank Limited		Applied for and Pending Receipt	-
3.	Bank of Baroda		Applied for and Pending Receipt	-
4.	Bank of India		Applied for and Pending Receipt	-
5.	Corporation Bank		Applied for and Pending Receipt	-
6.	Indian Bank		Applied for and Pending Receipt	-
7.	State Bank of Patiala		Applied for and Pending Receipt	-
8.	UCO Bank		Applied for and Pending Receipt	-
9.	Union Bank of India		Applied for and Pending Receipt	-
10.	United Bank of India		Applied for and Pending Receipt	-
HK				
1.	Canara Bank	Common loan agreement dated February 17, 2012	Applied for and Pending Receipt	-
2.	Corporation Bank		Applied for and Pending Receipt	-
3.	Oriental Bank of Commerce		Applied for and Pending Receipt	-
4.	State Bank of Hyderabad		Applied for and Pending Receipt	-
JR				
1.	Yes Bank Limited	Loan agreement dated January 25, 2011	Applied for and Pending Receipt	-

Sr. No.	Name of Lender	Nature of Borrowing and details of documentation	Status / Details of Lender's Consent	Conditions Specified (if any)
KM				
1.	DEG – Deutsche Investitions – Und Entwicklungsgesellschaft MBH	Term facility agreement dated June 12, 2013	Applied for and Pending Receipt	-
2.	Andhra Bank	Common Loan Agreement dated January 25, 2011	Applied for and Pending Receipt	-
3.	Bank of Maharashtra		Applied for and Pending Receipt	-
4.	Corporation Bank		Applied for and Pending Receipt	-
5.	Karnataka Bank Limited		Applied for and Pending Receipt	-
6.	Punjab and Sind Bank		Applied for and Pending Receipt	-
7.	State Bank of Bikaner and Jaipur		Applied for and Pending Receipt	-
8.	State Bank of Hyderabad		Applied for and Pending Receipt	-
9.	Yes Bank Limited		Applied for and Pending Receipt	-
NK				
1.	Infrastructure Development Finance Company Limited	Rupee Loan Agreement dated March 26, 2012	Applied for and Pending Receipt	-
2.	IDBI Trusteeship Services Limited (Debenture Trustee)	Debenture Trust Deed dated September 24, 2015	Applied for and Pending Receipt	-
PS				
1.	Axis Bank Limited	Common Loan Agreement dated March 18, 2015	Applied for and Pending Receipt	-
2.	India Infrastructure Finance Company Limited		Applied for and Pending Receipt	-
3.	IDFC Bank Limited		Applied for and Pending Receipt	-
4.	State Bank of Hyderabad		Applied for and Pending Receipt	-
SU				
1.	Dena Bank	Facility Agreement dated June 23, 2014	Applied for and Pending Receipt	-
2.	Oriental Bank of Commerce		Applied for and Pending Receipt	-
3.	State Bank of Bikaner & Jaipur		Applied for and Pending Receipt	-
4.	State Bank of India		Applied for and Pending Receipt	-
5.	State Bank of Mysore		Applied for and Pending Receipt	-
6.	L&T Infrastructure Finance Company Limited		Applied for and Pending Receipt	-
7.	IDBI Trusteeship Services Limited (Debenture Trustee)	Debenture Trust Deed dated August 12, 2014	Applied for and Pending Receipt	-
TD				
1.	Bank of India	Common Rupee Loan Agreement dated March 28, 2008	Applied for and Pending Receipt	-
2.	Canara Bank		Applied for and Pending Receipt	-
3.	Corporation Bank		Applied for and Pending Receipt	-
4.	India Infrastructure Finance Company Limited		Applied for and Pending Receipt	-
5.	Oriental Bank of Commerce		Applied for and Pending Receipt	-
6.	UCO Bank		Applied for and Pending Receipt	-

Sr. No.	Name of Lender	Nature of Borrowing and details of documentation	Status / Details of Lender's Consent	Conditions Specified (if any)
TK				
1.	Bank of India	Common Rupee Loan Agreement dated March 28, 2008	Applied for and Pending Receipt	-
2.	Canara Bank		Applied for and Pending Receipt	-
3.	Corporation Bank		Applied for and Pending Receipt	-
4.	India Infrastructure Finance Company Limited		Applied for and Pending Receipt	-
5.	Indian Overseas Bank		Applied for and Pending Receipt	-
6.	Oriental Bank of Commerce		Applied for and Pending Receipt	-
7.	UCO Bank		Applied for and Pending Receipt	-

For additional details in relation to the risks associated with any failure of the Project SPVs to obtain such consents, see "*Risk Factors - The Project SPVs are subject to restrictive covenants under their financing agreements that could limit our flexibility in managing our business or to use cash or other assets*" on page 24.

SECTION VII – LEGAL AND OTHER INFORMATION

MATERIAL LITIGATION AND REGULATORY ACTION

Except as stated in this section, there is no pending material litigation or regulatory action against the Trust, the Sponsor, the Investment Manager, the Project Manager, or any of their respective Associates, and the Trustee. Further, except as stated in this section, there is no pending material litigation involving the Project SPVs. "Associate" shall have the meaning ascribed to such term in the InvIT Regulations. All terms defined in a particular litigation are for that particular litigation only.

Given the nature and extent of the operations of the Project SPVs, civil proceedings, whether threatened or actual, involving the Project SPVs, which involve an amount of Rs. 100 million or more (to the extent that such an amount is determinable), or in which the amount is not determinable but where the proceeding is considered material by such entity have been individually disclosed.

The Sponsor and its Associates operate in diverse sectors in India and overseas. In Fiscal 2016, the total revenues of the Sponsor, as per its audited consolidated financial statements, was Rs. 184,076.67 million. Given the nature and extent of the operations of the Sponsor and its Associates, civil proceedings, whether threatened or actual, against the Sponsor and its Associates, which involve an amount equal to or more than Rs. 1,840.77 million (an amount equivalent to 1% of the total consolidated revenue of the Sponsor for the Fiscal 2016), or in which the amount is not determinable but where the proceeding is considered material by such entity, have been individually disclosed.

The Investment Manager is a subsidiary of Reliance Capital Limited, which is an Associate of the Sponsor. Accordingly, civil proceedings, whether threatened or actual, against the Associates of the Investment Manager, which involve an amount equal to or more than Rs. 1,840.77 million (an amount equivalent to 1% of the total consolidated revenue of the Sponsor for the Fiscal 2016), or in which the amount is not determinable but where the proceeding is considered material by such entity, have been individually disclosed. However, civil proceedings, whether threatened or actual, against the Investment Manager itself, which involve an amount equal to or more than Rs. 127.10 million (an amount equivalent to 1% of the total standalone revenue of the Investment Manager for the Fiscal 2016), or in which the amount is not determinable but where the proceeding is considered material by the Investment Manager, have been individually disclosed.

All pending criminal proceedings and regulatory action against the Trust, the Sponsor, the Investment Manager, the Project Manager or any of their Associates, and the Trustee, have been individually disclosed, as applicable.

Criminal complaints, compensation claims and first information reports filed against the employees and contract labour of the Sponsor, the Investment Manager and the Project Manager, and their respective Associates, wherein such entities themselves are not impleaded, have been not been disclosed. Further, due to the nature and extent of their respective business operations, the complaints and/or first information reports that the Sponsor, the Investment Manager and the Project Manager, and their respective Associates, have filed against various persons, have been not been disclosed.

With respect to the Trustee, all pending litigation and regulatory action that the Trustee has determined to be material have been disclosed.

A. Material Litigation and Regulatory Action against the Sponsor and the Associates of the Sponsor

Material Litigation and Regulatory Action against the Sponsor

Pending Civil Litigation against the Sponsor

1. Tata Power Company Limited (the "**Appellant**") had filed an appeal under Section 111 of the Electricity Act, 2003 before the Appellate Tribunal for Electricity ("**APTEL**") against the Sponsor and certain others challenging the order passed by the Maharashtra Electricity Regulatory Commission ("**MERC**") in relation to the standby charges payable by the Sponsor to the Appellant for a standby facility provided by the Appellant to the Sponsor seeking, *inter alia*, (a) that the Sponsor be held liable to pay to the Appellant the standby charges and on the same basis and at the same rate for the standby facility of 275 MVA provided by the Appellant, as charged by the Maharashtra State Electricity Board ("**MSEB**") from the Appellant for and in relation to the standby facility of 550 MVA provided by the MSEB to the Appellant; and (b) to order

and direct the Sponsor to pay to the Appellant such amount as has been paid by the Appellant to the MSEB in excess of its share of 50% standby charges from June, 2004 onwards along with interest and delayed payment charges. The Sponsor has filed a cross appeal before the APTEL against the Appellant and others contending, *inter alia*, that the Appellant recovers part of the standby charges paid to the MSEB from its customers (including the Sponsor) and hence the Sponsor is not liable to pay the standby charges at the same rate as the Appellant pays to the MSEB and the order of the MERC had the effect of transferring the burden of TPC's expenses on to the Sponsor and other customers. The Sponsor also contended that TPC had withheld amounts payable as standby charges and delayed payments of such charges. The liability to pay interest cannot be transferred to the consumers including the Sponsor and a direction to transfer such liability would be illegal. On appeal, the APTEL *vide* its order, fixed the Sponsor's liability at approximately Rs. 4,580 million and directed the Appellant to refund approximately Rs. 3,540 million to the Sponsor along with interest and set aside the order of the MERC. Both the Appellant and the Sponsor have filed appeals before the Supreme Court of India against the said order of the APTEL. The Supreme Court of India had, by way of its interim order, directed the Appellant to deposit Rs. 2,270 million with the Supreme Court which may be withdrawn by the Sponsor, subject to an undertaking that in the event the appeal is decided against the Sponsor, than the Sponsor will refund the amount to the Appellant with interest and furnish a bank guarantee amounting to Rs. 2,270 million in favour of the Supreme Court of India pending disposal of the appeal. The matter is currently pending.

2. The Sales Tax Officer, Pallakad, Kerala (the "**Sales Tax Officer**") had issued a demand notice against the Sponsor demanding payment of entry tax of Rs. 286 million and a penalty of Rs. 572 million, aggreggating to Rs. 858 million. Pursuant to the said demand notice, the Sponsor had filed a writ petition before the High Court of Kerala against the Sales Tax Officer and certain others (the "**Respondents**") seeking *inter alia* (a) to declare that the Kerala Tax on Entry of Goods into Local Areas Act, 1994 (the "**Act**") is ultra vires and violative of Article 301- Article 304 of the Constitution of India and (b) quash the demand notice issued by the Kerala Sales Tax Department. The said relief had been sought on, *inter alia*, the alleged grounds that (a) the demand of entry tax on the items brought by the Sponsor from outside Kerala under the Act is illegal and arbitrary and (b) a tax in the nature of entry tax can be imposed by the state only when the same is compensatory in nature. The High Court of Kerala has vide its order allowed the said writ petition and qaushed the impugned demands. The Respondents have filed a special leave petition against the Sponsor before the Supreme Court of India challenging the order of the High Court of Kerala. The nine judge bench of the Supreme Court has decided upon the issue and remanded the matter back to the regular benches.

Pending Regulatory Action against the Sponsor

1. The Maharashtra Electricity Regulatory Commission has issued a show cause notice to the Chief Executive Officer, Reliance Infrastructure Limited, to show cause as to why proceedings under Section 142 of the Electricity Act, 2003, should not be initiated against the Sponsor in relation to the non-compliance in implementing the requirement under Regulation 8.11 of the Maharashtra Electricity Regulation Commission (Distribution Open Access) Regulations, 2016 by not providing the facility of on-line submission of applications for connectivity and open access within the stipulated time of 90 days from the date of the notification. The Sponsor has filed its reply in the aforementioned matter submitting, *inter alia*, that it took all necessary steps in compliance with the 2016 Regulations and the minor delay in setting up the online application system was on account of the time taken to arrive at on the agreed process for inter-utility application handling, fee collection and remittance. No further communication has been received in this regard.

2. Directorate of Enforcement (New Delhi) vide its notice dated January 27, 2010, directed the Sponsor to show cause as to why adjudication proceedings should not be initiated against the Sponsor and why penalty should not be imposed in relation to certain alleged contraventions of the FEMA with respect to external commercial borrowing availed by the Sponsor in the past. The Sponsor vide its letter dated September 30, 2011, responded to the show cause notice and denied the allegations contained therein. The matter is currently pending.

3. Directorate of Revenue Intelligence (Mumbai) ("**DRI**") vide its notice dated August 31, 2016, in relation to the import of Indonesian coal by the Sponsor, directed the Sponsor and one of its Associates, namely Rosa Power Supply Company Limited, to show cause as to why (i) the declared value should not be rejected, (ii) the value should not be re-determined, (iii) the coal consignments should not be confiscated, and (iv) penalty under the Customs Act, 1962, should not be imposed. The Sponsor and Rosa Power Supply

Company Limited have responded to the aforementioned notice and sought documentation from the DRI in relation to the allegations made and have denied the allegations. The matter is currently pending.

Other Proceedings involving the Sponsor

1. The Sponsor has initiated arbitration proceedings against Haryana Power Generation Company Limited (the "**Respondent**") before the arbitral tribunal consisting of sole arbitrator Mrs. Promilla Issar claiming, *inter alia*, (a) a declaration to the effect that the time for completion of Unit I and Unit II at the Deenbandhu Chhoturam Thermal Power Station stands extended from November 11, 2007 to April 14, 2008 and from February 19, 2008 to June 24, 2008, respectively; (b) to declare the taking over dates of Unit I and Unit II at the Deenbandhu Chhoturam Thermal Power Station as April 14, 2008 and June 24, 2008, respectively, (c) a declaration to the effect that the date of the final take over in any event be considered as August 21, 2010, (d) to direct and order the Respondent to refund the amount of Rs. 2,097 million wrongfully deducted by the Respondent allegedly towards liquidated damages with interest thereon from the date of deduction aggregating to Rs. 3,929.12 million with further interest from October 21, 2013 till the payment or realisation, and (e) to order the Respondent to pay to the Sponsor a sum of Rs. 57.51 million with interest towards additional works performed by the Sponsor but not compensated for by the Respondent, in relation to the Deenbandhu Chhoturam Thermal Power Station. The Sponsor has claimed approximately 11,108.44 million from the Respondent. The Respondent has also filed a statement of defence denying the averments and submitting that the statement of claims be dismissed. The Respondent has *vide* its counter-claim claimed costs under various heads including (a) the cost of packing material of the equipment and machinery supplied by the Sponsor to the Deenbandhu Chhoturam Thermal Power Station for an amount of Rs. 628.8 million with interest; and (b) cost of fly ash/ administrative charges for an amount of Rs. 1,130.3 million along with interest at the rate of 18% from the actual date of loss till realisation towards of the lifting of dry fly ash. The matter is currently pending.

2. The Sponsor had initiated arbitration proceedings against the Government of Goa ("**Respondent**") before an arbitral tribunal consisting of sole arbitrator Mr. B.P. Singh claiming, inter alia, (a) an order or declaration to the effect that the Sponsor is entitled to interest on delayed payment of invoices for the period commencing January 2011 to March 2013 being a sum of Rs. 366.07 million; (b) an order or declaration to the effect that the Sponsor is entitled to an amount of Rs. 1,191.52 million for the period commencing June 2013 to August 13, 2014, towards the invoices raised for the aforesaid period along with interest thereon; and (c) costs for the petition. The Respondent has vide its counter-claim claimed (a) an aggregate amount of Rs. 12,417.34 million (including interest thereon) towards excess payments made by the Respondent to the Sponsor; and (b) interest pendente lite on the said aggregate amount. The matter is currently pending.

For details in relation to other proceedings against the Sponsor, please see "- *Other Proceedings involving PS*"

Completed Regulatory Action against the Sponsor

1. The Sponsor vide its letter dated September 5, 2013, had applied for the compounding of a delay in the submission of Form Overseas Direct Investment in relation to its overseas investment. The RBI vide its order dated February 26, 2014, compounded the delay upon the payment of a compounding fee amounting to Rs. 4.48 million. Consequently, the Sponsor paid the aforesaid compounding fee.

2. Pursuant to a consent order dated January 14, 2011, SEBI disposed of proceedings that it had initiated against the Sponsor and certain of its directors namely, Mr. Anil D. Ambani, Mr. Satish Seth, Mr. S. C. Gupta, Mr. Lalit Jalan and Mr. J.P. Chalasani (the "**Sponsor Applicants**"), and Reliance Natural Resources Limited and its director, namely Mr. Anil D. Ambani (the "**Other Applicants**"), *vide* show cause notices issued in June 2010 and September 2010, in relation to alleged violations of certain provisions of the Securities and Exchange Board of India Act, 1992, the Securities and Exchange Board of India (Prohibition of Fraudulent and Unfair Trade Practices Relating to Securities Market) Regulations, 2003 and the equity listing agreement. As per the terms of the aforesaid consent order, the Sponsor Applicants and the Other Applicants, without admitting or denying the alleged charges, had each remitted Rs. 250.00 million (aggregating to Rs. 500.00 million), and had agreed to abide by the terms of consent that they had voluntarily proposed, in accordance with which (i) the aforesaid applicant companies would not make investments in listed securities in the secondary market (other than mutual funds) until December 2012 and implement a policy of rotation of statutory auditors; (ii) the aforesaid individual applicants would not make investments in listed securities in the secondary market (other than mutual fund) until December

2011. However, the aforesaid would not apply to primary issuances, buy-backs and open offers.

Taxation Proceedings

There are 32 direct tax proceedings involving the Sponsor, in which the aggregate amount of income involved is approximately Rs. 113,741.82 million. Further, there are 20 indirect tax proceedings involving the Sponsor, which involve an aggregate amount demanded of approximately Rs. 2,900.6 million.

Material Litigation and Regulatory Action against the Associates of the Sponsor

For details in relation to the litigation and regulatory action (a) involving the Project SPVs, please see "- *Litigation and Regulatory Action involving the Project SPVs*".

I. *BSES Rajdhani Power Limited ("BRPL")*

Pending Civil Litigation against BRPL

1. Delhi Electricity Regulatory Commission (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against BRPL (the "**Respondent**"), challenging the validity of an order passed by the Appellate Tribunal for Electricity ("**APTEL**") dated March 2, 2015. The Appellant has, *inter alia*, submitted that APTEL in passing its order, failed to appreciate various tariff issues, and has sought that the aforesaid order be set aside to the extent of the issues challenged. The matter is currently pending.

2. Delhi Electricity Regulatory Commission (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against BRPL (the "**Respondent**"), challenging the validity of an order passed by the Appellate Tribunal for Electricity ("**APTEL**") dated November 28, 2014. The Appellant has challenged the aforesaid order on the issues of, *inter alia*, interest on working capital; terminal benefits payment to voluntary retirement schemes optees; truing up of interest rates for loans; fixation of AT&C loss targets; and disallowance due to lack of verification of kWh figures for Fiscal 2009-10. The Appellant has sought that the aforesaid order be set aside to the extent of the issues challenged. The matter is currently pending.

3. Green Energy Association (the "**Petitioner**") has filed a petition before the Delhi Electricity Regulatory Commission against BRPL, BYPL and certain others (the "**Respondents**") seeking, *inter alia*, the enforcement of renewable purchase obligations and the imposition of a penalty upon the Respondents. By way of its response in the aforesaid matter, BRPL and BYPL have submitted that they have taken bonafide steps and actions to fulfil their renewable purchase obligations and have sought that the petition be dismissed. The matter is currently pending.

Pending Regulatory Action against BRPL

1. Delhi Electricity Regulatory Commission ("**DERC**") has issued a show cause notice to BRPL and BYPL, and has issued directions in relation to the separation of corporate offices and employees common to BRPL and BYPL. BRPL and BYPL have replied to the aforesaid show cause notice and submitted details of compliance with the directions of the DERC. No further communication has been received in this regard.

2. Delhi Electricity Regulatory Commission ("**DERC**") has issued a show cause notice to BRPL and BYPL, in relation to, *inter alia*, non-payment of alleged aggregate dues amounting to Rs. 31,877 million. BRPL and BYPL responded to the aforesaid notice and submitted details in relation to their respective financial condition. Subsequently, DERC issued another show cause notice to BRPL and BYPL with respect to twelve additional alleged violations/non-compliances committed by them, in addition to those highlighted by way of the earlier show cause notice. By way of its order dated July 22, 2015, DERC separated the proceedings in relation to non-compliance in twelve additional issues, from the earlier show cause proceedings. No further communication has been received in this regard.

3. Delhi Electricity Regulatory Commission ("**DERC**") has issued a show cause notice to BRPL and BYPL, in relation to sudden disruption of power in NCT Delhi after the occurrence of a storm in May, 2014. During the course of the related hearing, BYPL and BRPL have submitted that the aforesaid failure was not on part of the distribution companies and further, have requested that the copies of the news reports and other materials that have been relied upon by the DERC be provided to BYPL and BRPL. No further communication has been received in this regard.

Other Civil Proceedings involving BRPL

1. BRPL (the "**Petitioner**") has filed a writ petition before the Supreme Court of India against the Union of India, the Delhi Electricity Regulatory Commission, the National Thermal Power Corporation and certain others (the "**Respondents**") seeking *inter alia* (a) to direct the Respondents to not discontinue power supply or to take any coercive step until the appropriate mechanism for adjusting the dues of the Petitioner to the Respondents is determined; (b) direct the commission to give effect to deferred costs created as regulatory asset and (c) to protect the investments made by the Petitioner and assured returns from the licensed business. By way of its response in the aforesaid matter, the Respondents have submitted that the Petitioners have not made payment of dues to them, and have sought to dismiss the writ petition with a direction to the Petitioners to make timely payment of the power purchase dues. By way of separate interim orders in the matter, the Supreme Court has directed that there shall be no disconnection in the supply of electricity, and that the distribution companies will continue to pay the current payments to the generating and transmission companies with effect from March 1, 2014, which will relate to the billing period from January 1, 2014. The matter is currently pending.

2. BRPL (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against the Delhi Electricity Regulatory Commission (the "**Respondent**"), challenging the validity of an order passed by the Appellate Tribunal for Electricity ("**APTEL**") dated March 11, 2014. The Appellant has submitted, *inter alia*, (a) that the APTEL had recalled its earlier order dated February 5, 2014, and permitted the Respondent to proceed and pass an order in relation to a petition dealing with a show cause notice issued by the Respondent to the Appellant, (b) that the APTEL failed to take into consideration that the Respondent had initiated proceedings under the Electricity Act, 2003, at the behest of the Delhi Government, and (c) that the APTEL failed to take into consideration that the multi-year tariff regulations permit uncontrollable expenses to be recovered. The Appellant has sought, *inter alia*, that the APTEL order be set aside. The matter is currently pending.

3. BRPL (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against the Delhi Electricity Regulatory Commission (the "**Respondent**"), challenging the validity of an order passed by the Appellate Tribunal for Electricity ("**APTEL**") dated March 11, 2014. The Appellant has, *inter alia*, sought that the aforesaid order be set aside, and has, *inter alia*, submitted that the APTEL in passing its order, should have directed the Respondent to amortize the acknowledged and recognized regulatory asset within a period of three years in accordance with the regulatory framework; has ignored the unlawful acts of the Respondent; and that the APTEL has deviated from its previous orders. The matter is currently pending.

Taxation Proceedings

There are 14 direct tax proceedings involving BRPL, which involve an aggregate amount of approximately Rs. 844.70 million. Further, there is 1 (one) indirect tax proceeding involving BRPL, which involves an aggregate amount of approximately Rs. 227 million.

II. *BSES Yamuna Power Limited ("BYPL")*

Pending Civil Litigation against BYPL

1. Delhi Electricity Regulatory Commission (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against the BYPL (the "**Respondent**"), challenging the validity of an order passed by the Appellate Tribunal for Electricity ("**APTEL**") dated March 2, 2015. The Appellant has, *inter alia*, submitted that APTEL in passing its order failed to appreciate various tariff issues, and has sought that the aforesaid order be set aside to the extent of the issues challenged. The matter is currently pending.

2. Delhi Electricity Regulatory Commission (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against BYPL (the "**Respondent**"), challenging the validity of an order passed by the Appellate Tribunal for Electricity ("**APTEL**") dated November 28, 2014. The Appellant has challenged the aforesaid order on the issues of, *inter alia*, interest on working capital; terminal benefits payment to voluntary retirement schemes optees; truing up of interest rates for loans; fixation of AT&C loss targets; and disallowance due to lack of verification of kWh figures for Fiscal 2009-10. The Appellant has sought that the aforesaid order be set aside to the extent of the issues challenged. The matter is currently pending.

3. Green Energy Association (the "**Petitioner**") has filed a petition before Delhi Electricity Regulatory Commission against BRPL, BYPL and certain others (the "**Respondents**") seeking, *inter alia*, the enforcement of renewable purchase obligations and the imposition of a penalty upon the Respondents. By way of its response in the aforesaid matter, BRPL and BYPL have submitted that they have taken bonafide steps and actions to fulfil their renewable purchase obligations and have sought that the petition be dismissed. The matter is currently pending.

Pending Regulatory Action involving BYPL

1. Delhi Electricity Regulatory Commission ("**DERC**") has issued a show cause notice to BRPL and BYPL, and has issued directions in relation to the separation of corporate offices and employees common to BRPL and BYPL. BRPL and BYPL have replied to the aforesaid show cause notice and submitted details of compliance of the directions of the DERC. No further communication has been received in this regard.

2. Delhi Electricity Regulatory Commission ("**DERC**") has issued a show cause notice to BRPL and BYPL, in relation to, *inter alia*, non-payment of alleged aggregate dues amounting to Rs 31,877 million. BRPL and BYPL responded to the aforesaid notice and submitted details in relation to their respective financial condition. Subsequently, DERC issued another show cause notice to BRPL and BYPL with respect to twelve additional alleged violations/non-compliances committed by them, in addition to those highlighted by way of the earlier show cause notice. By way of its order dated July 22, 2015, DERC separated the proceedings in relation to non-compliance in twelve additional issues, from the earlier show cause proceedings. No further communication has been received in this regard.

3. Delhi Electricity Regulatory Commission ("**DERC**") has issued a show cause notice to BRPL and BYPL, in relation to sudden disruption of power in NCT Delhi after occurrence of storm in May 2014. During the course of the related hearing, BYPL and BRPL have submitted that the aforesaid failure was not on part of the distribution companies and further, have requested that the copies of the news reports and other materials that have been relied upon by the DERC be provided to BYPL and BRPL. No further communication has been received in this regard.

Other Civil Proceedings involving BYPL

1. BYPL (the "**Petitioner**") has filed a writ petition before the Supreme Court of India against the Union of India, the Delhi Electricity Regulatory Commission, the National Thermal Power Corporation and certain others (the "**Respondents**") seeking, *inter alia*, (a) to direct the Respondents to not discontinue power supply or to take any coercive step until the appropriate mechanism for adjusting the dues of the petitioner to the respondents is determined, (b) hold and declare that the Petitioner is entitled to prudently incurred expenses, (c) direct the commission to give effect to deferred costs created as regulatory asset and (d) to protect the investments made by the Petitioner and assured returns from the licensed business. By way of its response in the aforesaid matter, the Respondents have submitted that the Petitioners have not made payment of dues to them, and have sought to dismiss the writ petition with a direction to the Petitioners to make timely payment of the power purchase dues. By way of separate interim orders in the matter, the Supreme Court has directed that there shall be no disconnection in the supply of electricity, and that the distribution companies will continue to pay the current payments to the generating and transmission companies with effect from March 1, 2014, which will relate to the billing period from January 1, 2014. The matter is currently pending.

2. BYPL (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against the Delhi Electricity Regulatory Commission (the "**Respondent**"), challenging the validity of an order passed by the Appellate Tribunal for Electricity ("**APTEL**") dated March 11, 2014. The Appellant has submitted, *inter alia*, that the APTEL recalled its earlier order dated February 5, 2014, and permitted the Respondent to proceed and pass an order in relation to a petition dealing with a show cause notice issued by the Respondent to the Appellant; that APTEL failed to take into consideration that the Respondent had initiated proceedings under the Electricity Act, 2003, at the behest of the Delhi Government, and that APTEL failed to take into consideration that the multi-year tariff regulations permit uncontrollable expenses to be recovered. The Appellant has sought, *inter alia*, that the APTEL order be set aside. The matter is currently pending.

3. BYPL (the "**Appellant**") has filed a civil appeal before the Supreme Court of India against the Delhi Electricity Regulatory Commission (the "**Respondent**"), challenging the validity of an order passed by the

Appellate Tribunal for Electricity ("**APTEL**") dated March 11, 2014. The Appellant has, *inter alia*, sought that the aforesaid order be set aside, and has, *inter alia*, submitted that APTEL in passing its order, should have directed the Respondent to amortize the acknowledged and recognized regulatory asset within a period of three years in accordance with the regulatory framework; has ignored the unlawful acts of the Respondent; and that the APTEL has deviated from its previous orders. The matter is currently pending.

Taxation Proceedings

There are 16 direct tax proceedings involving BYPL, which involve an aggregate amount of approximately Rs. 1,122.30 million.

III. *Delhi Airport Metro Express Private Limited ("DAMEPL")*

Other Proceedings against DAMEPL

1. Delhi Metro Rail Corporation Limited (the "**Claimant**") has initiated arbitration proceedings before the arbitral tribunal presided over by Mr. H.L. Bajaj against DAMEPL (the "**Respondent**"), *inter alia*, claiming (a) the quashing of the termination notice dated October 8, 2012 issued by the Respondent as the same was illegal and against the provisions of the concession agreement and applicable law and further declaration of such termination notice as void *ab initio*, (b) direction to the Respondent to re-commence the performance of its obligations under the concession agreement dated August 25, 2008, and, in the alternative, to grant compensation of Rs. 31,730 million (along with interest) and (c) direction to the Respondent to tender an amount of Rs. 49.2 million per month, which the Claimant is presently incurring as additional expenditure. The Respondent has, *vide* its reply, denied the contentions of the Claimant and claimed (a) termination payment of Rs. 32,760 million (along with interest), (b) expenses incurred by the Respondent in running the services, as an agent of the Claimant, plus the amount of debt serviced during this period by the Respondent, amounting to Rs. 1,525.9 million (along with interest), (c) debt servicing charges post-termination aggregating to Rs. 1044.10 million (along with interest), (d) compensation for wrongfully encashing the Respondent's bank guarantee, including related costs, amounting to Rs. 669.30 million (along with interest), (e) security deposits with the project's service providers amounting to Rs. 5.68 million (along with interest), (f) opportunity cost incurred, amounting to Rs. 23,828.20 million (along with interest), and (g) payments made to the Claimant along with the losses incurred on the project, amounting to Rs. 4,521.70 million (along with interest). The matter is currently pending.

2. Siemens AG and Siemens Limited (the "**Claimants**") have initiated arbitration proceedings against DAMEPL (the "**Respondent**") before the arbitral tribunal presided by Justice (Retd.) Dr. Arijit Pasayat in relation to 2 (two) contracts, namely, the power supply/traction contract and the signalling contract entered into between the Claimants and the Respondent. The Claimants have, under the power supply/traction contract, *inter alia* sought (a) a declaration to the effect that the termination of the power supply/traction contract by the Respondent was unlawful; (b) an award for a sum of Rs. 134.21 million and 0.69 million euros; (c) interest at the rate of 10% (ten percent) per annum until the date of realization of the total claim amount and (d) direction to forthwith release the performance bank guarantee for amounts of Rs. 73.35 million and 706,718 euros. The Claimants have, under the signalling contract, *inter alia* sought (a) a declaration to the effect that the termination of the signalling contract by the Respondent was unlawful; (b) an award for a sum of Rs. 60.92 million and 1.92 million euros; (c) interest at the rate of 10% (ten percent) per annum until the date of realization of the total claim amount and (d) direction to forthwith release the performance bank guarantee for amounts of Rs. 23.66 million and 1.43 million euros. The Respondent has filed its counter-claims. The matter is currently pending.

IV. *Reliance Defence and Engineering Limited ("RDEL")*

Pending Criminal Proceedings against RDEL

There are 2 (two) criminal proceedings before the Metropolitan Magistrate Court, Mumbai, against RDEL alleging dishonour of cheques. The aggregate amount involved is approximately Rs. 271.02 million.

Taxation Proceedings

There are 6 (six) direct tax proceedings involving RDEL, which involve an aggregate amount of approximately Rs. 354.50 million. Further, there are 24 indirect tax proceedings involving RDEL, which involve an aggregate

amount of approximately Rs. 2,620 million. The matters are currently pending.

V. *Mumbai Metro One Private Limited ("MMOPL")*

Pending Civil Litigation against MMOPL

1. Mumbai Metropolitan Region Development Authority (the "**Petitioner**") has filed a writ petition before the High Court of Bombay against the Fare Fixation Committee, MMOPL and another (the "**Respondents**") seeking, *inter alia*, to quash and set aside the report of the Fare Fixation Committee dated July 8, 2015 fixing the fare for the Mumbai Metro (Mass Rapid Transit System). MMOPL *vide* its reply in the aforementioned matter, has submitted, *inter alia*, that (a) the fare fixed is moderate and below the recommendations of the Fare Fixation Committee; and (b) that no prejudice, harm or injury may be caused to the Petitioner, if no interim relief has been ganted. The matter is currently pending.

Other Proceeding involving MMOPL

1. MMOPL (the "**Claimant**") has initiated arbitration proceedings before the arbitral tribunal presided by Mr. Shivraj Patil against Mumbai Metropolitan Region Development Authority (the "**Respondent**") claiming, *inter alia*, (a) an amount of Rs. 622.7 million towards claim for non-disbursal and interest on delay in disbursal of viability gap funding by the Respondnent; and (b) an amount of Rs. 17,039.63 million towards costs and expenses on account of the delay and various change in scope of works on the part of the Respondent in compliance with various obligations under the concession agreement totalling to Rs. 17,662.29 million. The Respondent has filed a statement of defence and counter claims involving an aggregate amount of approximately Rs. 164,300 million towards delay in completing the milestones and in the alternative have prayed for set-off of the amounts in the event the Claimant is entitled to any claims. The matter is currently pending.

Taxation Proceedings

There are 2 (two) direct tax proceedings involving MMOPL, which involve an aggregate amount of approximately Rs. 30 million. However, there will be no outflow of tax in view of the losses incurred by MMOPL. Further, there are 3 (three) indirect tax proceedings, which involve an aggregate amount of approximately Rs. 1,915 million.

VI. *Reliance Airports Developers Limited ("RADL")*

Pending Civil Litigation against RADL

1. Babasha Khan (the "**Petitioner**") has filed a writ petition before the High Court of Bombay against RADL and certain others (the "**Respondents**") seeking, *inter alia*, (a) to quash the decision of the Government of Maharashtra to transfer and vesting of 5 (five) airports at Yavatmal, Nanded, Latur, Baramati and Osmanabad to and in RADL by way of lease for a period of 95 years and (b) grant of interim injunction restraining the Respondents from acting upon the impugned decision of the Government of Maharashtra. The said relief has been sought on *inter alia*, the alleged grounds (a) that the decision of the Government of Maharashtra is contrary to several provisions of the Airports Authority of India Act, 1994, the Maharshtra Industrial Development Act, 1961 and the Maharashtra Land Revenue Code, 1966, as well as the rules made thereunder and (b) that the bids offered by certain Respondents were very low and if accepted, would cause financial losses to the Government of Maharashtra, aggregating to Rs. 100,000 million or more. The matter is currently pending.

VII. *Reliance Energy Trading Limited ("RETL")*

Taxation Proceedings

There is 1 (one) indirect tax proceeding involving RETL, which involves an aggregate amount of approximately Rs. 19.32 million.

VIII. *Parbati Koldam Transmission Company Limited ("PKTCL")*

Taxation Proceedings

There is 1 (one) indirect tax proceeding involving PKTCL, which involves an aggregate amount of approximately Rs. 42.26 million.

IX. *Utility Powertech Limited ("UPL")*

Taxation Proceedings

There are 13 indirect tax proceedings involving UPL, which involve an aggregate amount of approximately Rs. 103.67 million.

X. *Reliance Power Limited*

Taxation Proceedings

There are 6 (six) direct tax proceedings involving Reliance Power Limited, which involve an aggregate amount of approximately Rs. 2.61 million. There is 1 (one) indirect tax proceeding involving Reliance Power Limited.

XI. *Reliance Natural Resources Limited ("RNRL")*

Pending Regulatory Action against RNRL

1. Directorate of Enforcement (New Delhi) vide its notice dated January 27, 2010, directed RNRL to show cause as to why adjudication proceedings should not be initiated against RNRL and why penalty should not be imposed in relation to certain alleged contraventions of the FEMA with respect to foreign currency convertible bonds issued by RNRL in the past. RNRL vide its letter dated September 30, 2011, responded to the show cause notice and denied the allegations contained therein. The matter is currently pending.

Taxation Proceedings

There are 9 (nine) direct tax proceedings involving RNRL, which involve an aggregate amount of approximately Rs. 215.25 million.

XII. *Sasan Power Limited ("SPL")*

Taxation Proceedings

There is 1 (one) direct tax proceeding involving SPL, which involves an aggregate amount of approximately Rs. 4.50 million.

XIII. *Rosa Power Supply Company Limited ("RPSCL")*

Pending Regulatory Action against RPSCL

For further details in relation to the pending regulatory action against RPSCL, please see "- *Pending Regulatory Action against the Sponsor*".

Taxation Proceedings

There is 1 (one) direct tax proceeding involving RPSCL, which involves an aggregate amount of approximately Rs. 34.31 million. Further, there are a 5 (five) indirect tax proceedings involving RPSCL, which involve an aggregate amount of approximately Rs. 7,160.59 million.

XIV. *Reliance Power, Netherlands BV ("RPNBV")*

Other Proceedings involving RPNBV

1. RPNBV has filed a claim before the Singapore International Arbitration Centre against Kokos Leo Lim and Prestige Capital Holdings ("**Respondents**"), recalling a loan provided by the Claimaint to RPNBV on the grounds that the terms of the loan agreement had been breached. The Respondents have filed a counter-claim in this regard. The aggregate amount claimed is Rs. 27,000 million. The matter is currently pending.

XV. *Coastal Andhra Power Limited ("CAPL")*

Taxation Proceedings

There is 1 (one) direct tax proceeding involving CAPL, which involves an aggregate amount of approximately Rs. 4.40 million.

XVI. *Samalkot Power Limited ("SAMPL")*

Taxation Proceedings

There is 1 (one) indirect tax proceeding involving SAMPL, which involves an aggregate amount of approximately Rs. 6,410 million.

XVII. *Reliance Communications Limited ("RCOM")*

Pending Criminal Proceedings against RCOM

1. Dinesh Kotecha (the "**Complainant**") had filed a criminal complaint against Reliance Infocomm Limited and certain others (the "**Respondents**") before the Additional Chief Metropolitan Magistrate, Girgaon for the offences purported to have been committed under Section 420, Section 463, Section 467, Section 499 and Section 500 of the Indian Penal Code, 1860 ("**Criminal Complaint**"). The Additional Chief Metropolitan Magistrate passed a summoning order issuing process against the Respondents ("**Order**"). The Respondents have filed a writ petition before the High Court of Bombay seeking, *inter alia*, (a) the quashing of the Criminal Complaint and Order; and (b) to stay the proceedings before the Additional Metropolitan Magistrate during the pendency of the writ petition. The High Court of Bombay was pleased to admit the said writ petition and stayed the criminal proceedings before the Additional Metropolitan Magistrate and therefore, the proceedings before the Additional Metropolitan Magistrate have been stayed.

2. Pursuant to a letter written to the Director, Family Welfare, Government of NCT of Delhi, alleging the commission of offences under Section 22(2) of the Pre-Conception and Pre-Natal Diagnostic Techniques Act, 1994 by RCOM through their R-World services which gave tips as to pre-natal sex determination, a criminal complaint was filed by the Director, Family Welfare before the Tiz Hazari Court, Delhi. Subsequently, a first information report was registered against Mr. Mahesh Prasad, Mr. Sunil Jain, Ms. Manisha Rathore, Mr. Krishna Mohan Durba and Ms. Kinjal Popat. During the pendency of investigations being carried out by Special Cell, Lodhi Estate Police Station the court directed that Reliance Infocomm Limited and Mukesh D. Ambani also be named as accused, and summons be issued to them along with the other accused mentioned in the chargesheet. The matter is currently pending. RCOM has filed a petition before the High Court of Delhi, seeking quashing of the aforementioned criminal complaint and first information report. The matter is currently pending.

3. NPR Marketing (the "**Complainant**") has filed a criminal case against RCOM and certain others, in relation to certain alleged offences under the Indian Penal Code, on account of, *inter alia*, an alleged failure of the Company to refund the Complainant's security deposit. Subsequently, a charge sheet has been filed in this matter. The matter is currently pending.

Pending Regulatory Action against RCOM

1. RCOM and Reliance Telecom Limited ("**RTL**") had obtained licences under the Unified Access Service Licence ("**UASL**") regime permitting them to provide telecommunications services for a fixed period, for a licence fee of Rs. 16,510 million and Rs. 1,195.6 million, respectively, which has been paid by them. Subsequently in the financial year 2007, RCOM paid an additional one-time non-refundable fee of Rs. 15,390.1 million to use GSM technology in addition to CDMA technology. However, pursuant to the orders dated December 28, 2012 and March 15, 2013 (together, the "**Orders**"), the Department of Telecommunications ("**DoT**") demanded a further one-time spectrum charge from all telecommunications service providers for GSM spectrum beyond 4.4 MHz and up to 6.2 MHz and CDMA spectrum beyond 2.5 MHz and up to 5 MHz respectively. Accordingly, the DoT issued demand notices (the "**Demands**") requiring RCOM and RTL to pay a sum of approximately Rs. 17,578.9 million and Rs. 1,734.7 million respectively, for its currently held/allocated spectrum, failing which, RCOM and RTL shall have to

surrender the already allocated spectrum. Aggrieved by the Orders and Demands, RCOM and RTL have filed writ petitions against the DoT before the Calcutta High Court on the ground, *inter alia,* that the Orders and Demands breach RCOM's and RTL's contractual right to fully use the spectrum contracted under the UASL granted to RCOM and RTL. The Calcutta High Court has issued interim stays on the operation of the Demands and Orders. The matters are pending before the Calcutta High Court.

2. RCOM and Reliance Telecom Limited ("**RTL**") have been paying licence fee as a percentage of the adjusted gross revenue ("**AGR**") as per the definition of AGR in the Unified Access Service Licence ("**UASL**") agreement which includes revenue generated from several items unrelated to the licensed telecommunications business of RCOM and RTL. In September 2006, the Telecom Regulatory Authority of India ("**TRAI**") submitted its recommendations on a new proposed definition of AGR and excluded certain items from it such as income from capital gains, foreign exchange gains, dividends, etc. By an order dated August 30, 2007, (the "**TDSAT Order**"), the TDSAT accepted these recommendations and applied a narrower definition of AGR for determining licence fee and wireless, planning and coordination ("**WPC**") charges in a matter pending before it (to which RCOM and RTL were not a party). Based on the new definition of AGR recommended by the TRAI and accepted by the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") in the previous matter, RCOM and RTL filed various applications before the Department of Telecommunications ("**DoT**") for refund of excess payment made by it towards licence fees and WPC charges. The DoT, by an order dated November 5, 2008, rejected RCOM's refund applications on the ground that the TDSAT Order was not applicable to RCOM as it was not a party to the TDSAT Order. Aggrieved by the DoT's decision, RCOM and RTL filed separate petitions before the TDSAT which were allowed by the TDSAT by its judgment dated March 26, 2009 as a result of which RCOM and RTL could take advantage of the TDSAT Order with respect to the narrowed definition of AGR. The Supreme Court by its judgement dated October 11, 2011 has set aside the TDSAT Order and remitted the matter back to TDSAT for re-consideration. A refund of Rs. 2,320 million was sought by RCOM. The DoT issued a demand to RCOM dated October 19, 2009 (the "**Demand**") for payment of approximately Rs. 485 million towards allegedly unpaid licence fees for the financial year 2007 in respect of UASL held by RCOM in various circles. Aggrieved by the Demand, RCOM filed a petition before the TDSAT challenging the Demand. On January 31, 2012, the TDSAT directed RCOM to file individual petitions for each of the 20 circles for which a demand had been issued by the DoT. Subsequently, RCOM filed individual petitions before the TDSAT for each circle. TDSAT finally decided the mater on April 23, 2015, excluding most of the revenue heads out of total 23 from the purview of AGR. Further, TDSAT directed that in case any disputed head of inflow is left out that will be governed in the light of general discussions concerning the individual heads. All the demands of DoT under challenge are set aside and DoT has been directed to rework the license fees payable by RCOM and RTL for the years in question. DoT to issue fresh demands which RCOM & RTL will pay within the time prescribed under Law. Both DoT as well as RCOM have filed appeals against the said TDSAT judgment dated April 23, 2015, which is currently pending before the Supreme Court of India for hearing.

3. Pursuant to a special audit on November 8, 2012, the Department of Telecommunications ("**DoT**") raised consolidated demands on RCOM for the payment of approximately Rs. 1,560 million and Rs. 4,575 million as licence fees for the financial year 2007 and the financial year 2008 in relation to the 20 circles for which RCOM has been granted a Unified Access Service Licence ("**UASL**"). A similar demand was raised on Reliance Telecom Limited ("**RTL**") for the payment of approximately Rs. 36 million and Rs. 58 million for the financial year 2007 and the financial year 2008 in relation to the 8 circles for which the RTL has been granted a UASL. RCOM and RTL have separately challenged the demands before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**"). The DoT issued the demands on the basis that RCOM and RTL had allegedly under-paid licence fees due to under-reporting or non-reporting of certain revenue items. RCOM and RTL have sought a direction from the TDSAT setting aside the demands. The matters are pending before the TDSAT. RCOM also challenged the demands issued against it before the Kerala High Court. The Kerala High Court by its order dated December 6, 2012 issued an interim stay on the operation of the demands. By an order dated June 28, 2013, a similar interim stay was issued in respect of the demand of Rs. 1,190 million issued by the DoT for the financial year 2009. Further, by an order dated January 30, 2015, a similar interim stay was issued in respect of the demand of Rs. 7,070 million issued by the DoT for the financial year 2010. The matter is pending before the Kerala High Court.

4. Pursuant to a special audit, the Department of Telecommunications ("**DoT**") has raised a demand for Rs. 2,970 million towards spectrum charges for the financial years 2007 and 2008. RCOM has, by its letter dated September 25, 2014, replied to the DoT stating that the other demands raised by the DoT pursuant to the special audit have been challenged by RCOM before the Telecom Dispute Settlement and Appellate

Tribunal ("**TDSAT**") and the Kerala High Court, and the court has granted a stay order. Therefore, the DoT should not enforce the demands under the notice until the matter is pending in the TDSAT and the Kerala High Court. As the DoT intended to enforce the aforesaid demands, RCOM filed petition before the TDSAT wherein after briefly hearing RCOM's counsel, the TDSAT directed the DoT to not to take any coercive step to seek enforcement of the demands. The matter is currently pending before the TDSAT.

5. RCOM had filed a writ petition before the Madras High Court, *inter alia*, challenging the demand dated January 8, 2013 issued by the Department of Telecommunications ("**DoT**") for payment of approximately Rs. 2,190 million towards, *inter alia*, spectrum usage charges, revenue from leased line and bandwidth subscribers and penalty and interest thereon under the UASL for 16 circles for the period commencing from the financial year 2006 and ending at the conclusion of the financial year 2008. On June 23, 2016, the Madras High Court remanded the matter/entire demand to the DoT to consider everything afresh in the light of RCOM's pending representation within 4 (four) weeks. The Court also directed the DoT to refund the excess amount, if any, found to be payable to RCOM after reworking the impugned demands. The matter has been disposed off by the Madras High Court accordingly.

6. The Department of Telecommunications ("**DoT**") by an order dated February 25, 2010 increased the annual spectrum usage charge for CDMA and GSM service providers with effect from April 1, 2010 (the "**Order**") for 2G services. RCOM filed a petition before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") challenging the Order. On September 1, 2010, the TDSAT upheld the Order. RCOM then filed a civil appeal against the TDSAT's order before the Supreme Court and RCOM is currently paying increased annual spectrum charges under protest. The matter is pending before the Supreme Court.

7. Formerly, under the UASL, the price for the microwave spectrum paid by CDMA service providers (who paid the spectrum price as royalty) differed from that of the GSM service providers (who paid the spectrum price on a revenue-sharing basis). This discriminatory approach was corrected by the Department of Telecommunications ("**DoT**") by its order dated November 3, 2006 (the "**DoT Notification**"). However, RCOM challenged the DoT Notification before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") on the ground that the DoT Notification did not apply retrospectively from the date of the grant of the UASL, i.e., 2003. The TDSAT dismissed such petition on July 18, 2011. RCOM sought to appeal against the TDSAT's order before the Supreme Court but the appeal was not admitted. Subsequently, RCOM challenged the TDSAT order dated July 18, 2011 before the Delhi High Court. The Delhi High Court held that the writ petition was not maintainable but permitted RCOM to seek a clarification from the Supreme Court in relation to approaching the Delhi High Court afresh. RCOM filed an application in the Supreme Court seeking such clarification which was not allowed to be registered by the Registrar Judicial-II. RCOM appealed against the Registrar's order before the Supreme Court which was set aside by the Supreme Court by its order dated April 5, 2013. The application is pending before the Supreme Court, now remanded back to High Court.

8. The Department of Telecommunications ("**DoT**") allegedly granted additional spectrum beyond the licence-mandated quantity of 6.2 MHz in violation of the licence conditions to certain GSM service providers (including Reliance Telecom Limited) without any additional spectrum fee. This allocation was challenged by the Association of Unified Telecommunication Service Providers of India (the "**AUSPI**") and certain other telecommunications service providers (the "**Petitioners**") before the Supreme Court by way of a writ petition in May, 2012. The Petitioners sought: (a) the cancellation of the grant of the GSM spectrum beyond 6.2 MHz to these service providers (including Reliance Telecom Limited), (b) fresh auction of such spectrum, and (c) a direction to recover appropriate compensation from the service providers for the revenue that has accrued to them in relation to the excess spectrum. The matter is pending before the Supreme Court.

9. The Cellular Operators Association of India ("**COAI**") and the Association of Unified Telecommunication Service Providers of India ("**AUSPI**"), along with others including RCOM and RTL, (the "**Petitioners**") filed a petition before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") challenging the retrospective levy of penalty by the Department of Telecommunications ("**DoT**") on telecommunications service providers for missing or improper signage at BTS sites pursuant to a DoT circular dated October 11, 2012 (the "**2012 Circular**") read with circulars dated April 8, 2010 and November 2, 2010 (the "**2010 Circulars**") and the demands raised thereunder. The Petitioners submitted that the 2012 Circular envisages a prospective penalty of 5,000 per BTS site if the omission by the service providers to provide proper signage is not rectified in 30 days and the 2010 Circulars do not provide for any penalty on such omission. However, the impugned demand was retrospectively levied against non-compliant BTS sites at the rate of

Rs. 0.5 million per BTS site. The TDSAT by its order dated April 25, 2014 directed the DoT to refrain from taking any coercive action against the Petitioners for realisation of the demand. The matter is pending before the TDSAT.

10. On March 9, 2009, the Telecom Regulatory Authority of India ("**TRAI**")notified the Telecommunication Interconnection Usage Charges (Tenth Amendment) Regulations, 2009 (the "**Amendment Regulations**") by which it fixed all termination charges at Rs. 0.20 per minute for local and national long-distance calls and mobile telephone services. The Amendment Regulations were challenged by Bharat Sanchar Nigam Limited and various private telecommunications service providers, including RCOM, by filing separate cross appeals before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**"). By an order dated September 29, 2010 (the "**TDSAT Order**"), the TDSAT directed the TRAI to re-consider the Amendment Regulations by way of a consultative process in a time bound manner so that the new Interconnection Usage Charges ("**IUCs**") could be made effective by January 1, 2011. The TRAI and others parties filed civil appeals before the Supreme Court on the ground that the TDSAT does not have the jurisdiction to direct the TRAI to revise IUCs based on a consultative process. The Supreme Court, by its order dated December 6, 2013 ruled that the TDSAT does not have the jurisdiction to entertain the challenge to the Amendment Regulations framed by the TRAI. The challenge to the validity of the Amendment Regulations is being heard before the Supreme Court. Thereafter, TRAI has issued revised IUC Regulations dated March 22, 2015, which has been challenged by Vodafone by way of a writ petition before the Delhi High Court. The matter is pending before the Delhi High Court.

11. Reliance Telecom Limited ("**RTL**") and RCOM have respectively filed over 23 petitions under Sections 14 and 14A of the Telecommunication Regulatory Authority of India Act, 1997 before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") in relation to demands issued by the Department of Telecommunications ("**DoT**") imposing penalties on RCOM and RTL for, inter alia, (a) alleged violation by RCOM of the terms and conditions of the licence agreement or norms prescribed by the DoT pertaining to the verification of subscribers by their Customer Acquisition Forms ("**CAFs**"); (b) default or delay in depositing the penalty imposed on RCOM and RTL with respect to earlier penalty notices; and (c) refusal by the DoT to accept and review CAFs submitted late on account of an injunction order restraining RCOM and RTL from accessing the CAFs stored in a warehouse.

12. RCOM filed a petition before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") challenging the demand notice issued by the Department of Telecommunications ("**DoT**") for the payment of Rs. 28.82 million for alleged issuance of 700 SIM cards to customers based on fake identity proofs. The TDSAT issued an interim order dated March 5, 2014 directing the DoT not to take any coercive steps against RCOM, provided RCOM deposited one-third of the said demand. The matter is pending before the TDSAT.

13. The Cellular Operators Association of India ("**COAI**"), the Association of Unified Telecommunication Service Providers of India ("**AUSPI**") along with others including Reliance Telecom Limited ("**RTL**") and RCOM (the "**Petitioners**") filed a petition before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") challenging the provisions of the Department of Telecommunications ("**DoT**") circular dated August 9, 2012 pursuant to which telecommunications service providers are required to submit scanned coloured photographs of each subscriber to the DoT, non-compliance with which would attract a penalty. The Petitioners also challenged the provisions and demands raised thereunder penalizing service providers for, *inter alia*, accepting Customer Acquisition Forms ("**CAFs**") with incomplete information. The matter is pending before the TDSAT. The aggregate amount involved in the matter is approximately Rs. 12 million.

14. RCOM filed a writ petition before the Himachal Pradesh High Court against the Union of India and the Telecom Enforcement, Resource and Monitoring Cell, Shimla (the "**TERM**"), challenging the penalty levied on RCOM by TERM for providing phone connections without proper verification of Customer Acquisition Forms ("**CAFs**") which were recovered by the TERM at the office of the distributor of RCOM at Bilaspur, Himachal Pradesh. The Himachal Pradesh High Court has issued an interim order against the operation of the penalty levied by TERM subject to the deposit of Rs. 2.5 million. The matter is pending before the Himachal Pradesh High Court.

15. The Department of Telecommunications ("**DoT**"), by various circulars amended the licence agreements of telecommunications service providers requiring licencees to conduct audit and undertake self certification to demonstrate conformity with the BTS emissions standards. Pursuant to these circulars, the DoT issued

show-cause notices to various licensees imposing penalties for not submitting self certificates in the time and manner stipulated by the DOT. The Cellular Operators Association of India ("**COAI**") has challenged the circular dated October 10, 2012 and the show cause notices on the ground, *inter alia*, that the penalty imposed by the DoT is retrospective in nature. The Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") issued an interim order dated August 30, 2013 directing the DoT to refrain from taking any coercive action against the Petitioners for realisation of the demand. The matter is pending before the TDSAT.

16. RCOM has filed a petition before Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") against Department of Telecommunications ("**DoT**") challenging the liberalization guidelines of November 05, 2015 which mandated submission of bank guarantees for revised One Time Spectrum Charges ("**OTSC**") demand as a pre-condition for allowing liberalization of spectrum. This OTSC demand was in addition to the fees for liberalization of spectrum, which had already been paid by RCOM. In view of the exigencies and business requirements, RCOM submitted bank guarantees for Rs. 15,693.8 million for liberalization of spectrum in 16 circles, without prejudice to its rights and contentions that was to be considered and decided by TDSAT. Thereafter on May 11, 2016, TDSAT directed DoT to rework and re-compute its OTSC demand for the other 4 Circles where RCOM's application for liberalization was pending. As DoT failed to comply with the directions of TDSAT, RCOM under compulsion had to submit bank guarantees for 4,308.16 million for liberalization of spectrum in the 4 Circles. Subsequently on May 25, 2016, RCOM filed an application seeking refund of the excess bank guarantees submitted to DOT. The said application along with the main petition is pending before TDSAT for final hearing.

17. Department of Telecommunications ("**DoT**"), in the normal course, has raised various demands aggregating to Rs. 1,110 million towards spectrum usage charges ("**SUC**") for the financial years 2008-09 to 2015-16. RCOM has filed petition at Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") challenging the said demands including interest and penalty calculated up to 2015-16 for the alleged delay in payment. RCOM has also sought refund of 900 million which it paid under protest as SUC for the said financial years while seeking trading of its spectrum in 13 Circles. TDSAT *vide* interim orders dated September 7, 2016 and September 26, 2016, directed the DoT to not take any coercive step seeking enforcement of the impugned demands. The matter is currently pending before the TDSAT.

18. Department of Telecommunications ("**DoT**") has raised demands on RCOM and Reliance Telecom Limited ("**RTL**") in MP, Bihar and UP(W) circles on account of alleged shortfall in payment of Spectrum Usage Charges ("**SUC**") and license fee for the financial years 2012-13 and 2013-14. DoT has refused to adjust the admitted excess amount of fees paid by RCOM and RTL in the previous quarter and sought to enforce the demands along with interest as per its office memorandum dated November 11, 2014. Both RCOM and RTL have filed petitions before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") challenging the said demands as well as the memorandum dated November 11, 2014. TDSAT, *vide* its interim order dated May 1, 2015, restrained the DoT from enforcing any of the demands that were raised on the basis of its memorandum dated Novemer 11, 2014. The matter is currently pending before the TDSAT.

19. Department of Telecommunications ("**DoT**") issued demand notices dated November 5, 2014 and July 10, 2015 to RCOM on account of alleged shortfall of license fee for the financial years 2004-05 to 2008-09. RCOM had already filed its representation stating that as per the provisions of International Long Distance Service ("**ILDS**") License Agreement issued by DoT to RCOM, the revenue generated by the foreign operator for providing foreign half circuit of the International Private Leased Circuit ("**IPLC**") service outside India cannot be subject to license fee on account of RCOM. Without considering the submissions made by RCOM, DoT issued the revised demand notices directing RCOM to immediately pay Rs. 130.5 million. RCOM was constrained to file a petition before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**"). *Vide* interim order dated September 9, 2015, the TDSAT directed the DoT to not to take any coercive step to seek enforcement of the impugned demands. The matter is currently pending before the TDSAT.

Other Proceedings involving RCOM

1. On October 22, 2011, the Special Judge, CBI framed charges against Reliance Telecom Limited (a subsidiary of Reliance Communications Limited), three executives of the Reliance Group and certain persons not related to Reliance Group for various offences, including criminal breach of trust, criminal conspiracy, forgery, giving false evidence, abetment of corruption of a public servant and abetment of an

offence under various sections of the IPC, or in the alternative, various sections of the Prevention of Corruption Act, 1988, *inter alia*, in relation to award of the Unified Access Services License ("**UASL**") to Swan Telecom Private Limited, now known as Etisalat DB Private Limited ("**Swan**"). It has been alleged by the CBI that Swan was ineligible to be granted a UASL as Reliance Telecom Limited, directly as well as through its associates, was holding equity shares in excess of the limit of 10% prescribed limit under the UASL. Reliance Telecom Limited and three executives of the Reliance Group have contended that Reliance Telecom Limited had held equity shares within the prescribed limits in Swan, when Swan had applied for the UASL. Further, Reliance Telecom Limited sold the equity shares it held in Swan before the grant of UASL by the Department of Telecommunications to Swan in 2008. When Swan acquired the UASL, Reliance Telecom Limited did not hold any stake in Swan. Initially, all of the accused were denied pre-trial bail by the Special Judge, CBI but subsequently by an order of Supreme Court of India were released on bail. The matter is pending adjudication before the Special Judge, CBI.

2. The Cellular Operators Association of India (the "**COAI**") filed a petition before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") challenging the decisions of the Department of Telecommunications ("**DoT**") to allocate GSM spectrum to first time CDMA service providers (including RCOM). The COAI and its constituent telecommunications service providers offering GSM services (together, the "**GSM Service Providers**") argued that the spectrum provided to the CDMA service providers, was in fact additional spectrum, over which the GSM Service Providers had a vested right and for which they had applied earlier. The COAI has filed an appeal before the Supreme Court against the order passed by the TDSAT, after the Delhi High Court ruled that the COAI had failed to establish a *prima facie* case for not allotting the spectrum to the CDMA service providers. The matter is pending before the Supreme Court.

3. RCOM filed a petition before the Telecom Dispute Settlement and Appellate Tribunal seeking allocation of the balance of the GSM spectrum of 1.8 MHz out of the contracted spectrum of 6.2 MHz in 18 Circles and the balance of the CDMA spectrum of 1.25 or 2.5 MHz out of the contracted spectrum of 5 MHz, without any additional levy of charges. Pursuant to an order of the TDSAT dated January 31, 2014, the petition filed by RCOM was dismissed.

4. RCOM entered into interconnect agreements with Bharat Sanchar Nigam Limited ("**BSNL**") and Mahanagar Telecom Nigam Limited ("**MTNL**") (the "**Respondents**"). RCOM subsequently started a Home Country Direct ("**HCD**") service by which a foreign caller could call an Indian call recipient (who was a subscriber of the Respondents) through a number issued by RCOM which would connect the former to the latter. The Respondents allege that, as a result, RCOM did not pay the Respondents interconnect usage charges at international rates. Pursuant to the interconnect agreement, demands were raised by BSNL and MTNL for Rs. 3,190.4 million and Rs. 3,414.7 million, respectively, which were paid in protest by RCOM. RCOM filed a petition before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") seeking a refund of Rs. 1,116.3 million from BSNL and Rs. 2,712.3 million from MTNL on various grounds including application of wrong call rates, wrongful penalty imposed on trunk groups where RCOM did not terminate HCD calls and wrongful calculation of the number of minutes terminated in the Respondents' networks. The TDSAT by its order dated October 17, 2012 (the "**TDSAT Order**") partially allowed RCOM's claims and directed MTNL and BSNL to reconcile their accounts with those of RCOM, issue fresh bills and refund the excess amount to RCOM. RCOM and the Respondents filed cross appeals against the TDSAT Order, which are pending before the Supreme Court. In the interim, RCOM filed execution petitions in relation to the portion of the TDSAT Order which partially allowed RCOM's claim. By an order dated February 13, 2014 (the "**Execution Order**"), the TDSAT upheld the execution claim of RCOM against MTNL. However, MTNL has not complied with the Execution Order and RCOM has filed a contempt application against MTNL before the TDSAT, which is pending. MTNL filed a civil appeal before the Supreme Court which was dismissed. RCOM filed two new civil appeals in the Supreme Court, partly challenging the Execution Order against MTNL and BSNL. Subsequently, MTNL has again filed its civil appeal against the Execution Order. The matters are currently pending before the Supreme Court.

5. Bharat Sanchar Nigam Limited ("**BSNL**") issued a demand of Rs. 5,400 million to RCOM in relation to access deficit charges for fixed wireless phone for the period between November 14, 2004 and August 26, 2005 (the "**Demand**"). RCOM challenged the Demand before the Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**"). The TDSAT by an order dated April 15, 2010 upheld the Demand and also permitted BSNL to raise an invoice for access deficit charges levied for the period between August 26, 2005 and February 28, 2006. Aggrieved by the TDSAT's decision, RCOM has filed a civil appeal before the Supreme Court. The matter is currently pending before the Supreme Court.

6. RCOM, Reliance Telecom Limited ("**RTL**") and Reliance Infratel Limited ("**Reliance Infratel**") filed recovery petitions against S. Tel Private Limited ("**S. Tel**") for a claim of approximately Rs. 700 million, and against Etisalat DB Telecom Private Limited for approximately Rs. 16,000 million. The Telecom Dispute Settlement and Appellate Tribunal ("**TDSAT**") has allowed two of the petitions against S. Tel for approximately Rs. 244.6 million. The other petitions are pending before the TDSAT. Execution petitions have been filed against S.Tel seeking execution of the judgment pronounced by the TDSAT on May 2, 2014, in Petition No. 93 of 2012, and on July 1, 2015, in Petition No. 94 of 2012, in which RTL's & RCOM's claims of approximately Rs. 244.6 million was upheld along with interest from the date of filing of the petitions.

Completed Regulatory Action against RCOM

1. Directorate of Enforcement (New Delhi) *vide* its notice dated February 18, 2013, directed RCOM to show cause as to why adjudication proceedings should not be initiated against RCOM and why penalty should not be imposed in relation to certain alleged contraventions of the FEMA with respect to investment in a foreign subsidiary, namely Reliance Globalcom Limited. Pursuant to the aforesaid notice, RCOM *vide* its application dated September 19, 2014, sought compounding of the aforesaid contraventions. Subsequently, the RBI *vide* its order dated March 16, 2015, compounded the delay upon the payment of a penalty amounting to Rs. 0.52 million. Consequently, RCOM paid the aforesaid penalty.

2. Directorate of Enforcement (New Delhi) *vide* its notice dated February 18, 2013, directed RCOM to show cause as to why adjudication proceedings should not be initiated against Reliance Communications Limited and why penalty should not be imposed in relation to certain alleged contraventions of the FEMA with respect to investment in a foreign subsidiary, namely Reliance Globalcom B.V. Netherlands. Pursuant to the aforesaid notice, RCOM *vide* its application dated September 19, 2014, sought compounding of the aforesaid contraventions. Subsequently, the RBI *vide* its order dated March 16, 2015, compounded the delay upon the payment of a penalty amounting to Rs. 1.69 million. Consequently, RCOM paid the aforesaid penalty.

Taxation Proceedings

There are 11 direct tax proceedings involving RCOM, which involve an aggregate amount of approximately Rs. 3,333.90 millions. Further, there are 65 indirect tax proceedings involving RCOM, which involve an aggregate amount of approximately Rs. 2,455.85 million. The matters are currently pending.

Material Litigation and Regulatory Action involving the Project SPVs

I. DS Toll Road Limited ("DS")

Other Proceedings involving DS

1. DS (the "**Claimant**") had initiated arbitration proceedings before the arbitral tribunal presided by Justice Surjeet Singh against National Highways Authority of India (the "**Respondent**") claiming, *inter alia*, (a) compensation of a sum amounting to approximately Rs. 825.33 million towards additional costs/losses/damages suffered by the Claimant due to forced prolongation of the construction period; (b) interest on delayed payment of grant; and (c) interest on delayed payments of the claimed amount up to the date of payment. By way of its response, the Respondent has denied all averments. The arbitral tribunal has by way of its award, *inter alia*, allowed (a) a sum of Rs. 140.55 million (along with interest) towards costs incurred in relation to plant and equipment at the site during the extended period, (b) a sum of approximately Rs. 19.84 million (along with interest) towards additional expenses incurred on materials during the extended period and (c) a sum of approximately Rs. 10.18 million towards interest on delayed payment of grant. The aggregate amount of claims based on the award of the arbitral tribunal towards the Claimant is Rs. 1,017.35 million. The Respondent has challenged the award passed by the arbitral tribunal before the High Court of Delhi. The matter is currently pending.

Taxation Proceedings

There is 1 (one) indirect tax proceeding pending against DS in relation to CENVAT, which involves an aggregate amount of approximately Rs. 36.8 million.

II. GF Toll Road Private Limited ("GF")

Pending Regulatory Action involving GF

1. Vikram Singh (the "**Complainant**") has filed a complaint before the Assistant Labour Commissioner, Gurugram, against SSI Management Services and GF, claiming, *inter alia*, an amount of Rs. 0.17 million towards non-payment of wages. GF has filed its reply, contending, *inter alia*, that the Complainant is not a direct employee of GF. The matter is currently pending.

2. HPWD *vide* its letter dated March 9, 2016, sought Rs. 22.60 million (including interest payable at 14% per annum for the period from June 30, 2012 to December 31, 2015) as damages in relation to GF's alleged failure to achieve project milestones regarding shifting of utility services delay upto December 31, 2015 and as well as bridge and CD works delay upto June 29, 2012. GF *vide* its letter dated May 9, 2016, has submitted, *inter alia*, that GF had suffered delays mostly due to failure on the part of HPWD in fulfillment of the reciprocal obligations.The matter is currently pending.

3. HPWD *vide* its letter dated March 18, 2016, sought the recovery of Rs. 2.94 million as alleged to have been incurred on account of maintenance work executed by it. GF *vide* its letter dated June 1, 2016, has sought that it be provided with the relevant supporting documents in relation to the maintenance work alleged to have been completed by HPWD. GF has further denied all averments. The matter is currently pending.

4. HPWD *vide* its letter dated March 21, 2016, sought the recovery of costs of dismantled material such as scarifying material, dismantled cement concrete blocks, dismantled material from culverts, bridges and other structure pavement from road and site of the project during the construction of the work. GF *vide* its letter dated June 15, 2016 filed its reply in the aforementioned matter stating, *inter alia*, that there is no amount due and payable to HPWD. The matter is currently pending.

5. HPWD *vide* its letter dated March 9, 2016, sought the recovery of Rs. 91.92 million (along with interest) as damages on account of advertisement allowed by GF in the right of way limits of a project road in violation of the concession agreement. GF *vide* its letter dated May 9, 2016, has submitted, *inter alia*, that there is no default by GF of the provisions of the concession agreement and the application of the damages imposed on GF does not stand ground. The matter is currently pending.

6. HPWD *vide* its letter dated March 9, 2016, sought the recovery of Rs. 19.40 million (along with interest) as damages for delay in completion of punch list items. GF *vide* its letter dated April 2, 2016 has submitted, *inter alia*, that there is no default by GF of the terms of the concession agreement or delay in the completion of the punch list items for which GF is responsible. The matter is currently pending.

7. HPWD *vide* its letter dated March 11, 2016, sought an amount of Rs. 101.63 million (including interest) on late deposition of negative grant of approximately Rs. 1,503 million. GF *vide* its letter dated May 9, 2016, submitted that the relevent damanges as agreed in the supplementary agreement executed between HPWD and GF with regard to the delayed payment of grant has been paid by GF. Further, GF also submitted that there were events attributed to HPWD which delayed the achievement of financial closure and that HPWD's demand for interest on delayed payment of grant is contrary to the provisions of the concession agreement. GF has paid an amount of Rs. 3.8 million in the past in relation to the aforesaid demand whilst entering into the supplementary agreement dated November 27, 2009. The matter is currently pending.

8. HPWD *vide* its letter dated March 11, 2016, demanded costs of boulders excavated and obtained from various chainages of the Gurgaon – Faridabad road aggregating to Rs. 55.59 million (including interest). GF *vide* its letter dated December 5, 2016, has filed its reply in the aforementioned matter and denied all averments. The matter is currently pending.

9. HPWD *vide* its letter dated March 14, 2016, sought payment of Rs. 15.32 million towards savings made by GF by obtaining insurance for lesser value in contravention of the provisions of the concession agreement. The matter is currently pending.

10. HPWD *vide* its letter dated March 9, 2016, sought the recovery of Rs. 24.22 million as alleged to have

been incurred by HPWD on account of cost, remuneration and expenses of independent consultant due to delay in completion of the project. GF *vide* its letter dated May 6, 2016, has filed its reply in the aforementioned matter and denied all averments. The matter is currently pending.

11. HPWD *vide* its letter dated March 11, 2016, has demanded damages of Rs. 201.34 million towards delay in the completion of the project. GF *vide* its letter dated April 30, 2016, has filed its reply in the aforementioned matter and denied all averments. The matter is currently pending.

12. HPWD *vide* its letter dated March 17, 2016, has demanded Rs. 177.86 million towards damages on account of delay in operations and maintenance obligations under the concession agreement and delay in completion of defect and deficiencies. GF *vide* its letter dated May 5, 2016, has filed its reply in the aforementioned matter and denied all averments. The matter is currently pending.

13. HPWD *vide* its letter dated May 4, 2016, has demanded Rs. 17.62 million towards damages against piling of vehicles beyond 6 (six) vehicles/lane in queue under the provision of the concession agreement. GF *vide* its letter dated May 10, 2016, has filed its reply in the aforementioned matter and denied all averments. The matter is currently pending.

14. HPWD had served a notice upon GF for delay in the registration of the concession agreement under the Indian Stamp Act, 1899 and demanded the payment of the requisite stamp duty of Rs. 486.64 million. GF *vide* its letter dated May 20, 2016, filed its reply in the aforementioned matter submitting that the requirement of paying the stamp duty as under the Indian Stamp Act, 1899 and registration of the concession agreement under the Registration Act, 1908 is based on the assumption that the concession agreement is an instrument of lease are neither supported by law nor the transactions envisaged under the concession agreement. The matter is currently pending.

15. HPWD *vide* its letter dated May 4, 2016, sought the recovery of Rs. 16.88 million as damages on account of not providing one exempt lane in each direction for the traffic not required to pay user's fee. GF *vide* its letter dated November 28, 2016, has filed its reply in the aforementioned matter and denied all averments. The matter is currently pending.

Other Proceedings involving GF

1. GF (the "**Claimant**") has initiated an arbitration proceeding against the Government of Haryana, Haryana Public Works Department (Building and Roads) Branch, Chandigarh(the "**Respondent**") before the arbitral tribunal presided over by Justice S S Nijjar (Retd.). The Claimant has, *inter alia*, claimed for a compensation for the loss suffered due to non-compliance of toll notification No. 9/106/2001-3B&R(W) dated March 27, 2012 ("**Notification**") by users of the toll road and no adequate support being provided by the Respondent. The aggregate amount of the claim is approximately Rs. 950 million including interest. By way of its statement of defence in the aforesaid matter, the Respondent has, *inter alia*, submitted that (a) the failure of the Claimant or the toll collecting agency appointed by the Claimant in collection of toll, if any, will be the responsibility of the Claimant and (b) the Claimant has the right to refuse the entry of any non – toll paying vehicle on the toll fee road and that the Respondent is not responsible for any loss incurred due to non-payment of toll and that the calculation of the quantum of the claim by GF was faulty. GF has filed its reply to the statement of defence of the Respondent. Further, the Respondent has filed fourteen counter-claims under various headsfor an amount aggregating to approximately Rs. 1606.9 million, including interest. The matter is currently pending.

2. GF had filed a request for an amicable settlement to the Engineer-In-Chief, Public Works Department, Haryana, in relation to the costs and losses arising due to reasons of extension of time, change of scope of the project and delay in the revision of the toll fee. The amicable settlement failed and GF has issued a notice to commence arbitration.

Taxation Proceedings

There is 1 (one) indirect tax proceeding pending against GF in relation to CENVAT, involving an aggregate amount of approximately Rs. 64.25 million.

III. HK Toll Road Private Limited ("HK")

Pending Civil Litigation involving HK

1. HK (the "**Petitioner**") has filed a writ petition before the High Court of Madras against the General Manager, State Express Transport Corporation Limited, Chennai and certain others (the "**Respondents**"), *inter alia*, seeking (a) grant of interim injunction restraining the Respondents from using the Hosur – Krishnagiri section of NH-7 from Km. 33.130 to Km. 93.000 ("**Project Highway**") for the plying of their buses without making payment of user fee and (b) to issue a writ of mandamus or any appropriate writ, order or direction directing the Respondents to make payments to the Petitioner for the outstanding amount of Rs. 110.14 million and all future user fee be paid promptly for using the Project Highway for the plying their buses. The Respondents have filed their replies in the matter. The High Court of Madras has passed an order granting, *inter alia*, (a) the issuance of a writ of mandamus directing certain Respondents to pay to the Petitioner the user fees for the use of the Project Highway, including the payments already made for the buses and (b) an interim injunction restraining certain Respondents from using the Project Highway.

Taxation Proceedings

There is 1 (one) indirect tax proceeding against HK in relation to CENVAT, which involves an aggregate amount of approximately Rs. 52.3 million.

IV. JR Toll Road Private Limited ("JR")

Pending Regulatory Action against JR

1. NHAI *vide* its letter dated January 13, 2016, sought Rs. 6.33 million as damages in relation to the non-fulfillment of maintenance obligations by JR. JR *vide* its letter dated March 9, 2016, has responded to the aforesaid letter, and submitted that it is in compliance with its maintenance and repair obligations, and denied the deficiencies alleged by NHAI and the independent engineer. Further, JR has also requested the NHAI to return the wrongfully recovered amount of Rs. 0.67 million.The matter is currently pending.

Other Proceedings involving JR

1. JR has filed a claim before the independent engineer against NHAI for an approximate amount of Rs. 1,090.00 million towards, *inter alia*, (a) compensation for additional costs incurred due to the extended construction period; (b) compensation for the loss in toll revenue due to delay in commercial operation date; and (c) compensation for delay in payment of grant. The matter is currently pending.

Taxation Proceedings

There is 1 (one) direct tax proceeding pending against JR, which involves an aggregate amount of approximately Rs. 0.6 million. Further, there is 1 (one) indirect tax proceeding against JR in relation to CENVAT involving an aggregate amount of approximately Rs. 46.35 million.

V. KM Toll Road Private Limited ("KM")

Pending Regulatory Action against KM

1. NHAI has vide its notice dated December 15, 2015, demanded payment of premium from KM. KM has filed its reply to the aforementioned notice denying its liability, and subsequently, additional correspondence has been exchanged between the parties in this regard.

Taxation Proceedings

There is 1 (one) indirect tax proceeding pending against KM in relation to CENVAT, involving an aggregate amount of approximately Rs. 38.68 million.

VI. NK Toll Road Limited ("NK")

Other Proceedings involving NK

1. NK (the "**Claimant**") had initiated arbitration proceedings before the arbitral tribunal of three arbitrators

presided over by Mr. Ravindra Kumar against National Highways Authority of India claiming, *inter alia*, (a) compensation of a sum amounting to approximately Rs. 526.10 million towards (i) expenses on account of the extended stay of plant and equipment at the site due to the extended construction period; (ii) additional increase in the cost of input material incurred due to the extended construction period; (iii) loss of opportunity and profits and construction overheads due to the extended period of construction; (iv) loss of revenue due to delay in COD; (v) additional overhead costs incurred due to the extended construction period;(vi) delay in release of the promised grant; and(vii) interest on delayed payment of the above referred claims. By way of its response, the Respondent has denied all averments. The arbitral tribunal has by way of its award, *inter alia*, allowed (a) a sum of Rs. 96.47 million (along with interest) towards costs incurred in relation to the plant and equipment at the site during the extended construction period, (b) a sum of Rs. 13.30 million (along with interest) towards additional expenses incurred on materials during the extended period; (c) a sum of Rs. 7.12 million towards compensation due to delayed payment of grant; (d) Rs. 0.63 million (together with interest) for loss of opportunity and profits; (e) Rs. 182.61 million (together with interest) towards loss of revenue for delayed COD; and (f) Rs. 30.93 million towards overhead costs. NK has written to the NHAI claiming an aggregate amount of Rs. 699.42 million based on the claims awarded by the arbitral tribunal in favour of the Claimant which is Rs. 699.42 million.

Taxation Proceedings

There is 1 (one) direct tax proceeding pending against NK, which involves an aggregate amount of approximately Rs. 1.7 million. Further, there is one indirect tax proceeding pending against NK in relation to CENVAT involving an aggregate amount of approximately Rs. 29.54 million.

VII. PS Toll Road Private Limited ("PS")

Pending Regulatory Action against PS

1. NHAI has debited Rs. 44.10 million from the escrow account wrongfully on account of alleged non-payment of penal interest on premium. PS has vide its letter dated February 12, 2015, requested for the reversal of the same amount. No further communication has been received in this regard.

Other Proceedings involving PS

1. Roadway Solutions India Private Limited (the "**Claimant**") has filed an arbitration proceeding before the arbitral tribunal presided over by Justice Mohit Shah (Retd.) against the Sponsor and PS Toll Road Private Limited (the "**Respondents**"). The Claimant has, *inter alia*, claimed (a) direct costs from the Respondents, broadly the final bill, bank guarantee, relating to litigation expenses and various interest charges, (b) indirect costs, (c) additional costs due to inefficiencies on the part of the Respondent and (d) additional costs caused due to consequential delays. The Respondents by way of a statement of defence, have *inter alia* submitted that (a) the claims raised by the Claimant are misconceived without particulars, material or otherwise and contrary to the express terms of the construction agreement; and (b) the Claimant failed to perform the works under the construction agreements. Further,the Respondents have filed a counter-claim *inter alia* seeking (a) refund of the amounts paid to the Claimant in relation to material advance, escalation amount, royalty payment, etc., (b) damages on account of delay in completion of the project milestones, (c) liquidated damages on account of delay/non-completion of works within the scheduled completion date and(d) financial expenses due to delay in completion of the project. The aggregate amount involved in the counter claim is approximately Rs. 4,668.23 million with interest. The Claimant has also filed an interim application before the arbitral tribunal seeking, *inter alia*, to secure the amounts in dispute by providing equivalent to Rs. 387.50 million. The matter is currently pending.

Taxation Proceedings

There is 1 (one) indirect tax proceeding pending against PS in relation to CENVAT, involving an aggregate amount of approximately Rs. 218.1 million.

VIII. SU Toll Road Private Limited ("SU")

Taxation Proceedings

There is 1 (one) indirect tax proceeding pending against SU in relation to CENVAT, involving an aggregate

amount of approximately Rs. 67.57 million.

IX. TD Toll Road Private Limited ("TD")

Other Proceedings involving TD

1. TD has filed a claim against NHAI for an amount of Rs. 2,821.65 million towards, *inter alia*, (a) compensation for additional costs incurred due to the extended construction period; (b) compensation for the loss in toll revenue due to delay in commercial operation date; and (c) compensation for loss in toll revenue due to change in the location of the toll plaza. No further communication had been received from the NHAI in the aforementioned matter pursuant to which TD has vide its notice to the NHAI invoked the arbitration clause for the commencement of an arbitration proceeding and nominated Mr. I. M. Singh as its nominee arbitrator. The said proceedings have been invoked on account of claims arising out of forced prolongation of construction period, loss in toll revenue due to delay in commercial operation date and loss in toll revenue due to change in toll plaza location and the failure to arrive at an amicable settlement.

Taxation Proceedings

There is 1 (one) direct tax proceeding pending against TD, which involves an aggregate amount of approximately Rs. 1.1 million. Further, there is 1 (one) indirect tax proceeding pending against TD in relation to CENVAT, involving an aggregate amount of approximately Rs. 29.17 million.

X. TK Toll Road Private Limited ("TK")

Pending Regulatory Action involving TK

1. The Assistant Labour Commissioner (Central), Ministry of Labour and Employment, Puducherry has sent a notice to TK, as the principal employer, in relation to the alleged non-payment of dues and alleged illegal termination of Mr. Venkatachalam, an employee of M/s ISS Support Services Private Limited(a sub-contractor of TK). TK has replied to the aforesaid notice stating, *inter alia*, that TK had checked the records of ISS Support Services Private Limited in relation to Mr. Venkatachalam's termination and found that all statutory procedures had been followed and all payments had been made in accordance with the Contract Labour (Regulation and Abolition) Act, 1970. The matter is currently pending.

2. NHAI *vide* its letter dated March 25, 2015, has alleged that TK failed to complete certain items specified in the punch list given in the provisional completion certificate within 120 days as required under the concession agreement and demanded the payment of Rs. 4.80 million as damages from TK. TK *vide* its letter dated July 4, 2015, has submitted that recommendation of the independent consultant for the levy of damages for delay in completion of punch list items is not tenable as NHAI failed to provide land required for execution of the punch list in a timely manner and hence not acceptable. The matter is currently pending.

Other Proceedings involving TK

1. TK has filed a claim before the independent engineer against NHAI for an approximate amount of Rs. 5,459.92 million towards, *inter alia*, (a) compensation for additional costs incurred due to the extended construction period; (b) compensation for the loss in toll revenue due to delay in commercial operation date; (c) compensation for delay in payment of grant; (d) interest on delayed payment of grant; and (e) compensation for increase in cost due to the 'Change in Law' provision under the concession agreement. The matter is currently pending.

2. TK has filed a claim against NHAI towards (a) compensation of Rs. 866.05 Million towards interest lost/ paid on the investment made in Trichy Bypass; (b) compensation for additional cost of Rs. 411.50 million towards idling of plant and equipments deployed at site for the period from July 15, 2010 to April 30, 2016; (c) compensation of Rs. 110.90 million for the additional overhead cost that TK would incur for executing the balance works at Trichy Bypass; and (d) compensation toward additional cost of Rs. 763.58 million which TK would incur for executing the balance works in Trichy Bypass. The matter is currently pending.

Taxation Proceedings

There is 1 (one) indirect tax proceeding pending against TK in relation to CENVAT, involving an aggregate amount of approximately Rs. 35.65 million.

B. Material Litigation and Regulatory Action against the Investment Manager and the Associates of the Investment Manager

Other Matters involving the Investment Manager

1. Vistra ITCL (India) Limited (formerly known as IL&FS Trust Company Limited) ("**Complainant**"), acting in the capacity of a debenture trustee for and on behalf of the Investment Manager and holding the underlying securities of which the Investment Manager is a beneficiary, had filed 4 (four) criminal complaints before the Chief Metropolitan Magistrate, Mumbai against Mighty Constructions Private Limited and its directors Mrs. Roopal Rajesh Madhani and Mr. Rajesh Madhani ("**Respondents**") for the dishonour of cheques. Further, the Respondents have filed 5 (five) criminal review applications before the City Civil and Sessions Court, Mumbai for setting aside the orders passed by the Metropolitan Magistrate, Mumbai for issue of process against the Respondents for the offence punishable under Section 138 of the Negotiable Instruments Act, 1881. The Complainant has filed its replies in all five criminal review applications. The matter is currently pending.

2. Mighty Constructions Private Limited and certain others ("**Applicants**") have filed a criminal application before the High Court of Bombay against Vistra ITCL (India) Limited (formerly known as IL&FS Trust Company Limited), acting in the capacity of a debenture trustee for and on behalf of the Investment Manager and holding the underlying securities of which the Investment Manager is a beneficiary (the "**Respondent**") challenging the order passed by the City Civil and Sessions Court, Mumbai dismissing a criminal review application filed by the Applicants in relation to the issue of process against the Applicants for an offence punishable under Section 138 of the Negotiable Instruments Act, 1881. The Respondent has filed its reply in the matter. The matter is currently pending.

Taxation Proceedings

There are 2 (two) direct tax proceedings involving the Investment Manager, which involve an aggregate amount of approximately Rs. 8.23 million. Further, there are 16 indirect tax proceedings involving the Investment Manager, which involve an aggregate amount of approximately Rs. 909.90 million.

Material Litigation and Regulatory Action against the Associates of Investment Manager

I. Reliance Capital Limited ("RCL")

Pending Criminal Litigation against RCL

1. Joydip Banerjee (the "**Complainant**") has filed a criminal complaint before the Chief Judicial Magistrate, Alipore, against RCL alleging, *inter alia*, the commission of offences under Sections 506, 120B and 34 of the Indian Penal Code, 1860. The matter is currently pending.

Pending Regulatory Action against RCL

1. SEBI had issued a letter dated July 1, 2010 in respect of certain irregularities / deficiencies in the depository operations of RCL. The letter was issued pursuant to inspections carried out of its books and records during the month of June 2009. RCL has submitted a detailed reply *vide* letter dated July 20, 2010 confirming the corrective steps taken to regularize the aforesaid irregularities / deficiencies. No further action has been taken by SEBI against RCL in this regard.

2. SEBI had issued an administrative warning letter dated March 21, 2014 with respect to its findings in relation to the inspection of books and records of Reliance Securities Limited ("**RSL**") carried out in August 2012 ("**Inspection**"). Majority period covered under the Inspection pertained to the period when the depository participant activities were carried out by RCL. The depository participant business has been currently transferred from RCL to RSL. Pursuant to the administrative warning, RSL submitted a detailed reply *vide* letter dated April 21, 2014 including the details of the coercive steps taken and thereafter *vide* letter dated May 20, 2014 conveying the satisfaction of the boards of both RSL and RCL with regard to the coercive action steps taken. However, *vide* its letter dated June 12, 2014, SEBI issued a show cause

notice to RCL and initiated adjudication proceedings. The aforementioned show cause notice was subsequently set aside by an order of the Securities Appellate Tribunal dated February 9, 2015. No further communication has been received in this regard.

Taxation Proceedings

There are 6 (six) direct tax proceedings involving RCL, which involve an aggregate amount of approximately Rs. 1.50 million. Further, there are 7 (seven) indirect tax proceedings involving RCL which involve an aggregate amount of approximately Rs. 270.30 million.

II. Reliance Money Express Limited ("RMEL")

Pending Regulatory Action involving RMEL

1. The Directorate of Enforcement, Lucknow has issued a show cause notice to RMEL to show cause as to why inquiry proceedings should not be held against RMEL in relation to two large transaction of Rs. 12.50 million in foreign exchange which were alleged to be in contravention of the Foreign Exchange Management Act, 1999 ("**FEMA**"). RMEL filed its reply in the aforementioned matter and has denied all allegations. The Directorate of Enforcement, Lucknow, *vide* its adjudication order has directed RMEL to pay an amount of Rs. 12.50 million towards penalty for contravention of the provisions of FEMA. RMEL filed an appeal before the Appellate Tribunal for Foreign Exchange, Delhi, challenging the order of the Directorate of Enforcement, Lucknow. The Appellate Tribunal for Foreign Exchange, Delhi, by way of its order has stayed the operation of the impugned order of the Directorate of Enforcement, Lucknow, during the pendency of the proceeding. The matter is currently pending.

2. The Directorate of Enforcement, Delhi ("**ED**") issued summons to RMEL to give evidence and produce certain documents in relation to the proceedings under the Foreign Exchange Management Act, 1999 ("**FEMA**") pursuant to the seizure of foreign currency worth Rs. 33.3 million from an employee of the Surat Branch of RMEL at the Delhi Airport. The statement of RMEL in the aforementioned matter was recorded. After due internal enquiries, the ED had released the major amount of seized foreign currencies. Assorted foreign currencies worth about Rs.1.66 million was retained by the ED for verification with the sellers of the same to RMEL. Further, the Reserve Bank of India ("**RBI**") issued a show cause notice to RMEL to show cause as to why the Full Fledged Money Changer (FFMC) license issued in favour of RMEL should not be revoked. RMEL has replied to the aforementioned show cause notice. The RBI had renewed the licences and finally, those licences have been surrendered by RMEL. The matter is currently pending.

3. The Reserve Bank of India ("**RBI**") had issued a show cause notice to RMEL to show cause as to why the permission issued in favour of RMEL to deal as an authorised dealer in foreign exchange or in foreign securities should not be revoked and the renewal application not be refused in relation to an investigation carried on by the Directorate of Revenue Intelligence, Jaipur ("**DRI**") of the inward money transfer operations conducted under the Money Transfer Service Scheme by RMEL and its sub-agents. RMEL had filed its reply to the aforementioned show cause notice. RMEL also attended a personal hearing with RBI and made further submissions pursuant to the personal hearing with RBI. No further communication has been received in this regard.

4. The Directorate of Revenue Intelligence, Jaipur ("**DRI**") had issued summons to the Jaipur branch of RMEL to appear before the DRI along with certain documents and information in relation to an investigation carried on by the DRI regarding the inward money transfer operations conducted under the Money Transfer Service Scheme by RMEL and its sub-agents. The Jaipur branch of RMEL has vide its reply to the aforementioned summons, submitted the required information and documents to the DRI. Further, the Directorate of Enforcement, Jaipur, had issued summons to RMEL. All the necessary documents were provided to the Directorate of Enforcement, Jaipur and statements were recorded. No further communication has been received in this regard.

5. National Investigation Agency ("**NIA**") issued notices to RMEL in relation to a criminal investigation carried on by the NIA against certain accused persons, some of which have used RMEL's Money Transfer Services network to transfer money from Saudi Arabia. The NIA vide its notices had asked RMEL along with its sub-agents to appear before the Chief Investigation Officer and produce certain documents. RMEL has complied and submitted the required documents and also the statements of sub-agents have also been

duly recorded. No further communication has been received in this regard.

6. The Directorate of Enforcement ("**ED**") has passed an order directing RMEL to produce certain informantion and documents in relation to the purchase of assorted foreign exchange by RMEL from M/s VKC Credit & Forex Services Private Limited. RMEL has, *vide* its response in the aforementioned matter, complied and submitted the required documents. No further communication has been received in this regard.

7. The Directorate of Enforcement ("**ED**") has passed an order directing RMEL to produce certain informantion and documents in relation to the purchase of assorted foreign exchange by RMEL from M/s R.J Trade Wings, Varanasi. RMEL has, *vide* its response in the aforementioned matter, complied and submitted the required documents. No further communication has been received in this regard.

Taxation Proceedings

There are 2 (two) indirect tax proceedings involving RMEL which involve an aggregate amount of approximately Rs. 67.20 million.

III. Reliance Securities Limited ("RSL")

Criminal Litigation against RSL

1. There are 2 (two) first information reports filed against RSL for cheating, forgery and breach of trust.

Completed Regulatory Action involving RSL

1. The Securities Exchange Board of India ("**SEBI**") has issued two show cause notices ("**Notices**") dated August 9, 2010 and August 31, 2010, to RSL to show cause as to why legal action under the Securities Exchange Board of India (Intermediaries) Regulations, 2008 and the Securities Exchange Board of India (Stock Brokers and Sub-Brokers) Regulations, 1992 (the "**Regulations**") should not be taken in relation to the alleged violations of the Regulations. The Notices were issued pursuant to enquiries conducted by the designated authority, into the alleged violations of the provisions of the Regulations, as observed by SEBI during the inspection of books of accounts and other records. RSL has filed a consent application with SEBI proposing a settlement of the proceedings under consent terms in relation to the facts and allegations pertaining to the Notices. Further, RSL has also filed a response to the Notices, submitting, *inter alia*, (a) that the practices in violation of the SEBI norms alleged by the Notices have since been discontinued and the same was informed to SEBI and (b) none of the alleged violations set out in the Notices have resulted in any adverse consequence to any of the clients of RSL or any other investor. Pursuant to the consent application filed by RSL, SEBI passed a consent order directing certain conditions for settlement, including, (a) payment of a sum of Rs. 2.5 million towards settlement charges, (b) payment of a sum of Rs. 10 million towards investor education and awareness programmes and development of materials focussing on making investors more aware of their rights in connection with internet based trading in the securities market and (c) suspension of further registration of new clients for a period of 45 days. RSL has paid a sum of Rs. 2.5 million towards settlement charges in the form of a demand draft drawn on HDFC Bank Limited, Mumbai. Confirmation in the form of a certificate from a chartered accountant in relation to the expenditure of Rs. 10 million in accordance with consent order has been received. No further communication has been received in relation to the aforementioned matter.

Taxation Proceedings

There is 1 (one) direct tax proceedings involving RSL. No demand has been raised. Further, there are 9 (nine) indirect tax proceedings involving RSL, which involve an aggregate amount of approximately Rs. 221.20 million.

IV. Reliance Nippon Life Insurance Company Limited ("RNLICL")

Pending Criminal Litigation against RNLICL

1. Bimla Devi Agarwal and others ("**Respondents**") had filed a complaint which was registered as a criminal case ("**Complaint Case**") against RNLICL (formerly known as Reliance Life Insurance Company Limited) ("**Petitioner**") and nine other accused persons, before the Judicial Magistrate First Class,

Tinsukia, alleging charges under Sections 120B, 420, 406 and 34 of the Indian Penal Code, 1860 ("**IPC**"). The Judicial Magistrate First Class, Tinsukia, *vide* its order proceeded to take cognizance of the alleged charges and issued summons to the accused accordingly ("**Order**"). Thereafter, the Petitioner filed a criminal petition in the High Court of Gauhati, seeking, *inter alia*, (a) the quashing and setting aside of the Order and the entire proceedings thereof and (b) pending the final disposal of this application, to stay all further proceedings of the Complaint Case and the Order. The said relief was sought on, *inter alia*, the alleged grounds (a) that the essential ingredients required to constitute offences under Sections Section 120B, 420, 406 and 34 of the IPC are lacking and (b) that the entire allegations of forgery, conspiracy and criminal misappropriation are made against the broker and the sales manager of the branch office of the Petitioner and not against the Petitioner. The High Court of Gauhati *vide* its order dismissed the petition as lacking in merit. Further, the Petitioner filed a special leave petition before the Supreme Court of India challenging the order of the High Court of Guahati. The matter is currently pending.

2. Alok Kumar Shahi and certain others ("**Applicants**") have filed an application before the Court of House Controller, Patna against RNLICL (formerly known as Reliance Insurance Company Limited) ("**Respondent**") seeking for the fixing of a fair rent of the premises which is under the tenancy of the Respondent with effect from the date of filing of this application. The Court of House Controller, Patna vide its order fixed the rent at Rs. 50 per square feet totaling to Rs. 89,400 for 1,788 square feet. Alok Kumar Shahi has filed an appeal before the District Magistrate, Patna against the order of the Court of House Controller. The District Magistrate has vide its order remanded the matter to the Court of House Controller. The matter is currently pending.

3. Khalid Abdul Nazar (the "**Complainant**") has filed a complaint against Reliance Insurance Company Limited ("**RICL**") and another (the "**Accused**") under Section 138 read with Section 142 of the Negotiable Instruments Act, 1881, before the court of the Learned Judicial Magistrate First Class, Pattambi. The Complainant has also brought a complaint against the Managing Director, Reliance Life Insurance Company Limited ("**RLIC**") before the Consumer Disputes Redressal Forum, Kozhikode ("**District Forum**"). The matter is currently pending.

4. Chanda Sharma (the "**Complainant**") has filed a complaint against Reliance Life Insurance Company Limited ("**RLIC**"), Anasuya Ghosh (Head, Central Operating and Underwriting, RLIC), Anup Rau (Chief Executive Officer, RLIC), J. Bhattacharjee, Sandip Pal, Malay Ghosh Aloke Dey and Swapan Sen (the "**Accused**"), alleging charges under Sections 417, 420, 406, 427 and 468 of the Indian Penal Code, 1860, before the court of the Additional Chief Judicial Magistrate Second Class, Alipurduar District, Alipurduar. The Judicial Magistrate, Alipurduar, has issued summons to certain Accused. The matter is currently pending.

5. Raj Kishore Prasad Sharma (the "**Complainant**") filed a criminal complaint against Reliance Life Insurance Company Limited ("**RLIC**") and certain others (the "**Accused**"), before the court of the Chief Judicial Magistrate, Patna, alleging charges under Sections 406, 420, 456, 467 and 120B of the Indian Penal Code, 1860. The matter is currently pending.

Pending Regulatory Action against RNLICL

1. The Insurance Regulatory and Development Authority of India ("**IRDAI**") has *vide* its order imposed an aggregate penalty of Rs. 8.5 million on Reliance Life Insurance Company Limited ("**RLIC**") towards alleged violations of the provisions of the 'Guidelines on Outsourcing of Activities by Insurance Companies' laid down under the circular dated February 1, 2011 ("**Outsourcing Guidelines**") and IRDA (Sharing of Database for Distribution of Insurance Products) Regulations, 2010. RLIC has filed an appeal against the said order of IRDAI before the Securities Appellate Tribunal on September 21, 2015. IRDAI filed its affidavit in response to RLIC appeal on March 28, 2016. The matter is currently pending.

Completed Regulatory Action against RNLICL

1. IRDAI, through an order issued to Reliance Life Insurance Company Limited ("**RLIC**") had imposed a penalty of Rs. 1 million on RLIC for payment of excess referral fees than envisaged in the referral guidelines and deviation in the 'File and Use' procedure particularly in group products in violation of IRDAI circular dated July 12, 2006. RLIC has paid the amount of the penalty.

2. IRDAI conducted an on-site inspection of Reliance Life Insurance Company Limited ("**RLIC**") in January, 2012, and issued a show cause notice to RLIC to show cause as to why action should not be taken against RLIC's alleged violations of various laws, regulations, guidelines and circulars issued by the IRDAI. RLIC had filed its reply to the said show cause notice and made submissions during a personal hearing before the IRDAI. The IRDAI vide its order has imposed an aggregate penalty of approximately Rs. 17.7 million on RLIC towards the aforementioned violations. RLIC has paid the total amount of the penalty.

3. IRDAI *vide* its order ("**Order**") imposed an aggregate penalty of Rs. 0.5 million on Reliance Life Insurance Company Limited ("**RLIC**") towards alleged violations of Regulation 2(g)(i) of the IRDA (Registration of Indian Insurance Companies) Regulations, 2000 in relation to the non-disclosure of information regarding the status of Reliance Capital Limited being a subsidiary company of Reliance Innoventures Private Limited. RLIC has paid the total amount of the penalty and filed an appeal before the IRDAI to review its Order. IRDAI has *vide* its letter communicated to RLIC that there was no reason for review or modification of its Order.

Taxation Proceedings

There is 1 (one) direct tax proceedings involving RNLICL. No demand has been raised. Further, there are 4 (four) indirect tax proceedings involving RNLICL, which involve an aggregate amount of approximately Rs.185.50 million.

V. Reliance General Insurance Company Limited ("RGICL")

Pending Regulatory Action against RGICL

1. IRDAI issued an order against RGICL levying a penalty of Rs. 0.5 million towards failure to meet the obligatory target in relation to the declined risk pool for the year 2012-2013. RGICL has paid the penalty amount. No further action has been initiated against RGICL with respect to the said matter.

2. IRDAI issued a show cause notice to RGICL to show cause as to why no legal action should be initiated against RGICL for alleged violations of the provisions of IRDA (Health Insurance) Regulations, 2013. RGICL has filed its response in the aforementioned matter. In pursuance of the response to the said show cause notice, IRDA has passed an order directing RGICL to pay a penalty of Rs. 0.5 million. RGICL has paid the penalty amount. No further communication has been received by RGICL in this matter.

3. IRDAI issued a show cause notice to RGICL to show cause as to why regulatory action should not be initiated for the violation of the provisions of Regulation 2(g)(i) of the IRDA (Registration of Indian Insurance Companies) Regulations, 2000 ("**RIIC Regulations**") and non-disclosure of information regarding status of Reliance Capital Limited being a subsidiary company of Reliance Innoventures Private Limited. RGICL had filed its reply to the show cause notice. Pursuant to the reply of RGICL, IRDA has issued an order imposing a penalty of Rs. 0.5 million in relation to the violation of the provisions of the RIIC Regulations. RGICL has paid the penalty amount. No further communication has been received.

Taxation Proceedings

There are 9 (nine) direct tax proceedings involving RGICL, which involve an aggregate amount of approximately Rs. 18.67 million. Further, there are 20 (twenty) indirect tax proceedings involving RGICL, which involve an aggregate amount of approximately Rs. 2,085.00 million.

VI. Reliance Money Precious Metal Private Limited ("RMPMPL")

Pending Regulatory Action involving RMPMPL

1. The Registrar of Companies ("**RoC**") issued a letter to RMPMPL in relation to the gold investment plans run by RMPMPL and sought details about the nature of the product and whether it complies with various provisions of the Companies Act including provisions relating to accepting deposits and the rules relating thereto. RMPMPL submitted its reply in the aforementioned matter claiming complete compliance of the Companies Act and provided the necessary information and explanations. The RoC responded to RMPMPL's submissions *vide* a letter seeking further clarifications and explanations, which were duly submitted by RMPMPL. Thereafter, no further communication has been received.

2. Forward Markets Commission ("**FMC**") issued a letter to the Managing Director, RMPMPL seeking an explanation for the violation of various provisions of the Forward Contracts (Regulation) Act, 1952 in relation to the gold investment plans run by RMPMPL. RMPMPL submitted its reply in the aforementioned matter claiming compliance with all the provisions of the Forward Contracts (Regulation) Act, 1952, and provided the necessary information and explanations. The FMC further sought / information in relation to the customers since the launch of the plan, which were duly submitted by RMPMPL. Thereafter, no further communication has been received from the FMC. Further, the FMC has also merged with SEBI.

C. Material Litigation and Regulatory Action against the Project Manager and Associates of the Project Manager

For details in relation to the litigation and regulatory action against the Project Manager and its Associates, please see "- *Litigation and Regulatory Action against the Sponsor*" herein above.

D. Material Litigation and Regulatory Action against the Trustee

Pending Civil Litigation against the Trustee

1. Hubtown Limited (the "**Plaintiff**") had filed a case before the High Court of Bombay against the Trustee and its directors (the "**Defendants**") for having informed the bankers of the Plaintiff regarding the defaults committed by the Plaintiff. The Trustee has stated that the Plaintiff is a guarantor for the debt for which the Trustee is acting as a debenture trustee and in case of defaults, the relevant documents authorize the Trustee to share information about such default to CIBIL/RBI and other creditors. The aggregate amount claimed is Rs. 3000 million. The matter is currently pending.

2. SBI Cap Trustee (the "**Plaintiff**") had filed a suit before the City Civil Court, Bangalore against the Trustee and others (the "**Defendants**") requiring sale of pledged shares for a particular price by SREI Fund/Investors, for whom the Trustee was acting as the share pledge trustee. The Plaintiff was acting for a consortium of lenders and has residual interest. The aggregate claim amount is Rs. 1,550.3 million. The matter is pending.

3. Balmer Lawrie and Company Limited and another (the "**Plaintiffs**") had filed a petition before the Calcutta High Court against the Trustee and certain others (the "**Defendants**") challenging the validity of the sale transaction of 14,820,000 shares in Transafe Services Limited by the Defendant to the Plaintiff. The Plaintiffs have inter alia sought (a) the recovery of consideration received by the Defendants for the allegedly void contract being Rs. 237.12 million and (b) interest at the rate of 18% (eighteen percent) per annum on the decreetal amount. The matter is currently pending.

Taxation Proceedings

There is 1 (one) tax proceeding pending against the Trustee, which involves an aggregate amount of Rs. 3.74 million, and may involve an aggregate liability of approximately Rs. 1.40 million.

GOVERNMENT AND OTHER APPROVALS

The Trust and the Project SPVs have received the material consents, licenses, permissions, registrations and approvals from the Government, various governmental agencies and other statutory and/or regulatory authorities, required for carrying out their present or proposed business, as the case may be, and except as mentioned below, no further approvals are required for carrying on said businesses.

The material approvals, licences and registrations obtained by the Trust or the Project SPVs, as the case may be, which enable the Trust or the Project SPVs to undertake their respective businesses, are set out in this section. Certain licenses and/or approvals may expire/elapse periodically, in the ordinary course of business, and applications to the appropriate authorities for the renewal of such licenses and/or approvals are/will be submitted in accordance with applicable requirements and procedures.

Registration of the Trust

The Trust has received a certificate of registration as an infrastructure investment trust (SEBI Registration Number: IN/InvIT/16-17/0004), as issued by SEBI, dated November 24, 2016.

The aforesaid certificate has been granted subject to the following conditions, *inter alia*, as specified in Regulation 7 of the InvIT Regulations:

1. the Trust shall abide by the provisions of the SEBI Act and the InvIT Regulations;

2. the Trust shall fortwith inform the SEBI in writing, if any information or particulars previously submitted to the SEBI are found to be false or misleading in any material particular or if there is any material change in the information already submitted;

3. the Trust and the parties to the Trust, namely the Sponsor, the Investment Manager, the Trustee and the Project Manager, shall satisfy with the conditions specified in Regulation 4 of the InvIT Regulations at all times;

4. the Trust and the parties to the Trust, namely the Sponsor, the Investment Manager, the Trustee and the Project Manager, shall comply, at all times, with the Code of Conduct specified in Schedule VI of the InvIT Regulations, wherever applicable;

Further, the aforesaid certificate, *inter alia*, stipulates that:

- the investment conditions and other restrictions prescribed under the InvIT Regulations shall apply to all the investments and distributions made by the Trust;

- the Trust shall keep and maintain the book of accounts, records and such other documents as may be required by SEBI under the InvIT Regulations from time to time;

- the Trust shall ensure compliance with the Guidelines, Directives, Instructions and Circulars as may be issued from time to time by SEBI or the Governemnt of India relating to the activities carried on by the Trust;

- the Trust shall not make use of its status as a SEBI registered infrastructure investment trust in furtherance of unrelated activities or any other purpose which is not permitted in the InvIT Regulations;

- any material change in the information on the basis of which the registration is granted must be communicated to SEBI immediately; and

- the certificate of registration is granted on the basis of information available with SEBI at that point of time and does not preclude SEBI from cancelling the registration later if anthing adverse is found against the Trust or if the Trust is convicted.

Approvals in Relation to the Issue

1. Special resolution of the shareholders of the Sponsor dated October 21, 2016, passed by way of postal ballot, in relation to the sponsorship of the Trust and authorizing any sale or disposal of the whole, or substantially the whole, of the undertakings of the Sponsor, including the Project SPVs.

2. Resolution of the board of directors of Sponsor dated September 13, 2016, approving the formation of the Trust and to act as the Sponsor of the Trust.

3. Resolution of the duly authorized committee of the board of directors of the Investment Manager dated November 9, 2016, in relation to the Issue and other related matters.

4. In-principle approvals dated [●] and [●], issued by the BSE and the NSE, respectively.

Other Approvals in Relation to the Issue

Pending NHAI Applications

1. The Sponsor has applied to NHAI *vide* its letters in relation to each of DS, HK, JR, KM, NK, SU, TD and TK dated October 8, 2016, requesting NHAI's approval for the transfer of the Sponsor's shareholding in the aforesaid Project SPVs to the Trust, and waiver of any lock-up arrangements under the respective concession agreements. Further, the Sponsor has informed NHAI that the Trust proposes to use a portion of the proceeds of the Issue to (a) replace all or part of the existing senior debt provided by the senior lenders to the aforesaid Project SPVs with the senior debt provided by the Trust, and (b) replace the existing subordinate debt provided by the Sponsor to the aforesaid Project SPVs with subordinated debt provided by the Trust, without leading to an increase in the obligation of NHAI with respect to the termination payment or any other liabilities under the relevant concession agreements.

2. The Sponsor has applied to NHAI *vide* its letter in relation to PS dated October 8, 2016, requesting NHAI's approval for (a) the proposed acquisition of 2,788 equity shares in PS from Jiangsu Provincial Transportation Engineering Group Company Limited (representing 26% of PS's equity share capital on a fully diluted basis), and (b) the transfer of the Sponsor's shareholding in PS to the Trust post acquisition of PS's equity shares from Jiangsu Provincial Transportation Engineering Group Company Limited, and waiver of any lock-up arrangements under the respective concession agreement. Further, the Sponsor has informed NHAI that the Trust proposes to utilize a portion of the proceeds of the Issue to (a) replace all or part of the existing senior debt provided by the senior lenders to PS with senior debt provided by the Trust, and (b) replace the existing subordinate debt provided by the Sponsor to PS with subordinated debt provided by the Trust, without leading to an increase in the obligation of NHAI with respect to the termination payment or any other liabilities under the relevant concession agreements.

Pending HPWD Application

1. The Sponsor has applied to HPWD *vide* its letter in relation to GF dated October 8, 2016, requesting HPWD's approval for the transfer of the Sponsor's shareholding in GF to the Trust, and waiver of any lock-up arrangements under the respective concession agreement. Further, the Sponsor has informed HPWD that the Trust proposes to use a portion of the proceeds of the Issue to (a) replace all or part of the existing senior debt provided by the senior lenders to GF with the senior debt provided by the Trust, and (b) replace the existing subordinate debt provided by the Sponsor to GF with subordinated debt provided by the Trust, without leading to an increase in the obligation of HPWD with respect to the termination payment or any other liabilities under the relevant concession agreement.

Approvals in Relation to the Project SPVs

Completion Certificates

As on date, nine of the Project SPVs, namely DS, GF, HK, JR, KM, NK, SU, TD and TK, are 'completed and revenue generating' projects, in accordance with the InvIT Regulation, and have received the following certificates in this regard:

1. Provisional completion certificate dated September 27, 2009, with respect to DS's Dindigul Samayanallore Project. The aforesaid provisional completion certificate was issued along with a punch list containing certain items to be completed within 120 days from the date of issuance thereof, including, *inter alia*, a) plantation of avenue trees along the edge of the RoW and other landscaping works within RoW, b) completion of work on provison of unlined roadside drains, c) lining of roadside drains in identified stretches, d) construction of rest areas, as approved, e) completion of fencing works of RoW, f) turfing on embankment slopes in indentified sections, g) pointing to stone masonry works in identified cross drainage structures, h) stone pitching at identified locations, and ii) certain additional items to be constructed/completed, including, *inter alia*, a) construction of service roads including gravel service road, junctions adjoining service roads, side drains, toe drains, footpath, bus buys on service roads, including pavement marking; b) flyover junctions at Palani and Vathalakundu, c) Toll plaza administration building, toll plaza outer RHS extra wide lanes and installation of weigh in motion equipment in outer extra wide lanes, d) minor junctions abutting main carriageway, e) stone pitching protection works for pipe culverts & box culverts utility duct marker posts, f) truck lay byes facilities including footpath and drains, bus shelters and their amenities, and pedestrian guard rails, g) Noise barriers, rehabilitation of existing ponds, water harvesting structures/infiltration ponds, and h) all other works necessary for issuance of final completion certificate in accordance with the Concession Agreement.

2. Provisional completion certificate dated June 29, 2012, with respect to GF's Gurgaon Faridabad Project. The aforesaid provisional completion certificate was issued along with a punch list containing certain items to be completed/constructed within 120 days from the date of issuance thereof, including, *inter alia*, a) Toll plaza canopy, b) repairing/construction of lined, unlined and vertical drains, c) avenue plantation, d) balance slope protection work SEZ location, e) cover of side drains, f) landscaping of junction, and g) administrative buildings for toll plaza.

3. Provisional completion certificate dated April 5, 2016, with respect to HK's Hosur Krishnagiri Project. The aforesaid provisional completion certificate was issued along with a punch list containing (i) certain items to be completed/constructed within 90 days from the date of issuance thereof, including, *inter alia*, a) pedestrian walkway-utility duct cum footpath, b) ATCC in the toll plaza, c) pavement markings, d) highway lighting works, e) highway lighting in VUP/PUP approaches, and f) bus bays and bus shelters including pedestrian guard rail and ii) certain items to be completed/constructed within reasonable time, as assessed by the Independent Engineer, once hindrances/obstructions are removed, including, *inter alia*, a) utility duct works in the urban area, b) service roads including pavement markings, c) minor junction works, d) longitudinal drains, e) traffic signs in service road areas and f) bus bay and bus shelters including lighting works, pedestrian crossings and sign boards.

4. Provisional completion certificate dated July 15, 2013, with respect to the length of 48 kms of JR's Jaipur Reengus Project. Subsequently, the provisional completion certificate dated October 16, 2015, with respect to the full length of JR's Jaipur Reengus Project. The aforesaid provisional completion certificate was issued along with a punch list containing certain items to be completed within 90 days from the date of issuance thereof, including, *inter alia*, a) service roads, b) line drains, c) unlined drains, and d) boundary pillar.

5. Provisional completion certificate dated November 4, 2015, with respect to the length of 55.80 kms of KM's Kandla Mundra Port Project. The aforesaid provisional completion certificate was issued along with a punch list containing containing certain items to be completed within 90 days from the date of issuance thereof, including, *inter alia*, a) service road, b) major bridge, c) minor bridge, d) box culvert, e) static weigh bridge, f) highway lighting g) land scaping and tree plantation, h) truck laybye, i) bus bays, j) stone pitching, k) slope protection work, l) drainage, m) rainwater harvesting structure, n) turfing median side, o) solar lighting, p) entry/exit ramp and q) boundary stone.

6. Provisional completion certificate dated August 21, 2009, with respect to NK's Namakkal Karur Project. The aforesaid provisional completion certificate was issued along with a punch list containing certain items to be completed/constructed within 120 days from the date of issuance thereof, including, *inter alia*, a) avenue plantation along the edge of the ROW and other landscaping works, b) road side drains, c) rainwater harvesting structures, d) RCC lined drain, e) lined drain with thick stone pitching, f) fencing of ROW, g) turfing on embankment slopes, h) median plantation, i) stone pitching work, j) improvement of major junctions beyond ROW, k) administrative block and control room at toll plaza, l) pipe railing over crash barriers, m) service road along flyover, n) end of Velur bypass, o) service road along Namakkal bypass

and other locations, p) drinking water kiosks, q) overhead signs at major intersections, r) culverts at location of cross roads and s) rain water drainage pipe extension.

7. (i) Provisional completion certificate dated July 26, 2012, with respect to SU's Salem Ulundurpet Project, for the stretch from Km 45+765 to Km 136+670 related to toll plazas at Km 73+760 and Km 105+000. The aforesaid provisional completion certificates were issued along with a punch list containing certain items to be completed/constructed within 120 days from the date of issuance thereof, including, *inter alia*, : a) way side amenities, b) urban service roads, c) collector and distributor roads, d) bus bays, e) primary intersection, f) secondary intersection, g) avenue planation, h) earthen drain, i) open pacca drain, j) road land boundary pillars, k) TNEB utilities, l) TWAD utilities, and m) landscaping.

   (ii) Provisional completion certificate dated August 30, 2012, with respect to SU's Salem Ulundurpet Project, for the stretch from Km 0+313 to Km 45+765 related to toll plaza at Km 21+750. The aforesaid provisional completion certificates were issued along with a punch list containing certain items to be completed/constructed within 120 days from the date of issuance thereof, including, *inter alia*, : a) urban service road, and b) avenue plantation.

8. Provisional completion certificate dated January 10, 2012, with respect to TD's Trichy Dindigul Project. The aforesaid provisional completion certificate was issued along with a punch list containing certain items to be completed/constructed within 120 days from the date of issuance thereof, including, *inter alia* a) slope protection and drainage, b) earthen drain, c) lining of drain of roadside drain, d) turfing, e) avenue plantation, f) land scaping, g) rain water harvesting, and h) RCC drain.

9. Provisional completion certificate dated February 22, 2014, with respect to TK's Trichy Karur Project. The aforesaid provisional completion certificate was issued along with a punch list containing containing (i) certain items to be completed/constructed within 120 days from the date of issuance thereof, including, *inter alia;* a) earthen drain, b) lining of roadside drain, c) turfing & geo mesh, d) avenue plantation, and e) land scaping, and (ii) certain items that need to be completed as per the time frame mentioned in the concerned supplementary agreement.

Approvals for Continuing Commercial Operations

During the commercial operations phase of their respective projects, DS, GF, HK, JR, NK, SU, TD and TK, are required to, either through themselves or their respective sub-contractors, as applicable, obtain and maintain certain permits, registrations, approvals and licenses including, *inter alia*, registration as a principal employer in relation to contract labour, licenses for diesel generator sets, certificates with respect to weigh-in-motion systems, employee provident fund registration, along with the necessary registrations under taxation laws.

Each of DS, GF, HK, JR, NK, SU, TD and TK, have obtained the necessary permits, registrations, approvals and licenses that are required to operate their respective businesses. Further, certain approvals may have lapsed in their normal course and the aforesaid Project SPVs have either (i) made applications to the appropriate authorities for renewal of such licenses and/or approvals; or (ii) are in the process of making such applications.

Some of the material consents, licenses, registrations, permissions and approvals for which applications have been made are:

License for Diesel Generator Sets

1. Application dated December 7, 2016, made by DS to the Electrical Inspector, Dindigul;

2. Applications dated December 5, 2016, made by GF to the Electrical Inspector, Faridabad;

3. Application dated December 7, 2016, made by HK to the Electrical Inspectorate, Krishnagiri;

4. Application dated December 6, 2016, made by JR to the Assistant Electrical Inspector, Jaipur;

5. Application dated November 29, 2016, made by NK to the Electrical Inspector, Namakkal;

6. Applications dated November 30, 2016, made by SU to the Electrical Inspector, Salem;

7. Application dated December 2, 2016, made by TD to the Electrical Inspector, Trichy; and

8. Application dated November 29, 2016, made by TK to the Electrical Inspector, Namakkal, and application dated November 30, 2016, to the Electrical Inspector, Trichy.

License under Contract Labour (Regulation and Abolition) Act, 1970

1. Application dated December 6, 2016, made by GF's sub-contractor to the Deputy Labour Commissioner & Licensing Officer, Gurgaon, in relation to GF; and

2. Application dated December 7, 2016, made by NK's sub-contractor to the Assistant Labour Commissioner (Central), Chennai, in relation to NK.

Approvals with respect to KM

While KM has received a provision completion certificate dated November 4, 2015, for a length of 55.80 Kms of KM's Kandla Mundra Port Project, the remainder is currently under-construction. Based on the foregoing, KM is required to, either through itself or its sub-contractors, as applicable, obtain and maintain certain permits, registrations, approvals and licenses for its operations, including, *inter alia*, consent to operate under the Air (Prevention and Control of Pollution) Act, 1981, license for diesel generator set, permission for the use of explosives, a certificate with respect to its weigh-in-motion system, registration as a principal employer in relation to contract labour, employee provident fund registration; along with the necessary registrations under taxation laws. KM has either through itself or its sub-contractors, as applicable, obtained the necessary permits, registrations, approvals and licenses that are required to operate its business. Certain approvals may lapse in their normal course and KM, directly or through its sub-contractors, undertakes to obtain and maintain certain permits, registrations, approvals and licenses, to operate its business.

Some of the material consents, licenses, registrations, permissions and approvals for which applications have been made are:

License for Diesel Generator Sets

1. Application dated December 2, 2016, made by KM to the Electrical Inspector, Bhuj - Kutch;

Approvals with respect to PS

Being an under-construction project, PS is required to, either through itself or its sub-contractors, as applicable, obtain and maintain certain permits, registrations, approvals and licenses during the construction phase, including, *inter alia*, consent to operate under the Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981, registration as a principal employer in relation to contract labour, license for diesel generator set, employee provident fund registration; along with the necessary registrations under taxation laws. PS has either through itself or its sub-contractors, as applicable, obtained the necessary permits, registrations, approvals and licenses that are required to operate its business. Certain approvals may lapse in their normal course and PS, directly or through its sub-contractors, undertakes to obtain and maintain certain permits, registrations, approvals and licenses, to operate its business.

OTHER REGULATORY DISCLOSURES

Eligibility for the Issue

The Trust proposes to hold not less than 80% of its assets in completed and revenue generating projects and proposes to undertake the Issue in accordance with Regulation 14(4)(a) of the InvIT Regulations.

The Trust is eligible for the Issue in compliance with the Regulation 14(1) of InvIT Regulations, in the manner set out below:

a) The Trust is registered with SEBI under the InvIT Regulations;

b) The Trust proposes to enter into binding agreements with the relevant parties, by way of the Formation Transactions, such that the value of the assets held by the Trust is not less than Rs. 5,000 million prior to the Allotment of Units; and

c) The proposed Issue size is not less than Rs. 2,500 million.

Prohibition by SEBI or RBI

None of the Trust, the Sponsor, the Investment Manager, and the Project Manager, or the promoter(s) or director(s) of any of the Sponsor, the Investment Manager, the Project Manager (i) is debarred from accessing the securities market by SEBI; (ii) is a promoter, director or person in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; or (iii) is in the list of willful defaulters published by the RBI. Neither the Trustee nor, to the best knowledge of the Trustee, its promoters or directors (i) is debarred from accessing the securities market by SEBI; (ii) is a promoter, director (as applicable) or person in control of any other company or a sponsor, investment manager or trustee of any infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; or (iii) is in the list of willful defaulters published by the RBI.

To the best of the knowledge of the Trustee, none of the promoters or directors of the Trustee (i) is debarred from accessing the securities market by SEBI; (ii) is a promoter, director or person in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; or (iii) is in the list of willful defaulters published by the RBI.

Minimum Subscription and Minimum Allotment

In the event that a minimum Allotment of at least 25% of the total outstanding Units on a post-Issue basis cannot made or if the number of prospective 'public' Allottees is less than 20 or if the Trust does not receive the minimum subscription of at least 90% of the Issue, including devolvement of Underwriters, if any, the Investment Manager shall forthwith refund the entire subscription amount received within 12 Working Days from the Bid/Issue Closing Date. In accordance with the InvIT Regulations, 'public' means any person other person other than a related party of the Trust or any other person as may be specified by the SEBI, provided however that if any related party of the Trust is a qualified institutional buyer, such person shall be included in the term 'public'.

If there is a delay beyond the prescribed time, the Investment Manager shall pay interest prescribed under the InvIT Regulations and applicable law.

Minimum Unitholding Post-Listing of Units

In accordance with the InvIT Regulations, at all times post-listing of the Units, other than the Sponsor, its related parties and Associates, the Trust is required to have, and maintain, a minimum of 20 Unitholders forming part of the 'public', each holding not more than 25% of the aggregate amount of the Units on a post-Issue basis, failing which action may be taken as may be specified by the SEBI and the Stock Exchanges, including delisting of the Units under the InvIT Regulations. In accordance with the InvIT Regulations, 'public' means any person other person other than a related party of the Trust or any other person as may be specified by the SEBI, provided however that if any related party of the Trust is a qualified institutional buyer, such person shall be included in the term 'public'.

Prohibition on Offer of Incentives

No person connected with the Issue, including any person connected with the distribution of the Issue, shall offer any incentive, whether direct or indirect, in any manner, whether in cash or kind or services or otherwise to any person for making an application for Allotment of the Units.

The Investment Manager, on behalf of the Trust, shall ensure that transactions in the Units by the Sponsor and its Associates, during the period between the date of filing the Offer Document with the SEBI and the Stock Exchanges and the Bid/Issue Closing Date, shall be reported to the Stock Exchanges within 24 hours of such transactions.

The GCBRLMs and the BRLMs have submitted a due diligence certificate to SEBI dated December 15, 2016, in relation to the Issue.

Undertakings by the Investment Manager

The Investment Manager (on behalf of the Trust) undertakes the following:

- at any given time, there shall be only one denomination for the Units; and
- it shall comply with such disclosure and accounting norms specified by SEBI from time to time.

Important Information for Investors – Eligibility and Transfer Restrictions

The Units have not been and will not be registered under the U.S. Securities Act or any state securities laws of the United States, and may not be offered or sold within the United States, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the U.S. Securities Act and applicable state securities laws. Accordingly, the Units are being offered and sold (i) within the United States only to persons reasonably believed to be "qualified institutional buyers" (as defined in Rule 144A under the U.S. Securities Act and referred to in this Draft Offer Document as "U.S. QIBs", for the avoidance of doubt, the term U.S. QIBs does not refer to a category of institutional investor defined under applicable Indian regulations and referred to in the Draft Offer Document as "QIBs") in transactions exempt from, or not subject to, the registration requirements of the U.S. Securities Act, and (ii) outside the United States in reliance on Regulation S under the U.S. Securities Act and the applicable laws of the jurisdiction where those offers and sales occur.

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

Until the expiry of 40 days after the commencement of the Issue, an offer or sale of Units within the United States by a dealer (whether or not it is participating in the Issue) may violate the registration requirements of the U.S. Securities Act.

Units Offered and Sold within the United States

Each purchaser that is acquiring the Units offered pursuant to the Issue within the United States, by its acceptance of the Offer Document and of the Units, will be deemed to have acknowledged, represented to and agreed with the Trust, the GCBRLMs and the BRLMs that it has received a copy of the Offer Document and such other information as it deems necessary to make an informed investment decision and that:

(1) the purchaser is authorized to consummate the purchase of the Units offered pursuant to the Issue in compliance with all applicable laws and regulations;

(2) the Units offered pursuant to the Issue have not been and will not be registered under the U.S. Securities Act or with any securities regulatory authority of any state of the United States and accordingly may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the U.S. Securities Act;

(3) the purchaser (i) is a U.S. QIB, (ii) is aware that the sale to it is being made in a transaction exempt from or not subject to the registration requirements of the U.S. Securities Act, and (iii) is acquiring such Units for its own account or for the account of a qualified institutional buyer with respect to which it exercises sole investment discretion;

(4) the purchaser is not an affiliate of the Trust or a person acting on behalf of an affiliate;

(5) if, in the future, the purchaser decides to offer, resell, pledge or otherwise transfer such Units, or any economic interest therein, such Units or any economic interest therein may be offered, sold, pledged or otherwise transferred only (A) (i) to a person whom the beneficial owner and/or any person acting on its behalf reasonably believes is a U.S. QIB in a transaction meeting the requirements of Rule 144A or (ii) in an offshore transaction complying with Rule 903 or Rule 904 of Regulation S under the U.S. Securities Act and (B) in accordance with all applicable laws, including the securities laws of the States of the United States. The purchaser understands that the transfer restrictions will remain in effect until the Trust determines, in its sole discretion, to remove them;

(6) the Units are "restricted securities" within the meaning of Rule 144(a)(3) under the U.S. Securities Act and no representation is made as to the availability of the exemption provided by Rule 144 for resales of any such Units;

(7) the purchaser will not deposit or cause to be deposited such Units into any depositary receipt facility established or maintained by a depositary bank other than a Rule 144A restricted depositary receipt facility, so long as such Units are "restricted securities" within the meaning of Rule 144(a)(3) under the U.S. Securities Act;

(8) the purchaser agrees that neither the purchaser, nor any of its affiliates, nor any person acting on behalf of the purchaser or any of its affiliates, will make any "directed selling efforts" as defined in Regulation S under the U.S. Securities Act or general solicitation or advertising within the meaning of Regulation D under the U.S. Securities Act in the United States with respect to the Units;

(9) the purchaser understands that such Units (to the extent they are in certificated form), unless the Trust determines otherwise in accordance with applicable law, will bear a legend substantially to the following effect:

THE UNITS REPRESENTED HEREBY HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "U.S. SECURITIES ACT") OR WITH ANY SECURITIES REGULATORY AUTHORITY OF ANY STATE OR OTHER JURISDICTION OF THE UNITED STATES AND MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED EXCEPT (1) TO A PERSON WHOM THE SELLER OR ANY PERSON ACTING ON ITS BEHALF REASONABLY BELIEVES IS A QUALIFIED INSTITUTIONAL BUYER WITHIN THE MEANING OF RULE 144A IN A TRANSACTION MEETING THE REQUIREMENTS OF RULE 144A UNDER THE U.S.SECURITIES ACT, OR (2) IN AN OFFSHORE TRANSACTION COMPLYING WITH RULE 903 OR RULE 904 OF REGULATION S UNDER THE U.S. SECURITIES ACT, IN EACH CASE IN ACCORDANCE WITH ANY APPLICABLE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES.

(10) the Trust will not recognise any offer, sale, pledge or other transfer of such Units made other than in compliance with the above-stated restrictions; and

(11) the purchaser acknowledges that the Trust, the GCBRLMs, the BRLMs, their respective affiliates and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations and agreements and agrees that, if any of such acknowledgements, representations and agreements deemed to have been made by virtue of its purchase of such Units are no longer accurate, it will promptly notify the Trust, and if it is acquiring any of such Units as a fiduciary or agent for one or more accounts, it represents that it has sole investment discretion with respect to each such account and that it has full power to make the foregoing acknowledgements, representations and agreements on behalf of such account.

All Other Units Offered and Sold in the Issue

Each purchaser that is acquiring the Units offered pursuant to the Issue outside the United States, by its acceptance of the Offer Document and of the Units offered pursuant to the Issue, will be deemed to have acknowledged, represented to and agreed with the Trust, the GCBRLMs and the BRLMs that it has received a copy of the Offer Document and such other information as it deems necessary to make an informed investment decision and that:

(1) the purchaser is authorised to consummate the purchase of the Units offered pursuant to the Issue in compliance with all applicable laws and regulations;

(2) the Units offered pursuant to the Issue have not been and will not be registered under the U.S. Securities Act or with any securities regulatory authority of any state of the United States and accordingly may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the U.S. Securities Act;

(3) the purchaser is purchasing the Units offered pursuant to the Issue in an offshore transaction meeting the requirements of Rule 903 of Regulation S under the U.S. Securities Act;

(4) the purchaser and the person, if any, for whose account or benefit the purchaser is acquiring the Units offered pursuant to the Issue, was located outside the United States at the time (i) the offer was made to it and (ii) when the buy order for such Units was originated;

(5) the purchaser is not an affiliate of the Trust or a person acting on behalf of an affiliate;

(6) if, in the future, the purchaser decides to offer, resell, pledge or otherwise transfer such Units, or any economic interest therein, such Units or any economic interest therein may be offered, sold, pledged or otherwise transferred only (A) (i) to a person whom the beneficial owner and/or any person acting on its behalf reasonably believes is a U.S. QIB in a transaction meeting the requirements of Rule 144A or (ii) in an offshore transaction complying with Rule 903 or Rule 904 of Regulation S under the U.S. Securities Act and (B) in accordance with all applicable laws, including the securities laws of the States of the United States. The purchaser understands that the transfer restrictions will remain in effect until the Trust determines, in its sole discretion, to remove them;

(7) the purchaser agrees that neither the purchaser, nor any of its affiliates, nor any person acting on behalf of the purchaser or any of its affiliates, will make any "directed selling efforts" as defined in Regulation S under the U.S. Securities Act in the United States with respect to the Units;

(8) the purchaser understands that such Units (to the extent they are in certificated form), unless the Trust determines otherwise in accordance with applicable law, will bear a legend substantially to the following effect:

THE UNITS REPRESENTED HEREBY HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "U.S. SECURITIES ACT") OR WITH ANY SECURITIES REGULATORY AUTHORITY OF ANY STATE OR OTHER JURISDICTION OF THE UNITED STATES AND MAY NOT BE OFFERED, SOLD, PLEDGED OR OTHERWISE TRANSFERRED EXCEPT (1) TO A PERSON WHOM THE SELLER OR ANY PERSON ACTING ON ITS BEHALF REASONABLY BELIEVES IS A QUALIFIED INSTITUTIONAL BUYER WITHIN THE MEANING OF RULE 144A IN A TRANSACTION MEETING THE REQUIREMENTS OF RULE 144A UNDER THE SECURITIES ACT, OR (2) IN AN OFFSHORE TRANSACTION COMPLYING WITH RULE 903 OR RULE 904 OF REGULATION S UNDER THE U.S. SECURITIES ACT, IN EACH CASE IN ACCORDANCE WITH ANY APPLICABLE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES.

(9) the Trust will not recognise any offer, sale, pledge or other transfer of such Units made other than in compliance with the above-stated restrictions; and

(10) the purchaser acknowledges that the Trust, the GCBRLMs, the BRLMs, their respective affiliates and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations and agreements and agrees that, if any of such acknowledgements, representations and agreements deemed

to have been made by virtue of its purchase of such Units are no longer accurate, it will promptly notify the Trust, and if it is acquiring any of such Units as a fiduciary or agent for one or more accounts, it represents that it has sole investment discretion with respect to each such account and that it has full power to make the foregoing acknowledgements, representations and agreements on behalf of such account.

SECTION VIII – ISSUE INFORMATION

ISSUE STRUCTURE

Initial public offer of up to [●] Units, aggregating to Rs. 30,000 million, with an option to retain oversubscription of up to 25% of the Issue size in accordance with the InvIT Regulations. The Issue will constitute at least 25% of the total Units of the Trust on post-Issue basis.

The Issue is being made through the Book Building Process.

Particulars	Institutional Bidders Category			Other Bidders Category
	Strategic Investors	Anchor Investors	Institutional Investors	
Number of Units available for Allotment/allocation	Not more than [●] Units		Not more than [●] Units	Not less than [●] Units available for allocation
Percentage of Issue Size available for Allotment/allocation	Not more than 60% of the Institutional Bidder Category		Not more than 75% of the Issue size. In case of under - subscription, the unsubscribed portion may be Allotted to Bidders in the other category.	Not less than 25% of the Issue size. In case of under-subscription, the unsubscribed portion may be Allotted to Bidders in the other category.
Basis of Allotment/ allocation if respective category is oversubscribed	On a discretionary basis, subject to minimum Bid lot		Proportionate, subject to minimum Bid lot.	Proportionate, subject to minimum Bid lot.
Mode of Bidding	Non-ASBA		ASBA	
Minimum Bid	Strategic Investors shall make an application of a value of at least Rs. 100 million[(1)]	Anchor Investors shall make an application of a value of at least Rs. 100 million	Such number of Units that the Bid Amount exceeds Rs. 1 million	Such number of Units that the Bid Amount exceeds Rs. 1 million
Maximum Bid	Such number of Units (in multiples of [●] Units) not exceeding the size of the Issue, subject to applicable limits.			
Mode of Allotment	Compulsorily in dematerialised form.			
Bid Lot	[●] Units and in multiples of [●] Units thereafter			
Allotment Lot	[●] Units and in multiples of [●] Units thereafter			
Trading Lot	Such number of Units that exceed Rs. 0.50 million			
Who can apply[(2)(3)]	• An infrastructure finance company registered with the RBI as an NBFC; a scheduled commercial bank; • an international multilateral financial institution; • a systemically	• A QIB, which currently means, (i) a mutual fund, VCF, AIF and FVCI, (ii) an FPI other than Category III FPI, (iii) a public financial institution as defined in section 4A of the Companies Act, 1956, (iv) a scheduled commercial bank, (v) a multilateral and bilateral development financial institution, (vi) a state industrial development corporation, (vii) an insurance company registered with the IRDAI, (viii) a provident fund with minimum corpus of Rs. 250 million; a pension fund with minimum corpus of Rs. 250 million, (ix) national investment fund set up by resolution no. F. No. 2/3/2005-DDII dated November 23,	• An infrastructure finance company registered with the RBI as an NBFC; an international multilateral financial institution; • a Category III FPI; • an NRI; • an HUF; • a family trust that is not an

Particulars	Institutional Bidders Category			Other Bidders Category
	Strategic Investors	**Anchor Investors**	**Institutional Investors**	**Other Bidders Category**
	important NBFC registered with the RBI; and • an FPI.	2005 of the Government published in the gazette of India, (x) insurance funds set up and managed by army, navy or air force of the Union of India, and (xi) insurance funds set up and managed by the Department of Posts, India; • a family trust with a net-worth of more than Rs. 5,000 million, as per its last audited financial statements; • a systematically important NBFC, registered with the RBI, with a net-worth of more than Rs. 5,000 million, as per its last audited financial statements; and • an intermediary, registered with the SEBI, with a net-worth of more than Rs. 5,000 million, as per its last audited financial statements		Institutional Investor; • a systematically important NBFC, registered with the RBI that is not an Institutional Investor; • an intermediary, registered with the SEBI that is not an Institutional Investor; and • any other person(s) authorised in India to invest in the Units.
Terms of Payment	Full Bid Amount shall be payable at the time of submission of the Anchor Investor Application Form or Strategic Investor Application Form, as the case may be[(4)]		Full Bid Amount shall be blocked by the SCSBs in the bank account of the ASBA Bidder that is specified in the ASBA Form at the time of submission of the ASBA Form.	Full Bid Amount shall be blocked by the SCSBs in the bank account of the ASBA Bidder that is specified in the ASBA Form at the time of submission of the ASBA Form.

(1) *In case of Bids by Strategic Investors, the application value shall be subject to Regulation 2(1)(zza) of the InvIT Regulations.*

(2) *In case of joint Bids, the Bid cum Application Form should contain only the name of the first Bidder whose name should also appear as the first holder of the beneficiary account held in joint names. The signature of only such first Bidder would be required in the Bid cum Application Form and such first Bidder would be deemed to have signed on behalf of the joint holders.*

(3) *The categories of investors specified are based on the investor categories listed in Regulation 2(1)(zza) of the InvIT Regulations and Regulation 106X of the ICDR Regulations. Bidders are advised to consult their own advisors with respect to any restrictions or limitations that may be applicable to them, including any restrictions or limitations in relation to their ability to invest in the Units. By making a Bid (including any revision thereof), the Bidder will be deemed to have represented to the Investment Manager, the Trustee, the GCBRLMs, the BRLMs and the Syndicate Members that it is eligible to participate in the Issue and be Allotted Units under applicable law.*

(4) *If the Issue Price is greater than the Anchor Investor and Strategic Investor Allocation Price, the additional amount being the difference between the Issue Price and the Anchor Investor and Strategic Investor Allocation Price will be payable by the Anchor Investors or Strategic Investors, as the case may be, within two days from the Bid/Issue Closing Date.*

In case of under-subscription in any category, the unsubscribed portion in either category may be Allotted to Bidders in the other category at the discretion of the Investment Manager, in consultation with the GCBRLMs, the BRLMs and the Designated Stock Exchange.

In accordance with the InvIT Regulations, (i) Units Allotted to Anchor Investors in the Anchor Investor Portion shall be locked-in for a period of 30 days from the date of Allotment, and (ii) Units Allotted to Strategic Investors under the Anchor Investor Portion shall be locked-in for a period of one year from the date of Allotment.

Bid/Issue Programme

BID/ISSUE OPENS ON	[●][(1)]
BID/ISSUE CLOSES ON	**[●]**[(2)]

(1) *The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors. The Anchor Investor and Strategic Investor Bid/Issue Period shall be one day prior to the Bid/Issue Opening Date in accordance with the InvIT Regulations.*

(2) *The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider closing the Bid/Issue Period for Institutional Bidders one day prior to the Bid/Issue Closing Date in accordance with the InvIT Regulations.*

An indicative timetable in respect of the Issue is set out below:

Event	Indicative Date
Bid/Issue Opening Date[(1)]	[●]
Bid/Issue Closing Date[(2)]	[●]
Transfer of equity shares held in the Project SPVs from the Sponsor to the Trust and issue of Units to the Sponsor pursuant to the Formation Transactions	[●]
Finalisation of Basis of Allotment with the Designated Stock Exchange	On or about [●]
Initiation of refunds (if any, for Anchor Investors and Strategic Investors)/unblocking of funds from ASBA Accounts	On or about [●]
Credit of Units to demat accounts of Allottees	On or about [●]
Commencement of trading of the Units on the Stock Exchanges	On or about [●]

(1) *The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors. The Anchor Investor and Strategic Investor Bid/Issue Period shall be one day prior to the Bid/Issue Opening Date in accordance with the InvIT Regulations.*

(2) *The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider closing the Bid/Issue Period for Institutional Bidders one day prior to the Bid/Issue Closing Date in accordance with the InvIT Regulations.*

The above timetable is indicative and does not constitute any obligation or liability on the Trust, the Investment Manager, the Trustee, the GCBRLMs or the BRLMs.

While the Investment Manager shall ensure that all steps for the completion of the necessary formalities for the listing and the commencement of trading of the Units on the Stock Exchanges are taken within 12 Working Days of the Bid/Issue Closing Date, the timetable may change due to various factors, including any extension of the Bid/Issue Period by the Investment Manager due to any revision(s) of the Price Band or any delay in receiving the final listing and trading approval from the Stock Exchanges. The commencement of trading of the Units will be entirely at the discretion of the Stock Exchanges and in accordance with the applicable laws.

Except in relation to the Bids received from the Anchor Investors and Strategic Investors, Bids and any revision in Bids shall be accepted **only between 10.00 a.m. and 5.00 p.m.** (Indian Standard Time) during the Bid/Issue Period (except the Bid/Issue Closing Date) at the Bidding Centres and the Designated Branches mentioned on the Bid cum Application Form. Bidders are not allowed to withdraw or lower their Bid (in terms of number of Units or the Bid Amount) at any stage.

It is clarified that Bids not uploaded on the electronic bidding system would be rejected.

Due to limitation of the time available for uploading the Bids on the Bid/Issue Closing Date, Bidders are advised to submit their Bids one day prior to the Bid/Issue Closing Date and, in any case, no later than 1.00 p.m. IST on the Bid/Issue Closing Date. Any time mentioned in this Draft Offer Document is IST. Bidders are cautioned that, in the event a large number of Bids are received on the Bid/Issue Closing Date, some Bids may not get uploaded due to lack of sufficient time. Such Bids that cannot be uploaded will not be considered for allocation under the Issue. Bids will be accepted only on Business Days i.e. Monday to Friday (excluding any public holiday). None among the Trust, the Investment Manager, the Trustee or any member of the Syndicate is liable for any failure in uploading the Bids due to faults in any software/hardware system or otherwise.

The Investment Manager, in consultation with the GCBRLMs and the BRLMs, reserves the right to revise the Price Band during the Bid/Issue Period, in accordance with the InvIT Regulations. However, it is clarified that the Price Band may not be revised more than twice during the Bid/Issue Period.

In case of any revision to the Price Band, the Bid/Issue Period will be extended by at least one Working Day, subject to the total Bid/Issue Period not exceeding 30 days, provided that there shall not be more than two revisions to the Price Band during the Bid/Issue Period. Any revision to the Price Band and the revised Bid/Issue Period, if applicable, will be widely disseminated by notification to the Stock Exchanges during the Bid/Issue Period and by indicating the change on the websites of the Trust, the Sponsor, the Investment Manager and Stock Exchanges.

In case of any discrepancy in the data entered in the electronic book *vis-à-vis* the data contained in the physical Bid cum Application Form, for a particular Bidder, the details as per the Bid file received from the Stock Exchanges will be taken as the final data for the purpose of Allotment. In case of discrepancy in the data entered in the electronic book *vis-à-vis* the data contained in the physical or electronic Bid cum Application Form, for a particular ASBA Bidder, the Registrar to the Issue shall ask for rectified data.

ISSUE PROCEDURE

The following is a summary intended to present a general outline of the procedure relating to the application, payment, Allocation and Allotment of the Units offered pursuant to the Issue. Bidders are advised to consult their own advisors and inform themselves of any restrictions or limitations that may be applicable to them, including any restrictions or limitations in relation to their ability to invest in the Units. By making a Bid (including any revision thereof), the Bidder will be deemed to have represented to the Investment Manager, the Trustee, the GCBRLMs, the BRLMs and the Syndicate Members that it is eligible to participate in the Issue and be Allotted Units under applicable law. Bidders are also advised to make their independent investigations and ensure that their Bids are submitted in accordance with applicable laws and do not exceed the investment limits or maximum number of Units that can be held by them under applicable law or as specified herein.

The Investment Manager, the Trustee, the GCBRLMs, the BRLMs and Syndicate Members do not accept any responsibility for the completeness and accuracy of the information stated in this chapter and are not liable for any amendment, modification or change in the applicable law which may occur after the date hereof.

Book Building Procedure

The Issue is being made through the Book Building Process, wherein not more than 75% of the Issue shall be available for allocation to Institutional Bidders on a proportionate basis, provided that the Investment Manager may, in consultation with the GCBRLMs and the BRLMs, allocate up to 60% of the Institutional Bidder Category to Anchor Investors and Strategic Investors on a discretionary basis in accordance with the InvIT Regulations. Further, not less than 25% of the Issue shall be available for allocation on a proportionate basis to Other Bidders, subject to valid Bids being received at or above the Issue Price.

In case of under-subscription in any category, the unsubscribed portion in either category may be Allotted to Bidders in the other category at the discretion of the Investment Manager, in consultation with the GCBRLMs, the BRLMs and the Designated Stock Exchange.

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

Investors should note that the Units will be Allotted to all successful Bidders only in dematerialised form. The Bid cum Application Forms which do not have the details of the Bidders' depository account, including DP ID, Client ID and PAN, shall be treated as incomplete and will be rejected. Bidders will not have the option of being Allotted Units in physical form.

Bid cum Application Form

Copies of the Bid cum Application Form and the abridged version of the Offer Document will be available with the Designated Intermediaries at the Bidding Centers and at the registered office of the Trust. An electronic copy of the Bid cum Application Form will also be available for download on the websites of the NSE (www.nseindia.com) and the BSE (www.bseindia.com).

Copies of the Anchor Investor Application Form and the Strategic Investor Application Form will be available at the offices of the GCBRLMs and the BRLMs.

All Bidders (other than Anchor Investors and Strategic Investors) shall mandatorily participate in the Issue only through the ASBA process. Anchor Investors and Strategic Investors are not permitted to participate in the Issue through the ASBA process.

ASBA Bidders must provide bank account details and authorisation to block funds in the relevant space provided in the ASBA Form and the ASBA Forms that do not contain such details will be rejected. ASBA Bidders shall ensure that the Bids are made on ASBA Forms bearing the stamp of the Designated Intermediary, submitted at the Bidding Centers only (except in case of electronic ASBA Forms) and the ASBA Forms not bearing such specified stamp are liable to be rejected.

The prescribed color of the Bid cum Application Form for the various categories is as follows

Category	Colour of Bid cum Application Form*
Resident Indians and Eligible NRIs applying on a non-repatriation basis	White
Non-residents applying on a repatriation basis	Blue
Anchor Investors**	White
Strategic Investors**	White

** Excluding electronic Bid cum Application Form.*
*** Bid cum Application Forms for Anchor Investors and Strategic Investors shall be available at the offices of the GCBRLMs and the BRLMs.*

Designated Intermediaries shall submit/deliver the ASBA Forms to the respective SCSB, where the Bidder has a bank account and shall not submit it to any non-SCSB bank or any Escrow Collection Bank.

Bidders do not have the right to withdraw or lower their Bid (in terms of number of Units or the Bid Amount) at any stage.

Participation by associates, affiliates and persons related to the GCBRLMs, BRLMs and Syndicate Members

The GCBRLMs, BRLMs and the Syndicate Members shall not be entitled to subscribe in this Issue in any manner, except towards fulfilling their underwriting obligations.

Further, the GCBRLMs, the BRLMs and any persons related to the GCBRLMs or BRLMs are not permitted to participate in the Issue under the Anchor Investor Portion (except for Mutual Funds, insurance companies and Pension Funds sponsored by the GCBRLMs or the BRLMs or entities related to the GCBRLMs or the BRLM).

However, the associates and affiliates of the GCBRLMs, the BRLMs and the Syndicate Members may Bid for Units in the Issue, either in the Institutional Bidder Category or in the Other Bidder Category, as may be applicable to such Bidders, where the allocation is on a proportionate basis. All categories of investors, including associates or affiliates of the GCBRLMs, the BRLMs and Syndicate Members, shall be treated equally for the purpose of allocation to be made on a proportionate basis.

Bids by Anchor Investors

The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors in the Issue for up to 60% of the Institutional Bidder Category in accordance with the InvIT Regulations. Only Institutional Investors (as defined under Regulation 106X of the ICDR Regulations) and Strategic Investors (as defined under Regulation 2(1)(zza) of the InvIT Regulations) are eligible to invest in the Anchor Investor Portion. The Institutional Bidder Category will be reduced in proportion to allocation under the Anchor Investor Portion. In the event of under-subscription in the Anchor Investor Portion, the balance Units will be added to the Institutional Bidder Category.

Anchor Investors are not permitted to participate in the Issue through the ASBA process.

In accordance with the InvIT Regulations, the key terms for participation by Anchor Investors in the Anchor Investor Portion are provided below:

- Bid cum Application Forms will be made available for Anchor Investors at the offices of the GCBRLMs and the BRLM;

- The Bid must be for a minimum of such number of Units so that the Bid Amount is at least Rs. 100 million;

- The bidding for Anchor Investors will open one day before the Bid/Issue Opening Date and allocation to Anchor Investors shall be completed on the same day;

- The Investment Manager, in consultation with the GCBRLMs and the BRLMs, will finalise allocation to Anchor Investors on a discretionary basis, provided that the minimum and maximum number of Allottees in the Anchor Investor Portion will be, as mentioned below:

- where allocation in the Anchor Investor Portion is up to Rs. 2,500 million, minimum of two Anchor Investors; and

- where the allocation under the Anchor Investor Portion is more than Rs. 2,500 million, minimum of five Anchor Investors.

- Allocation to Anchor Investors will be completed on the Anchor Investor and Strategic Investor Bid/Issue Period;

- The number of Units allocated to Anchor Investors and the price at which the allocation is made will be made available on the website of the Stock Exchanges, the Sponsor, the Investment Manager, the GCBRLMs and the BRLMs before the Bid/Issue Opening Date;

- Anchor Investors cannot withdraw or lower the size of their Bids (in terms of number of Units or the Bid Amount) at any stage after submission of the Bid;

- If the Issue Price is greater than the Anchor Investor and Strategic Investor Allocation Price, the additional amount being the difference between the Issue Price and the Anchor Investor and Strategic Investor Allocation Price will be payable by the Anchor Investors within two days from the Bid/Issue Closing Date. However, if the Issue Price is lower than the Anchor Investor and Strategic Investor Allocation Price, Allotment to successful Anchor Investors will be at the Anchor Investor and Strategic Investor Issue Price;

- In accordance with the InvIT Regulations, the Units Allotted to Anchor Investors in the Anchor Investor Portion shall be locked-in for a period of 30 days from the date of Allotment

- Neither the GCBRLMs nor the BRLMs nor any person related to the GCBRLMs or the BRLMs (except for Mutual Funds, insurance companies and Pension Funds sponsored by the GCBRLMs or the BRLMs or entities related to the GCBRLMs or the BRLM) are permitted to participate in the Anchor Investor Portion; and

- Bids made by Anchor Investors under both the Anchor Investor Portion and the Institutional Bidder category will not be considered multiple Bids.

Bids by Strategic Investors

The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors in the Issue for up to 60% of the Institutional Bidder Category in accordance with the InvIT Regulations. Only Institutional Investors (as defined under Regulation 106X of the ICDR Regulations) and Strategic Investors (as defined under Regulation 2(1)(zza) of the InvIT Regulations) are eligible to invest in the Anchor Investor Portion. The Institutional Bidder Category will be reduced in proportion to allocation under the Anchor Investor Portion. In the event of under-subscription in the Anchor Investor Portion, the balance Units will be added to the Institutional Bidder Category.

Strategic Investors are not permitted to participate in the Issue through the ASBA process.

In accordance with the InvIT Regulations, the key terms for participation by Strategic Investors in the Anchor Investor Portion are provided below:

- Bid cum Application Forms will be made available for Strategic Investors at the offices of the GCBRLMs and the BRLM;

- Bids by Strategic Investors, must together be for a minimum of 5% of the Issue size or such amount as may be specified by SEBI from time to time;

- The bidding for Strategic Investors will open one day before the Bid/Issue Opening Date and allocation to Strategic Investors shall be completed on the same day;

- The Investment Manager, in consultation with the GCBRLMs and the BRLMs, will finalise allocation to Strategic Investors on a discretionary basis;

- Allocation to Strategic Investors will be completed on the Anchor Investor and Strategic Investor Bid/Issue Period;

- The number of Units allocated to Strategic Investors and the price at which the allocation is made will be made available on the website of the Stock Exchanges, the Sponsor, the Investment Manager, the GCBRLMs and the BRLMs before the Bid/Issue Opening Date;

- Strategic Investors cannot withdraw or lower the size of their Bids (in terms of number of Units or the Bid Amount) at any stage after submission of the Bid;

- If the Issue Price is greater than the Anchor Investor and Strategic Investor Allocation Price, the additional amount being the difference between the Issue Price and the Anchor Investor and Strategic Investor Allocation Price will be payable by the Strategic Investors within two days from the Bid/Issue Closing Date. However, if the Issue Price is lower than the Anchor Investor and Strategic Investor Allocation Price, Allotment to successful Strategic Investors will be at the Anchor Investor and Strategic Investor Issue Price;

- In accordance with the InvIT Regulations, the Units Allotted to Strategic Investors will be locked-in for a period of one year from the date of Allotment;

- Neither the GCBRLMs nor the BRLMs nor any person related to the GCBRLMs or the BRLMs (except for Mutual Funds, insurance companies and Pension Funds sponsored by the GCBRLMs or the BRLMs or entities related to the GCBRLMs or the BRLM) are permitted to participate in the Anchor Investor Portion; and

- Bids made by Strategic Investors (where such Strategic Investors are Institutional Investors) under both the Anchor Investor Portion and the Institutional Bidder category will not be considered multiple Bids.

Bids by Eligible NRIs

Eligible NRIs are permitted to participate in the Issue subject to compliance with the applicable restrictions and conditions which may be prescribed by Government from time to time. The RBI had vide its notification No. FEMA.355/2015-RB dated November 16, 2015, made certain amendments to the FEMA Regulations, thereby permitting investment by NRIs in units of infrastructure investment trusts in a manner (and subject to such terms and conditions) specified in Schedule 11 thereof. Payment for the units of an infrastructure investment trust acquired by an Eligible NRI shall be made by an inward remittance through the normal banking channels including by debit to an NRE or an FCNR account.

Eligible NRIs may obtain copies of Bid cum Application Form from the Designated Intermediaries. Eligible NRI Bidders bidding on a repatriation basis should authorize their SCSB to block their Non-Resident External ("**NRE**") accounts, or Foreign Currency Non-Resident ("**FCNR**") accounts, and eligible NRI Bidders bidding on a non-repatriation basis should authorize their SCSB to block their Non-Resident Ordinary ("**NRO**") accounts for the full Bid Amount, at the time of the submission of the Bid cum Application Form. Eligible NRIs Bidding on non-repatriation basis are advised to use the Bid cum Application Form for residents (white in colour). Eligible NRIs Bidding on a repatriation basis are advised to use the Bid cum Application Form meant for Non-Residents (blue in colour).

Bids by FPIs

On January 7, 2014, SEBI notified the FPI Regulations pursuant to which the existing classes of portfolio investors, namely FIIs and QFIs, were subsumed under a new category, namely FPIs. The RBI had vide its notification No. FEMA.355/2015-RB dated November 16, 2015, made certain amendments to the FEMA Regulations, thereby permitting investment by FPIs in units of infrastructure investment trusts in a manner (and subject to such terms and conditions) specified in Schedule 11 thereof. The payment for the units of an infrastructure investment trust acquired by an FPI shall be made by an inward remittance through the normal banking channels including by debit to an NRE or an FCNR account. Further, vide its circular dated March 15,

2016, SEBI has permitted FPIs to invest in units of infrastructure investment trusts subject to compliance with such other terms and conditions as SEBI may prescribe from time to time.

In case of Bids made by FPIs, a verified true copy of the certificate of registration issued by the designated depository participant under the FPI Regulations is required to be attached along with the Bid cum Application form, failing which the Investment Manager, in consultation with the GCBRLMs and the BRLMs, reserves the right to reject the Bid without assigning any reasons thereof.

Bids by SEBI registered VCFs and AIFs

The VCF Regulations, as amended, *inter alia*, prescribe the investment restrictions on VCFs registered with SEBI. Further, the AIF Regulations prescribe, amongst others, the investment restrictions on AIFs. Additionally, VCFs which have not re-registered as an AIF under the AIF Regulations shall continue to be regulated by the SEBI VCF Regulations until the existing fund or scheme managed by the fund is wound up and such funds shall not launch any new scheme after the notification of the AIF Regulations. Additionally, VCFs and AIFs are subject to certain investment restrictions with respect to, *inter-alia*, the percentage of investible funds held in each investee entity.

Allotments made to VCFs and AIFs in the Issue are subject to the rules and regulations that are applicable to each of them respectively, including in relation to any lock-in requirements.

All Non-Resident Bidders including Eligible NRIs and FPIs should note that refunds, dividends and other distributions, if any, will be payable in Indian Rupees only and net of bank charges and / or commission. There is no reservation for NRIs, FPIs and FVCIs and all Bidders will be treated on the same basis with other categories for the purpose of allocation.

Bids by Banking Companies

In case of Bids made by banking companies registered with the RBI, certified copies of (i) the certificate of registration issued by the RBI, and (ii) the approval of such banking company's investment committee are required to be attached to the Bid cum Application Form, failing which, the Investment Manager, reserves the right to reject any Bid without assigning any reason thereof.

Bids by SCSBs

SCSBs participating in the Issue are required to comply with the terms of applicable SEBI circulars and directions. Such SCSBs are required to ensure that for making applications on their own account using ASBA, they should have a separate account in their own name with any other SEBI registered SCSBs. Further, such account shall be used solely for the purpose of making applications in public issues and clear demarcated funds should be available in such account for ASBA applications.

Bids by LLPs

In case of Bids made by limited liability partnerships registered under the Limited Liability Partnership Act, 2008, a certified copy of certificate of registration issued under the Limited Liability Partnership Act, 2008, must be attached to the Bid cum Application Form. Failing this, the Investment Manager reserves the right to reject any Bid without assigning any reason thereof.

Bids by Provident Funds/Pension Funds

On March 2, 2015 the Ministry of Finance has issued a notification allowing investments by non-government provident funds, super-annuation funds and gratuity funds up to 5% in infrastructure investment trusts. On May 29, 2015, the Ministry of Labour and Employment has issued a notification allowing investments by provident funds up to 5% in infrastructure investment trusts. On September 2, 2015, the Pension Fund Regulatory and Development Authority and Employment has issued a circular allowing investments by pension funds up to 5% in infrastructure investment trusts. However such investments by provident funds and pension funds will be subject to the sponsor having a minimum of AA or equivalent rating from at least two credit rating agencies registered with SEBI. In case of Bids made by provident funds/ pension funds, subject to applicable laws, with minimum corpus of Rs. 250 million, a certified copy of certificate from a chartered accountant certifying the corpus of the provident fund/pension fund must be attached to the Bid cum Application Form. Failing this, the Investment Manager reserves the right to reject any Bid without assigning any reason thereof.

Bids under Power of Attorney

In case of Bids made pursuant to a power of attorney or by limited companies, corporate bodies, registered societies, FPIs and provident funds with a minimum corpus of Rs. 250 million and pension funds with a minimum corpus of Rs. 250 million (in each case, subject to applicable law and in accordance with their respective constitutional documents), a certified copy of the power of attorney or the relevant resolution or authority, as the case may be, along with a certified copy of the memorandum of association and articles of association and/or bye laws, as applicable must be lodged along with the Bid cum Application Form. Failing this, the Investment Manager, the GCBRLMs and the BRLMs, severally and jointly, reserve the right to reject any Bid without assigning any reason thereof.

The above information is given for the benefit of the Bidders. Each Bidder should check whether it is eligible to apply under applicable law and ensure that any prospective Allotment to it in the Issue is in compliance with the investment restrictions under applicable law. Certain categories of Bidders may not be allowed to Bid in the Issue or hold Units exceeding certain limits specified under applicable law.

The Trust, the Investment Manager, the Trustee, the GCBRLMs and the BRLMs are not liable for any amendments or modification or changes in applicable laws or regulations, which may occur after the date hereof. Bidders are advised to make their independent investigations and ensure that any single Bid from them does not exceed the applicable investment limits or maximum number of the Units that can be held by them under applicable law or regulation or as specified herein.

Pre-Issue Advertisement

The Investment Manager shall, after filing the Offer Document with SEBI, make a pre-Issue advertisement on the website of the Trust, the Sponsor, the Investment Manager and the Stock Exchanges.

Price Band

The Price Band and the minimum Bid Lot will be decided by the Investment Manager, in consultation with the GCBRLMs and the BRLMs, and will be announced at least five Working Days prior to the Bid/Issue Opening Date, on the website of the Trust, the Sponsor and the Investment Manager, and shall be made available to the Stock Exchanges for the purpose of uploading on their respective websites.

Differential price shall not be offered to any investor. The Floor Price or Price Band and the relevant financial ratios computed for both the upper and lower end of the Price Band shall be disclosed on the websites of the Stock Exchanges. The Floor Price or Price Band shall be pre-filled in the Bid cum Application Forms available at the website of the Stock Exchanges.

The Investment Manager, in consultation with the GCBRLMs and the BRLMs and without the prior approval of, or intimation, to the Bidders, reserves the right to revise the Price Band during the Bid/Issue Period, provided that there shall not be more than two revisions to the Price Band during the Bid/Issue Period.

Issue Period

The Issue shall be kept open for at least three Working Days and not more than thirty days. Bidders are advised to refer to the Bid cum Application Form and the abridged version of the Offer Document or the Offer Document for details of the Bid/Issue Period. Details of Bid/Issue Period shall also be available on the website of the Stock Exchanges.

The Investment Manager may, in consultation with the GCBRLMs and the BRLMs, consider participation by Anchor Investors and Strategic Investors. Bidding for Anchor Investors and Strategic Investors will open one day before the Bid/Issue Opening Date and allocation to Anchor Investors and Strategic Investors, if any, shall be completed on the same day.

In case of any revision to the Price Band, the Bid/Issue Period will be extended by at least one Working Day, subject to the total Bid/Issue Period not exceeding 30 days, provided that there shall not be more than two revisions to the Price Band during the Bid/Issue Period. Any revision to the Price Band and the revised Bid/Issue Period, if

applicable, will be widely disseminated by notification to the Stock Exchanges during the Bid/Issue Period and by indicating the change on the websites of the Trust, the Sponsor, the Investment Manager and Stock Exchanges.

The Investment Manager, in consultation with the GCBRLMs and the BRLMs, may decide to close the Bidding by Institutional Bidders one day prior to the Bid/Issue Closing Date, subject to the condition that the total Bid/Issue Period shall be kept open for a minimum of three days for all categories of Bidders.

Submission of Bid cum Application Forms or Revision Forms

Bidders may submit completed Bid cum Application Forms/Revision Forms in the following manner:

Mode of Application	Submission of Bid cum Application Form/Revision Form
Anchor Investor Application Forms	To the GCBRLMs or the BRLMs at the locations mentioned in the Anchor Investor Application Form
Strategic Investor Application Forms	To the GCBRLMs or the BRLMs at the locations mentioned in the Strategic Investor Application Form
ASBA Forms	(i) To members of the Syndicate in the Specified Locations or Registered Brokers at the Broker Centres or the RTA at the Designated RTA Location or the DP at the Designated DP Location; or (ii) Designated branches of the SCSBs where the ASBA Account is maintained.

Bidders should not submit the Bid cum Application Forms/Revision Form directly to the Escrow Collection Banks. Bid cum Application Forms/Revision Forms submitted to the Escrow Collection Banks are liable for rejection. Bidders should submit the Revision Form to the same Designated Intermediary through which such Bidder had placed the original Bid.

Maximum and Minimum Bid Size

The Bid must be for a minimum of such number of Units such that the Bid Amount exceeds Rs.1 million and in multiples of [●] Units thereafter. A Bid cannot be submitted for more than the Issue size. The maximum Bid by any Bidder including Institutional Bidders should not exceed the investment limits prescribed for them under the applicable laws.

The price and quantity options submitted by the Bidder in the Bid cum Application Form may be treated as optional bids from the Bidder and may not be cumulated. After determination of the Issue Price, the highest number of Units Bid for by a Bidder at or above the Issue Price may be considered for Allotment and the rest of the Bid(s), irrespective of the Bid Amount may automatically become invalid.

Payment Details

The full Bid Amount shall be blocked in the ASBA Account based on the authorisation provided in the ASBA Form. All Bidders (except Anchor Investors) have to participate in the Issue only through the ASBA mechanism. Bid Amount cannot be paid in cash, through money order or through postal order.

Payment into Escrow Account for Anchor Investors

The Investment Manager, in consultation with the GCBRLMs and the BRLMs, in its absolute discretion, will decide the list of Anchor Investors and Strategic Investors to whom the CAN will be sent, pursuant to which the details of the Units allocated to them in their respective names will be notified to such Anchor Investors and Strategic Investors. For Anchor Investors and Strategic Investors, the payment instruments for payment into the Escrow Account should be drawn in favour of:

a) In case of resident Anchor Investors and Strategic Investors: "*[●]*"; or

b) In case of non-resident Anchor Investors and Strategic Investors: "*[●]*".

Instructions for Anchor Investors and Strategic Investors

a) Anchor Investors and Strategic Investors may submit their Bids with a GCBRLMs or BRLM;

b) Payments should be made either by RTGS or NEFT; and

c) The Escrow Collection Banks shall maintain the monies in the Escrow Account for and on behalf of the Anchor Investors and Strategic Investors until the Designated Date.

Instructions for ASBA Bidders

a) Bidders may submit the ASBA Form either:

   i) in electronic mode through the internet banking facility offered by an SCSB authorizing blocking of funds that are available in the ASBA account specified in the Bid cum Application Form, or

   ii) in physical mode to any Designated Intermediary.

b) Bidders must specify the Bank Account number in the Bid cum Application Form. The Bid cum Application Form submitted by Bidder and which is accompanied by cash, demand draft, cheque, money order, postal order or any mode of payment other than blocked amounts in the ASBA Account maintained with an SCSB, will not be accepted;

c) Bidders should ensure that the Bid cum Application Form is also signed by the ASBA Account holder(s) if the Bidder is not the ASBA Account holder;

d) Bidders shall note that for the purpose of blocking funds under ASBA facility clearly demarcated funds shall be available in the account;

e) From one ASBA Account, a maximum of five Bids cum Application Forms can be submitted;

f) Bidders should submit the Bid cum Application Form only at the Bidding Centers, i.e. to the respective member of the Syndicate at the Specified Locations, the SCSBs, the Registered Broker at the Broker Centres, the RTA at the Designated RTA Locations or CDP at the Designated CDP Locations;

g) Bidders bidding through a Designated Intermediary, other than an SCSB, should note that ASBA Forms submitted to such Designated Intermediary may not be accepted, if the SCSB where the ASBA Account, as specified in the Bid cum Application Form, is maintained has not named at least one branch at that location for such Designated Intermediary, to deposit ASBA Forms;

h) Bidders bidding directly through the SCSBs should ensure that the ASBA Form is submitted to a Designated Branch of a SCSB where the ASBA Account is maintained;

i) Upon receipt of the ASBA Form, the Designated Branch of the SCSB may verify if sufficient funds equal to the Bid Amount are available in the ASBA Account, as mentioned in the Bid cum Application Form;

j) If sufficient funds are available in the ASBA Account, the SCSB may block an amount equivalent to the Bid Amount mentioned in the ASBA Form and for application directly submitted to SCSB by investor, may enter each Bid option into the electronic bidding system as a separate Bid;

k) If sufficient funds are not available in the ASBA Account, the Designated Branch of the SCSB may not accept such Bids and such Bids are liable to be rejected;

l) Upon submission of a completed ASBA Form each Bidder may be deemed to have agreed to block the entire Bid Amount and authorized the Designated Branch of the SCSB to block the Bid Amount specified in the ASBA Form in the ASBA Account maintained with the SCSBs;

m) The Bid Amount may remain blocked in the aforesaid ASBA Account until finalisation of the Basis of Allotment and consequent transfer of the Bid Amount against the Allotted Units to the Public Issue Account, or until withdrawal or failure of the Issue, or until withdrawal or rejection of the Bid, as the case may be; and

n) SCSBs bidding in the Issue must apply through an Account maintained with any other SCSB; else their Bids are liable to be rejected.

General Instructions

Do's

a) Check if you are eligible to apply as per the terms of the Offer Document and under applicable law, rules, regulations, guidelines and approvals;

b) Ensure that you have Bid within the Price Band;

c) Read all the instructions carefully and complete the Bid cum Application Form in the prescribed form;

d) Ensure that you have mentioned the correct ASBA Account number in the Bid cum Application Form;

e) Ensure that your Bid cum Application Form bearing the stamp of a Designated Intermediary is submitted to the Designated Intermediary at the Bidding Center within the prescribed time;

f) Ensure that you have funds equal to the Bid Amount in the ASBA Account maintained with the SCSB before submitting the ASBA Form to any of the Designated Intermediaries;

g) If the first applicant is not the bank account holder, ensure that the Bid cum Application Form is signed by the account holder. Ensure that you have mentioned the correct bank account number in the Bid cum Application Form;

h) Ensure that the signature of the First Bidder in case of joint Bids, is included in the Bid cum Application Forms;

i) In case of joint Bids, the Bid cum Application Form should contain the name of only the First Bidder whose name should also appear as the first holder of the beneficiary account held in joint names;

j) Ensure that the PAN (of the sole/first Bidder) provided in the Bid cum Application Form is exactly the same as the PAN of the person(s) in whose name the relevant beneficiary account is held;

k) If the Bid cum Application Form was submitted in joint names, Bidders are required to ensure that the beneficiary account was held in the same joint names in the same sequence in which they appeared in the Bid cum Application Form;

l) Ensure that you request for and receive a stamped acknowledgement of the Bid cum Application Form for all your Bid options;

m) Ensure that you submit the revised Bids to the same Designated Intermediary, through whom the original Bid was placed and obtain a revised acknowledgment;

n) Except for Bids (i) on behalf of the Central or State Governments and the officials appointed by the courts, who, in terms of the SEBI circular dated June 30, 2008, may be exempt from specifying their PAN for transacting in the securities market, and (ii) Bids by persons resident in the state of Sikkim, who, in terms of a SEBI circular dated July 20, 2006, may be exempted from specifying their PAN for transacting in the securities market, all Bidders should mention their PAN allotted under the Income Tax Act. The exemption for the Central or the State Government and officials appointed by the courts and for investors residing in the State of Sikkim is subject to (a) the demographic details received from the respective depositories confirming the exemption granted to the beneficiary owner by a suitable description in the PAN field and the beneficiary account remaining in "active status"; and (b) in the case of residents of Sikkim, the address

as per the demographic details evidencing the same. All other applications in which PAN is not mentioned will be rejected;

o) Ensure that thumb impressions and signatures other than in the languages specified in the Eighth Schedule to the Constitution of India are attested by a Magistrate or a Notary Public or a Special Executive Magistrate under official seal;

p) Ensure that the category and the investor status is indicated;

q) Ensure that in case of Bids under power of attorney or by limited companies, corporates, trust, etc., relevant documents are submitted;

r) Ensure that Bids submitted by any person outside India are in compliance with applicable foreign and Indian laws;

s) With respect to Bids by SCSBs, ensure that you have a separate account in your own name with any other SCSB having clear demarcated funds for applying under the ASBA process and that such separate account (with any other SCSB) is used as the ASBA Account with respect to your Bid;

t) Do not Bid if you are the Valuers or any of its employees involved in valuing of the Trust Assets;

u) Ensure that the demographic details with the Depositories are updated, true and correct in all respects;

v) Ensure that the Depository account is active, the correct DP ID, Client ID and the PAN are mentioned in their Bid cum Application Form and that the name of the Bidder, the DP ID, Client ID and the PAN entered into the online IPO system of the Stock Exchanges by the relevant Designated Intermediary, as applicable, matches with the name, DP ID, Client ID and PAN available in the Depository database; and

w) Ensure that you have correctly signed the authorisation/undertaking box in the Bid cum Application Form, or have otherwise provided an authorisation to the SCSB via the electronic mode, for blocking funds in the ASBA Account equivalent to the Bid Amount mentioned in the Bid cum Application Form at the time of submission of the Bid.

The Bid cum Application Form is liable to be rejected if the above instructions, as applicable, are not complied with.

Don'ts:

a) Do not Bid for lower than the minimum Bid size such that the Bid Amount is less than Rs.1 million;

b) Do not pay the Bid Amount in cheques, demand drafts or by cash, by money order or postal order;

c) Do not send Bid cum Application Forms by post; instead submit the same to the Designated Intermediary only;

d) Do not instruct your respective banks to release the funds blocked in the ASBA Account under the ASBA process;

e) Do not submit the Bid for an amount more than funds available in your ASBA account;

f) Do not submit Bids on plain paper or on incomplete or illegible Bid cum Application Forms or on Bid cum Application Forms in a colour prescribed for another category of Bidder;

g) Do not submit a Bid in case you are not eligible to acquire Units under applicable law or your relevant constitutional documents or otherwise

h) Do not fill up the Bid cum Application Form such that the Units Bid for exceeds the Issue size and/or investment limit or maximum number of Units that can be held under the applicable laws or regulations or maximum amount permissible under the applicable regulations or under the terms of the Offer Document;

i) Do not submit incorrect details of the DP ID, Client ID and PAN or provide details for a beneficiary account which is suspended or for which details cannot be verified by the Registrar to the Issue;

j) Do not submit your Bid after 1.00 pm on the Bid/Issue Closing Date;

k) Do not Bid if you are not competent to contract under the Indian Contract Act, 1872 (other than minors having valid depository accounts as per demographic details provided by the Depository);

l) Do not Bid/revise the Bid lower than the Floor Price or above the Cap Price; and

m) Do not withdraw your Bid or lower the size of your Bid (in terms of quantity of the Units or the Bid Amount) at any stage.

The Bid cum Application Form is liable to be rejected if the above instructions, as applicable, are not complied with.

Grounds for Technical Rejections

Bidders are advised that incomplete or illegible Bid cum Application Forms will be rejected by Designated Intermediaries. Bidders are advised to note that Bids are liable to be rejected on technical grounds including the following:

a) Bids made by Strategic Investors in the Strategic Investor Portion in the event that the cumulative Bids made by Strategic Investors in the Issue is less than 5% of the Issue size or such amount as may be specified by the SEBI from time to time;

b) The amounts mentioned in the Bid cum Application Form does not tally with the amount payable for the value of the Units Bid for;

c) Application on plain paper;

d) In case of partnership firms, Units may be registered in the names of the individual partners and no firm as such will be entitled to apply;

e) Bid by persons not competent to contract under the Indian Contract Act, 1872, as amended, including minors;

f) PAN not stated (except for Bids on behalf of the Central or State Government, residents of Sikkim and the officials appointed by the courts);

g) GIR number furnished instead of PAN;

h) Where PAN details are not verified by demat accounts, i.e., where the demat account is "suspended for credit";

i) Bids for lower value of Units than specified for that category of Bidders;

j) Bids at a price less than the Floor Price;

k) Bids at a price over the Cap Price;

l) Submission of more than five Bid cum Application Forms per ASBA Account;

m) Bids for a value of less than Rs. 1 million;

n) Bidder category not specified;

o) Multiple Bids as described in the Offer Document;

p) In case of Bids under power of attorney or by limited companies, corporate, trust etc., relevant documents not being submitted;

q) Bids accompanied by cash, stock invest, money order or postal order;

r) Signature of sole and/or the First Bidder (in case of joint Bids) is missing;

s) The Bid cum Application form not being signed by the ASBA Account holder, if the ASBA Account holder is different from the Bidder;

t) Bid cum Application Form does not have the stamp of a Designated Intermediary (except for electronic ASBA Bids), as the case may be;

u) Bid cum Application Forms are not submitted within the time prescribed as per the Bid cum Application Form, Bid/Issue Opening Date advertisement and the Offer Document and as per the instructions in the Offer Document and the Bid cum Application Forms;

v) Inadequate funds in the ASBA Account to block the Bid Amount specified in the Bid cum Application Form at the time of blocking such Bid Amount in the ASBA Account;

w) Authorisation for blocking funds in the ASBA Account not provided;

x) Bids for amounts greater than the maximum permissible amounts prescribed by Applicable Law;

y) Bids by OCBs;

z) Bids by persons in the United States other than "qualified institutional buyers" as defined in Rule 144A under the U.S. Securities Act;

aa) Bank account details for the refund not given in case of Bids by Anchor Investors and Strategic Investors;

bb) Bids by persons prohibited from buying, selling or dealing in the Units directly or indirectly by SEBI or any other regulatory authority;

cc) Bids by persons who are not eligible to acquire Units under applicable law or their relevant constitutional documents or otherwise; and

dd) Bids that do not comply with the securities laws of their respective jurisdictions.

Build-up of the Book and Revision of Bids

Bidders shall submit their Bids within the Bid/Issue Period. An amount to the extent of entire application money shall be collected or blocked, as the case may be, from a Bidder before a Bid is accepted an order is placed on its behalf. The payment accompanied with any revision of Bid, shall be adjusted against the payment made at the time of the original Bid or the previously revised Bid. However, Bidders are not allowed to withdraw or lower their Bid (in terms of number of Units or the Bid Amount) at any stage.

The Bidding process shall be conducted through an electronically linked transparent bidding facility provided by a recognised stock exchange. The bidding terminals shall contain an online graphical display of demand and bid prices updated at periodic intervals, not exceeding thirty minutes. The Stock Exchanges shall continue to display on their website, the data pertaining to the Issue in a uniform format, *inter alia* giving category-wise details of Bids received, for a period of at least three days after Bid/Issue Closing Date.

Price Discovery and Allocation

- Based on the Bids received and demand generated at various price levels, the Investment Manager, in consultation with the GCBRLMs and the BRLMs, will determine the Issue Price and the Anchor Investor and Strategic Investor Issue Price.

- Once the Issue Price is determined, all successful Bidders (i.e. whose Bids have been found to be at and above the Issue Price) shall be entitled for Allotment of the Units.

- In case of under-subscription in any category, the unsubscribed portion in either category may be Allotted to Bidders in the other category at the discretion of the Investment Manager, in consultation with the GCBRLMs, the BRLMs and the Designated Stock Exchange.

- Allocation to Non-Residents, including Eligible NRIs and FPIs will be subject to applicable law, rules, regulations, guidelines and approvals.

- Allocation to Anchor Investors and Strategic Investors shall be at the discretion of the Investment Manager, in consultation with the GCBRLMs and the BRLMs, subject to compliance with the InvIT Regulations.

- The Investment Manager, in consultation with the GCBRLMs and the BRLMs, may reject a Bid placed by a QIB for reasons to be recorded in writing, provided that such rejection shall be made at the time of acceptance of the Bid and the reasons therefore shall be disclosed to the bidders.

Withdrawal of the Issue

The Investment Manager, in consultation with the GCBRLMs and the BRLMs, reserves the right not to proceed with the Issue, in whole or any part thereof after the Bid/Issue Opening Date but before the Allotment. In the event that the Investment Manager, in consultation with the GCBRLMs and the BRLMs, decides not to proceed with the Issue at all, the Investment Manager shall issue a public notice on the website of the Trust, the Sponsor and the Investment Manager, within six days of the Bid/Issue Closing Date, or such other time as may be prescribed by SEBI in this regard. The GCBRLMs and the BRLMs, through the Registrar to the Issue, shall notify the SCSBs to unblock the bank accounts of the ASBA Bidders within one Working Day from the date of receipt of such notification. The Investment Manager shall also inform the same to the Stock Exchanges.

If the Investment Manager withdraws the Issue after the Bid/Issue Closing Date and thereafter determines that it will proceed with a fresh issue of the Units, the Investment Manager shall file a fresh draft offer document with SEBI. Notwithstanding the foregoing, the Issue is also subject to obtaining the final listing and trading approvals of the Stock Exchanges, which the Trust shall apply for after Allotment.

Basis of Allotment

The Allotment of Units to Bidders other than Anchor Investors and Strategic Investors shall be on a proportionate basis within the specified investor categories and the number of Units Allotted shall be rounded off to the nearest integer, subject to minimum Allotment as per InvIT Regulations.

A. Allotment to Institutional Bidders (other than Anchor Investors and Strategic Investors)

a) Bids received from Institutional Bidders at or above the Issue Price shall be grouped together to determine the total demand under this category. The Allotment to all the successful Institutional Bidders will be made at the Issue Price.

b) The Institutional Bidder Category will be available for Allotment to Institutional Bidders who have Bid in the Issue at a price that is equal to or greater than the Issue Price.

c) The Issue size less Allotment to Other Bidders will be available for Allotment to Institutional Bidders who have Bid in the Issue at a price that is equal to or greater than the Issue Price. The aggregate Allotment to Institutional Bidders shall be not more than 75% of the Issue.

d) If the aggregate demand in this category is less than or equal to [●] Units at or above the Issue Price, full Allotment shall be made to Institutional Bidders to the extent of their demand.

e) In case the aggregate demand in this category is greater than [●] Units at or above the Issue Price, Allotment shall be made on a proportionate basis up to a minimum of [●] Units, and in multiples of [●] Units thereafter.

f) The identity of Institutional Bidders (other than Anchor Investors and Strategic Investors) shall not be made public.

B. Allotment to Other Bidders

a) Bids received from Other Bidders at or above the Issue Price shall be grouped together to determine the total demand under this category. The Allotment to all the successful Other Bidders will be made at the Issue Price finalized by the Investment Manager, in consultation with the GCBRLMs and the BRLMs.

b) The Other Bidder Category will be available for Allotment to Other Bidders who have Bid in the Issue at a price that is equal to or greater than the Issue Price.

c) The aggregate Allocation to Other Bidders shall be not less than 25% of the Issue, subject to valid Bids being received from them at or above the Issue Price.

d) If the aggregate demand in this category is less than or equal to [●] Units at or above the Issue Price, full Allotment shall be made to Other Bidders to the extent of their demand.

e) In case the aggregate demand in this category is greater than [●] Units at or above the Issue Price, Allotment shall be made on a proportionate basis up to a minimum of the Other Bidder Category.

C. Allotment to Anchor Investors (if applicable)

a) Allocation of Units to Anchor Investors at the Anchor Investor and Strategic Investor Issue Price will be at the discretion of the Investment Manager, in consultation with the GCBRLMs and the BRLMs, subject to compliance with the following requirements:

- Not more than 60% of the Institutional Bidder Category will be Allocated to Anchor Investors;
- Allocation to Anchor Investors shall be in discretionary basis and subject to:
  - a minimum of two Anchor Investors for allocation of up to Rs. 2,500 million; and
  - a minimum of five Anchor Investors for allocation of more than Rs. 2,500 million.
- The identity of Anchor Investors shall be made public.

b) An Anchor Investor shall make an application of a value of at least Rs. 100 million in the Issue.

c) A physical book is prepared by the Registrar on the basis of the Anchor Investor Application Forms received from Anchor Investors. Based on the physical book and at the discretion of the Investment Manager, in consultation with the GCBRLMs and the BRLMs, selected Anchor Investors will be sent a CAN and if required, a revised CAN.

d) **In the event that the Issue Price is higher than the Anchor Investor and Strategic Investor Issue Price:** Anchor Investors will be sent a revised CAN within one day of the Pricing Date indicating the number of Units allocated to such Anchor Investor and the pay-in date for payment of the balance amount. Anchor Investors are then required to pay any additional amounts, being the difference between the Issue Price and the Anchor Investor and Strategic Investor Issue Price, as indicated in the revised CAN within the pay-in date referred to in the revised CAN. Thereafter, the Allotment Advice will be issued to such Anchor Investors.

e) **In the event the Issue Price is lower than the Anchor Investor and Strategic Investor Issue Price:** Anchor Investors who have been Allotted Units will directly receive Allotment Advice.

D. Allotment to Strategic Investors (if applicable)

a) Allocation of Units to Strategic Investors at the Anchor Investor and Strategic Investor Issue Price will be at the discretion of the Investment Manager, in consultation with the GCBRLMs and the BRLMs, subject to compliance with the following requirements:

- Not less than 5% of the Issue size will together be Allocated to Strategic Investors;
- Not more than 60% of the Institutional Bidder Category will be Allocated to Strategic Investors;
- The identity of Strategic Investors shall be made public.

b) Strategic Investors shall together make an application for not less than 5% of the Issue size, subject to such application being of a value of at least Rs. 100 million.

c) A physical book is prepared by the Registrar to the Issue on the basis of the Strategic Investor Application Forms received from Strategic Investors. Based on the physical book and at the discretion of the Investment Manager, in consultation with the GCBRLMs and the BRLMs, selected Strategic Investors will be sent a CAN and if required, a revised CAN.

d) **In the event that the Issue Price is higher than the Anchor Investor and Strategic Investor Issue Price:** Strategic Investors will be sent a revised CAN within one day of the Pricing Date indicating the number of Units allocated to such Strategic Investor and the pay-in date for payment of the balance amount. Strategic Investors are then required to pay any additional amounts, being the difference between the Issue Price and the Anchor Investor and Strategic Investor Issue Price, as indicated in the revised CAN within the pay-in date referred to in the revised CAN. Thereafter, the Allotment Advice will be issued to such Strategic Investors.

e) **In the event the Issue Price is lower than the Anchor Investor and Strategic Investor Issue Price:** Strategic Investors who have been Allotted Units will directly receive Allotment Advice.

The Investment Manager, the GCBRLMs and the BRLMs, shall finalise the Basis of Allotment in consultation with the Designated Stock Exchange. The authorized representatives of the Designated Stock Exchange along with the GCBRLMs and the BRLMs, the Investment Manager and the Registrar to the Issue shall ensure that the Basis of Allotment is finalized in a fair and proper manner.

Designated Date and Allotment Advice

Designated Date

On the Designated Date, the Escrow Collection Banks shall transfer the funds represented by allocation of Units to Anchor Investors and Strategic Investors from the Escrow Account, as per the terms of the Escrow Agreement, into the Public Issue Account with the Public Issue Account Bank(s). The balance amount after transfer to the Public Issue Account shall be transferred to the Refund Account. Payments of refund to the Bidders applying in the Anchor Investor Portion shall be made from the Refund Account as per the terms of the Escrow Agreement and the Offer Document. On the Designated Date, the Registrar to the Issue shall instruct the SCSBs to transfer funds represented by allocation of Units from ASBA Accounts into the Public Issue Account.

Issuance of Allotment Advice

Upon the finalization of the Basis of Allotment, the Investment Manager shall undertake the necessary action to facilitate the Allotment and credit of Units. Bidders are advised to instruct their Depository Participant to accept the Units that may be Allotted to them pursuant to the Issue. Pursuant to confirmation of such actions, the Registrar will dispatch Allotment Advice to the Bidders who have been Allotted Units in the Issue. The dispatch of Allotment Advice shall be deemed a valid, binding and irrevocable contract.

The Investment Manager will ensure that the Allotment of Units will be completed within 12 Working Days of the Bid/Issue Closing Date

Interest and Refunds

Non-Receipt of Listing and Trading Permission

If the listing and trading approvals with respect to the Units are not granted by both Stock Exchanges, the Investment Manager (on behalf of the Trust) shall forthwith repay all moneys received from the Bidders in

pursuance of the Offer Document, in such manner and within such time as prescribed under the InvIT Regulations. Further, in such a case, the Trust shall be liable to refund the subscription moneys, if any, to the respective Allottees, immediately, along with interest at 15% per annum from the date of Allotment.

Withdrawal of SEBI's Observation Letter

In the event of withdrawal of SEBI's observation letter, the Units shall not be eligible for listing and the Trust shall be liable to refund the subscription moneys, if any, to the respective Allottees, immediately, along with interest at 15% per annum from the date of Allotment.

Non-Receipt of Minimum Subscription or Failure to make Minimum Allotment

In case of a failure to receive the minimum subscription of 90% of the Issue (including devolvement of Underwriters) or in case minimum Allotment of at least 25% of the total outstanding Units on a post-Issue basis cannot made or if the number of prospective Allottees is less than 20, the Investment Manager shall forthwith refund the entire subscription amount received.

Mode of Refund

a) **In case of ASBA Bids:** Within 12 Working Days of the Bid/Issue Closing Date, the Registrar to the Issue may give instructions to SCSBs for unblocking the amount in ASBA Account on unsuccessful Bids and also for any excess amount blocked on Bidding.

b) **In case of Anchor Investors and Strategic Anchors:** Within 12 Working Days of the Bid/Issue Closing Date, the Registrar to the Issue may dispatch the refund orders for all amounts payable to unsuccessful Anchor Investors and Strategic Investors.

c) In case of Anchor Investors and Strategic Investors, the Registrar to the Issue may obtain from the depositories the Bidders' bank account details, including the MICR code, on the basis of the DP ID, Client ID and PAN provided by the Anchor Investors in their Anchor Investor Application Forms and the Strategic Investors in their Strategic Investor Application Forms, for refunds. Accordingly, Anchor Investors and Strategic Investors are advised to immediately update their details as appearing on the records of their DPs. Failure to do so may result in delays in dispatch of refund orders or refunds through electronic transfer of funds, as applicable, and any such delay may be at the sole risk of such Anchor Investor or Strategic Investor, as the case may be, and neither the Trust, the Investment Manager, the Trustee, the Registrar to the Issue, the Escrow Collection Banks, or the Syndicate, may be liable to compensate the Anchor Investors or Strategic Investors, as the case may be, for any losses caused to them due to any such delay, or liable to pay any interest for such delay. Hence, Anchor Investors and Strategic Investors should carefully fill in their Depository Account details in the Bid cum Application Form.

d) In the case of Bids from non-resident Bidders, refunds, if any, will only generally be payable in Indian Rupees only and net of bank charges and/or commission. The Trust, the Investment Manager and the Trustee may not be responsible for loss, if any, incurred by the Bidder/Applicant on account of conversion of foreign currency.

Electronic mode of making refunds for Anchor Investors and Strategic Investors

The payment of refund, if any, may be done through various electronic modes as mentioned below:

a) **NEFT:** Payment of refund may be undertaken through NEFT wherever the branch of the Anchor Investor's bank or Strategic Investor's bank is NEFT enabled and has been assigned the Indian Financial System Code ("**IFSC**"), which can be linked to the MICR of that particular branch. The IFSC Code may be obtained from the website of RBI as at a date prior to the date of payment of refund, duly mapped with MICR numbers. Wherever the Anchor Investors and Strategic Investors have registered their nine-digit MICR number and their bank account number while opening and operating the demat account, the same may be duly mapped with the IFSC Code of that particular bank branch and the payment of refund may be made to the Anchor Investors or Strategic Investors, as the case may be, through this method. In the event NEFT is not operationally feasible, the payment of refunds may be made through any one of the other modes as discussed in this section;

b) **RTGS:** Anchor Investors and Strategic Investors having a bank account at any of the centres notified by SEBI where clearing houses are managed by the RBI, may have the option to receive refunds, if any, through RTGS;

c) **Direct Credit:** Anchor Investors and Strategic Investors having their bank account with the Refund Banker may be eligible to receive refunds, if any, through direct credit to such bank account

For details of levy of charges, if any, for any of the above methods, Anchor Investors and Strategic Investors may refer to the Offer Document/Final Offer Document. All such charges shall be borne by such Anchor Investors and Strategic Investors.

Unblocking of ASBA Accounts

Once the Basis of Allotment is finalized by the Designated Stock Exchange, the Registrar to the Issue may provide the following details to the controlling branches of each SCSB, along with instructions to unblock the relevant bank accounts and for successful applications transfer the requisite money to the Public Issue Account designated for this purpose, within the specified timelines:

i) the number of Units to be Allotted against each Bid;

ii) the amount to be transferred from the relevant bank account to the Public Issue Account, for each Bid;

iii) the date by which funds referred to in (ii) above may be transferred to the Public Issue Account; and

iv) details of rejected Bids, if any, along with reasons for rejection and details of withdrawn or unsuccessful Bids, if any, to enable the SCSBs to unblock the respective bank accounts.

On the basis of instructions from the Registrar to the Issue, the SCSBs may transfer the requisite amount against each successful Bidder to the Public Issue Account and may unblock the excess amount, if any, in the ASBA Account. In the event of withdrawal or rejection of the ASBA Form and for unsuccessful Bids, the Registrar to the Issue may give instructions to the SCSB to unblock the Bid Amount in the relevant ASBA Account within 12 Working Days of the Bid/Issue Closing Date.

Interest

The Investment Manager shall pay interest at the rate of 15% per annum if refund orders are not dispatched or if, in a case where the refund or portion thereof is made in electronic manner, the refund instructions have not been given to the clearing system in the disclosed manner and/or demat credits are not made to Bidders or instructions for unblocking of funds in the ASBA Account are not dispatched within the 12 Working Days of the Bid/Issue Closing Date.

The Investment Manager may pay interest at 15% per annum for any delay beyond 12 Working Days from the Bid/Issue Closing Date, if Allotment is not made.

Underwriting Agreement

The Trustee (acting on behalf of the Trust), the Investment Manager and the Syndicate Members may enter into an Underwriting Agreement after the finalisation of the Issue Price. Pursuant to the terms of the Underwriting Agreement, the obligations of the Underwriters will be several and will be subject to certain conditions specified therein.

The Underwriters have indicated their intention to underwrite the following number of Units:

(This portion has been intentionally left blank and will be completed before filing the Final Offer Document)

Name, address, telephone number, fax number and e-mail address of the Underwriters	Indicative number of Units to be underwritten	Amount underwritten (Rs. in Million)
[●]	[●]	[●]

The above-mentioned is indicative underwriting and will be finalised after pricing and actual allocation and subject to the provisions of the InvIT Regulations.

Final Offer Document

An updated Offer Document will be filed with SEBI in accordance with the applicable law, which then would be termed as the 'Final Offer Document'. The Final Offer Document will contain, *inter alia*, details of the Units issued, Issue Price, the Anchor Investor and Strategic Investor Issue Price, Issue Size and underwriting arrangements, and will be complete in all material respects.

SECTION IX – OTHER INFORMATION

MATERIAL CONTRACTS AND DOCUMENTS FOR INSPECTION

The following contracts, which are or may be deemed material have been entered or are to be entered into in due course. These contracts and also the documents for inspection referred to hereunder, may be inspected at the registered office of the Trust, from 11:00 A.M. to 5:00 P.M., from the date of the Offer Document until the date of listing of the Units pursuant to the Issue, on Working Days.

A. Material Contracts

1. Issue Agreement dated December 15, 2016, among the Trustee (acting on behalf of the Trust), the Investment Manager, the Sponsor, the GCBRLMs and the BRLM;

2. Registrar Agreement dated December 5, 2016, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Registrar to the Issue;

3. Escrow Agreement dated [●], among the Trustee (acting on behalf of the Trust), the Investment Manager, the GCBRLMs, the BRLMs, the Registrar to the Issue, the Escrow Collection Bank(s), the Public Issue Account Bank(s) and the Refund Bank(s);

4. Syndicate Agreement dated [●], among the Trustee (acting on behalf of the Trust), the Investment Manager, the GCBRLMs, the BRLMs and the Syndicate Members; and

5. Underwriting Agreement dated [●], among the Trustee (acting on behalf of the Trust), the Investment Manager, the GCBRLMs, the BRLMs and the Syndicate Members.

B. Documents for Inspection

1. The Indenture of Trust dated September 12, 2016;

2. Certificate of registration of the Trust as an infrastructure investment trust (SEBI Registration Number: IN/InvIT/16-17/0004), issued by SEBI dated November 24, 2016;

3. The resolution of the shareholders of the Sponsor dated October 21, 2016, and the resolution of the board of directors of the Sponsor dated September 13, 2016;

4. The Investment Management Agreement dated October 3, 2016;

5. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and DS, dated October 3, 2016;

6. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and GF, dated October 3, 2016;

7. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and HK, dated October 3, 2016;

8. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and JR, dated October 3, 2016;

9. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and KM, dated October 3, 2016;

10. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and NK, dated October 3, 2016;

11. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and PS, dated October 3, 2016;

12. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and SU, dated October 3, 2016;

13. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and TD, dated October 3, 2016;

14. The project implementation agreement, among the Trustee (acting on behalf of the Trust), the Investment Manager and the Project Manager and TK, dated October 3, 2016;

15. Resolution of the duly authorized committee of the board of directors of the Investment Manager dated November 9, 2016, in relation to the Issue and other related matters.

16. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and DS;

17. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and GF;

18. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and HK;

19. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and JR;

20. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and KM;

21. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and NK;

22. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and PS;

23. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and SU;

24. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and TD;

25. The securities purchase agreement dated [●] entered into among the Sponsor, the Trustee (acting on behalf of the Trust), the Investment Manager and TK;

26. The Right of First Offer and Future Assets Agreement dated [●], among the Sponsor, the Investment Manager and the Trustee (actiing on behalf of the Trust);

27. The concession agreement between DS and NHAI dated January 30, 2006, together with any amendments or supplements thereto;

28. The concession agreement between GF and HPWD dated January 31, 2009, together with any amendments or supplements thereto;

29. The concession agreement between HK and NHAI dated July 2, 2010, together with any amendments or supplements thereto;

30. The concession agreement between JR and NHAI dated February 19, 2010, together with any amendments or supplements thereto;

31. The concession agreement between KM and NHAI dated March 10, 2010, together with any amendments or supplements thereto;

32. The concession agreement between NK and NHAI dated January 30, 2006, together with any amendments or supplements thereto;

33. The concession agreement between PS and NHAI dated March 10, 2010, together with any amendments or supplements thereto;

34. The concession agreement between SU and NHAI dated July 19, 2007, together with any amendments or supplements thereto;

35. The concession agreement between TD and NHAI dated July 19, 2007, together with any amendments or supplements thereto;

36. The concession agreement between TK and NHAI dated July 19, 2007, together with any amendments or supplements thereto;

37. The audit report of the Auditors on the Condensed Combined Financial Statements dated December 13, 2016, included in this Draft Offer Document;

38. Consent of the Auditors, in relation to their report on the Revenue, Profit and Cash Flow Projections dated December 15, 2016, and the statement of tax benefits dated December 15, 2016, included in this Draft Offer Document;

39. The statement of tax benefits dated December 15, 2016, from the Auditors, included in this Draft Offer Document;

40. Consent of the Auditors, Traffic Consultants, GCBRLMs, BRLMs, Syndicate Members, Indian Legal Counsel to the Trust, Indian Legal Counsel to the Underwriters, International Legal Counsel to the Underwriters, Registrar to the Issue, Escrow Collection Bank(s), Refund Bank(s), Compliance Officer, as referred to in their specific capacities;

41. Consent of the Valuers, in relation to their report dated December 15, 2016, included in this Draft Offer Document;

42. Due Diligence Certificate dated December 15, 2016, addressed to SEBI from the GCBRLMs and the BRLM;

43. The no-objection/approval from NHAI dated [●];

44. The no-objection/approval from HPWD dated [●]

45. In-principle listing approvals dated [●] and [●], issued by the BSE and the NSE, respectively;

46. Tripartite Agreement dated [●], among Trustee (acting on behalf of the Trust), the Investment Manager, NSDL and the Registrar to the Issue; and

47. Tripartite Agreement dated [●], among Trustee (acting on behalf of the Trust), the Investment Manager, CDSL and the Registrar to the Issue.

Any of the contracts or documents mentioned in this Draft Offer Document may be amended or modified at any time if so required in the interest of the Trust or if required by the other parties, without reference to the Unitholders, subject to compliance with applicable law.

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the provisions of the InvIT Regulations, the SCRA, the SEBI Act, or rules, regulations, and guidelines issued thereunder (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and are adequate in order to enable the investors to make an informed decision.

SIGNED BY THE DIRECTORS OF THE INVESTMENT MANAGER

Mr. Kanu Doshi Independent Director	**Mr. S. C. Tripathi** Independent Director
Ms. Ameeta Chatterjee Independent Director	**General Ved Prakash Malik (Retd.)** Independent Director
Mr. Soumen Ghosh Director	**Mr. Kazuhide Toda** Director
Mr. Tomanao Gotoda Director	**Mr. Sundeep Sikka** Wholetime Director

Date: December 15, 2016
Place: Mumbai

DECLARATION

The Trustee (on behalf of the Trust) hereby declares and certifies that all relevant provisions of the InvIT Regulations, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the provisions of the InvIT Regulations, the SCRA, the SEBI Act, or rules, regulations, and guidelines issued thereunder (as the case may be). The Trustee (on behalf of the Trust) further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and are adequate in order to enable the investors to make an informed decision.

SIGNED BY THE TRUSTEE (ON BEHALF OF THE TRUST)

FOR IDBI TRUSTEESHIP SERVICES LIMITED

Date: December 15, 2016
Place: Mumbai

DECLARATION

The Sponsor hereby declares and certifies that all relevant provisions of the InvIT Regulations, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Offer Document is contrary to the provisions of the InvIT Regulations, the SCRA, the SEBI Act, or rules, regulations, and guidelines issued thereunder (as the case may be). The Sponsor further certifies that all the statements and disclosures in this Draft Offer Document are material, true, correct, not misleading and are adequate in order to enable the investors to make an informed decision.

SIGNED BY THE DIRECTORS OF THE SPONSOR

Mr. Anil D. Ambani Non-executive and Non-independent Director	**Mr. S. Seth** Non-executive and Non-independent Director
Dr. V.K. Chaturvedi Non-executive and Non-independent Director	**Mr. Shiv Prabhat** Non-executive and Non-independent Director
Mr. S.S. Kohli Independent Director	**Mr. K. Ravikumar** Independent Director
Mr. V.R. Galkar Independent Director	**Ms. Ryna Karani** Independent Director

FOR RELIANCE INFRASTRUCTURE LIMITED

Date: December 15, 2016
Place: Mumbai

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Reliance Infrastructure InvIT Fund
H Block, Ist Floor
DhirubhaiAmbani Knowledge City
Navi Mumbai 400710
India

Reliance Nippon Life Asset Management Limited
H Block, Ist Floor
DhirubhaiAmbani Knowledge City
Navi Mumbai 400710
India

15 December 2016

For the kind attention of Muneesh Sud**,** Reliance Nippon Life Asset Management Limited

Re: Valuation Services

Dear Sir,

With reference to our Engagement Letter dated 28 September 2016, confirming the appointment of Walker Chandiok & Co LLP (hereinafter referred to as "WCC" or the "Firm")as an independent valuer for the purpose of valuation of the 10 Subsidiaries or Special Purpose Vehicles (hereinafter referred to as "SPVs") of Reliance Infrastructure Limited (hereinafter referred to as "RIL" or the "Company") proposed to be transferred to Reliance Infrastructure InvIT Fund (hereinafter referred to as "InvIT"), acting through its Investment Manager, Reliance Nippon Life Asset Management Limited(collectively hereinafter referred to as the "Client") as on 31 December 2016 (hereinafter referred to as the "Valuation Date") in accordance with the SEBI (Infrastructure Investment Trusts) Regulation, 2014, as amended on 30.11.2016 (hereinafter referred to as "SEBI InvIT Regulations")

We have relied on explanations and information provided by the management of RIL (hereinafter referred to as "Management"). Although we have reviewed such data for consistency, we have not independently investigated or otherwise verified the data provided. We have no present or planned future interest in Company, SPVs or Client and the fee for our Valuation Report ("Report") is not contingent upon the values reported herein. Our valuation analysis should not be construed as investment advice specifically, we do not express any opinion on the suitability or otherwise of entering into any financial or other transaction with the Company.

Please note that all comments in our Report must be read in conjunction with the Caveats to the Report, which are contained in Section XII of this Report.

The Report and the Summary of Valuation included herein can be reproduced and included in the Offer Document proposed to be filed in connection with an IPO offering of the units of the InvIT and may be made available for inspection in the manner specified therein

Limitation of liability: We draw your attention to the limitation of liability clauses in Section XII of the Report.

Yours sincerely,
For **Walker Chandiok & Co LLP**
Chartered Accountants
Firm Registration No: 001076N/N500013

_____
Khushroo B. Panthaky
Partner
Membership No: 42423

Place: Mumbai
Dated: 15.12.2016

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I. SUMMARY OF VALUATION

I. a) Background & Scope

RIL incorporated in 1929, is a constituent of the Reliance Group. RIL owns and operates five power stations with aggregate generating capacity of 941 MW and distributes more than 25 billion units of electricity to over 6.4 million consumers in India's two premier cities, Mumbai and Delhi. RIL also provides Engineering, Procurement and Construction (EPC) services for developing power and road projects.

In the Roads sector, RIL is amongst the largest private concessionaires in India. It has a portfolio of 11 projects totalling length of approximately 1,000 km. The company is also amongst the largest developers of 6 lane NHAI road projects with three projects totalling approximately 380 km in its portfolio.

RIL has sponsored and floated an Infrastructure Investment Trust ("Trust") and registered it with SEBI as "Reliance Infrastructure InvIT Fund" ("InvIT") under the SEBI InvIT Regulations. IDBI Trusteeship Services Ltd has been appointed as the Trustee to the above mentioned InvIT. Reliance Nippon Life Asset Management Limited has been appointed as the Investment Manager to the InvIT by the Trustee and will be responsible to carry out the duties of such person as mentioned in Regulation 10 of the SEBI InvIT Regulations.

Based on discussions with the Client, we understand that the InvIT proposes to acquire 100% shareholding in the 10 Special Purpose Vehicles (hereinafter referred to as "Road Assets") (mentioned in section I c) of the report), following which it proposes to issue units which are to be listed on one or more Indian stock exchange consequent to an IPO process.

RIL holds 100% stake in all the Road Assets except for PS Toll Road Private Limited ("PS") where it holds 74% stake and the balance is held by a Chinese company named Jiangsu Provincial Transportation Engineering Group Co. Ltd. The Client has confirmed that 100% stakes of all the 10 SPVs including PS shall be transferred to the InvIT.

The Client requires the assistance of the Firm to carry out the fair valuation of the Road Assets of RIL proposed to be transferred to it in accordance with the SEBI InvIT Regulations. This Report covers all the disclosures required as per the SEBI InvIT Regulations.

The Firm declares that:

- It is competent to undertake the valuation
- It is independent and has prepared the Report on a fair and unbiased basis
- It has valued the SPVs based on the valuation standards as specified under sub-regulation 10 of regulation 21 of SEBI InvIT Regulations

I. b) Valuation Approach& Assumptions

To arrive at fair value of the SPVs, we have used a Discounted Cash Flows ("DCF") method under the Income Approach.

For the purpose of this valuation exercise, the Firm has been provided with the financial projections of the SPVs under Indian Accounting Standard ("Ind AS") by the Management as on the Valuation Date. The projections are based on the best judgement of the Management on the future cash flows supported by the traffic surveys conducted by independent traffic consultancy firms namely GMD Consultants ("GMD") and Systra MVA Consulting (India) Private Limited ("Systra") (together referred to as "Traffic Surveyors").

In addition to the aforementioned financial projections, the following approach and assumptions have been considered for the valuation exercise:

- The Free Cash Flows to Firm under the Discounted Cash Flow Method has been used for the purpose of the valuation of each of the SPVs.
- The Weighted Average Cost of Capital based on average debt equity over the life of the project for each of the SPVs has been considered as the discount rate for respective SPV for the purpose of valuation.

I. c) Conclusion of Value

Based on the methodology and assumptions discussed above, we have arrived at the Fair Enterprise Value ("EV") of the 10 SPVs as on the Valuation Date

Table 1.1: Fair EV of the 10 SPVs as on the Valuation Date (INR Millions ("Mn")

Name of the SPV	Fair Enterprise Value
NK Toll Road Limited	2,851.0
DS Toll Road Limited	5,162.6
TD Toll Road Private Limited	4,846.4
TK Toll Road Private Limited	9,342.9
SU Toll Road Private Limited	10,688.6
JR Toll Road Private Limited	4,205.7
GF Toll Road Private Limited	6,787.5
KM Toll Road Private Limited	8,259.4
PS Toll Road Private Limited	19,050.3
HK Toll Road Private Limited	12,203.8
Total Fair Enterprise Value of the 10 SPVs	**83,398.2**

The EV has further been adjusted for cash, net current assets, net long term assets and liabilities, external bank debt and net dues from/to related parties including interest free subordinate debt to arrive at the Fair Value of Equity of the 10 SPVs as on the Valuation Date.

Table 1.2: Fair Value of Equity of the 10 SPVs as on the Valuation Date (INR Mn)

Name of the SPV	Fair Equity Value
NK Toll Road Limited	(38.5)
DS Toll Road Limited	2,512.6
TD Toll Road Private Limited	2,127.6
TK Toll Road Private Limited	4,075.50
SU Toll Road Private Limited	4,794.9
JR Toll Road Private Limited	(748.2)
GF Toll Road Private Limited	(74.3)
KM Toll Road Private Limited	(2,758.1)
PS Toll Road Private Limited	(108.7)
HK Toll Road Private Limited	3,527.1
Total Fair Value of Equity for the 10 SPVs	**13,309.9**

In absence of the balance sheets of the SPVs as on the Valuation Date, the Fair Value of Equity of the SPVs has been estimated based on the key items of audited balance sheets including outstanding net debt of the individual SPVs (including interest free Subordinate debt from related parties) as on 30 September 2016 and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided to us by the Management. The Equity value of the SPVs may change based on the actual balance sheet of the SPVs as on the Valuation Date.

(This section has intentionally been left blank)

II. CONTEXT AND PURPOSE

RIL incorporated in 1929, is a constituent of the Reliance Group. RIL owns and operates five power stations with aggregate generating capacity of 941 MW and distributes more than 25 billion units of electricity to over 6.4 million consumers in India's two premier cities, Mumbai and Delhi. RIL also provides Engineering, Procurement and Construction (EPC) services for developing power and road projects.

In the Roads sector, RIL is amongst the largest private concessionaires in India. It has a portfolio of 11 projects totalling length of approximately 1,000 km. The company is also amongst the largest developers of 6 lane NHAI road projects with three projects totalling approximately 380 km in its portfolio.

RIL has sponsored and floated an InvIT and registered it with SEBI as "Reliance Infrastructure InvIT Fund" under the SEBI InvIT Regulations. IDBI Trusteeship Services Ltd has been appointed as the Trustee to the above mentioned InvIT. Reliance Nippon Life Asset Management Limited has been appointed as the Investment Manager to the InvIT by the Trustee and will be responsible to carry out the duties of such person as mentioned in Regulation 10 of the SEBI InvIT Regulations.

Based on discussions with the Client, we understand that InvIT proposes to acquire 100% shareholding in the Road Assets, following which it proposes to issue units which are to be listed on one or more Indian stock exchange consequent to an IPO process.

The 10SPVs which are proposed to be transferred from RIL to InvIT are:

1. NK Toll Road Limited
2. DS Toll Road Limited
3. TD Toll Road Private Limited
4. TK Toll Road Private Limited
5. SU Toll Road Private Limited
6. JR Toll Road Private Limited
7. GF Toll Road Private Limited
8. KM Toll Road Private Limited
9. PS Toll Road Private Limited
10. HK Toll Road Private Limited

For this purpose, the Firm has assisted the Client to carry out a fair valuation of the 10 SPVs of RIL proposed to be transferred to InvIT in accordance with the SEBI InvIT Regulations.

VALUATION DATE

In order to reflect the Gross Enterprise Value of the Road Assets closer to the time of the transfer of the SPVs to the InvIT, the Valuation Date has been assumed to be 31 December 2016 which is closest to the date of report and the nearest quarter end date (hereinafter referred to as "Valuation Date").

Further, in order to arrive at the equity value of the SPVs, the Gross Enterprise Value has then been adjusted for the following - 1) cash, net current assets, bank borrowings etc. based on the Balance Sheet as on 30 September 2016 provided by the Management; 2) estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management. As informed by the Management, as per NHAI officer order dated 29 November 2016 NHAI will compensate to the SPVs for O&M and interest cost for the period of demonetization. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months.

The market based inputs for arriving at the discount rate have been considered as on 30 September 2016.

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III. OVERVIEW OF THE SPVS

The details of the individual SPVs are as given below:

- **NK Toll Road Limited ("NK")**

  NK project covers the Namakkal and Karur section of NH-7 from km 248.625 to km 292.600. The project involving 4 laning has been implemented on a Build Operate Transfer ("BOT") basis by the NHAI in the Design Build Finance Operate Transfer ("DBFOT") format. This project has been awarded to NK for a concession period of 20 years starting from 29 July 2006 and ending on 28 July 2026 on the basis of a grant given by NHAI of INR 240.0 Mn during the concession period.

  The project is in the state of Tamil Nadu and passes through the districts of Nammakal and Karur. The project corridor bypasses major settlements of Paramatty and Pugaloor / Veleyudampalayam. NK project has been commissioned and is currently in the operation / maintenance phase.

Table 3.1: Details of NK

Parameters	Details
Length of the project	41.375 km
Project Cost	INR 3,520 Mn
Concession Period – Start	29 July 2006
Concession Period – End	28 July 2026
Tolling Start Date	22 August 2009
Date of Inspection	3 October 2016
RIL's Stake	100%

Source: Management

Pictures of the Project Corridor:

- **DS Toll Road Limited ("DS")**

  DS project covers the Dindigul and Samayanallore section of NH-7 from km 373.726 to km 426.779. The project involving 4 laning has been implemented on a BOT basis by the NHAI in the DBFOT format. This project has been awarded to DS for a concession period of 20 years starting from 29 July 2006 and ending on 28 July 2026 on the basis of a grant given by NHAI of INR 310.0 Mn during the concession period.

  The project is in the state of Tamil Nadu and passes through the districts of Dindigul and Samayanallore which mainly comprise of agricultural land with patches of built-up areas, industrial areas etc. Several educational institutions, medium and heavy industries, hatcheries, poultry farms have been observed along the Project corridor. DS project has been commissioned and is currently in the operation / maintenance phase.

Table 3.2: Details of DS

Parameters	Details
Length of the project	53.049 km
Project Cost	INR 4,280 Mn
Concession Period – Start	29 July 2006
Concession Period – End	28 July 2026
Tolling Start Date	28 September 2009
Date of Inspection	3 October 2016
RIL's Stake	100%

Source: Management

Pictures of the Project Corridor:

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- **TD Toll Road Private Limited("TD")**

  TD project covers the Trichy and Dindigul section of NH-45 from km 333.0 to km 421.3. TD project has been implemented on a BOT basis in the DBFOT format by the NHAI. This project has been awarded to TD for a concession period of 30 years starting from 15 January 2008 and ending on 14 January 2038 on the basis of a grant given by NHAI of INR 1,074.6 Mn during the concession period.

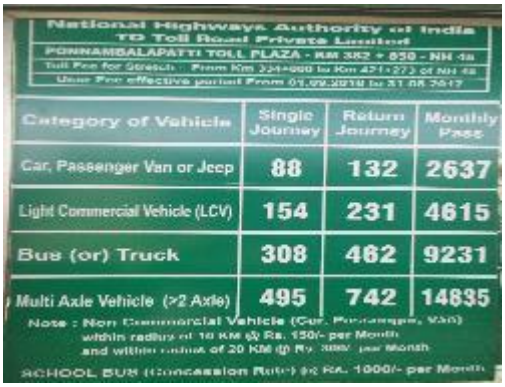
  The project is in the state of Tamil Nadu and passes through districts, viz. Trichy and Dindigul. En-route, it passes few major/minor urban centres, viz. Manaparai, Vaiyampatti, Ayyalur and Vadamadurai. The project has been commissioned and is currently in the operation / maintenance phase.

Table 3.3: Details of TD

Parameters	Details
Length of the project	87.273 Km
Project Cost	INR 5,400 Mn
Concession Period – Start	15 January 2008
Concession Period – End	14 January 2038
Tolling Start Date	10 January 2012
Date of Inspection	3 October 2016
RIL's Stake	100%

Source: Management

Pictures of the Project Corridor:



- **TK Toll Road Private Limited("TK")**

  TK project covers the Trichy and Karur section of NH-67 from km 135.8 to km 218.0. The part 2 laning and part 4 laning project has been implemented on a BOT basis in the DBFOT format by the NHAI. This project has been awarded for a concession period of 30 years starting from 15 January 2008 and ending on 14 January 2038 on the basis of a grant given by NHAI of INR 1,342.6 Mn during the concession period.

  The project is in the state of Tamil Nadu and passes through five taluks namely, Trichy, Srirangam, Kulithalai, Krishnarayapuram and Karur. The road stretch runs very close to Cauvery River for length of 26 Kms and follows its southern bank.

  The project has been commissioned and is currently in the operation / maintenance phase.

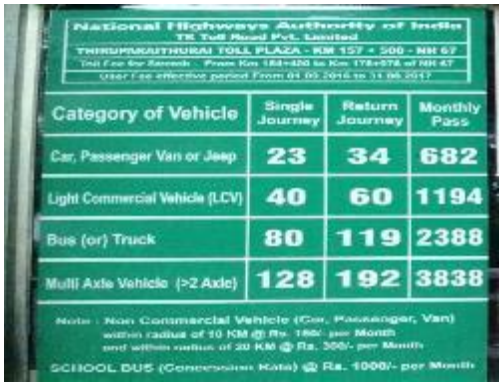
Table 3.4: Details of TK

Parameters	Details
Length of the project*	61.348
Project Cost	INR 8,116 Mn
Concession Period – Start	15 January 2008
Concession Period – End	14 January 2038
Tolling Start Date	22 Feb,2014
Date of Inspection	3 October 2016
RIL's Stake	100%

Source: Management

* In November 2013, a supplementary agreement was executed between NHAI and Concessionaire in which total length of 18.475 Km (Trichy Bypass and stretch from KM 153.230 to Km 154.400) was delinked from project for COD purpose. Additionally, 2.28 Km length of Lalapet Railway Over Bridge ("ROB") was added to project length, which is not tollable. Therefore, the total length of project road for which COD has been awarded is 63.628 Km. After adjusting for the 2.28 Km of Lalpet ROB, which is not tollable, the total tollable length is 61.348.

Pictures of the Project Corridor:



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- **SU Toll Road Private Limited ("SU")**

  SU project covers the Salem and Ulundurpet section of NH-68 from km 0.313 to km 136.670. The project involving 4 laning has been implemented on a BOT basis by the NHAI in the DBFOT format. This project has been awarded for a concession period of 25 years starting from 15 January 2008 and ending on 14 January 2033 on the basis of a grant given by NHAI of INR 2,123.60 Mn during the concession period. The project also include approximately 38 Km of bypass length, which will be converted to a four lane road pursuant to the concession agreement

  The project is in the state of Tamil Nadu and passes through districts, viz. Salem and Villupuram. It originates from Salem and traverses through major settlements of Attur, China Salem and Kallakurichu before ending at Ulundurpet.

  The project has been commissioned and is currently in the operation / maintenance phase.

Table 3.5: Details of SU

Parameters	Details
Length of the project	136.357 km
Project Cost	INR 11,070 Mn
Concession Period – Start	15 January 2008
Concession Period – End	14 January 2033
Tolling Start Date	28 July 2012*
Date of Inspection	1 October 2016
RIL's Stake	100%

Source: Management

*Full commencement date is 1 September 2013. Collection of tolls started on 28 July 2012

Pictures of the Project Corridor:

- **JR Toll Road Private Limited ("JR")**

  JR project covers the Jaipur and Reengus section of NH-11 from km 246.3 to km 298.1. The project has been implemented on a BOT basis by the NHAI. This project has been awarded for a concession period of 18 years starting from 14 August 2010 and ending on 13 August 2028 on the basis of a grant given by NHAI of INR 1,029.0 Mn during the concession period. The project has been commissioned and is currently in the operational / maintenance phase.

Table 3.6: Details of JR

Parameters	Details
Length of the project	51.84 km
Project Cost	INR 5,680 Mn
Concession Period – Start	14 August 2010
Concession Period – End	13August 2028
Tolling Start Date	15 July 2013
Date of Inspection	4 October 2016
RIL's Stake	100%

Source: Management

Pictures of the Project Corridor:

- **GF Toll Road Private Limited ("GF")**

  GF project covers the Gurgaon and Faridabad section and Ballabhgarh - Sohna. GF project has been implemented on a BOT basis by the Haryana Public Works Department. This project has been awarded to GF for a concession period of 17 years starting from 31 May 2009 and ending on 31 May 2026. GF paid a grant of INR 1,503 Mn.

The project is in the state of Haryana and the project corridor includes Gurgaon Faridabad road, Crusher road, Ballabgarh Sohna Road and MCF road. The project has been commissioned and is currently in the operation / maintenance phase.

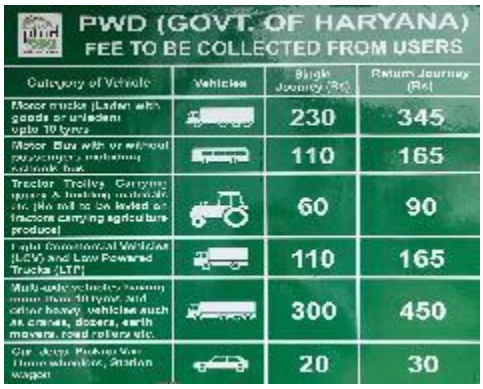
Table 3.7: Details of GF

Parameters	Details
Length of the project:	
Gurgaon Faridabad Road	24.31 km
Crusher Road	3.10 km
Ballabhgarh Sohna Road	32.7 km
MCF Road	6.1 km
Project Cost*	INR 7,790 Mn
Concession Period – Start	31 May 2009
Concession Period – End	31 May 2026
Tolling Start Date	29 June 2012
Date of Inspection	3 October 2016
RIL's Stake	100%

Source: Management

*Includes negative grant of INR 1,074.6

Pictures of the Project Corridor:



- **KM Toll Road Private Limited ("KM")**

  KM project covers the Kandla and Mundra section of NH-8A extension from km 0.0 to km 71.40. KM project has been implemented on a BOT basis by the NHAI. This project has been awarded for a concession period of 25 years starting from 19 January 2011[1]on the basis of a premium of INR 420.0 Mn payable to the NHAI in the first year of concession period increased annually at 5%.

  The project corridor connects two most important cities called Kandla and Mundra in Kutch district of Gujarat. The project has been commissioned and is currently in the operational / maintenance phase.

Table 3.8: Details of KM

Parameters	Details
Length of the project	71.4 km
Project Cost	INR 12,260.0 Mn
Concession Period – Start	19 January 2011
Concession Period – End	18 January 2041
Tolling Start Date	4 November 2015
Date of Inspection	5 October 2016
RIL's Stake	100%

Source: Management

Modification in the Concession Period

As per the Clause 29 of the concession agreement between NHAI and KM provided to us by the Management, if the actual traffic falls short or exceeds target traffic on a defined date, the concession period shall be revised subject to calculation specified therein. The target date and target traffic as provided in the concession agreement along with the projected traffic as on the target date are given below:

Target Date - 1 January 2020

Target Traffic – 60,384 PCUs

Projected Traffic as on Target Date – 38,892 PCUs based on Average expected traffic of FY19 to FY21 by the Management

As per the traffic projections provided by the Management, the traffic volume falls short of the target traffic as on the target date. This warrants for an extension of the concession period. Hence, the concession period has been extended to 30.0 years (from the original 25 years) up to 11 January 2041 by the Management.

[1] Check date in table

We understand that as on the Valuation Date, the deferment of premium has been rejected by NHAI for KMTR. If the premium is not paid within stipulated period, NHAI has the right to terminate the concession agreement. However, the Management has represented that termination of concession agreement is unlikely because of following reasons:

- Management will use the proceeds from InvIT listing, first to pay the deferred premium along with the interest to NHAI before paying any other liability.
- As per the Management, based on the precedence of earlier case laws and their reliance on the opinion of a law firm, it is unlikely that the termination of the concession will occur.

Financial projections provided by the Management assumes that 6 laning for KMTR would begin in FY20 and will get over by FY22. The Management has represented that, the 6 laning work is expected to progress as scheduled and is likely to be completed on time.

Pictures of the Project Corridor:

- **PS Toll Road Private Limited ("PS")**

  PS project covers the Pune and Satara section of NH-4 from km 725.0 to km 865.35. PS project has been implemented on a BOT basis by the NHAI. This project has been awarded to PS for a concession period of 24 years starting from 1 October 2010.

  The project is in the state of Maharashtra and passes through three major industrial towns, viz. Satara, Pune and Pimpri – Chinchwad. Trichy and Dindigul. En-route, it passes few major/minor urban centres, viz. Pimpri - Chinchwad, Pune, Katraj, Shindewadi, Velu, KhedShivapur, Kapurthol,

Nasrapur, Shirwal, Sasvad, Khandala, Wele, Surul, Limb and Anewadi. It also provides access to Hinjewadi IT Park near Pune. The project has been commissioned and is currently in the operational / maintenance phase.

Table 3.9: Details of PS

Parameters	Details
Length of the project	140 km
Project Cost	INR 20,080 Mn
Concession Period – Start	1 October 2010
Concession Period – End	30 September 2039
Tolling Start Date	1October 2010
Date of Inspection	3 October 2016
RIL's Stake	74%
Jiangsu Provincial Transportation Engineering Group Co. Ltd	26%

Source: Management

As per the concession agreement between NHAI and PS, PS has agreed to pay premium of INR 909 Mn from the COD date per annum with annual escalation of 5% year over year.

Modification in the Concession Period

As per the Clause 29 of the concession agreement between NHAI and PS provided to us by the Management, if the actual traffic falls short or exceeds target traffic on a defined date, the concession period shall be revised subject to calculation specified therein. The target date and target traffic as provided in the concession agreement along with the projected traffic as on the target date are given below:

Target Date - 31 March 2019

Target Traffic – 60,848 PCUs

Projected Traffic as on Target Date – 52,845 PCUs based on Average expected traffic of FY18 to FY20 by the Management

As per the traffic projections provided by the Management, the traffic volume falls short of the target traffic as on the target date. This warrants for an extension of the concession period. Hence, the concession period has been extended to 28.8 years (from the original 24 years) up to 13 July 2039 by the Management.

Pictures of the Project Corridor:

- **HK Toll Road Private Limited ("HK")**

  HK project covers the Hosur and Krishnagiri section of NH-7 from km 33.130 to km 93.000.HK project involving 6 laning has been implemented on a BOT basis by the NHAI in DBFOT format. This project has been awarded to HK for a concession period of 24 years starting from 7 June 2011 and ending on 6 June 2035.

  The project is in the state of Tamil Nadu and passes through one district -Krishnagiri. The project has been commissioned and is currently in the operation / maintenance phase.

Table 3.10: Details of HK

Parameters	Details
Length of the project	59.87 km
Project Cost	INR 9,250 Mn
Concession Period – Start	7 June 2011
Concession Period – End	6 June 2035
Tolling Start Date	4 Lane: 7 June 2011 6 Lane: 5 April 2016
Date of Inspection	1 October 2016
RIL's Stake	100%

Source: Management

As per the concession agreement between NHAI and HK, HK has agreed to pay premium of INR 669 Mn from the COD date per annum with annual escalation of 5% year over year. NHAI has approved the premium deferment vide its letter dated 17 June 2014.

Modification in the Concession Period

As per the Clause 29 of the concession agreement between NHAI and HK provided to us by the Management, if the actual traffic falls short or exceeds target traffic on a defined date, the concession period shall be revised subject to calculation specified therein. The target date and target traffic as provided in the concession agreement along with the projected traffic as on the target date are given below:

Target Date - 1April 2020

Target Traffic –60,691 Passenger Car Units ("PCUs")

Projected Traffic as on Target Date – 83,837 PCUs based on average expected traffic of FY 20 to FY 22

Further, Clause 29.2.2 of the concession agreement between NHAI and HK, in case the actual traffic exceeds the target traffic, HK has an option not to reduce the concession period by paying a further premium equal to 25% of the realisable fee in the respective years in addition to the concession fee.

As per the traffic projections provided by the Management, the traffic volume exceeds the target traffic as on the target date. This warrants for as shortening of the concession period. However, the Management plans to exercise the option to not reduce the concession period by paying a premium equal to 25% of the realisable fee in the respective years in addition to the concession fee.

Pictures of the Project Corridor:

IV. IMPACT OF LITIGATIONS FOR THE 10 SPVS

The list of all material litigations, (including tax litigations, if any) against the project SPVs has been provided to us for review by the Management. The Management has confirmed that it is not aware of any other potential litigation, pending or threatened claims in relation to any of the SPVs that may arise in the future, other than what has been provided to us. We have been informed by the Management that the Sponsor would indemnify the InvIT and its SPVs against any financial losses suffered or incurred in connection with any litigations, pending or threatened claims against the Project SPVs made prior to the transfer of the assets to the InvIT, hence no impact has been factored on the valuation of the SPVs.

V. DISCLOSURES OF PERMITS & LICENSES FOR THE 10 SPVS

We have been provided by the Management with the lists of the permits and licenses of the individual SPVs. We have not independently verified the documents related to the permits and licenses and have relied on the representation by the Management regarding the same.

VI. DISCLOSURES OF ESTIMATED MAJOR REPAIRS OF THE 10 SPVS

The Management has considered the estimates and timing of the proposed major repairs for the individual SPVs as per the Traffic Surveyors' Reports. We have not independently verified these estimates and have relied on the Management and Traffic Surveyors Reports.

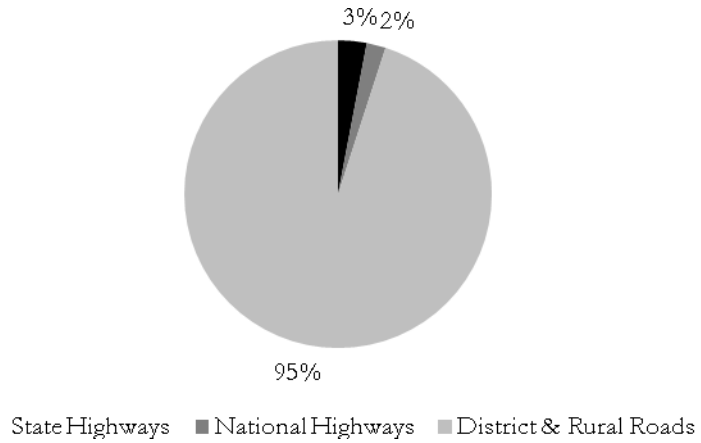
VII. INDUSTRY OVERVIEW

Road construction sector in India

Road network development is an important constituent for the infrastructural development in India. Road development in India is undertaken by the Central and State Governments and implemented through agencies like Ministry of Road Transport and Highways (MORTH) NHAI, Border Roads Organisation (BRO), State Public Works Departments (PWDs) and municipal corporations. Historically, development and maintenance of road infrastructure has been funded by the Government. Private sector interest in funding road projects was lacking because of the large investment requirement, long gestation period, and uncertainty of returns. However, the private sector has played an important role in the road sector in the Engineering Procurement Construction ("EPC") segment.

The Indian transport sector constitutes 6% of the country's Gross Domestic Product. The road sector constitutes 70% of the total Indian transport sector. The country has the second largest road network in the world of approximately 5.23 Mn km.[2]The road network has a big role to play on transport and logistics in the country, almost 65%[3] of all goods and 85%[4] of total passenger traffic is transported through road networks. The national highways in India constitute only about 2% of the road network as shown by Chart 7.1 but account for about 40% of the total road traffic. The country transports nearly 57% of the total goods by road, as compared to 22% in China and 37% in the U.S.[5]

Chart 7.1. Distribution of Road Network across India



Source: Ministry of Road Transport and Highways (MoRTH), 2015

[2] Make in India; http://www.makeinindia.com/sector/roads-and-highways
[3] http://www.ibef.org/download/Roads-October-2016.pdf
[4] http://www.ibef.org/industry/roads-india.aspx
[5] Twelfth five year plan (2012-2017)

The value of roads and bridges infrastructure in India is projected to grow at a Compound Annual Growth Rate (CAGR) of 17.4 per cent over FY12–17[6]. The country's roads and bridges infrastructure, which was valued at US$ 6.9 billion in 2009 is expected to touch US$ 19.2 billion by 2017[5].

The construction of highways had reached an all-time high of 6,029 km during FY15-16, and the increased pace of construction is expected to continue for the coming years.

The financial outlay for road transport and highways grew at a CAGR of 12.5%[5] between FY10-16. The plan outlay for FY16-17 stepped up budgetary support for Road Transport and Highways to US$ 14.46 billion[5].

Government Initiatives

Indian Government to support the growth of the road construction sector has taken some initiatives:

- Taking a step towards improving freight movement, inter-city connectivity in the country and easing traffic bottlenecks, the Government plans to invest $44.73 billion[5] for developing roads totalling a length of 35,000[5] km out of which 21,000[5] km will be economic corridors.
- To step up execution of highway projects, National Highways Authority of India (NHAI) has delegated powers to its Regional officers for hiring of equipment and labourers to enable NHAI to make free land speedily available to contractors.
- To propel economic growth, Ministry of Road Transport has accelerated the construction of highways and it plans to build five more greenfield expressways across the country. The Government expects this to revive investments in infrastructure sector which may create 5 million jobs in next two years.
- Infusion of funds is another area where the Government is taking initiatives. In partnership with Japan, Indian Government plans to set up a finance corporation which will provide loans for Indian road projects with a credit target of $29.82 billion[5].

Growth Drivers

- One of the key drivers of growth in the roads construction sector is growth in demand. Growing demand for roadways can be directly attributed to higher individual discretionary spending which has led to increased spending on cars, motorbikes and scooters. This can be seen from the rise in sales of passenger vehicles which has increased at a CAGR of 5.5% in FY10-16. Further, an increase in domestic trade flows has led to a jump in commercial vehicles and freight movement. Due to this rise in freight movement India has seen a growth in freight traffic from 13.8% to 65%.
- Another key driver to the growth is the policy support in Infrastructure development. Government has been increasing the funding in the infrastructure sector. Infrastructure's total share in bank funding rose from 3.72% in 2002 to about 9.8% in FY16. The Government also aims to attract funding from the private sector for infrastructure projects.

[6]http://www.ibef.org/industry/roads-india.aspx

Public Private Partnership in Road Projects in India

In the FY15–16, Infrastructure investments were expected to rise to USD 11.6 Bn from the Central funds and internal resources of Central Public Sector Enterprises.[7] The private sector is emerging as a key player in the development of road infrastructure in India. As on March 2015, India had completed 100 PPP-full form projects and 165 PPP projects were under progress.[6] Investment of USD 31 Bn is expected in PPP during the next five years (by 2020) for national highways.[6] National highways are expected to reach 100,000 km by the end of 2017 from 97,135 km in FY15[6]. As per Union Budget 2015–16, the government has provided an outlay of USD 6.43 Bn for the road sector.[6]

A mega push to the road sector has been planned by the government by increasing the target to award projects for construction from 8,500 km to 10,000 km and an infusion of up to INR 40,000Mnfor the completion of projects which are stalled due to the lack of funds.[8]

Key Policy Initiatives in the Road Infrastructure sector over the last three Financial Years[9]

2013-2014	2014-2015	2015-2016
Classification of road BOT projects, loans secured.	80% land acquisition before project awarded	100% exit after two years for all road projects (including projects awarded pre 2009).
Environmental clearance for forest land delinked for road widening projects	Premium re-scheduling for stressed projects.	NHAI prepares to infuse funds into projects that are stuck.
	Fast track clearance: i.) States to clear projects up to 40 acres of forest land. ii.) Increased limit for sand mining. iii.) Online filing and clearance of ROB and RUBS.	Extending concession period for projects delayed due to lack of clearance for authority: The CCEA has given its approval for authorising NHAI to allow extension of concession period for all current projects in BOT (Toll) mode that are languishing during the construction period due to causes not attributable to the concessionaire.

[7]http://www.ibef.org/download/Roads-August-2015.pdf
[8] timesofindia.indiatimes.com/india/Centre-plans-10000km-push-for-roadsector/articleshow/47219049.cms
[9] Press Release by CRISIL Research titled "New concession agreement is a booster shot for highways" released on 15 September 2015.

Future Outlook

Contribution of road transport sector in GDP of India

The Government of India targets to widen and expand national highways to 150,000 km in next two years across the country for ensuring that the roads and highways sector contributes at least 2% to the GDP growth.[10]As a consequence of increasing economic activity and the new government's thrust on improving road-infrastructure development, spending on constructing/augmenting roads is expected to increase. It would chiefly be supported by greater budgetary allocation for road augmentation, gradually increasing number of project awards (in EPC, BOT and hybrid annuity modes) and by private sector making a slow and gradual comeback.

There has been a gain in momentum in development of infrastructure including roads, which can be linked to the aim of the Government to develop roads with a total length of 66,117 km[2]. The Government focus has been on investments for developments of Highways. During the period FY15 – FY19, investments through Public private Partnership (PPP) are expected to be over $31 Billion[2] for National highways and around $10 billion[2] for State highways. Under the 12th Five – year plan, the Government targets to develop national highways at the rate of 20 km per day.

National highways set to see rise in spending

Based on the collective effect of budgetary allocation and progressively mounting interest in BOT projects, the value of total roads and bridges infrastructure in the country in FY14 was USD 11 Bn which is expected to touch USD 19.2 Bn by FY17[7]

Attracting private investments to road infrastructure projects through various incentives such as capital grants, tax free bonds and exemptions, allowing the collection and retention of tolls by private participants in Build-Operate-Transfer Projects and set up of special purpose vehicles will increase the participation of private players in road construction projects and in turn, contribute to growth of road and highway construction industry.

Dispute resolution and contract enforcement are key areas that need to be addressed to revive the Indian road sector. The Road Ministry has prepared a Regulatory Authority for Highways in India Bill, 2013, which will provide the regulator with powers to check these problems and bring solutions. The Indian Government is trying to address these problems and help revive the industry.

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[10] News Article titled "Road Transport to Spur GDP Growth by 2 Percent: Gadkari" issued by Indian Express on 26 November 2015.

VIII. VALUATION METHODOLOGY AND APPROACH

The standard of value used in our analysis is fair value which is often defined as the price, in terms of cash or equivalent, that a buyer could reasonably be expected to pay, and a seller could reasonably be expected to accept, if the business were exposed for sale on the open market for a reasonable period of time, with both buyer and seller being in possession of the pertinent facts and neither being under any compulsion to act.

There are several commonly used and internationally accepted methods for determining the fair value of companies, which have been considered in the present case, to the extent relevant and applicable. Accordingly, we have carried out valuation of the SPVs as on 31 December 2016.

It should be understood that the valuation of any company or its assets is inherently subjective and is subject to certain uncertainties and contingencies, all of which are difficult to predict and are beyond our control. In performing our analysis, we made assumptions with respect to industry performance and general business and economic conditions, many of which are beyond the control of the SPVs. In addition, this valuation will fluctuate with changes in prevailing market conditions, the conditions and prospects, financial and otherwise, of the SPVs, and other factors which generally influence the valuation analysis.

The application of any particular method of valuation depends on the purpose for which the valuation is done. Although different values may exist for different purposes, it cannot be too strongly emphasized that a valuer can only arrive at one value for one purpose. Our choice of methodology of valuation has been arrived at using usual and conventional methodologies adopted for transactions of a similar nature and our reasonable judgment, in an independent and bona fide manner is based on our previous experience of assignments of a similar nature.

In respect of going concerns, certain valuation techniques have evolved over time and are commonly in vogue. These can be broadly categorised as follows:

Market Based

- *Market Price Method*

  This valuation method reflects the price that the market, at a point in time, is prepared to pay for the shares of an entity. It is therefore influenced by the condition of the stock market, and the concerns and opportunities that are seen for the business in the sector or market in which it operates. The market price also reflects the investor's view of the ability of management to deliver a return on the capital it is using. In case of companies not frequently traded, this value may be very different from the inherent value of the shares, but nevertheless forms a benchmark value. Clearly, this method can be used only in case of shares of a company listed on a stock exchange. Since the shares of the SPVs are not currently listed on any stock exchange, we have not applied this method for the purpose of valuation.

- *Market Multiple Method*

  Under this methodology, appropriate valuation multiples of comparable listed companies are computed and applied to the financials of the company being valued in order to arrive at a multiple based valuation.

  This method applies a reasonable multiple to the relevant operating performance metrics of the company being valued to estimate its Equity Value. The relevant multiple is derived from reference to market based conditions of similar quoted companies. The methodology is considered appropriate to use for an established business with an identifiable stream of continuing revenues that are considered maintainable.

  We have not considered this method in our valuation analysis in the absence of closely comparable listed companies having similar geographical locations, stage of growth, size, terms and profitability.

- *Precedent Transaction Multiple Method*

  This method is similar to the above Market Multiple Method, with the exception that the companies used as guidelines are those that have been recently acquired. Under this method, acquisitions or divestitures involving similar companies are identified, and the multiples implied by their purchase prices are used to assess the subject company's value. There is no rule of thumb for the appropriate age of a reasonable transaction; however, it is important to be aware of the competitive market at the time of the transaction and factor any changes in the marketplace environment into the analysis. All other things being equal, the more recent the transaction, the more reliable the value arrived at using this technique. We have not considered this method for the valuation of the SPVs due to lack of availability of the recent transactions involving road projects in India having similar geographical locations, stage of growth, size, terms and profitability as that of the SPVs.

Asset Based

- *Adjusted Net Asset Value Method (NAV)*

  The value arrived at under this approach is based on the audited / provisional financial statements of the business and may be defined as Shareholders' Funds or Net Assets owned by the business. The NAV method is generally used as the minimum break-up value for the transaction since this methodology ignores the future return the assets can produce and is calculated using historical accounting data that may not reflect the worth of the business to someone who may buy or invest in the business as a going concern. We have therefore not considered this method for valuation of the SPVs.

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Income Based

- *Discounted Cash flow Method (DCF)*

  Under the DCF method, forecasted cash flows for a reasonably long period are discounted back at an appropriate discount rate, to the present date, generating a net present value for the cash flow stream of the business during the forecast period. The rates at which future cash flows are discounted reflect not only the time value of the cash flows but also the risk associated with the business' future operations. Typically under this method, forecasted cash flows are developed based on several inputs which tend to be subjective particularly for dynamic companies. Considering that this method is based on future potential of the SPVs and is widely accepted method in road sector, we have used this approach in the valuation of the SPVs

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IX. VALUATION ANALYSIS

Discounted Cash Flow Method (Free Cash Flows to Firm)

Using the DCF analysis involves determining the following:

Estimating future free cash flows:
Free cash flows are the cash flows expected to be generated by each individual SPV and available to the capital providers in each SPV has been estimated based on projected financial information provided by the Management. Projections provided by the Management are only the best estimates of each individual SPV's growth and sustainability of profitability margins. Although we have reviewed the financial forecast provided by the Management for consistency and reasonableness, we have not specifically validated these financial projections and have relied on the estimates provided by the Management.

Appropriate discount rate to be applied to cash flows i.e. the cost of capital:
This discount rate, which is applied to the free cash flows, should reflect the opportunity cost to all the capital providers (namely shareholders and creditors), weighted by their relative contribution to the total capital for each individual SPV. The opportunity cost to the capital provider equals the rate of return the capital provider expects to earn on other investments of equivalent risk.

The key assumptions under the DCF Method

For the DCF analysis, we have relied on the projected financials of the SPVs provided by the Management based on their best estimates on the growth and sustainability of profitability margins of the individual SPVs. Please note that though we have reviewed the financial forecast provided by the Management for consistency and reasonableness based on site visits, data available in public domain and Traffic Surveyors' reports provided by the Management for each SPV, we have not independently investigated or otherwise verified the data and key inputs estimated by the Management for the 10 SPVs. Nothing has come to our attention to indicate that the information provided by the Management had material mis-statements or would not afford reasonable grounds upon which to base our Report. The Free Cash Flows to Firm ("FCFF") have been calculated for each individual SPV as on the Valuation Date based on the Financial Projections.

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The key assumptions and the basis for the valuation are explained in detail below:

Discounting Factor

The discount rate considered for arriving at the present value of the free cash flows to the firm is the Weighted Average Cost of Capital ("WACC"). The WACC for the SPVs as on the Valuation Date are derived as follows:

WACC= (ke x we) + (kd x (1 – t) x wd)
where,

we = weight of equity in the capital structure

wd = weight of debt in the capital structure

ke = cost of equity

kd = cost of debt, and

t = effective tax rate

Cost of Equity ("ke")

The cost of equity is computed using the Capital Asset Pricing Model ("CAPM") as shown below:

ke = rf + β (rm-rf) where

ke = Cost of Equity,

rf = Risk Free Return,

β = Beta, a measure of Market Risk

rm = Market Return

Cost of Equity is estimated using the following factors:

- Risk Free Return (rf) – The risk free rate (rf) is the return on an investment with zero risk where actual returns are equal to the expected return. Rf at 7.0% has been considered for each SPV based on the 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of the 30 September 2016;

- Beta (β) – Beta has been computed by re-levering the average asset beta of companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure. Beta has been considered based on 5 year trailing Beta of comparable companies, re-levered for each of the SPV specific debt to equity ratio and effective taxes. Refer Appendix 1 for a list of comparable companies.

- Debt to Equity Ratio ("DER") –The DER is based on the average debt to equity ratio of each individual SPV over the projected period.

- Income Tax – Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Management for each SPV.

- Equity Risk Premium ("ERP") (rm-rf) – ERP is considered at 7.40% for each SPV based on Grant Thornton research for India.

Cost of Debt ("kd")

Marginal cost of raising debt for each SPV is based on the prevailing interest rate as on 30 September 2016.

The WACC Calculation for the SPVs is based on the Average DER of each SPV over the projected period.

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X. VALUATION ANALYSIS OF THE INDIVIDUAL SPVS

As discussed above, we have estimated the value of the SPVs using the Discounted Cash Flow Method. We have considered projections estimated by the Management for the individual SPVs.

The key inputs of the projections provided to us by the Management are:

Traffic Volume – The growth in traffic volumes for each SPV were provided to us by the Management supported by the Traffic Surveyors' reports for the 10 SPVs. As confirmed by the Management, the traffic volumes for each SPV has been estimated by the Traffic Surveyors after considering overall structure and condition of the projects including analysis of demand and supply and strategic geographical locations of the individual road projects.

Toll Rates – The current toll rates provided by the Management have been validated based on the site visits carried out by the Firm. The toll rates have been projected to grow in the manner stipulated in the individual concession agreements of the SPVs. The variable determinant supporting the toll rate forecast is "Wholesale price Index" (WPI) as estimated by the Management and Traffic Surveyors. Additionally Management has informed that the NHAI has proposed Ministry of Road Transport and Highway to change the criteria for rounding off the user fee to INR 5 from present criteria of rounding off to INR 1 in earlier BOT projects. Management has considered the same in projecting future toll rates.

Operations & Maintenance ("O&M") – O&M expenditures provided by the Management over the Projected Period are based on the future estimates as provided by the Traffic Surveyors for each SPV.

Amortisation – The toll collection rights, (including premium payable and negative grant to NHAI as applicable) for the 10 SPVs have been amortised over the period of concession, using revenue based amortisation.

Debt Repayment – The Management has provided us with the debt repayment schedule of each individual SPV based on the agreements with various banks.

Non-Cash Net Working Capital–As per the nature of the business of operating toll road projects, there is no requirement of working capital to run the business and hence the Management has considered it to be nil for the entire projected period.

Other Inputs:

In case of GF & JR the growth in traffic revenue is based on certain project specific reasons as explained below:

- GF – As highlighted in the Traffic Surveyor's report and as mentioned by the Management, the project has historically witnessed leakage of revenues as certain vehicles are not paying toll. As per Traffic Surveyor's survey, 16% and 9% of car passengers were not paying toll at BS1 and BS2 toll plaza locations respectively. Similarly, at Crusher zone toll plaza about 21% of car users

were not paying toll. At Bandhwari toll plaza, about 10% Truck users were not paying toll. Management has represented that necessary measures have already been initiated to avoid non-compliance which would result in the non-compliance being significantly reduced over the next three years.

- JR – As highlighted in the Traffic Surveyor's report, there is an Escape Route in the vicinity of toll plaza which traffic is using to bypass the toll plaza. As per the Traffic Surveyor's estimates and Management representation, barricades are being provided on the Escape Route to avoid any leakage of traffic through the alternate road. Accordingly, the traffic, which is presently using the escape route, has been included by the Traffic Surveyor to project the road traffic in the year FY 2018.

- **Valuation of NK Toll Road Limited**

The FCFF for NK has been calculated based on the financial projections provided by the Management for the period FY17 through FY27.

The base cost of equity for NK is considered to be 10.7% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 10.9% based on the prevailing interest rate of the SPV. An effective tax rate of 21.3% has been considered as applicable throughout the projected period, resulting in a post-tax cost of debt of 8.6%.

Based on an average DER of 0.2 over the projected period for NK, the WACC arrived at for the purpose of valuation is 10.3%.

As on the Valuation Date, we have discounted the free cash flows of NK using the WACC leading to a Gross Enterprise Value ("GEV") of INR 2,851.0 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of NK as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of NK is negative INR 38.5 Mn as on the Valuation Date.

Refer Appendix II for the detailed Discounted Cash Flow workings of NK**.**

- **Valuation of DS Toll Road Limited**

The FCFF for DS project has been calculated based on the financial projections provided by the Management for the period FY17 through FY27.

The base cost of equity for DS is considered to be 13.4% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 10.9% based on the prevailing interest rate of the SPV. An effective tax rate of 21.34%has been considered as applicable throughout the projected period, resulting in a post-tax cost of debt of 8.6%.

Based on an average DER of 1.29 over the projected period for DS, the WACC arrived at for the purpose of valuation is 10.7%.

As on the Valuation Date, we have discounted the free cash flows of DS SPV using the WACC leading to a GEV of INR 5,162.6 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of DS as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of DS is INR 2,512.6 Mn as on the Valuation Date.

Refer Appendix III for the Discounted Cash Flow workings of DS project**.**

- **Valuation of TD Toll Road Private Limited**

The FCFF for TD has been calculated based on the financial projections provided by the Management for the period FY17 through FY38.

The WACC has been calculated based on the applicable tax rate in the projected period.

In the years where MAT rate i.e. 21.3% is applicable, the base cost of equity for TD is considered to be 10.8% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 10.9% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 8.6%.

In the years where the corporate tax rate i.e. 34.6% is applicable, the base cost of equity for TD is considered to be 11.1% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 10.9% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 7.1%.

Based on an average DER of 0.2 over the projected period for TD, the WACC arrived at for the purpose of valuation is 10.3% and 10.3% based on the MAT rate and corporate tax rate, respectively.

As on the Valuation Date, we have discounted the free cash flows of TD project using the appropriate WACC leading to a GEV of INR 4,846.4 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of TD as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of TD is INR 2,127.6 Mn as on the Valuation Date.

Refer Appendix IV for the Discounted Cash Flow workings of TD.

- **Valuation of TK Toll Road Private Limited**

The FCFF for TK has been calculated based on the financial projections provided by the Management for the period FY17 through FY38.

In the years where MAT rate i.e. 21.3% is applicable, the base cost of equity for TK is considered to be 10.5% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.0% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 8.6%.

In the years where the corporate tax rate i.e. 34.6% is applicable, the base cost of equity for TK is considered to be 10.8% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.0% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 7.2%.

Based on an average DER of 0.1 over the projected period for TK, the WACC arrived at for the purpose of valuation is 10.3% and 10.4% based on the MAT rate and corporate tax rate, respectively.

As on the Valuation Date, we have discounted the free cash flows of TK using the WACC leading to a GEV of INR 9,342.9 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of TK as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of TK is INR 4,075.5 Mn as on the Valuation Date.

Refer Appendix V for the Discounted Cash Flow workings of **TK.**

- **Valuation of SU Toll Road Private Limited**

The FCFF for SU has been calculated based on the financial projections provided by the Management for the period FY17 through FY33.

The WACC has been calculated based on the applicable tax rate in the projected period.

In the years where MAT rate i.e. 21.3% is applicable, the base cost of equity for SU is considered to be 13.3% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.2% based on the prevailing interest rate of the SPV leading to post-tax cost of debt of 8.8%.

In the years where the corporate tax rate i.e. 34.6% is applicable, the base cost of equity for SU is considered to be 13.5% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.2% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 7.4%.

Based on an average DER of 1.3 over the projected period for SU, the WACC arrived at for the purpose of valuation is 10.8% and 10.0%, based on the MAT rate and corporate tax rate, respectively.

As on the Valuation Date, we have discounted the free cash flows of SU project using the WACC leading to a GEV of INR 10,688.6 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of SU as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of SU is INR 4,794.9 Mn as on the Valuation Date.

Refer Appendix VI for the Discounted Cash Flow workings of **SU.**

- **Valuation of JR Toll Road Private Limited**

The FCFF for JR has been calculated based on the financial projections provided by the Management for the period FY17 through FY29.

The WACC has been calculated based on the applicable tax rate in the projected period.

The base cost of equity for JR is considered to be 13.0% based on the factors mentioned above in Section IX. Additionally, we have considered 1% project specific risk for JR to factor in risk related to higher estimates of traffic volumes due to expected stoppage of traffic leakages in few months which results in an adjusted cost of equity of 14.0%. The pre-tax cost of debt is considered to be 12.0% based on the prevailing interest rate of the SPV. An Effective tax rate of 21.3% has been considered as applicable throughout the projected period, resulting in a post-tax cost of debt of 9.4%.

Based on an average DER of 1.1 over the projected period for JR, the WACC arrived at for the purpose of valuation is 11.6%.

As on the Valuation Date, we have discounted the free cash flows of JR using the WACC leading to a GEV of INR 4,205.7 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of JR as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of JR is negative INR 748.2 Mn as on the Valuation Date.

Refer Appendix VII for the Discounted Cash Flow workings of **JR.**

- **Valuation of GF Toll Road Private Limited**

The FCFF for GF has been calculated based on the financial projections provided by the Management for the period FY17 through FY27.

The WACC has been calculated based on the applicable tax rate in the projected period.

The base cost of equity for GF is considered to be 11.2% based on the factors mentioned above in Section IX. Additionally, we have considered 2% project specific risk for GF to factor in risk related to higher estimates of traffic volumes in the forecast period on account of steps taken to overcome the current loss in traffic volumes due to non-compliance which results in an adjusted cost of equity of 13.2%.

The pre-tax cost of debt is considered to be 11.2% based on the prevailing interest rate of the SPV. An Effective tax rate of 21.3% has been considered as applicable throughout the projected period, resulting in a post-tax cost of debt of 8.8%.

Based on an average DER of 0.4 over the projected period for GF, the WACC arrived at for the purpose of valuation is 11.9%.

As on the Valuation Date, we have discounted the free cash flows of GF project using the WACC leading to a GEV of INR 6,787.5 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of GF as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of GF is negative INR 74.3 Mn as on the Valuation Date.

Refer Appendix VIII for the Discounted Cash Flow workings of GF.

- **Valuation of KM Toll Road Private Limited**

The FCFF for KM has been calculated based on the financial projections provided by the Management for the period FY17 through FY41.

The WACC has been calculated based on the applicable tax rate in the projected period.

In the years where MAT rate i.e. 21.3% is applicable, the base cost of equity for KM is considered to be 12.7% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 10.0% based on the prevailing interest rate of the SPV leading to post-tax cost of debt of 7.8%.

In the years where the corporate tax rate i.e. 34.6% is applicable, the base cost of equity for KM is considered to be 12.8% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 10.0% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 6.5%.

Additionally, we have considered 2% project specific risk for KM to factor in risk related to rejection of deferment of premium by NHAI and risk due to delays in completion of six laning later than FY22. Hence, the adjusted cost of equity for KM is 14.7% and 14.8% applicable respectively in the years when MAT is applicable and Corporate tax is applicable.

Based on an average DER of 1.0 over the projected period for KM, the WACC arrived at for the purpose of valuation is 11.3% and 10.7%, respectively.

As on the Valuation Date, we have discounted the free cash flows of KM project using the WACC leading to a GEV of INR 8,259.4 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the balance sheet of KM as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of KM is negative INR 2,758.1 Mn as on the Valuation Date.

Refer Appendix IX for the Discounted Cash Flow workings of **KM.**

- **Valuation of PS Toll Road Private Limited**

The FCFF for PS has been calculated based on the financial projections provided by the Management for the period FY17 through FY40.

The WACC has been calculated based on the applicable tax rate in the projected period.

In the years where MAT rate i.e. 21.3% is applicable, the base cost of equity for PS is considered to be 10.8% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.6% based on the prevailing interest rate of the SPV leading to post-tax cost of debt of 9.1%.

In the years where the corporate tax rate i.e. 34.6% is applicable, the base cost of equity for PS is considered to be 11.1% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.6% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 7.6%.

Additionally, we have considered 1% project specific risk for PS to factor in risk related to delays in completion of 6 laning by April 2017 which results in an adjusted cost of equity of 11.8% in the years when MAT is applicable and 12.1% when corporate tax rate is applicable.

Based on an average DER of 0.2 over the projected period for PS, the WACC arrived at for the purpose of valuation is 11.3% and 11.2%, respectively.

As on the Valuation Date, we have discounted the free cash flows of PS project using the WACC leading to a GEV of INR 19,050.3 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of PS as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of PS is negative INR 108.7 Mn as on the Valuation Date.

Refer Appendix X for the Discounted Cash Flow workings of **PS.**

- **Valuation of HK Toll Road Private Limited**

The FCFF for HK has been calculated based on the financial projections provided by the Management for the period FY17 through FY36.

The WACC has been calculated based on the applicable tax rate in the projected period.

In the years where MAT rate i.e. 21.3% is applicable, the base cost of equity for HK is considered to be 12.3% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.7% based on the prevailing interest rate of the SPV leading to post-tax cost of debt of 9.2%.

In the years where the corporate tax rate i.e. 34.6% is applicable, the base cost of equity for HK is considered to be 12.5% based on the factors mentioned above in Section IX. The pre-tax cost of debt is considered to be 11.7% based on the prevailing interest rate of the SPV leading to a post-tax cost of debt of 7.6%.

Additionally, we have considered 1% project specific risk for HK to factor in risk after considering projected performance and current and historical performance

Based on an average DER of 0.8 over the projected period for HK, the WACC arrived at for the purpose of valuation is 11.4% and 10.8%, respectively.

As on the Valuation Date, we have discounted the free cash flows of HK project using the WACC leading to a GEV of INR 12,203.8 Mn.

The GEV has then been adjusted for cash, net current assets, net cash impact of long term assets and liabilities, bank borrowings, net dues from/to related parties including interest free subordinate debt based on the audited balance sheet of HK as on 30 September 2016 provided by the Management and estimated net cash outflow/inflow for the Quarter ending 31st December 2016 provided by the Management as explained in Section II. Based on the above adjustments, the Fair Value of Equity of HK is INR 3,527.1 Mn as on the Valuation Date.

Refer Appendix XI for the Discounted Cash Flow workings of **HK.**

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XI. SOURCES OF INFORMATION

We have relied on the following sources of information:

- Provided by the Management:
    - Information on business and profile of the SPVs as provided by the Management.
    - Concession Agreement of each SPV between NHAI and individual SPV.
    - Letter to NHAI for the deferment of premium by RIL for HK.
    - Audited financial statements on a standalone basis from the date of operation of individual SPV till FY16 as per Indian GAAP.
    - Audited balance sheet of each SPV as per IndAS as on the 30 September 2016
    - Financial projections of the SPVs from FY17 till the end of the concession period of the respective SPV as provided by the Management as per IndAS.
    - Traffic Surveyors' Reports prepared by GMD and Systra for their respective SPVs as provided by the Management.
    - The list of all the permits and licenses of the individual SPVs as provided by the Management.
    - The estimates and timing of the proposed major repairs to be carried out by the SPVs considered by the Management based on the reports provided by the Traffic Surveyors.
- International databases
- Site Visits and Physical inspection for the 10 SPVs
- Other industry related information from various publicly available sources
- Other discussions with the Management

In addition to the above, we have also obtained such other information and explanations which were considered relevant for the purpose of our analysis. While we have relied on the information, we have not independently verified or audited these information

Please note that with respect to the audited, provisional and projected financial statements, rounding-off of amounts in the underlying financial information could result in immaterial arithmetic differences

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XII. CAVEATS

a) Provision of valuation recommendations and considerations of the issues described herein are areas of our regular corporate advisory practice. The services do not represent accounting, audit, and financial due diligence review, consulting, transfer pricing or domestic tax-related services that may otherwise be provided by WCC.

b) Our analysis and review of the SPVs does not constitute an audit in accordance with Auditing Standards. We have relied on explanations and information provided by the Management and accepted the information provided to us as accurate. Although, we have reviewed such data for consistency and reasonableness, we have not independently investigated or otherwise verified the data provided. Nothing has come to our attention to indicate that the information provided contains material mis-statements or would not afford reasonable grounds upon which to base the Report.

c) We must emphasize that the Financial Projections are prepared by the Management and provided to us for the purpose of our analysis. The fact that we have considered the Financial Projections in this exercise should not be construed or taken as our being associated with or a party to such projections. Realisations of free cash flow forecast used in the analysis will be dependent on the continuing validity of assumptions on which they are based. Our analysis, therefore, will not, and cannot be directed to provide any assurance about the achievability of the Financial Projections. Since the Financial Projections relate to future, actual results are likely to be different from the projected results because events and circumstances do not occur as expected, and the differences may be material.

d) In accordance with the terms of our engagement, we have assumed and relied upon, without independent verification, the accuracy of the information that was publicly available and formed a substantial basis for this Report. These sources, although considered to be reliable, are external and hence, we assume no liability for the accuracy of the data. We have assumed that the business continues normally without any disruptions due to statutory or other external/internal occurrences.

e) Further, except as specifically stated to the contrary, this Report has given no consideration to matters of a legal nature, including issues of legal title and compliance with local laws, and litigation and other contingent liabilities that are not recorded in the audited/ unaudited balance sheet of the 10 SPVs. Our conclusion assumes that the assets and liabilities of the 10 SPVs, reflected in their respective latest balance sheets remain intact as of the Report date.

f) We are not advisors with respect to legal tax and regulatory matters for the proposed transaction. No investigation of the SPVs' claim to title of assets has been made for the purpose of this Report and the SPVs' claim to such rights have been assumed to be valid. No consideration has been given to liens or encumbrances against the assets, beyond the loans disclosed in the accounts. Therefore, no responsibility is assumed for matters of a legal nature.

g) The scope of our work has been limited both in terms of the areas of the business and operations which we have reviewed and the extent to which we have reviewed them. There may be matters, other than those noted in this Report, which might be relevant in the context of the

transaction and which a wider scope might uncover. It may be noted that valuation is not an exact science and ultimately depends upon what the business is worth to a serious investor or buyer who may be prepared to pay a substantial goodwill.

h) The valuation analysis recommendation contained herein is not intended to represent the value at any time other than the date that is specifically stated in this Report. This Report is issued on the understanding that the Management have drawn our attention to all matters of which they are aware concerning the financial position of the businesses, which may have an impact on our Report up to the date of issue. We have no responsibility to update this Report for events and circumstances occurring after the date of this Report.

i) This Report does not look into the business/ commercial reasons behind the proposed transaction nor the likely benefits arising out of the same. Similarly, it does not address the relative merits of investing in InvIT as compared with any other alternative business transaction, or other alternatives, or whether or not such alternatives could be achieved or are available.

j) We have no present or planned future interest in the Client, Trustee, Investment Manager, Company or the SPVs and the fee for this Report is not contingent upon the values reported herein. Our valuation analysis should not be construed as investment advice; specifically, we do not express any opinion on the suitability or otherwise of entering into any financial or other transaction with the Client, Company or the SPVs.

k) The fee for the engagement is not contingent upon the results reported.

l) Limitation of Liability of Walker Chandiok & Co LLP (referred as the "Firm") as per paragraphs 8 i) to 8 iii) to Appendix 3 of our Engagement Letter with the Client

   i. The aggregate liability of the Firm, its partners, directors, consultants, employees, agents, affiliates and other personnel for damage shall be limited to the amount of the fees that the Firm has received in connection with the engagement. If the engagement is of a recurring nature then the aggregate liability shall not exceed the amount received by the Firm in the immediately preceding year.

   ii. For the purposes of this engagement "damage" shall mean the aggregate of all losses or damages and costs suffered or incurred, directly or indirectly, by the Client under or in connection with the engagement or its subject matter (as the same may be amended or varied) and any report prepared pursuant to it, including as a result of breach of contract, breach of statutory duty, tort (including negligence), or other act or omission by the Firm but excluding any such losses, damages or costs arising from the fraud or dishonesty of the Firm or in respect of liabilities which cannot lawfully be limited or excluded.

   iii. It is agreed that, having regard to the Firm's interest in limiting the personal liability and exposure to litigation of its personnel, the Client will not bring any claim in respect of any damage against any of the Firm's personnel personally.

XIII. DISTRIBUTION OF REPORT

This Report is confidential and is provided exclusively for the addressee. It should not be used, reproduced or circulated to any other person or for any purpose other than as mentioned above, in whole or in part, without the prior written consent of WCC. Such consent will only be given after full consideration of the circumstances at the time. It can however be used for statutory and regulatory filings in connection with proposed transaction which attracts the provisions of SEBI InvIT Regulations. The Report and the Summary of Valuation included herein can be reproduced and included in the Offer Document proposed to be filed in connection with an IPO offering of the units of the InvIT and may be made available for inspection in the manner specified therein.

It is clarified that this Report is not a fairness opinion under any of the stock exchange/ listing regulations. In case of any third party having access to this Report, please note this Report is not a substitute for the third party's own due diligence/ appraisal/ enquiries/ independent advice that the third party should undertake for his purpose

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XIV. CONCLUSION

Based on the above analysis and subject to the assumptions and limitations stated in this Report and in our Engagement Letter, the Fair Enterprise Value as on the Valuation Date of the 10 SPVs is illustrated in Table 11.1.

Table 11.1: Fair Enterprise Value of the 10 SPVs as on the Valuation Date

Name of the SPV	Fair Enterprise Value
NK Toll Road Limited	2,851.0
DS Toll Road Limited	5,162.6
TD Toll Road Private Limited	4,846.4
TK Toll Road Private Limited	9,342.9
SU Toll Road Private Limited	10,688.6
JR Toll Road Private Limited	4,205.7
GF Toll Road Private Limited	6,787.5
KM Toll Road Private Limited	8,259.4
PS Toll Road Private Limited	19,050.3
HK Toll Road Private Limited	12,203.8
Total Fair Enterprise Value of the 10 SPVs	**83,398.2**

The EV has further been adjusted for net dues from/to related parties including interest free subordinate debt to arrive at the Fair Value of Equity fair value of equity of the 10 SPVs as on the Valuation Date is illustrated in Table 11.2.

Table 11.2: Fair Value of Equity of the 10 SPVs as on the Valuation Date

Name of the SPV	Fair Equity Value
NK Toll Road Limited	(38.5)
DS Toll Road Private Limited	2,512.6
TD Toll Road Private Limited	2,127.6
TK Toll Road Private Limited	4,075.5
SU Toll Road Private Limited	4,794.9
JR Toll Road Private Limited	(748.2)
GF Toll Road Private Limited	(74.3)
KM Toll Road Private Limited	(2,758.1)
PS Toll Road Private Limited	(108.7)
HK Toll Road Private Limited	3,527.1
Total Fair Value of Equity for the 10 SPVs	**13,309.9**

Please note that in absence of the balance sheets of the SPVs as on the Valuation Date, the Fair Value of Equity of the SPVs are arrived from the Enterprise Value of the respective SPVs after making certain adjustments of current assets and non-current assets and liabilities including outstanding net debt of the individual SPVs (including interest free Subordinate debt from related parties) based on the audited balance sheets of the respective SPVs as on 30 September 2016 provided to us by the Management and cash inflow/outflow for the period 3 months ended 31 Dec 2016. The Equity value of the SPVs may change based on the actual balance sheet of the SPVs as on the Valuation Date.

Yours faithfully,

For Walker Chandiok & Co LLP
(Formerly Walker, Chandiok & Co)
Chartered Accountants
Firm Registration No. 001076N/N500013

Khushroo B. Panthaky

Partner
Membership No: 42423

Place: Mumbai
Dated: 15.12.2016

APPENDICES

APPENDIX I

List of Comparable Companies used for the computation of Beta

Ashoka Buildcon Ltd.
Atlanta Ltd.
IRB Infrastructure Developers Limited
MEP Infrastructure Developers Limited
Sadbhav Engineering Ltd.
IL&FS Transportation Networks Limited

Appendix II - NK Toll Road Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a)		88.8	391.6	437.6	499.1	561.9	635.0	714.0
Gronth Rate			*10.3%*	*11.7%*	*14.0%*	*12.6%*	*13.0%*	*12.4%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**73.8**	**306.6**	**346.8**	**402.0**	**458.1**	**524.5**	**596.4**
Margin		*83.1%*	*78.3%*	*79.2%*	*80.6%*	*81.5%*	*82.6%*	*83.5%*
Less: Depreciation & Amortization		36.1	159.4	178.1	203.1	228.7	258.4	290.6
Less: Interest on BG		0.1	0.4	0.4	0.5	0.5	0.5	0.5
Less: Interest on MMR provision		0.0	0.0	2.6	5.9	9.9	14.8	20.7
Earnings Before Interest and Tax		**37.6**	**146.8**	**165.7**	**192.5**	**219.0**	**250.9**	**284.6**
Income Tax (b)		8.0	31.3	35.4	41.1	46.7	53.5	60.7
Gross Free Cash Flows to Firm		**29.6**	**115.5**	**130.3**	**151.4**	**172.3**	**197.3**	**223.9**
Add: Depreciation & Amortization		36.1	159.4	178.1	203.1	228.7	258.4	290.6
Add: Major Maintenance Expenses provision		0.0	21.9	27.2	33.4	40.7	49.2	59.3
Less: Major Maintainence Expenses Payment		0.0	0.0	0.0	0.0	0.0	115.8	115.8
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**65.7**	**296.8**	**335.6**	**387.9**	**441.6**	**389.2**	**457.9**
Present Value Factors (c)	**10.3%**	0.9880	0.9293	0.8423	0.7634	0.6920	0.6272	0.5685
Present Value of Free Cash Flows to Firm		**64.9**	**275.8**	**282.6**	**296.1**	**305.6**	**244.1**	**260.3**

Gross Enterprise Value	**2,851.0**
Add: Cash balance (d)	106.7
Add/Less: Net current assets (induding investments) (d)	119.9
Add/Less: Net cash impact of long term assets and liabilities (d)	(2.8)
Less: External bank debt (d)	(1,140.6)
Add/(Less): Cash inflow/(outflow) for the 3 months ended 31st Dec 2016 (e)	3.5
Equity Value (INR Mn.) inclusive of sub debt	**1,937.6**
Less: Interest Free Subordinate debt from related parties (d)	(1,976.2)
Equity Value (INR Mn.) excluding sub debt	**(38.5)**

Footnotes:

INR: Indian Rupees; Mn.: Million; FY: Financial Year

(a) Projections for the Financial Years of FY17 to FY27 based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Limited ("Management").

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(d) Based on the audited balance sheet as on the 30 September 2016 as provided by the Management. Cash balance has been adjusted to reflect the cash inflow for the period 30 Sep 2016 to 31 Dec 2016.

(e) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31st December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March			
(Free Cash Flows to Firm or FCFF Model)		FY24	FY25	FY26	FY27
No of days operationsl		366	365	365	122
Net Sales (a)		805.6	902.2	1,006.9	363.9
Growth Rate		*12.8%*	*12.0%*	*11.6%*	*n/a*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**723.4**	**816.8**	**918.0**	**334.1**
Margin		*89.8%*	*90.5%*	*91.2%*	*91.8%*
Less: Depreciation & Amortization		327.8	367.2	409.8	148.1
Less: Interest on BG		0.0	0.0	0.0	0.0
Less: Interest on MMR provision		0.0	0.0	0.0	0.0
Earnings Before Interest and Tax		**395.6**	**449.6**	**508.3**	**186.0**
Income Tax (c)		84.4	96.0	108.5	39.7
Gross Free Cash Flows to Firm		**311.1**	**353.6**	**399.8**	**146.3**
Add: Depreciation & Amortization		327.8	367.2	409.8	148.1
Add: Major Maintenance Expenses		0.0	0.0	0.0	0.0
Less: Major Maintainence Expenses Payments		0.0	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**639.0**	**720.8**	**809.6**	**294.4**
Present Value Factors (d)	**10.3%**	0.5153	0.4670	0.4233	0.3837
Present Value of Free Cash Flows to Firm		**329.2**	**336.6**	**342.7**	**113.0**

Weighted Average Cost of Capital

Cost of Equity Calculation	Value
Risk Free Rate (a)	7.0%
Relevered Beta (b)	0.50
Equity Risk Premium (c)	7.4%
Base Cost of Equity	**10.7%**
Project Specific Risk Premium	0.0%
Adjusted Cost of Equity	**10.7%**

Cost of Debt Calculation	Value
Cost of Debt (e)	**10.9%**
Less: Tax (f)	21.3%
Post-tax Cost Of Debt	8.6%

WACC Calculation	Weight (g)	Value
Debt	16.7%	8.6%
Equity	83.3%	10.7%
Adjusted Cost Of Capital		**10.3%**

Footnotes:

ERP: Equity Risk Premium; CSRP: Company Specific Risk Premium; D/E: Debt to Equity

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected.
Beta has been considered based on 5 yr trailing Median Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) Cost of debt has been considered to be 10.9% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(e) Effective tax rate has been considered as applicable throughout the projected period.

(f) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY27.

Appendix III - DS Toll Road Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a)		162.9	716.5	792.5	898.2	1,012.3	1,147.0	1,290.4
Growth Rate			*8.5%*	*10.6%*	*13.3%*	*12.7%*	*13.3%*	*12.5%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**146.7**	**619.9**	**689.2**	**787.6**	**893.7**	**1,020.4**	**1,155.2**
Margin		*90.0%*	*86.5%*	*87.0%*	*87.7%*	*88.3%*	*89.0%*	*89.5%*
Less: Depreciation & Amortization		42.0	184.9	204.6	231.9	261.3	296.1	333.1
Less: Interest on BG		0.3	1.1	1.2	1.1	1.3	1.3	1.3
Less: Interest on MMR provision		0.0	0.0	3.4	7.5	12.7	18.9	26.5
Earnings Before Interest and Tax		**104.4**	**433.9**	**480.0**	**547.0**	**618.4**	**704.1**	**794.3**
Income Tax (b)		22.3	92.6	102.4	116.7	132.0	150.3	169.5
Gross Free Cash Flows to Firm		**82.1**	**341.3**	**377.6**	**430.3**	**486.4**	**553.8**	**624.8**
Add: Depreciation & Amortization		42.0	184.9	204.6	231.9	261.3	296.1	333.1
Add: Major Maintenance Expenses provision		0.0	28.1	34.8	42.8	52.1	63.1	76.0
Less: Major Maintainence Expenses Payment		0.0	0.0	0.0	0.0	0.0	148.5	148.5
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**124.1**	**554.3**	**617.0**	**704.9**	**799.9**	**764.6**	**885.4**
Present Value Factors (c)	**10.7%**	0.9876	0.9271	0.8378	0.7570	0.6840	0.6181	0.5585
Present Value of Free Cash Flows to Firm		**122.6**	**513.9**	**516.9**	**533.6**	**547.1**	**472.6**	**494.5**

Gross Enterprise Value	**5,162.6**
Add: Cash balance (d)	114.3
Add/Less: Net current assets (induding investments) (d)	762.7
Add/Less: Net cash impact of long term assets and liabilities (d)	53.5
Less: External bank debt (d)	(3,151.3)
Add/(Less): Cash inflow/(outflow) for the period 3 months ended 31st Dec 2016 (e)	38.8
Equity Value (INR Mn.) inclusive of sub debt	**2,980.6**
Less: Interest Free Subordinate debt from related parties (e)	(468.0)
Equity Value (INR Mn.) excluding sub debt	**2,512.6**

Footnotes:

INR: Indian Rupees; Mn.: Million; FY: Financial Year

(a) Projections for the Financial Years of FY17 to FY27 based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Limited ("Management").

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(d) Based on the audited balance sheet as on the 30 September 2016 as provided by the Management. Cash balance has been adjusted to reflect the cash inflow for the period 30 Sep 2016 to 31 Dec 2016.

(e) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31st December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March			
(Free Cash Flows to Firm or FCFF Model)		**FY24**	**FY25**	**FY26**	**FY27**
No of days operationsl		**366**	**365**	**365**	**115**
Net Revenue (a)		1,452.3	1,622.9	1,803.6	632.5
Growth Rate		*12.5%*	*11.8%*	*11.1%*	*n/a*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**1,363.2**	**1,530.3**	**1,707.2**	**601.2**
Margin		*93.9%*	*94.3%*	*94.7%*	*95.1%*
Less: Depreciation & Amortization		374.9	418.9	465.6	163.3
Less: Interest on BG		0.0	0.0	0.0	0.0
Less: Interest on MMR provision		0.0	0.0	0.0	0.0
Earnings Before Interest and Tax		**988.3**	**1,111.3**	**1,241.6**	**437.9**
Income Tax (c)		210.9	237.2	265.0	93.5
Gross Free Cash Flows to Firm		**777.4**	**874.2**	**976.7**	**344.5**
Add: Depreciation & Amortization		374.9	418.9	465.6	163.3
Add: Major Maintenance Expenses		0.0	0.0	0.0	0.0
Less: Major Maintainence Expenses Payments		0.0	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**1,152.3**	**1,293.1**	**1,442.2**	**507.7**
Present Value Factors (d)	**10.7%**	0.5047	0.4560	0.4121	0.3855
Present Value of Free Cash Flows to Firm		**581.5**	**589.7**	**594.3**	**195.7**

Weighted Average Cost of Capital

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.86	0.88
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**13.4%**	**13.5%**
Project Specific Risk Premium	0.0%	0.0%
Adjusted Cost of Equity	**13.4%**	**13.5%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (e)	**10.9%**	**10.9%**
Less: Tax (f)	21.3%	34.6%
Post-tax Cost Of Debt	8.6%	7.1%

WACC Calculation	Weight (g)	@ 21.3% tax	@ 34.6% tax
Debt	56.4%	8.6%	7.1%
Equity	43.6%	13.4%	13.5%
Adjusted Cost Of Capital		**10.7%**	**9.9%**

Footnotes:

ERP: Equity Risk Premium; CSRP: Company Specific Risk Premium; D/E: Debt to Equity

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected.
Beta has been considered based on 5 yr trailing Median Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) Cost of debt has been considered to be 10.9% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(e) Effective tax rate has been considered as applicable throughout the projected period.

(f) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY27.

Appendix IV - TD Toll Road Private Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a)		92.8	386.1	405.6	445.4	502.1	567.9	639.2
Growth Rate			*2.6%*	*5.1%*	*9.8%*	*12.7%*	*13.1%*	*12.5%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**50.2**	**197.9**	**199.6**	**306.6**	**351.7**	**405.8**	**464.1**
Margin		*54.1%*	*51.3%*	*49.2%*	*68.8%*	*70.1%*	*71.5%*	*72.6%*
Less: Depreciation & Amortization		12.8	55.9	61.6	69.8	78.6	89.0	100.1
Less: Interest on BG		0.2	0.9	1.0	1.0	1.2	1.2	1.2
Earnings Before Interest and Tax		**37.2**	**128.3**	**108.1**	**235.7**	**264.1**	**298.2**	**333.6**
Income Tax (b)		7.9	27.4	23.1	50.3	56.4	63.6	71.2
Gross Free Cash Flows to Firm		**29.3**	**100.9**	**85.0**	**185.4**	**207.8**	**234.6**	**262.4**
Add: Grant income		42.6	172.8	118.2	0.0	0.0	0.0	0.0
Less: Interest on Grant		11.0	29.5	12.4	0.0	0.0	0.0	0.0
Add: Depreciation & Amortization		12.8	55.9	61.6	69.8	78.6	89.0	100.1
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**100.3**	**230.9**	**213.7**	**319.8**	**366.5**	**421.9**	**228.4**
Present Value Factors (c)	**10.3%**	0.9879	0.9292	0.8421	0.7631	0.6916	0.6268	0.5680
Present Value of Free Cash Flows to Firm	**10.3%**	**99.1**	**214.6**	**180.0**	**244.0**	**253.4**	**264.4**	**129.7**

Gross Enterprise Value	**4,846.4**
Add: Cash balance (d)	11.5
Add/Less: Net current assets (induding investments) (d)	37.4
Add/Less: Net cash impact of long term assets and liabilities (d)	247.6
Less: External bank debt (d)	(2,883.5)
Add/(Less): Cash inflow/(outflow) for the period 3 months ended 31st Dec 2016 (e)	20.7
Equity Value (INR Mn.) inclusive of sub debt	**2,280.1**
Less: Interest Free Subordinate debt from related parties (e)	(152.5)
Equity Value (INR Mn.) excluding sub debt	**2,127.6**

Footnotes:

INR: Indian Rupees; Mn.: Million; FY: Financial Year

(a) Projections for the Financial Years of FY17 to FY38 based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Limited ("Management").

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(d) Based on the audited balance sheet as on the 30 September 2016 as provided by the Management. Cash balance has been adjusted to reflect the cash inflow for the period 30 Sep 2016 to 31 Dec 2016.

(e) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31st December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**	**FY30**
No of days operationsl		**366**	**365**	**365**	**365**	**366**	**365**	**365**
Net Sales (a)		715.9	800.8	887.2	982.2	1,084.0	1,181.9	1,293.4
Growth Rate		*12.0%*	*11.9%*	*10.8%*	*10.7%*	*10.4%*	*9.0%*	*9.4%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**526.5**	**650.4**	**726.2**	**810.3**	**900.3**	**985.2**	**1,082.5**
Margin		*73.5%*	*81.2%*	*81.8%*	*82.5%*	*83.1%*	*83.4%*	*83.7%*
Less: Depreciation & Amortization		112.1	125.4	139.0	153.8	169.8	185.1	202.6
Less: Interest on BG		1.1	0.0	0.0	0.0	0.0	0.0	0.0
Earnings Before Interest and Tax		**369.7**	**525.0**	**580.1**	**640.6**	**703.8**	**760.3**	**824.2**
Income Tax (c)		78.9	112.0	123.8	136.7	150.2	162.3	175.9
Gross Free Cash Flows to Firm		**290.8**	**413.0**	**456.3**	**503.9**	**553.6**	**598.0**	**648.3**
Add: Grant income		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: Interest on Grant		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add: Depreciation & Amortization		112.1	125.4	139.0	153.8	169.8	185.1	202.6
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**294.1**	**597.4**	**668.5**	**747.7**	**833.1**	**603.7**	**698.5**
Present Value Factors (d)	**10.3%**	0.5148	0.4665	0.4228	0.3831	0.3472	0.3147	0.2852
Present Value of Free Cash Flows to Firm	**10.3%**	**151.4**	**278.7**	**282.6**	**286.5**	**289.3**	**190.0**	**199.2**

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March							
(Free Cash Flows to Firm or FCFF Model)		**FY31**	**FY32**	**FY33**	**FY34**	**FY35**	**FY36**	**FY37**	**FY38**
No of days operationsl		**365**	**366**	**365**	**365**	**365**	**366**	**365**	**282**
Net Sales (a)		1,401.1	1,523.1	1,635.3	1,758.7	1,894.5	2,004.3	2,116.9	1,779.3
Growth Rate		*8.3%*	*8.7%*	*7.4%*	*7.5%*	*7.7%*	*5.8%*	*5.6%*	*n/a*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**1,223.3**	**1,334.9**	**1,435.8**	**1,546.6**	**1,668.7**	**1,763.3**	**1,993.0**	**1,679.5**
Margin		*87.3%*	*87.6%*	*87.8%*	*87.9%*	*88.1%*	*88.0%*	*94.1%*	*94.4%*
Less: Depreciation & Amortization		219.5	238.6	256.2	275.5	296.8	314.0	331.6	278.7
Less: Interest on BG		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Earnings Before Interest and Tax		**1,003.8**	**1,088.2**	**1,161.4**	**1,240.5**	**1,326.2**	**1,385.4**	**1,661.4**	**1,400.8**
Income Tax (c)		214.2	232.2	247.9	264.7	373.1	476.3	638.4	530.0
Gross Free Cash Flows to Firm		**789.6**	**856.0**	**913.5**	**975.8**	**953.2**	**909.1**	**1,022.9**	**870.9**
Add: Grant income		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: Interest on Grant		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add: Depreciation & Amortization		219.5	238.6	256.2	275.5	296.8	314.0	331.6	278.7
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**1,076.9**	**1,178.6**	**1,273.0**	**1,377.1**	**1,043.8**	**1,048.0**	**1,354.5**	**1,149.5**
Present Value Factors (d)	**10.3%**	0.2584	0.2342	0.2123	0.1924	0.1747	0.1584	0.1435	0.1316
Present Value of Free Cash Flows to Firm	**10.3%**	**278.3**	**276.1**	**270.2**	**264.9**	**182.4**	**166.0**	**194.4**	**151.2**

Weighted Average Cost of Capital

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.51	0.55
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**10.8%**	**11.1%**
Project Specific Risk Premium	0.0%	0.0%
Adjusted Cost of Equity	**10.8%**	**11.1%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (e)	**10.9%**	**10.9%**
Less: Tax (f)	21.3%	34.6%
Post-tax Cost Of Debt	8.6%	7.1%

WACC Calculation	Weight (g)	@ 21.3% tax	@ 34.6% tax
Debt	19.1%	8.6%	7.1%
Equity	80.9%	10.8%	11.1%
Adjusted Cost Of Capital		**10.3%**	**10.3%**

Footnotes:

ERP: Equity Risk Premium; CSRP: Company Specific Risk Premium; D/E: Debt to Equity

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected. Beta has been considered based on 5 yr trailing Median Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) Cost of debt has been considered to be 10.9% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(e) Effective tax rate has been considered as applicable throughout the projected period.

(f) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY38.

Appendix V - TK Toll Road Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a)		141.4	614.8	684.8	780.3	877.5	994.5	1,117.4
Gronth Rate			*8.7%*	*11.4%*	*14.0%*	*12.5%*	*13.3%*	*12.4%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**111.2**	**480.1**	**535.3**	**614.0**	**748.8**	**855.9**	**967.6**
Margin		*78.6%*	*78.1%*	*78.2%*	*78.7%*	*85.3%*	*86.1%*	*86.6%*
Less: Depreciation & Amortization		22.8	99.3	110.6	126.0	141.7	160.6	180.5
Earnings Before Interest and Tax		**88.3**	**380.8**	**424.7**	**488.0**	**607.1**	**695.3**	**787.1**
Income Tax (b)		18.9	81.3	90.6	104.1	129.6	148.4	168.0
Gross Free Cash Flows to Firm		**69.5**	**299.6**	**334.0**	**383.8**	**477.5**	**546.9**	**619.2**
Add: Depreciation & Amortization		22.8	99.3	110.6	126.0	141.7	160.6	180.5
Add: Major Maintenance Expenses provision		9.0	45.2	55.6	67.7	25.0	31.0	38.1
Less: Major Maintainence Expenses Payment		0.0	0.0	102.5	102.5	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**101.3**	**444.1**	**397.7**	**475.1**	**644.3**	**738.5**	**837.7**
Present Value Factors (c)	**10.3%**	0.9880	0.9296	0.8430	0.7645	0.6932	0.6287	0.5701
Present Value of Free Cash Flows to Firm	**10.4%**	**100.1**	**412.8**	**335.2**	**363.2**	**446.6**	**464.3**	**477.6**

Gross Enterprise Value	**9,342.9**
Add: Cash balance (d)	12.9
Add/Less: Net current assets (induding investments) (d)	(93.4)
Add/Less: Net cash impact of long term assets and liabilities (d)	(146.4)
Less: External bank debt (d)	(3,442.5)
Add/(Less): Cash inflow/(outflow) for the period 3 months ended 31st Dec 2016 (e)	19.7
Equity Value (INR Mn.) inclusive of sub debt	**5,693.2**
Less: Interest Free Subordinate debt from related parties (d)	(1,617.7)
Equity Value (INR Mn.) excluding sub debt	**4,075.5**

Footnotes:

INR: Indian Rupees; Mn.: Million; FY: Financial Year

(a) Projections for the Financial Years of FY17 to FY38 based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Limited ("Management").

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(d) Based on the audited balance sheet as on the 30 September 2016 as provided by the Management.

(e) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31st December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**	**FY30**
No of days operationsl		**366**	**365**	**365**	**365**	**366**	**365**	**365**
Net Sales (a)		1,252.0	1,399.8	1,549.2	1,714.9	1,894.5	2,075.0	2,276.8
Growth Rate		*12.0%*	*11.8%*	*10.7%*	*10.7%*	*10.5%*	*9.5%*	*9.7%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**1,090.8**	**1,224.2**	**1,357.3**	**1,556.8**	**1,725.3**	**1,893.3**	**2,081.0**
Margin		*87.1%*	*87.5%*	*87.6%*	*90.8%*	*91.1%*	*91.2%*	*91.4%*
Less: Depreciation & Amortization		202.2	226.1	250.2	277.0	306.0	335.1	367.7
Earnings Before Interest and Tax		**888.6**	**998.1**	**1,107.1**	**1,279.9**	**1,419.4**	**1,558.2**	**1,713.3**
Income Tax (c)		189.6	213.0	236.3	273.1	302.9	332.5	365.6
Gross Free Cash Flows to Firm		**698.9**	**785.1**	**870.8**	**1,006.7**	**1,116.4**	**1,225.6**	**1,347.6**
Add: Depreciation & Amortization		202.2	226.1	250.2	277.0	306.0	335.1	367.7
Add: Major Maintenance Expenses		46.4	56.2	67.7	30.2	37.4	45.9	56.0
Less: Major Maintainence Expenses Payments		0.0	132.2	132.2	0.0	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**947.6**	**935.2**	**1,056.5**	**1,313.8**	**1,459.8**	**1,606.7**	**1,771.3**
Present Value Factors (d)	**10.3%**	0.5170	0.4688	0.4252	0.3855	0.3496	0.3171	0.2875
Present Value of Free Cash Flows to Firm	**10.4%**	**489.9**	**438.4**	**449.2**	**506.5**	**510.4**	**509.4**	**509.3**

DISCOUNTED CASH FLOW ANALYSIS	Financial Year Ending 31 March							
(Free Cash Flows to Firm or FCFF Model)	**FY31**	**FY32**	**FY33**	**FY34**	**FY35**	**FY36**	**FY37**	**FY38**
No of days operationsl	**365**	**366**	**365**	**365**	**365**	**366**	**365**	**282**
Net Sales (a)	2,469.5	2,680.3	2,876.3	3,094.7	3,332.6	3,547.1	3,752.6	3,133.5
Growth Rate	*8.5%*	*8.5%*	*7.3%*	*7.6%*	*7.7%*	*6.4%*	*5.8%*	*n/a*
Earnings Before Interest, Depreciation & Amortization and Tax (a)	**2,257.8**	**2,451.8**	**2,692.5**	**2,899.8**	**3,125.1**	**3,325.1**	**3,514.1**	**2,911.1**
Margin	*91.4%*	*91.5%*	*93.6%*	*93.7%*	*93.8%*	*93.7%*	*93.6%*	*92.9%*
Less: Depreciation & Amortization	398.8	432.9	464.5	499.8	538.2	572.9	606.1	506.1
Earnings Before Interest and Tax	**1,858.9**	**2,018.9**	**2,227.9**	**2,399.9**	**2,586.8**	**2,752.2**	**2,908.0**	**2,405.0**
Income Tax (c)	396.7	430.9	475.5	512.2	552.1	659.2	1,130.9	930.9
Gross Free Cash Flows to Firm	**1,462.2**	**1,588.0**	**1,752.5**	**1,887.8**	**2,034.7**	**2,093.1**	**1,777.1**	**1,474.1**
Add: Depreciation & Amortization	398.8	432.9	464.5	499.8	538.2	572.9	606.1	506.1
Add: Major Maintenance Expenses	67.8	81.6	34.0	42.1	51.7	63.0	76.3	91.9
Less: Major Maintainence Expenses Payments	159.4	159.4	0.0	0.0	0.0	0.0	179.5	179.5
Less: Capex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm	**1,769.4**	**1,943.1**	**2,251.0**	**2,429.7**	**2,624.7**	**2,729.0**	**2,280.0**	**1,892.6**

Weighted Average Cost of Capital

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.47	0.52
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**10.5%**	**10.8%**
Project Specific Risk Premium	0.0%	0.0%
Adjusted Cost of Equity	**10.5%**	**10.8%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (d)	**11.0%**	**11.0%**
Less: Tax (e)	21.3%	34.6%
Post-tax Cost Of Debt	8.6%	7.2%

WACC Calculation	Weight (f)	@ 21.3% tax	@ 34.6% tax
Debt	10.6%	8.6%	7.2%
Equity	89.4%	10.5%	10.8%
Adjusted Cost Of Capital		**10.3%**	**10.4%**

Footnotes:

ERP: Equity Risk Premium; CSRP: Company Specific Risk Premium; D/E: Debt to Equity

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected.
Beta has been considered based on 5 yr trailing Median Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) Cost of debt has been considered to be 11.0% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(e) Effective tax rate has been considered as applicable throughout the projected period.

(f) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY38.

Appendix VI - SU Toll Road Private Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	365	365	365	365
Net Revenue (a)		239.3	1,014.9	1,130.8	1,280.2	1,437.7	1,637.6	1,834.5
Growth Rate			*4.6%*	*11.4%*	*13.2%*	*12.3%*	*13.9%*	*12.0%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**182.3**	**766.6**	**862.3**	**989.6**	**1,191.4**	**1,374.4**	**1,552.7**
Margin		*76.2%*	*75.5%*	*76.3%*	*77.3%*	*82.9%*	*83.9%*	*84.6%*
Less: Depreciation & Amortization		44.9	198.5	221.2	250.5	281.3	406.6	455.5
Less: Interest on BG		0.7	2.7	2.7	2.7	2.8	3.7	4.2
Less: Interest on MMR provision		0.0	12.0	26.9	45.1	0.0	10.6	23.8
Earnings Before Interest and Tax		**136.7**	**553.4**	**611.5**	**691.2**	**907.2**	**953.4**	**1,069.2**
Income Tax (b)		29.2	118.1	130.5	147.5	193.6	203.5	228.2
Gross Free Cash Flows to Firm		**107.5**	**435.3**	**481.0**	**543.7**	**713.6**	**749.9**	**841.0**
Add: Grant income		88.2	32.2	0.0	0.0	0.0	0.0	0.0
Less: Interest on Grant		9.6	0.0	0.0	0.0	0.0	0.0	0.0
Add: Depreciation & Amortization		44.9	198.5	221.2	250.5	281.3	406.6	455.5
Add: Major Maintenance Expenses provision		24.6	123.9	152.2	185.5	88.5	109.7	134.8
Less: Major Maintainence Expenses Payment		0.0	0.0	280.7	280.7	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0	0.0	190.0	760.1
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**255.7**	**789.9**	**573.7**	**699.0**	**1,083.5**	**1,076.3**	**671.3**
Present Value Factors (c)	**10.8%**	0.99	0.93	0.84	0.75	0.68	0.61	0.55
Present Value of Free Cash Flows to Firm	**10.0%**	**252.5**	**731.5**	**479.4**	**527.1**	**737.2**	**660.8**	**371.9**

Gross Enterprise Value	**10,688.6**
Add: Cash balance (d)	285.7
Add/Less: Net current assets (induding investments) (d)	298.8
Add/Less: Net cash impact of long term assets and liabilities (d)	(11.2)
Add/Less: Cash Inflow(Outflow) for the period 3 months ended 31 Dec 2016 (e)	69.5
Less: External bank debt (d)	(6,536.5)
Equity Value of SUTR (INR Mn.)	**4,794.9**

Footnotes:

INR: Indian Rupees; Mn.: Million; FY: Financial Year;

(a) Projections for the Financial Years of FY17 to FY33 based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Limited ("Management").

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(d) Based on the audited balance sheet as on the 30 September 2016 as provided by the Management.

(e) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31st December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March									
(Free Cash Flows to Firm or FCFF Model)		**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**	**FY30**	**FY31**	**FY32**	**FY33**
No of days operationsl		**365**	**365**	**365**	**365**	**365**	**365**	**365**	**365**	**365**	**288**
Net Revenue (a)		2,064.4	2,317.8	2,572.5	2,838.1	3,146.2	3,451.1	3,800.3	4,134.6	4,491.0	3,825.6
Growth Rate		*12.5%*	*12.3%*	*11.0%*	*10.3%*	*10.9%*	*9.7%*	*10.1%*	*8.8%*	*8.6%*	*n/a*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**1,762.5**	**1,993.9**	**2,300.3**	**2,550.5**	**2,842.0**	**3,128.7**	**3,458.0**	**3,770.7**	**4,264.0**	**3,642.8**
Margin		*85.4%*	*86.0%*	*89.4%*	*89.9%*	*90.3%*	*90.7%*	*91.0%*	*91.2%*	*94.9%*	*95.2%*
Less: Depreciation & Amortization		512.7	575.7	638.9	704.9	781.5	857.3	944.1	1,027.1	1,115.7	950.3
Less: Interest on BG		4.7	5.1	6.3	6.6	7.2	5.4	2.2	0.0	0.0	0.0
Less: Interest on MMR provision		40.0	59.7	0.0	9.6	21.5	36.2	54.1	75.7	0.0	0.0
Earnings Before Interest and Tax		**1,205.1**	**1,353.4**	**1,655.1**	**1,829.4**	**2,031.7**	**2,229.8**	**2,457.7**	**2,667.9**	**3,148.3**	**2,692.5**
Income Tax (b)		257.2	288.8	353.2	390.4	433.6	475.9	524.5	569.4	1,069.0	1,040.5
Gross Free Cash Flows to Firm		**947.9**	**1,064.6**	**1,301.9**	**1,438.9**	**1,598.1**	**1,753.9**	**1,933.2**	**2,098.5**	**2,079.3**	**1,652.0**
Add: Grant income		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: Interest on Grant		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Add: Depreciation & Amortization		512.7	575.7	638.9	704.9	781.5	857.3	944.1	1,027.1	1,115.7	950.3
Add: Major Maintenance Expenses		164.3	198.9	80.2	99.4	122.1	148.8	180.2	216.9	0.0	0.0
Less: Major Maintainence Expenses Payments		348.1	348.1	0.0	0.0	0.0	0.0	423.8	423.8	0.0	0.0
Less: Capex		760.1	190.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**516.7**	**1,301.0**	**2,021.0**	**2,243.3**	**2,501.7**	**2,760.0**	**2,633.6**	**2,918.8**	**3,195.0**	**2,602.3**
Present Value Factors (d)	**10.8%**	0.50	0.45	0.41	0.37	0.33	0.30	0.27	0.24	0.24	0.22
Present Value of Free Cash Flows to Firm	**10.0%**	**258.3**	**586.9**	**822.6**	**823.9**	**829.1**	**825.4**	**710.7**	**710.7**	**778.3**	**581.9**

Weighted Average Cost of Capital

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.86	0.87
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**13.3%**	**13.5%**
Project Specific Risk Premium	0.0%	0.0%
Adjusted Cost of Equity	**13.3%**	**13.5%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (d)	**11.2%**	**11.2%**
Less: Tax (e)	21.3%	34.6%
Post-tax Cost Of Debt	8.8%	7.4%

WACC Calculation	Weight (f)	@ 21.3% tax	@ 34.6% tax
Debt	55.9%	8.8%	7.4%
Equity	44.1%	13.3%	13.5%
Adjusted Cost Of Capital		**10.8%**	**10.0%**

Footnotes:

ERP: Equity Risk Premium; CSRP: Company Specific Risk Premium; D/E: Debt to Equity

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected. Beta has been considered based on 5 yr trailing average Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) Cost of debt has been considered to be 11.2% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(e) Effective tax rate has been considered as applicable throughout the projected period.

(f) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY33.

Appendix VII - JR Toll Road Private Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a)		123.2	558.8	624.0	695.1	772.3	845.5	935.4
Growth Rate			*11.8%*	*11.7%*	*11.4%*	*11.1%*	*9.5%*	*10.6%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**97.8**	**449.4**	**507.7**	**570.4**	**638.6**	**701.9**	**809.6**
Margin		*79.4%*	*80.4%*	*81.4%*	*82.1%*	*82.7%*	*83.0%*	*86.6%*
Less: Depreciation & Amortization		46.8	212.1	236.9	263.8	293.2	320.9	355.1
Less: Interest on BG		0.3	1.1	1.1	1.1	1.3	1.6	1.8
Less: Interest on MMR Provision		0.0	3.5	7.8	13.1	19.5	27.3	0.0
Earnings Before Interest and Tax		**50.8**	**232.8**	**262.0**	**292.4**	**324.6**	**352.0**	**452.8**
Income Tax (b)		10.8	49.7	55.9	62.4	69.3	75.1	96.6
Gross Free Cash Flows to Firm		**39.9**	**183.1**	**206.1**	**230.0**	**255.3**	**276.9**	**356.2**
Add: Depreciation & Amortization		46.8	212.1	236.9	263.8	293.2	320.9	355.1
Add: Interest on Premium Deferment								
Add: Major Maintenance Expenses provision		7.1	35.9	44.0	53.7	65.0	78.3	29.4
Less: Major Maintainence Expenses Payment		0.0	0.0	0.0	0.0	152.9	152.9	0.0
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**93.8**	**431.1**	**487.0**	**547.5**	**460.6**	**523.2**	**740.6**
Present Value Factors (c)	**11.6%**	0.9866	0.9215	0.8259	0.7402	0.6634	0.5946	0.5329
Present Value of Free Cash Flows to Firm	**10.8%**	**92.6**	**397.2**	**402.2**	**405.3**	**305.6**	**311.1**	**394.7**

Gross Enterprise Value	**4,205.7**
Add: Cash balance (d)	3.4
Add/Less: Net current assets (including investments) (d)	(13.0)
Add/Less: Net cash impact of long term assets and liabilities (d)	(94.4)
Add/Less: Cash inflow (outflow) for the period 3 months ended 31 Dec 2016 (e)	(1.2)
Less: External bank debt (d)	(3,570.8)
Equity Valuation of JRTR including Subordinate Debt (INR Mn)	**529.6**
Less: Interest Free Subordinate debt from related parties (d)	(1,277.8)
Equity Valuation of JRTR excluding Subordinate Debt (INR Mn)	**(748.2)**

Footnotes:

INR: Indian Rupees; Mn: Millions; FY: Financial Year

(a) Projections for the Financial Years of FY17 to FY29 as per Indian GAAP and based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Ltd ("Management"). As highlighted in the Traffic Surveyor's report, there is an Escape Route in the vicinity of toll plaza which traffic is using to bypass the toll plaza. As per the Traffic Surveyor's estimates and Management representation, barricades are being provided on the Escape Route to avoid any leakage of traffic through the alternate road. Accordingly, the traffic, which is presently using the escape route, has been induded by the Traffic Surveyor to the project the road traffic in the year FY18.

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(d) Based on the audit balance sheet as on 30 September 2016 provided by the Management as per IndAS.

(e) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31 December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31 December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31 December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March					
(Free Cash Flows to Firm or FCFF Model)		**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**
No of days operationsl		**366**	**365**	**365**	**365**	**366**	**135**
Net Sales (a)		1,031.8	1,129.5	1,245.1	1,340.8	1,456.7	437.8
Growth Rate		*10.3%*	*9.5%*	*10.2%*	*7.7%*	*8.6%*	*n/a*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**898.6**	**988.3**	**1,095.4**	**1,181.7**	**1,288.7**	**335.5**
Margin		*87.1%*	*87.5%*	*88.0%*	*88.1%*	*88.5%*	*76.6%*
Less: Depreciation & Amortization		391.7	428.7	472.6	508.9	552.9	166.2
Less: Interest on BG		2.2	0.0	0.0	0.0	0.0	0.0
Less: Interest on Premium Deferment (b)		3.5	7.9	13.3	19.8	27.8	37.3
Earnings Before Interest and Tax		**501.3**	**551.7**	**609.5**	**653.0**	**708.0**	**132.0**
Income Tax (c)		107.0	117.7	130.1	139.4	151.1	28.2
Gross Free Cash Flows to Firm		**394.3**	**434.0**	**479.4**	**513.6**	**556.9**	**103.8**
Add: Depreciation & Amortization		391.7	428.7	472.6	508.9	552.9	166.2
Add: Interest on Premium Deferment							
Add: Major Maintenance Expenses		36.5	44.8	54.6	66.1	79.6	95.4
Less: Major Maintainence Expenses Payments		0.0	0.0	0.0	0.0	0.0	406.5
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**822.4**	**907.5**	**1,006.6**	**1,088.7**	**1,189.5**	**(41.1)**
Present Value Factors (d)	**11.6%**	0.4776	0.4281	0.3837	0.3439	0.3082	0.2762
Present Value of Free Cash Flows to Firm	**10.8%**	**392.8**	**388.5**	**386.2**	**374.3**	**366.6**	**(11.4)**

Weighted Average Cost of Capital

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.81	0.83
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**13.0%**	**13.1%**
Project Specific Risk Premium	1.0%	1.0%
Adjusted Cost of Equity	**14.0%**	**14.1%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (d)	**12.0%**	**12.0%**
Less: Tax (e)	21.3%	34.6%
Post-tax Cost Of Debt	9.4%	7.8%

WACC Calculation	Weight (f)	@ 21.3% tax	@ 34.6%
Debt	52.9%	9.4%	7.8%
Equity	47.1%	14.0%	14.1%
Adjusted Cost Of Capital		**11.6%**	**10.8%**

Footnotes:

D/E: Debt to Equity; FY: Financial Year

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected. Beta has been considered based on 5 yr trailing Average Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) We have considered 1% project specific risk for JRTR to factor in risk related to higher traffic volumes due to assumption of stoppage of traffic leakages in few months.

(e) Cost of debt has been considered to be 12% based on the interest rate on the borrowings of the Company as on 30 September 2016 provided to us by the Management.

(f) Effective tax rate has been considered as applicable throughout the projected period.

(g) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY29.

Appendix VIII - GF Toll Road Private Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a) (b)		207.5	993.3	1,303.2	1,412.8	1,486.4	1,741.1	1,880.2
Growth Rate			*19.7%*	*31.2%*	*8.4%*	*5.2%*	*17.1%*	*8.0%*
Earnings Before Interest, Depreciation & Amortization and Tax (a) (b)		**165.9**	**680.4**	**948.5**	**1,173.3**	**1,225.9**	**1,463.8**	**1,581.1**
Margin		*79.9%*	*68.5%*	*72.8%*	*83.1%*	*82.5%*	*84.1%*	*84.1%*
Less: Depreciation & Amortization		88.1	422.5	555.6	602.7	634.4	743.8	803.6
Earnings Before Interest and Tax		**77.8**	**257.9**	**392.9**	**570.6**	**591.5**	**720.0**	**777.6**
Income Tax (c)		16.6	55.0	83.8	121.8	126.2	153.7	165.9
Gross Free Cash Flows to Firm		**61.2**	**202.9**	**309.0**	**448.8**	**465.3**	**566.3**	**611.6**
Add: Depreciation & Amortization		88.1	422.5	555.6	602.7	634.4	743.8	803.6
Add: Major Maintenance Expenses provision		0.0	137.0	169.9	45.3	56.2	69.1	84.2
Less: Major Maintainence Expenses Payment		0.0	153.4	153.4	0.0	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**149.3**	**608.9**	**881.1**	**1,096.9**	**1,155.9**	**1,379.2**	**1,499.4**
Present Value Factors (d)	**11.9%**	0.9862	0.9194	0.8216	0.7341	0.6560	0.5862	0.5238
Present Value of Free Cash Flows to Firm		**147.2**	**559.8**	**723.9**	**805.3**	**758.2**	**808.5**	**785.4**

Gross Enterprise Value	**6,787.5**
Add: Cash balance (e)	17.1
Add/Less: Net current assets (induding investments) (e)	(218.6)
Add/Less: Net cash impact of long term assets and liabilities (e)	(249.9)
Less: External bank debt (e)	(4,679.2)
Add/Less: Net dues from / (to) related parties (e)	0.0
Add/(Less): Cash inflow/(outflow) for the period 3 months ended 31st Dec 2016 (f)	24.6
Equity Value (INR Mn.) inclusive of sub debt	**1,681.6**
Less: Interest Free Subordinate debt from related parties (e)	(1,755.9)
Equity Value (INR Mn.) excluding sub debt	**(74.3)**

Footnotes:

INR: Indian Rupees; Mn.: Million; FY: Financial Year

(a) Projections for the Financial Years of FY17 to FY27 based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Limited ("Management").

(b) As represented by the Management, the growth in revenue is higher in the initial forecast years due to the increase in traffic volume as a result of the steps taken by the Management to overcome the non-compliance by the toll users with respect to the payment of toll charges

(c) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(d) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(e) Based on the audited balance sheet as on the 30 September 2016 as provided by the Management. Cash balance has been adjusted to reflect the cash inflow for the period 30 Sep 2016 to 31 Dec 2016.

(f) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31st December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March			
(Free Cash Flows to Firm or FCFF Model)		FY24	FY25	FY26	FY27
No of days operationsl		366	365	365	61
Net Revenue (a)		1,968.9	2,312.9	2,490.1	416.1
Growth Rate		*4.7%*	*17.5%*	*7.7%*	*n/a*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**1,643.6**	**2,037.7**	**2,248.4**	**377.3**
Margin		*83.5%*	*88.1%*	*90.3%*	*90.7%*
Less: Depreciation & Amortization		841.7	989.5	1,065.6	174.5
Earnings Before Interest and Tax		**801.9**	**1,048.2**	**1,182.8**	**202.8**
Income Tax (c)		171.1	223.7	252.4	43.3
Gross Free Cash Flows to Firm		**630.7**	**824.5**	**930.4**	**159.5**
Add: Depreciation & Amortization		841.7	989.5	1,065.6	174.5
Add: Major Maintenance Expenses		101.9	42.8	0.0	0.0
Less: Major Maintainence Expenses Payments		199.8	199.8	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in DSRA		0.0	0.0	0.0	0.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**1,374.6**	**1,657.0**	**1,995.9**	**334.0**
Present Value Factors (d)	**11.9%**	0.4680	0.4182	0.3737	0.3499
Present Value of Free Cash Flows to Firm		**643.4**	**693.0**	**745.9**	**116.9**

Weighted Average Cost of Capital

Cost of Equity Calculation	Value
Risk Free Rate (a)	7.0%
Relevered Beta (b)	0.57
Equity Risk Premium (c)	7.4%
Base Cost of Equity	**11.2%**
Project Specific Risk Premium (d)	2.0%
Adjusted Cost of Equity	**13.2%**

Cost of Debt Calculation	Value
Cost of Debt (e)	**11.2%**
Less: Tax (f)	21.3%
Post-tax Cost Of Debt	8.8%

WACC Calculation	Weight (g)	Value
Debt	30.1%	8.8%
Equity	69.9%	13.2%
Adjusted Cost Of Capital		**11.9%**

Footnotes:

ERP: Equity Risk Premium; CSRP: Company Specific Risk Premium; D/E: Debt to Equity

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected. Beta has been considered based on 5 yr trailing average Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) We have considered 2% project specific risk for GFTR to factor in risk related to increase in traffic in the forecast period after steps are taken to overcome the current loss in traffic volumes due to non compliance, as represented by Management

(e) Cost of debt has been considered to be 11.2% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(f) Effective tax rate has been considered as applicable throughout the projected period.

(g) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY27.

Appendix IX - KM Toll Road Private Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a)		393.8	1,189.3	1,351.2	1,499.7	1,655.2	1,803.6	1,966.7
Gronth Rate				*13.6%*	*11.0%*	*10.4%*	*9.0%*	*9.0%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**193.0**	**1,107.1**	**1,264.9**	**1,409.2**	**1,560.1**	**1,704.7**	**1,801.8**
Margin		*49.0%*	*93.1%*	*93.6%*	*94.0%*	*94.3%*	*94.5%*	*91.6%*
Less: Depreciation & Amortization		35.0	251.0	285.1	316.5	349.3	475.5	518.5
Less: Interest on BG		0.3	1.6	1.7	2.0	2.6	2.9	3.5
Earnings Before Interest and Tax		**3.9**	**169.0**	**244.0**	**309.2**	**361.5**	**295.0**	**245.6**
Income Tax (c)		0.8	36.1	52.1	66.0	77.1	63.0	52.4
Gross Free Cash Flows to Firm		**3.1**	**133.0**	**191.9**	**243.2**	**284.3**	**232.1**	**193.2**
Add: Depreciation & Amortization		35.0	251.0	285.1	316.5	349.3	475.5	518.5
Less: Capital Expenditure (d)		450.0	0.0	0.0	960.3	1,344.5	1,536.6	0.0
Less: NHAI Premium payment and interest		26.9	240.7	357.5	361.9	151.5	163.5	12.2
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**(285.0)**	**828.7**	**853.7**	**19.0**	**(15.7)**	**(61.2)**	**1,795.7**
Present Value Factors (e)	11.3%	0.9869	0.9234	0.8300	0.7460	0.6705	0.6027	0.5417
Present Value of Free Cash Flows to Firm	10.7%	**(281.3)**	**765.3**	**708.6**	**14.1**	**(10.5)**	**(36.9)**	**972.8**

Gross Enterprise Value	**8,259.4**
Add: Cash balance (f)	21.1
Add/Less: Net current assets (induding investments) (f)	(687.1)
Add/Less: Net cash impact of long term assets and liabilities (f)	202.3
Add/Less: Cash inflow (outflow) for the period 3 months ended 31 Dec 2016 (g)	(82.4)
Less: External bank debt (f)	(7,012.8)
Equity Value of KMTR including Subordinate Debt (INR Mn.)	**700.4**
Less: Interest Free Subordinate debt from related parties (f)	(3,458.5)
Equity Value of KMTR excluding Subordinate Debt (INR Mn.)	**(2,758.1)**

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**	**FY30**
No of days operationsl		**366**	**365**	**365**	**365**	**366**	**365**	**365**
Net Sales (a)		2,150.7	2,341.1	2,555.3	2,740.2	2,922.3	3,130.0	3,348.1
Growth Rate		*9.4%*	*8.9%*	*9.1%*	*7.2%*	*6.6%*	*7.1%*	*7.0%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**1,918.6**	**2,094.2**	**2,292.2**	**2,459.7**	**2,624.5**	**2,813.5**	**3,011.1**
Margin		*89.2%*	*89.5%*	*89.7%*	*89.8%*	*89.8%*	*89.9%*	*89.9%*
Less: Depreciation & Amortization		567.0	617.2	673.6	722.4	770.4	825.2	882.7
Less: Interest on BG		3.4	3.6	4.1	0.9	1.2	1.1	1.7
Less: Interest on Premium Deferment (b)		423.2	540.3	684.4	726.3	648.8	588.8	563.9
Less: Interest on NHAI Premium		726.4	739.1	749.6	757.5	762.2	763.1	759.7
Less: Interest on MMR Provision		7.4	16.7	28.0	41.8	58.6	78.7	102.9
Earnings Before Interest and Tax		**191.1**	**177.3**	**152.4**	**210.8**	**383.4**	**556.5**	**700.3**
Income Tax (c)		40.8	37.8	32.5	45.0	81.8	118.8	149.4
Gross Free Cash Flows to Firm		**150.3**	**139.5**	**119.9**	**165.8**	**301.6**	**437.8**	**550.8**
Add: Depreciation & Amortization		567.0	617.2	673.6	722.4	770.4	825.2	882.7
Add: Interest on NHAI Premium and premium deferment		1,149.6	1,279.5	1,434.0	1,483.7	1,410.9	1,352.0	1,323.6
Add: Major Maintenance Expenses provision		76.9	94.5	115.2	139.4	167.9	201.2	240.0
Less: Major Maintainence Expenses Payment		0.0	0.0	0.0	0.0	0.0	548.6	548.6
Less: Capital Expenditure		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: NHAI Premium payment and interest		158.9	0.0	0.0	737.5	2,132.7	2,226.4	1,757.6
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**1,785.0**	**2,130.6**	**2,342.7**	**1,773.9**	**518.1**	**41.1**	**690.9**
Present Value Factors (d)	**11.3%**	0.4869	0.4376	0.3934	0.3536	0.3178	0.2856	0.2567
Present Value of Free Cash Flows to Firm	**10.7%**	**869.1**	**932.4**	**921.5**	**627.2**	**164.6**	**11.7**	**177.4**

DISCOUNTED CASH FLOW ANALYSIS	Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)	**FY31**	**FY32**	**FY33**	**FY34**	**FY35**	**FY36**	**FY37**
No of days operationsl	**365**	**366**	**365**	**365**	**365**	**366**	**365**
Net Sales (a)	3,578.2	3,761.8	3,965.3	4,161.5	4,384.5	4,595.9	4,832.6
Growth Rate	*6.9%*	*5.1%*	*5.4%*	*4.9%*	*5.4%*	*4.8%*	*5.1%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)	**3,298.2**	**3,466.8**	**3,656.0**	**3,836.8**	**4,042.8**	**4,235.8**	**4,452.2**
Margin	*92.2%*	*92.2%*	*92.2%*	*92.2%*	*92.2%*	*92.2%*	*92.1%*
Less: Depreciation & Amortization	943.3	991.7	1,045.4	1,097.1	1,155.9	1,211.6	1,274.0
Less: Interest on BG	1.6	1.5	0.0	0.0	0.0	0.0	0.0
Less: Interest on Premium Deferment (b)	507.1	394.9	210.2	46.8	2.8	0.2	0.0
Less: Interest on NHAI Premium	751.1	736.4	714.8	685.0	645.9	596.1	533.9
Less: Interest on MMR Provision	0.0	8.9	19.9	33.5	50.0	70.0	94.0
Earnings Before Interest and Tax	**1,095.1**	**1,333.3**	**1,665.8**	**1,974.4**	**2,188.3**	**2,358.0**	**2,550.2**
Income Tax (c)	299.0	579.6	696.7	802.6	875.5	929.2	763.0
Gross Free Cash Flows to Firm	**796.1**	**753.7**	**969.1**	**1,171.8**	**1,312.8**	**1,428.8**	**1,787.3**
Add: Depreciation & Amortization	943.3	991.7	1,045.4	1,097.1	1,155.9	1,211.6	1,274.0
Add: Interest on NHAI Premium and premium deferment	1,258.2	1,131.3	925.0	731.8	648.7	596.2	533.9
Add: Major Maintenance Expenses provision	74.1	91.9	112.9	137.6	166.6	200.6	240.3
Less: Major Maintainence Expenses Payment	0.0	0.0	0.0	0.0	0.0	0.0	655.4
Less: Capital Expenditure	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: NHAI Premium payment and interest	1,594.9	2,336.7	2,516.9	3,442.9	1,886.4	1,190.9	1,204.0
Less/(Add): Increase/(Decrease) in Working Capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm	**1,476.8**	**632.0**	**535.4**	**(304.6)**	**1,397.5**	**2,246.3**	**1,976.1**

DISCOUNTED CASH FLOW ANALYSIS	Financial Year Ending 31 March			
(Free Cash Flows to Firm or FCFF Model)	FY38	FY39	FY40	FY41
No of days operationsl	365	365	366	293
Net Sales (a)	5,080.2	5,348.2	5,617.8	4,733.2
Growth Rate	*5.1%*	*5.3%*	*5.0%*	
Earnings Before Interest, Depreciation & Amortization and Tax (a)	**4,677.5**	**5,104.6**	**5,369.4**	**4,529.7**
Margin	*92.1%*	*95.4%*	*95.6%*	*95.7%*
Less: Depreciation & Amortization	1,339.3	1,409.9	1,481.0	1,247.8
Less: Interest on BG	0.0	0.0	0.0	0.0
Less: Interest on Premium Deferment (b)	0.0	0.0	0.0	0.0
Less: Interest on NHAI Premium	457.5	365.0	254.0	121.9
Less: Interest on MMR Provision	122.9	0.0	0.0	0.0
Earnings Before Interest and Tax	**2,757.9**	**3,329.7**	**3,634.4**	**3,160.0**
Income Tax (c)	826.3	1,122.4	1,191.1	1,045.5
Gross Free Cash Flows to Firm	**1,931.6**	**2,207.3**	**2,443.2**	**2,114.6**
Add: Depreciation & Amortization	1,339.3	1,409.9	1,481.0	1,247.8
Add: Interest on NHAI Premium and premium deferment	457.5	365.0	254.0	121.9
Add: Major Maintenance Expenses provision	286.7	0.0	0.0	0.0
Less: Major Maintainence Expenses Payment	655.4	0.0	0.0	0.0
Less: Capital Expenditure	0.0	0.0	0.0	0.0
Less: NHAI Premium payment and interest	1,261.5	1,324.4	1,390.6	1,172.1
Less/(Add): Increase/(Decrease) in Working Capital	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm	**2,098.2**	**2,657.8**	**2,787.6**	**2,312.1**

Weighted Average Cost of Capital

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.76	0.79
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**12.7%**	**12.8%**
Project Specific Risk Premium (d)	2.0%	2.0%
Adjusted Cost of Equity	**14.7%**	**14.8%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (e)	**10.0%**	**10.0%**
Less: Tax (f)	21.3%	34.6%
Post-tax Cost Of Debt	7.8%	6.5%

WACC Calculation	Weight (f)	@ 21.3% tax	@ 34.6% tax
Debt	49.9%	7.8%	6.5%
Equity	50.1%	14.7%	14.8%
Adjusted Cost Of Capital		**11.3%**	**10.7%**

Footnotes:

D/E: Debt to Equity; FY: Financial Year

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected. Beta has been considered based on 5 yr trailing Average Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) We have considered 2% project specific risk for KMTR to factor in risk related to rejection of deferment of premium by NHAI and risk due to delays in completion of six lanning later than FY22.

(e) Cost of debt has been considered to be 10% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(f) Effective tax rate has been considered as applicable throughout the projected period.

(g) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY41.

Appendix X - PS Toll Road Private Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March							
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24
No of days operationsl		90	365	365	366	365	365	365	366
Net Revenue (a)		1,364.5	2,597.9	2,924.5	3,231.3	3,565.7	3,895.7	4,281.7	4,697.7
Gronth Rate				*12.6%*	*10.5%*	*10.3%*	*9.3%*	*9.9%*	*9.7%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**521.0**	**2,355.4**	**2,665.4**	**2,954.0**	**3,268.8**	**3,579.5**	**3,944.6**	**4,337.8**
Margin		*38.2%*	*90.7%*	*91.1%*	*91.4%*	*91.7%*	*91.9%*	*92.1%*	*92.3%*
Less: Depreciation & Amortization		0.0	580.3	653.2	721.7	796.4	870.1	956.3	1,049.2
Less: Interest on BG		0.0	1.2	1.5	1.8	1.9	1.9	2.4	3.2
Less: Interest on NHAI Premium		400.4	1,672.7	1,719.9	1,765.1	1,807.7	1,847.0	1,882.0	1,912.0
Less: Interest on MMR Provision		0.0	3.5	11.8	22.1	34.6	49.8	68.2	90.3
Earnings Before Interest and Tax		**120.6**	**97.8**	**278.9**	**443.4**	**628.2**	**810.7**	**1,035.6**	**1,283.1**
Income Tax (b)		25.7	20.9	59.5	94.6	134.1	173.0	221.0	552.9
Gross Free Cash Flows to Firm		**94.9**	**76.9**	**219.4**	**348.7**	**494.1**	**637.7**	**814.6**	**730.3**
Add: Depreciation & Amortization		0.0	580.3	653.2	721.7	796.4	870.1	956.3	1,049.2
Add: Interest on NHAI Premium		400.4	1,672.7	1,719.9	1,765.1	1,807.7	1,847.0	1,882.0	1,912.0
Add: Major Maintenance Expenses provision		7.2	69.2	85.4	104.4	126.9	153.2	183.9	219.9
Less: Major Maintainence Expenses Payment		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: Capital Expenditure (c)		1,500.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: NHAI Premium payment		300.4	1,279.1	1,343.0	1,410.2	1,480.7	1,554.7	1,632.4	1,714.1
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**(1,297.9)**	**1,120.0**	**1,334.9**	**1,529.9**	**1,744.5**	**1,953.2**	**2,204.5**	**2,197.3**
Present Value Factors (d)	**11.3%**	0.9869	0.9235	0.8300	0.7461	0.6706	0.6027	0.5418	0.4879
Present Value of Free Cash Flows to Firm	**11.2%**	**(1,280.9)**	**1,034.2**	**1,108.0**	**1,141.4**	**1,169.8**	**1,177.3**	**1,194.3**	**1,072.1**

Gross Enterprise Value	**19,050.3**
Add: Cash balance (e)	158.2
Add/Less: Net current assets (induding investments) (e)	(906.3)
Add/Less: Net cash impact of long term assets and liabilities (e)	(878.5)
Add/Less: Cash inflow (outflow) for the period 3 months ended 31 Dec 2016 (f)	(983.4)
Less: External bank debt (e)	(6,658.9)
Equity Valuation of PSTR including Subordinate Debt (INR Mn)	9,781.5
Less: Interest Free Subordinate debt from related parties (e)	(9,890.2)
Equity Value of PSTR (INR Mn.)	**(108.7)**

Footnotes:

INR: Indian Rupees; Mn: Millions; FY: Financial Year

(a) Projections for the Financial Years of FY17 to FY40 as per IndAS and based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Ltd ("Management").

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) As per the estimate by the Management, PS is expected to incure Capital expenditure of INR 150 Cr from 1 January 2017 to 31 March 2017.

(d) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(e) Based on the audit balance sheet as on 30 September 2016 provided by the Management as per IndAS.

(f) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31 December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31 December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31 December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS	Financial Year Ending 31 March							
(Free Cash Flows to Firm or FCFF Model)	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**	**FY30**	**FY31**	**FY32**
No of days operationsl	**365**	**365**	**365**	**366**	**365**	**365**	**365**	**366**
Net Revenue (a)	5,135.5	5,602.9	6,039.9	6,512.2	7,035.6	7,590.6	8,161.7	8,650.0
Growth Rate	*9.3%*	*9.1%*	*7.8%*	*7.8%*	*8.0%*	*7.9%*	*7.5%*	*6.0%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)	**4,750.9**	**5,191.3**	**5,673.9**	**6,125.3**	**6,626.1**	**7,156.4**	**7,700.7**	**8,162.5**
Margin	*92.5%*	*92.7%*	*93.9%*	*94.1%*	*94.2%*	*94.3%*	*94.4%*	*94.4%*
Less: Depreciation & Amortization	1,147.0	1,251.4	1,349.0	1,454.5	1,571.4	1,695.4	1,823.0	1,932.0
Less: Interest on BG	3.3	3.4	3.2	2.4	0.0	0.0	0.0	0.0
Less: Interest on Premium Deferment (b)	1,935.7	1,952.1	1,959.5	1,956.6	1,941.3	1,911.8	1,865.6	1,800.0
Less: Interest on MMR Provision	116.7	148.1	0.0	13.1	29.4	49.5	73.9	103.4
Earnings Before Interest and Tax	**1,548.2**	**1,836.3**	**2,362.1**	**2,698.7**	**3,083.9**	**3,499.7**	**3,938.3**	**4,327.0**
Income Tax (c)	466.9	584.6	965.5	1,090.0	1,230.3	1,378.5	1,521.3	1,643.7
Gross Free Cash Flows to Firm	**1,081.3**	**1,251.7**	**1,396.6**	**1,608.7**	**1,853.6**	**2,121.2**	**2,416.9**	**2,683.3**
Add: Depreciation & Amortization	1,147.0	1,251.4	1,349.0	1,454.5	1,571.4	1,695.4	1,823.0	1,932.0
Add: Interest on NHAI Premium	1,935.7	1,952.1	1,959.5	1,956.6	1,941.3	1,911.8	1,865.6	1,800.0
Add: Major Maintenance Expenses Provision	261.8	310.7	109.6	135.8	166.9	203.4	246.3	296.5
Less: Major Maintainence Expenses Payments	772.3	772.3	0.0	0.0	0.0	0.0	0.0	0.0
Less: Capex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: NHAI Premium payment	1,799.8	1,889.7	1,984.2	2,083.4	2,187.6	2,297.0	2,411.8	2,532.4
Less/(Add): Increase/(Decrease) in Working Capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm	**1,853.8**	**2,103.8**	**2,830.5**	**3,072.2**	**3,345.7**	**3,634.8**	**3,939.9**	**4,179.4**

DISCOUNTED CASH FLOW ANALYSIS	Financial Year Ending 31 March							
(Free Cash Flows to Firm or FCFF Model)	**FY33**	**FY34**	**FY35**	**FY36**	**FY37**	**FY38**	**FY39**	**FY40**
No of days operationsl	**365**	**365**	**365**	**366**	**365**	**365**	**365**	**111**
Net Revenue (a)	9,188.2	9,799.2	10,373.1	11,027.7	11,711.9	12,407.5	13,190.1	4,259.0
Growth Rate	*6.2%*	*6.7%*	*5.9%*	*6.3%*	*6.2%*	*5.9%*	*6.3%*	
Earnings Before Interest, Depreciation & Amortization and Tax (a)	**8,671.6**	**9,250.7**	**10,060.7**	**10,709.0**	**11,386.9**	**12,075.9**	**12,851.9**	**4,154.1**
Margin	*94.4%*	*94.4%*	*97.0%*	*97.1%*	*97.2%*	*97.3%*	*97.4%*	*97.5%*
Less: Depreciation & Amortization	2,052.2	2,188.7	2,316.9	2,463.1	2,615.9	2,771.3	2,946.1	951.3
Less: Interest on BG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: Interest on Premium Deferment (b)	1,712.1	1,598.5	1,455.3	1,278.1	1,062.1	801.7	490.6	121.9
Less: Interest on MMR Provision	139.0	181.6	0.0	0.0	0.0	0.0	0.0	0.0
Earnings Before Interest and Tax	**4,768.2**	**5,281.9**	**6,288.5**	**6,967.8**	**7,708.8**	**8,502.9**	**9,415.1**	**3,080.9**
Income Tax (c)	1,445.2	1,604.4	2,084.3	2,253.7	2,430.4	2,608.8	2,813.5	699.1
Gross Free Cash Flows to Firm	**3,323.0**	**3,677.5**	**4,204.2**	**4,714.1**	**5,278.4**	**5,894.1**	**6,601.6**	**2,381.8**
Add: Depreciation & Amortization	2,052.2	2,188.7	2,316.9	2,463.1	2,615.9	2,771.3	2,946.1	951.3
Add: Interest on NHAI Premium	1,712.1	1,598.5	1,455.3	1,278.1	1,062.1	801.7	490.6	121.9
Add: Major Maintenance Expenses	355.3	423.8	0.0	0.0	0.0	0.0	0.0	0.0
Less: Major Maintainence Expenses Payments	968.8	968.8	0.0	0.0	0.0	0.0	0.0	0.0
Less: Capex	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: NHAI Premium payment	2,659.1	2,792.0	2,931.6	3,078.2	3,232.1	3,393.7	3,563.4	1,137.8
Less/(Add): Increase/(Decrease) in Working Capital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm	**3,814.8**	**4,127.7**	**5,044.7**	**5,377.1**	**5,724.4**	**6,073.4**	**6,475.0**	**2,317.1**

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.5	0.6
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**10.8%**	**11.1%**
Project Specific Risk Premium (d)	1.0%	1.0%
Adjusted Cost of Equity	**11.8%**	**12.1%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (e)	11.6%	11.6%
Less: Tax (f)	21.3%	34.6%
Post-tax Cost Of Debt	9.1%	7.6%

WACC Calculation	Weight (f)	@ 21.3% tax	@ 34.6% tax
Debt	19%	9.1%	7.6%
Equity	81%	11.8%	12.1%
Adjusted Cost Of Capital		**11.3%**	**11.2%**

Footnotes:

D/E: Debt to Equity; FY: Financial Year

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected. Beta has been considered based on 5 yr trailing Average Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) We have considered 1% project specific risk for PSTR to factor in risk related to delays in completion of 6 lanning by April 2017.

(e) Cost of debt has been considered to be 11.6% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(f) Effective tax rate has been considered as applicable throughout the projected period.

(g) Based on the average debt to equity ratio of the Project over the projected period from FY17 to FY40.

Appendix XI - HK Toll Road Private Limited

Discounted Cash Flow Analysis

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		FY17	FY18	FY19	FY20	FY21	FY22	FY23
No of days operationsl		90	365	365	366	365	365	365
Net Revenue (a)		331.7	1,541.4	1,743.4	2,008.0	2,275.7	2,559.5	2,891.6
Gronth Rate			*16.2%*	*13.1%*	*15.2%*	*13.3%*	*12.5%*	*13.0%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**301.0**	**1,409.0**	**1,602.0**	**1,856.7**	**2,113.8**	**2,387.1**	**2,707.8**
Margin		*90.7%*	*91.4%*	*91.9%*	*92.5%*	*92.9%*	*93.3%*	*93.6%*
Less: Depreciation & Amortization		74.1	344.2	389.3	448.4	508.1	571.5	645.7
Less: Interest on Premium Deferment		12.3	68.7	74.1	63.9	34.5	7.7	3.2
Less: Interest on NHAI Premium		256.2	1,061.4	1,081.2	1,098.0	1,111.2	1,120.0	1,123.6
Less: Interest on MMR Provision		0.0	3.8	8.5	14.3	21.4	29.9	40.2
Less: Interest on BG		0.3	1.2	1.2	1.2	1.2	1.6	2.5
Earnings Before Interest and Tax		**(42.0)**	**(70.3)**	**47.7**	**230.9**	**437.4**	**656.4**	**892.7**
Income Tax (b)		-	-	10.2	49.3	93.4	140.1	288.6
Gross Free Cash Flows to Firm		**(42.0)**	**(70.3)**	**37.5**	**181.7**	**344.1**	**516.3**	**604.1**
Add: Depreciation & Amortization		74.1	344.2	389.3	448.4	508.1	571.5	645.7
Add: Interest on NHAI Premium and premium deferment		268.6	1,130.2	1,155.3	1,161.9	1,145.7	1,127.6	1,126.7
Add: Major Maintenance Expenses provision and interest		7.8	39.3	48.3	58.8	71.3	85.8	102.8
Less: Major Maintainence Expenses Payment		0.0	0.0	0.0	0.0	0.0	0.0	280.3
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: NHAI Premium payment and interest		148.1	822.7	1,029.6	1,281.0	1,545.3	1,264.9	1,087.3
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**160.4**	**620.7**	**600.8**	**569.8**	**523.8**	**1,036.3**	**1,111.7**
Present Value Factors (c)	**11.4%**	0.9868	0.9226	0.8282	0.7435	0.6674	0.5992	0.5544
Present Value of Free Cash Flows to Firm	**10.8%**	**158.3**	**572.7**	**497.6**	**423.7**	**349.6**	**620.9**	**616.4**

Gross Enterprise Value	**12,203.8**
Add: Cash balance (d)	21.5
Add/Less: Net current assets (induding investments) (d)	(324.2)
Add/Less: Net cash impact of long term assets and liabilities (d)	41.1
Add/Less: Cash inflow (outflow) for the period 3 months ended 31 Dec 2016 (e)	1.6
Less: External bank debt (d)	(5,496.1)
Equity Value of HK including Subordinate Debt (INR Mn.)	**6,447.7**
Less: Interest Free Subordinate debt from related parties (d)	(2,920.6)
Equity Value of HK excluding Subordinate Debt (INR Mn.)	**3,527.1**

Footnotes:

INR: Indian Rupees; Mn.: Million; FY: Financial Year;

(a) Projections for the Financial Years of FY17 to FY36 based on the expected tenure of the project, as provided by the management of Reliance Infrastructure Limited ("Management").

(b) Effective tax rate has been applied after considering 80IA benefits and applicable MAT credit (if any) in the projected period as confirmed to us by the Managment.

(c) Present Value factors have been considered based on the WACC of the Project. Please refer to Exhibit 3 for detailed calculation.

(d) Based on the audited balance sheet as on the 30 September 2016 as provided by the Management.

(e) In absence of December 2016 financials, we have adjusted for the net cash outflow/inflow for the Quarter ending 31st December 2016 as provided to us by the Management. On account of demonetization and the subsequent NHAI order, we have assumed that there would be no cash inflows or outflows from operations for 1 month in the Quarter ending 31st December 2016. Accordingly, while arriving at the estimated net cash outflow/inflow for the Quarter ending 31st December 2016, the cash flow from operations has been considered for only two months post discussion with the Management.

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March						
(Free Cash Flows to Firm or FCFF Model)		**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**	**FY30**
No of days operationsl		**366**	**365**	**365**	**365**	**366**	**365**	**365**
Net Sales (a)		3,283.1	3,717.6	4,144.2	4,627.2	5,162.5	5,698.0	6,348.5
Growth Rate		*13.5%*	*13.2%*	*11.5%*	*11.7%*	*11.6%*	*10.4%*	*11.4%*
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**3,086.9**	**3,545.2**	**3,961.6**	**4,434.9**	**4,959.8**	**5,484.0**	**6,122.2**
Margin		*94.0%*	*95.4%*	*95.6%*	*95.8%*	*96.1%*	*96.2%*	*96.4%*
Less: Depreciation & Amortization		733.1	830.1	925.4	1,033.2	1,152.7	1,272.3	1,417.6
Less: Interest on Premium Deferment		11.0	8.5	0.4	0.0	0.0	0.0	0.0
Less: Interest on NHAI Premium		1,121.1	1,111.5	1,093.5	1,065.7	1,026.7	974.7	907.7
Less: Interest on MMR Provision		52.6	0.0	5.0	11.1	18.7	27.9	39.0
Less: Interest on BG		3.0	3.3	2.8	0.0	0.0	0.0	0.0
Earnings Before Interest and Tax		**1,166.2**	**1,591.8**	**1,934.6**	**2,324.8**	**2,761.6**	**3,209.1**	**3,758.0**
Income Tax (c)		461.6	687.2	814.2	958.1	1,117.8	1,276.4	1,473.4
Gross Free Cash Flows to Firm		**704.6**	**904.6**	**1,120.4**	**1,366.8**	**1,643.8**	**1,932.7**	**2,284.5**
Add: Depreciation & Amortization		733.1	830.1	925.4	1,033.2	1,152.7	1,272.3	1,417.6
Add: Interest on NHAI Premium and premium deferment		1,132.1	1,120.0	1,093.8	1,065.8	1,026.7	974.7	907.7
Add: Major Maintenance Expenses		122.6	41.3	51.3	63.0	76.7	92.9	111.9
Less: Major Maintainence Expenses Payments		280.3	0.0	0.0	0.0	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Less: Repayment of Deferred Premium along with interest to NHAI (b)		1,085.9	1,455.7	1,333.1	1,391.2	1,460.4	1,533.4	1,610.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**1,326.2**	**1,440.3**	**1,857.8**	**2,137.5**	**2,439.7**	**2,739.3**	**3,111.6**
Present Value Factors (d)	**11.4%**	0.5003	0.4515	0.4075	0.3677	0.3319	0.2995	0.2703
Present Value of Free Cash Flows to Firm	**10.8%**	**663.6**	**650.4**	**757.0**	**786.1**	**809.7**	**820.4**	**841.0**

DISCOUNTED CASH FLOW ANALYSIS		Financial Year Ending 31 March					
(Free Cash Flows to Firm or FCFF Model)		**FY31**	**FY32**	**FY33**	**FY34**	**FY35**	**FY36**
No of days operationsl		**365**	**366**	**365**	**365**	**365**	**68**
Net Sales (a)		6,992.5	7,670.9	7,834.1	6,838.1	7,488.1	1,510.4
Growth Rate		*10.1%*	*9.7%*	*2.1%*	*-12.7%*	*9.5%*	
Earnings Before Interest, Depreciation & Amortization and Tax (a)		**6,752.8**	**7,418.2**	**7,669.6**	**6,670.4**	**7,317.0**	**1,477.8**
Margin		*96.6%*	*96.7%*	*97.9%*	*97.5%*	*97.7%*	*97.8%*
Less: Depreciation & Amortization		1,561.3	1,712.8	1,749.3	1,526.9	1,672.0	337.2
Less: Interest on Premium Deferment		0.0	0.0	0.0	0.0	0.0	0.0
Less: Interest on NHAI Premium		823.4	719.3	592.6	440.1	258.0	42.4
Less: Interest on MMR Provision		52.4	68.5	0.0	0.0	0.0	0.0
Less: Interest on BG		0.0	0.0	0.0	0.0	0.0	0.0
Earnings Before Interest and Tax		**4,315.6**	**4,917.6**	**5,327.7**	**4,703.4**	**5,386.9**	**1,098.2**
Income Tax (c)		1,540.3	1,744.8	1,895.9	1,517.8	1,707.7	259.0
Gross Free Cash Flows to Firm		**2,775.3**	**3,172.8**	**3,431.8**	**3,185.6**	**3,679.2**	**839.2**
Add: Depreciation & Amortization		1,561.3	1,712.8	1,749.3	1,526.9	1,672.0	337.2
Add: Interest on NHAI Premium and premium deferment		823.4	719.3	592.6	440.1	258.0	42.4
Add: Major Maintenance Expenses		134.0	159.9	0.0	0.0	0.0	0.0
Less: Major Maintainence Expenses Payments		365.5	365.5	0.0	0.0	0.0	0.0
Less: Capex		0.0	0.0	0.0	0.0	0.0	0.0
Less: Repayment of Deferred Premium along with interest to NHAI (b)		1,690.5	1,775.1	1,863.8	1,957.0	2,054.8	402.0
Less/(Add): Increase/(Decrease) in Working Capital		0.0	0.0	0.0	0.0	0.0	0.0
Net Free Cash Flows to Firm		**3,238.0**	**3,624.3**	**3,909.9**	**3,195.5**	**3,554.4**	**816.9**
Present Value Factors (d)	**11.4%**	0.2439	0.2201	0.1987	0.1793	0.1618	0.1522
Present Value of Free Cash Flows to Firm	**10.8%**	**789.8**	**797.8**	**776.7**	**572.9**	**575.0**	**124.4**

Cost of Equity Calculation	@ 21.3% tax	@ 34.6% tax
Risk Free Rate (a)	7.0%	7.0%
Relevered Beta (b)	0.71	0.74
Equity Risk Premium (c)	7.4%	7.4%
Base Cost of Equity	**12.3%**	**12.5%**
Project Specific Risk Premium (d)	1.0%	1.0%
Adjusted Cost of Equity	**13.3%**	**13.5%**

Cost of Debt Calculation	@ 21.3% tax	@ 34.6% tax
Cost of Debt (e)	**11.7%**	**11.7%**
Less: Tax (f)	21.3%	34.6%
Post-tax Cost Of Debt	9.2%	7.6%

WACC Calculation	Weight (g)	@ 21.3% tax	@ 34.6% tax
Debt	45.5%	9.2%	7.6%
Equity	54.5%	13.3%	13.5%
Adjusted Cost Of Capital		**11.4%**	**10.8%**

Footnotes:

ERP: Equity Risk Premium; CSRP: Company Specific Risk Premium; D/E: Debt to Equity

(a) Risk Free Rate is based on 10 Year Wholesale Debt Market Zero Coupon Bond Yield as of 30 September 2016. Source: CCIL

(b) Companies in the construction and engineering segment, and having more than 50% revenues from the road infrastructure have been selected.
Beta has been considered based on 5 yr trailing average Beta of comparable companies, relevered for company specific D/E and effective taxes.

(c) Based on analysis of long term equity risk premium in the Indian stock market. Source: GT Research

(d) We have considered a premium of 1% to take into account certain project specific risk for HKTR, induding current and historical performance compared to projected performance

(e) Cost of debt has been considered to be 11.7% based on the interest rate on the borrowings of the Company as on the Valuation Date provided to us by the Management.

(f) Effective tax rate has been considered as applicable throughout the projected period.

(g) Based on the average debt to equity ratio of RInfra Project over the projected period from FY17 to FY36.

Auditors' Report on the projections

To

IDBI Trusteeship Services
(As the Trustee of the Reliance Infrastructure InvIT Fund)
Asian Building, Ground Floor
17, R. Kamani Marg
Ballard Estate
Mumbai - 400 001
India.

Reliance Infrastructure InvIT Fund ("Fund")
502, Plot No. 91/94
Prabhat Colony
Santacruz (East)
Mumbai - 400 055
India.

Reliance Nippon Life Asset Management Limited
(As the Investment Manager the Reliance Infrastructure InvIT Fund)
'H' Block, 1st Floor
Dhirubhai Ambani Knowledge City
Koparkhairne, Navi Mumbai
Thane - 400 710
India.

Dear Sirs,

We have reviewed the attached projected summary profit and loss information, the projected summary cash flow information of the Project SPV Group for the years ended March 31, 2018, 2019 and 2020, the projected summary revenue from operations, projected summary operating cash flow information of the Project SPVs (defined below) for the financial years ended March 31, 2018, 2019 and 2020 and the Basis and Notes to these projections ("Projections") along with the Significant assumptions underlying the projections ("Projection Assumptions" together with the Projections as ("Revenue, Profit and Cash Flow Projections")) of 10 subsidiaries of **Reliance Infrastructure Limited** ("Sponsor"), namely PS Toll Road Private Limited, GF Toll Road Private Limited, KM Toll Road Private Limited, HK Toll Road Private Limited, DS Toll Road Limited, NK Toll Road Limited, TK Toll Road Private Limited, TD Toll Road Private Limited, SU Toll Road Private Limited and JR Toll Road Private Limited respectively (together called "Project SPVs" or "Project SPV Group" and individually a "Project SPV") which are proposed to be transferred from the Sponsor and other shareholders to the Fund in accordance with Standard on Assurance Engagement 3400, "The Examination of Prospective Financial Information", issued by the Institute of Chartered Accountants of India.

The Revenue, Profit and Cash Flow Projections have been prepared in relation to the proposed Initial Public Offering of Units of the Fund (the 'Issue'), under the SEBI (Infrastructure Investment Trust) Regulations, 2014, as amended from time to time, including pursuant to any circulars and guidelines issued thereunder, ("InvIT Regulations").

The preparation and presentation of the Revenue, Profit and Cash Flow Projections in accordance with the InvIT Regulations, is the responsibility of the Investment Manager of the Fund and has been approved by the Investment Manager of the Fund for inclusion in the draft offer document in connection with the proposed Initial Public Offerings of Units of the Fund ("IPO").

We have examined the evidence supporting the assumptions and other information in the Projections. Our responsibility does not include verification of the accuracy of the Projections. Therefore, we do not vouch for the accuracy of the same. The assumptions used for the preparation of these Projections have been provided to us by the Investment Manager of the Fund and relied upon by us as certain matters included are of technical nature.

We have examined and reviewed the Revenue, Profit and Cash Flow Projections, which comprises of the following:

a. The projected summary profit and loss information of the Fund Group for the years ended March 31, 2018, 2019 and 2020;

b. The projected summary cash flow information of the Fund Group for the years ended March 31, 2018, 2019 and 2020;

c. The projected summary revenue from operations of the respective Project SPVs for the years ended March 31, 2018, 2019 and 2020; and

d. The projected summary operating cash flow information of the respective Project SPVs for the years ended March 31, 2018, 2019 and 2020.

Based on our review of the evidence supporting the assumptions, nothing has come to our attention which causes us to believe that the Projection Assumptions do not provide a reasonable basis for the Projections and we confirm that the Projection Assumptions are appropriate for the purpose of these Projections.

We have verified the arithmetical accuracy of the Projections and found them to be accurate and appropriate.

Further, in our opinion, the Projections are properly prepared on the basis of the assumptions as set forth in the basis and notes to Projections and are consistent with the accounting policies of the Fund Group and with the financial statements of the Project SPVs and the significant accounting policies adopted by the Project SPV Group in line with the Indian Accounting Standard (Ind AS) as prescribed under Section 133 of the Companies Act, 2013 read with relevant rules and other accounting principles generally accepted in India and the InvIT Regulations.

Events and circumstances frequently do not occur as expected; even if the events anticipated under the hypothetical assumptions described herewith in the attached documents occur. Actual results are still likely to be different from the Projections since other anticipated events frequently do not occur as expected and the variation may be material. The actual results may therefore differ materially from those forecasted and projected, for the reasons set out above. Therefore, we do not express any opinion as to the possibility of achievement of the Projections.

Our work has not been carried out in accordance with auditing or other standards and practices generally accepted in jurisdictions outside India, including in the United States of America, and accordingly should not be relied upon as if it had been carried out in accordance with those standards and practices. US securities regulations do not require profit forecasts to be reported on by a third party. This report should not be relied upon by prospective investors in the United States of America, including persons who are Qualified Institutional Buyers as defined under Rule 144A under the United States Securities Act of 1933 participating in the Offering. We accept no responsibility and deny any liability to any person who seeks to rely on this report and who may seek to make a claim in connection with any offering of securities on the basis that they had acted in reliance on such information under the protections afforded by United States of America law and regulation.

This report is intended solely for inclusion in the draft offer document in connection with the proposed IPO of the Units of the Fund and is not to be used, referred to or distributed for any other purpose without our written consent.

For Chaturvedi & Shah
Chartered Accountants
Firm Registration Number: 101720W

Sd/-

Vijay Napawaliya
Partner
Membership No: 109859

Place: Mumbai
Date: December 15, 2016

Reliance Infrastructure InvIT Fund
Projected summary of Profit and Loss information of the Project SPV Group

` in Million

Particulars	Refer Assumption	For the year ended March 31, 2018	For the year ended March 31, 2019	For the year ended March 31, 2020
Income				
Revenue from Operations	1	9,993.19	11,386.44	12,738.95
Other Income	4	30.10	37.91	44.62
Total Income		**10,023.29**	**11,424.35**	**12,783.57**
Expenditure				
Operation & Maintenance Expenses	2	1,621.86	1,743.77	1,664.13
InvIT Expenses (inc IM, Trustee, valuer Fees)	3	110.64	124.74	138.39
Earning before interest, tax depreciation and amortisation		**8,290.79**	**9,555.84**	**10,981.05**
Depreciation and amortisation expenses	6	2,507.96	2,896.22	3,234.39
Finance costs	7	2,818.34	2,730.36	2,557.96
Other Finance Cost				
Interest unwinding on premium deferment		3,488.29	3,609.34	3,708.55
Unwinding of discount on provisions		40.10	116.19	124.46
Other finance charges		15.73	16.73	17.65
		8,870.42	**9,368.84**	**9,643.01**
Profit / (Loss) before tax		**(579.63)**	**187.00**	**1,338.04**

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

sd/-

Sundeep Sikka
Executive Director & CEO

sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 15, 2016

Reliance Infrastructure InvIT Fund

Projected summary cash flow information of the Project SPV Group

` in Million

Particulars	For the year ended March 31, 2018	For the year ended March 31, 2019	For the year ended March 31, 2020
Profit/ (Loss) before Tax	**(579.63)**	**187.00**	**1,338.04**
Adjustments to reconcile profit before tax to net cash flows			
Finance cost	2,818.34	2,730.36	2,557.96
Other Finance Cost			
Interest unwinding on premium deferment	3,488.29	3,609.34	3,708.55
Unwinding of discount on provisions	40.10	116.19	124.46
Other finance charges	15.73	16.73	17.65
Depreciation and amortisation expenses	2,507.96	2,896.22	3,234.39
Provision for resurfacing expenses	594.03	665.31	531.75
Actual outflow for major maintenance	(356.30)	(739.51)	(383.21)
Cash generated from operations	**8,528.53**	**9,481.65**	**11,129.60**
Direct taxes paid	(47.11)	(101.44)	(217.96)
Premium paid to Authority	(2,638.63)	(2,770.56)	(2,909.09)
Net cash generated from operations	**5,842.79**	**6,609.65**	**8,002.55**
Finance cost	(2,834.07)	(2,747.09)	(2,575.61)
Repayment of bank debt (net of Proceeds)	(1,071.33)	(1,430.25)	(1,913.02)
	(3,905.40)	**(4,177.34)**	**(4,488.63)**
Cash generated during the year *	**1,937.38**	**2,432.31**	**3,513.92**

* Out of the above cash flows , distributions shall be made to unit holders in the form of interest, dividend and buyback of units. The distributions shall be subject to standalone cash flows of the InvIT, and the provisions of the InvIT regulations / other applicable laws in this regard.

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

sd/-

Sundeep Sikka
Executive Director & CEO

sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 15, 2016

Reliance Infrastructure InvIT Fund
Projected revenue from operations of the Project SPV Group

` in Million

Project SPV	For the year ended March 31, 2018	For the year ended March 31, 2019	For the year ended March 31, 2020
NK	391.64	437.64	499.10
DS	716.45	792.46	898.23
TD	386.05	405.62	445.43
TK	614.85	684.78	780.31
SU	1,013.62	1,129.55	1,278.98
HK	1,541.35	1,743.42	2,008.00
GF	983.28	1,293.18	1,402.75
JR	558.77	624.05	695.09
PS	2,597.90	2,924.55	3,231.32
KM	1,189.27	1,351.21	1,499.73
Total	**9,993.18**	**11,386.46**	**12,738.95**

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

sd/- sd/-

Sundeep Sikka **Prateek Jain**
Executive Director & CEO Chief Financial Officer

Place : Mumbai
Date : December 15, 2016

Reliance Infrastructure InvIT Fund

Projected Summary operating cash flow information of the Project SPV Group for the year ended March 31, 2018

Particulars	NK	DS	TD	TK	SU	HK	GF	JR	PS	KM	Fund	Total	Elimination	Consolidated Invit
Cash flow from operating activities														
Profit/(Loss) before tax	44.97	122.57	(165.31)	53.22	(165.47)	(669.95)	(189.77)	(169.43)	(547.33)	(497.64)	1,604.51	(579.63)	-	(579.63)
Adjustments to reconcile profit before tax to net cash flows														
Finance Cost	113.21	315.04	293.57	327.62	718.87	603.49	447.68	402.20	645.11	666.69		4,533.48	(1,715.15)	2,818.33
Other Finance Cost														
Interest unwinding on premium deferment	-	-	-	-	-	1,130.15	-	-	1,672.66	685.48		3,488.29		3,488.29
Unwinding of discount on provisions	-	-	12.94	4.38	11.99	3.80	-	3.47	3.52	-		40.10		40.10
Other finance charges	0.41	1.07	0.85	1.27	2.72	1.17	4.31	1.08	1.22	1.62		15.72		15.72
Depreciation and amortisations expenses	159.37	184.94	55.85	99.30	198.53	344.17	422.48	212.10	580.26	250.96		2,507.96		2,507.96
Provision for resurfacing expesnes	21.90	28.08	120.76	40.86	111.88	35.50	136.99	32.39	65.67	-		594.03		594.03
Actual outflow for major maintanance	-	-	(202.88)	-	-	-	(153.42)	-	-	-		(356.30)		(356.30)
Cash generated from opearations	**339.86**	**651.70**	**115.78**	**526.65**	**878.52**	**1,448.33**	**668.27**	**481.81**	**2,421.11**	**1,107.11**	**1,604.51**	**10,243.65**	**(1,715.15)**	**8,528.50**
Direct taxes paid	(9.60)	(26.16)	-	(11.36)	-	-	-	-	-	-		(47.12)		(47.12)
Premium paid to Authority	-	-	-	-	-	(896.52)	-	-	(1,279.05)	(463.05)		(2,638.62)		(2,638.62)
Net Cash flows form operating activities	**330.26**	**625.54**	**115.78**	**515.29**	**878.52**	**551.81**	**668.27**	**481.81**	**1,142.06**	**644.06**	**1,604.51**	**7,557.91**	**(1,715.15)**	**5,842.76**

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

sd/-

Sundeep Sikka
Executive Director & CEO

sd/-

Prateek Jain
Chief Financial Officer

Place : Mumbai
Date : December 15, 2016

Reliance Infrastructure InvIT Fund

Projected Summary operating cash flow information of the Project SPVs for the year ended March 31, 2019

Particulars	NK	DS	TD	TK	SU	HK	GF	JR	PS	KM	Fund	Total	Elimination	Consolidated Invit
Cash flow from operating activities														
Profit/(Loss) before tax	86.85	202.68	(156.83)	145.97	(89.08)	(521.23)	39.80	(109.83)	(507.32)	(364.57)	1,460.56	187.00	-	187.00
Adjustments to reconcile profit before tax to net cash flows														
Finance Cost	98.28	280.77	264.88	278.68	700.58	572.75	353.09	371.83	786.24	608.55		4,315.65	(1,585.30)	2,730.35
Other Finance Cost														
Interest unwinding on premium deferment	-	-	-	-	-	1,155.32	-	-	1,719.89	734.13		3,609.34		3,609.34
Unwinding of discount on provisions	2.63	3.37	28.98	9.81	26.85	8.52	16.44	7.77	11.82	-		116.19		116.19
Other finance charges	0.43	1.18	0.98	1.35	2.74	1.15	4.61	1.08	1.51	1.70		16.73		16.73
Depreciation and amortisations expenses	178.09	204.56	61.59	110.60	221.23	389.29	555.64	236.88	653.21	285.13		2,896.22		2,896.22
Provision for resurfacing expesnes	24.53	31.45	135.25	45.77	125.31	39.76	153.42	36.27	73.55	-		665.31		665.31
Actual outflow for major maintanance	-	-	(202.88)	(102.52)	(280.70)	-	(153.42)	-	-	-		(739.52)		(739.52)
Cash generated from / (used in) opearations	**390.81**	**724.01**	**131.97**	**489.66**	**706.93**	**1,645.56**	**969.58**	**544.00**	**2,738.90**	**1,264.94**	**1,460.56**	**11,066.92**	**(1,585.30)**	**9,481.62**
Direct taxes paid	(18.53)	(43.25)	-	(31.15)	-	-	(8.49)	-	-	-		(101.42)		(101.42)
Premium paid to Authority	-	-	-	-	-	(941.35)	-	-	(1,343.01)	(486.20)		(2,770.56)		(2,770.56)
Net Cash flows form (used in) operating activities	**372.28**	**680.76**	**131.97**	**458.51**	**706.93**	**704.21**	**961.09**	**544.00**	**1,395.89**	**778.74**	**1,460.56**	**8,194.94**	**(1,585.30)**	**6,609.64**

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

sd/- sd/-

Sundeep Sikka **Prateek Jain**
Executive Director & CEO Chief Financial Officer

Place : Mumbai
Date : December 15, 2016

Reliance Infrastructure InvIT Fund

Projected Summary operating cash flow information of the Project SPV Group for the year ended March 31, 2020

Particulars	NK	DS	TD	TK	SU	HK	GF	JR	PS	KM	Fund	Total	Elimination	Consolidated Invit
Cash flow from operating activities														
Profit/(Loss) before tax	140.74	301.37	1.04	257.48	(6.12)	(332.89)	320.65	(52.60)	(334.03)	(309.35)	1,351.75	1,338.04	-	1,338.04
Adjustments to reconcile profit before tax to net cash flows														
Finance Cost	81.35	245.65	234.71	230.51	697.33	567.64	249.97	344.98	777.38	618.57		4,048.09	(1,490.14)	2,557.95
Other Finance Cost														
Interest unwinding on premium deferment	-	-	-	-	-	1,161.93	-	-	1,765.12	781.50		3,708.55		3,708.55
Unwinding of discount on provisions	5.89	7.55	-	16.48	45.11	14.31	-	13.06	22.06	-		124.46		124.46
Other finance charges	0.51	1.13	1.04	1.34	2.73	1.17	4.88	1.14	1.75	1.96		17.65		17.65
Depreciation and amortisations expenses	203.10	231.86	69.77	126.03	250.50	448.37	602.72	263.85	721.73	316.47		3,234.40		3,234.40
Net Construction Income	-	-	-	-	-	-	-	-	-	-		-		-
Provision for resurfacing expesnes	27.47	35.23	64.57	51.26	140.35	44.53	45.35	40.63	82.37	-		531.76		531.76
Actual outflow for major maintanance	-	-	-	(102.52)	(280.70)	-	-	-	-	-		(383.22)		(383.22)
Cash generated from / (used in) opearations	**459.06**	**822.79**	**371.13**	**580.58**	**849.20**	**1,905.06**	**1,223.57**	**611.06**	**3,036.38**	**1,409.15**	**1,351.75**	**12,619.73**	**(1,490.14)**	**11,129.59**
Direct taxes paid	(30.04)	(64.32)	(0.22)	(54.95)	-	-	(68.43)	-	-	-		(217.96)		(217.96)
Premium paid to Authority	-	-	-	-	-	(988.42)	-	-	(1,410.16)	(510.51)		(2,909.09)		(2,909.09)
Net Cash flows form (used in) operating activities	**429.02**	**758.47**	**370.91**	**525.63**	**849.20**	**916.64**	**1,155.14**	**611.06**	**1,626.22**	**898.64**	**1,351.75**	**9,492.68**	**(1,490.14)**	**8,002.54**

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

sd/- sd/-

Sundeep Sikka **Prateek Jain**
Executive Director & CEO Chief Financial Officer

Place : Mumbai
Date : December 15, 2016

Basis and Notes to Revenue, Profit and Cash Flow Projections`

1. General information

The Reliance Infrastructure InvIT Fund (the "Fund") is a trust constituted by "The Indenture of Trust" dated September 12, 2016 registered under the Registration Act, 1908 and under the Securities Exchange Board of India (Infrastructure Investment Trust) Regulations, 2014. The Fund is settled by the Sponsor, Reliance Infrastructure Limited ("Rinfra" or the "Sponsor"), an infrastructure development company in India. The Trustee to the Fund is IDBI Trusteeship Services Limited (the "Trustee"). The Investment manager for the Fund is Reliance Nippon Life Asset Management Limited (the "Investment Manager" or the "Management"). The Reliance Infrastructure InvIT Fund along with ten Project SPVs as stated below shall be together called as the “Project SPV Group”.

2. Purpose and the basis of preparation of the profit and cash flow projection

The projected revenue and projected statements of summary cash flows of ten subsidiaries of the Sponsor, namely NK Toll road Limited ("NK"), DS Toll Road Limited ("DS"), TD Toll Road Private Limited ("TD"), TK Toll Road Private Limited ("TK"), SU Toll Road Private Limited ("SU"), GF Toll Road Private Limited ("GF"), JR Toll Road Private Limited ("JR"), KM Toll Road Private Limited ("KM"), HK Toll Road Private Limited ("HK"), PS Toll Road Private Limited ("PS"), (together called as "Project SPV Group" and individually a "Project SPV") for the years ending March 31, 2018, 2019 and 2020 and the projected combined statement of profit and loss and the projected combined cash flow statement of the Project SPV Group for the years ending March 31, 2018, 2019 and 2020 (the "Projections"). The Projections have been compiled solely for the purpose of being included in the Draft Offer Document in connection with the offering of the units of the Fund. Therefore, the use of the Projections is not appropriate and should not be used or relied upon for any purpose other than described above.

The Projections have been prepared based on the assumption that once the IPO is complete, the Fund will acquire equity interests in the Project SPVs immediately prior to the public issue, the Net Proceeds being ` 30000 million, and the Net Proceeds will be infused in the Project SPVs to replace part of the existing bank debt and Sponsor Sub-ordinated Debt.

The Projections are prepared based on the accounting policies that are expected to be used for the Fund's financial information for the corresponding periods in accordance with Indian Accounting Standards ("Ind AS") and / or any addendum thereto as defined in Rule 2(1)(a) notified under the Companies (Indian Accounting Standards) Rules, 2015 and the Companies (Indian Accounting Standards) Amendment Rules, 2016.

The Projections only include the following information:

1. The projected summary profit & loss information of the Project SPV Group for the years ended 2018, 2019 and 2020.

2. The projected summary cash flow information of the Project SPV Group for the years ended 2018, 2019 and 2020.
3. The projected revenue from operations of the Project SPVs for the years ended 2018, 2019 and 2020.
4. The projected summary operating cash flow information of the Project SPVs for the years ended 2018, 2019 and 2020.
5. Basis and Notes to projections.
6. Significant assumptions underlying the projections.

The Reliance Infrastructure InvIT Fund

Though the aforesaid Projections are prepared under the Ind-AS framework, they do not provide for all the detailed disclosures as required under Ind-AS.

The accounting year end of the Fund is March 31 of each year. Accordingly, the Projections are prepared for all the years in the Concession period. The Projections have been prepared and disclosed in INR millions, unless otherwise specifically mentioned.

The Projections contain forecasts and projections that relate to future events, which are, by their nature, subject to significant risks and uncertainties. The future events referred to involve risks, uncertainties and other factors which may cause the actual results or performance to be materially different from any future results or performance expressed or implied.

Significant assumptions for the Projections

The Projections have been prepared based on the significant assumptions summarized below. The Investment Manager considers the assumptions to be appropriate and reasonable as at the date of the report. However, the investors should consider these assumptions as well as the Projections and make their own assessment of the future performance of the Fund.

1. Income from operations:

The Project SPVs' income mainly consists of revenue from operations and other income. Revenue from operations primarily consists of income from toll collection.

In addition to the revenue from toll collections some of the projects have a minute portion of advertisement income.

Significant assumptions used in projection of income from toll collection are described below:-

The base data for the projections is based on the actual traffic data and tariff rates for the financial year 2016. Key variables for toll revenue growth are traffic growth (PCU growth) and the wholesale price index ('WPI') which are based on Management estimates and details of the assumptions are as set forth below:-

Assumptions for FY 2018:

Project	PS	HK	KM	NK	DS	TD	TK	SU	GF	JR
Traffic growth	8%	9%	8%	9%	8%	8%	8%	9%	9%	7%
WPI	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

Assumptions for FY 2019:

Project	PS	HK	KM	NK	DS	TD	TK	SU	GF	JR
Traffic growth	7%	9%	8%	9%	9%	8%	8%	9%	9%	7%
WPI	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

Assumptions for FY 2020:

Project	PS	HK	KM	NK	DS	TD	TK	SU	GF	JR
Traffic growth	6%	9%	6%	9%	9%	8%	8%	9%	9%	7%
WPI	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%

As per the relevant concession agreements, the tariff rates of NK, DS, TD, TK and SU are based on complete WPI pass through whereas the tariff rates of PS, KM, HK and JR are based on a simple increase rate of 3% + 40% of WPI. The tariff rate in GF is fixed and is revised every three years as per the relevant clause in the Concession Agreement. Management has estimated WPI growth as 4% for FY 2018, 5% for FY 2019 and 5% for FY 2020.

2. **Operating and maintenance cost**

The operating and maintenance cost includes routine, periodic/major maintenance, manpower costs and operational expenses, including, but not limited to, road and site work expenses, employee benefit expenses, other operating and maintenance costs and other expenses. These costs are projected based on the current and past trends of operating and maintenance costs of the individual SPVs. These are in line with the industry standards for such expenses. Onetime expenses incurred in the Tamil Nadu projects reinstatement of property due to floods in the state, in FY 2016 have been normalized for the purpose of projections in future years.

The projected operating and maintenance cost corresponds with the projected traffic and the projected revenue and is primarily based on the currently available information on actual operating and maintenance cost associated with the operation of the Project SPVs. The periodic / major maintenance

cost is provided for in the Statement of Profit and Loss as per the traffic consultant report. Based on the concession agreements, the potential periodic / major maintenance cost is provided for in the statement of profit and loss for each year, and in the year of actual expenditure the same is adjusted against the provision created for the same. The projections do not envisage any unanticipated expenses which may be incurred due to any unforeseen circumstances.

3. InvIT expenses

The Fund expenses are mainly projected based on the quotations obtained from various intermediaries or expected terms and conditions of the relevant agreements and / or based on Management's experience and judgement. The nature for the Fund expenses is described below.

i. **Investment Manager Fee**

Pursuant to the Investment Manager Agreement (IMA), the Investment Manager is entitled to a Investment Manager fee to be calculated @ 1% per annum, exclusive of Service Tax (GST), of the consolidated toll revenue of the Fund at the end of the reporting period subject to a floor of ` 100 million and a cap of ` 250 million.

ii. **Trustee fees**

The Trustee shall be entitled to receive trusteeship fees for the services rendered in relation to the administration and management of the Trust, subject to the condition that the aggregate of service charges payable to the Trustee shall not exceed ` 5 million plus applicable taxes in any financial year. Subsequent fees will be ` 5.5 million plus taxes every year.

iii. Other fund expenses

It is assumed that any other fund expenses will be a part of the O&M cost of the SPVs.

4. Other income

A minor amount including interest, income and dividend on short term investment and advertising income have been considered in the projected profit and loss statement.

5. Capital expenditure

All the projects are currently revenue operational. The only under construction (but revenue generating) projects are KM Toll Road and PS Toll Road. The construction work in these two projects is expected to be completed in FY 2017 and the same is considered in the projections.

6. Toll Collection rights (Including Premium)

As per their respective concession agreements, PS, KM and HK are obligated to pay the annual fixed amount of premium to National Highways Authority of India (NHAI). HK has received premium deferment sanction form NHAI and KM proposal is in consideration with Ministry of Road Transport and Highways (MoRTH). The annual premium payments in PS are been expensed in the statement of Profit and loss

account in the projections. The total premium payable as per the concession agreements has been capitalized as 'Intangible Assets – Toll Collection Rights' and amortized over the concession period. Toll collection rights are amortized over the period of concession, using revenue based amortization. Under this method, the carrying value of the rights have been amortized in the proportion of actual toll revenue for the year by projected revenue for the balance toll period, to reflect the pattern in which the assets economic benefits will be consumed. At each balance sheet date, the projected revenue for the balance toll period is reviewed by the Management.

7. Finance costs

It is assumed that the proceeds from the Issue shall be utilized by the Project SPV Group to provide loans for the purposes of part or full refinancing of the Project SPV loans, including sub-ordinated debt. While the bank debt will carry the same rate of interest as per the terms of the financing agreements, the interest rate on the Trust loans would vary based on the available cash flow of the Project SPV's and the same forms a significant component of the finance costs of the Projects SPVs and of the Project SPV Group.

8. Taxes

Current income tax are measured at the amount expected to be recovered from, or paid to, the taxation authorities. The tax rates and tax laws used to compute the amount are those that are enacted or substantively enacted at the reporting date in India where the Project SPV Group operates and generates taxable income.

All the Project SPVs are eligible for deduction under section 80IA of the Income Tax Act, 1961 for ten consecutive years. Accordingly, the tax is calculated under MAT provisions of Section 115JB of the Income Tax Act, 1961 based on the book profits of the Project SPVs.

The Fund will receive interest income from Project SPVs which is considered exempt under the Income Tax Act, 1961. No income other than the above has been assumed in the Fund. Hence no income tax expense/cash flow is assumed for the Fund over the projection period. The transaction of receipt of interest income will be eliminated and not have any effect on the combined cash flow from operating activities of the Project SPV Group.

9. Changes in working capital

The entire collection of tolls is in cash and routine expenses are in cash or a credit period is available. In these cases the effective working capital deployed is relatively small or negative in certain instances. Further we believe the working capital is fairly stable and not expected to vary drastically over a period of time. Hence, changes in working capital are immaterial and no impact of that has been considered in the projected cash flows.

10. Other Assumptions

i. The initial portfolio of Project SPVs remains unchanged throughout the projection period.

ii. No further assets are assumed to be acquired during the period.

iii. No further capital will be raised during the forecast period.

iv. There will be no material change in taxation legislation or other applicable legislation.

v. The relevant tax exemptions, tax remissions, and preferential tax treatments granted remain valid and applicable and that the terms and conditions thereto are complied with.

vi. No loss/gain has been considered for forex and related derivative instruments.

vii. The Projections are based on assumptions and are subject to a number of factors. Investors should be aware that future events, including actual traffic growth rates, cannot be predicted with any certainty and there may be deviations from the figures projected in the Projections. The Projections have been prepared based on the Traffic Report's Most Likely / Realistic scenario for traffic volume growth rates, and no analysis has been performed to demonstrate the sensitivity of the Projections to changes in traffic volume growth rates or other assumptions.

For and on behalf of Reliance Nippon Life Asset Management Limited
(Investment Manager to Reliance Infrastructure InvIT Fund)

sd/-	sd/-
Sundeep Sikka	Prateek Jain
Executive Director & CEO	Chief Financial Officer

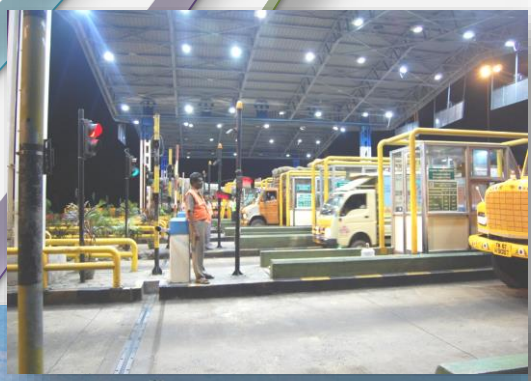
Place : Mumbai
Date : December 15, 2016

DINDIGUL TO SAMYANALLORE (KM 373.726 TO KM 426.779)

SECTION OF NH-7 IN THE STATE OF

TAMIL NADU

TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)



DEC 2016

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DINDIGUL TO SAMYANALLORE (KM 373.726 TO KM 426.779)
SECTION OF NH-7 IN THE STATE OF
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TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

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ABBREVIATIONS

AADT	-	Annual Average Daily Traffic	**NHAI**	-	National Highway Authority of India
BOT	-	Build Operate Transfer	**NHDP**	-	National Highways Development Project
CAGR	-	Compound Annual Growth Rate	**NSDP**	-	Net State Domestic Product
CTV	-	Classified traffic volume	**O&M**	-	Operation & Maintenance
DBFOT	-	Design, Build, Finance, Operate & Transfer	**PCDP**	-	Per Capita Domestic Product
EME	-	Earth Moving Equipment	**PCI**	-	Per Capita Income
GDP	-	Gross Domestic Product	**PCU**	-	Passenger Car Unit
GSDP	-	Gross State Domestic Product	**PSC**	-	Pre-stressed Concrete
HCM	-	Heavy Construction Machinery	**RCC**	-	Reinforced cement concrete
HCV	-	Heavy Commercial Vehicle	**RHS**	-	Right Hand Side
HTMS	-	Highway Traffic Management System	**SH**	-	State Highway
IRC	-	Indian Road Congress	**TP**	-	Toll Plaza
IRR	-	Internal Rate of Return	**WPI**	-	Wholesale Price Index
LCV	-	Light Commercial Vehicle	**SIR**	-	Special Investment Region
LHS	-	Left Hand Side	**c.**	-	Circa
LGV	-	Light Goods Vehicle	**ROB**	-	Railway Over Bridge
MAV	-	Multi Axle Vehicle	**MDR**	-	Major District Road
MORTH	-	Ministry of Road Transport and Highways	**ODR**	-	Other District Road
NH	-	National Highway	**CA**	-	Concession Agreement
PCC	-	Plain Cement Concrete	**RMT**	-	Running Meter
CR	-	Coarse Rubble			

CHAPTER 1
INTRODUCTION

1.1 Background

The Government of India through National Highway Authority of India (NHAI) embarked upon a program to enhance the traffic capacity and safety for efficient transportation of goods as well as passenger traffic on National Highway Sections under NHDP Phase V. Under Phase V NHAI has planned to convert 6,500 km of existing 4-lane National Highways into 6-lane National Highway. Sections envisaged under 6-laning comprise the Golden Quadrilateral section (5,700 km) and some other sections which are 800 km in length.

The project under consideration, Dindigul - Samayanallur section of NH-7 from Km 373.726 to Km 426.775 is one such road project NHAI intended to implement on a BOT basis in the DBFOT format. Project has concession period of 20 years. Project achieved COD on 28th September 2009. The Project has been commissioned and is currently in the operation / maintenance phase.

1.2 Objective of the Study

M/s Reliance Infrastructure InvIT Fund has engaged GMD Consultants to assess the future traffic and toll potential of project along with related operation & maintenance expenditure involved.

This report named as "***Toll Revenue and O&M Cost Projection Report***" mainly focuses on traffic and O&M aspects of the project. Other parameters like competing road, area developments etc. have been considered from a traffic development point of view.

1.2.1 Scope of Services

The broad scope of work covered in the assignment is as follows

a) Analysis of Traffic Growth
b) Toll Rate Growth
c) Revenue Forecasting
d) Operation and Maintenance Cost Projections

The Concessionaire has provided basic traffic data and other project details on the basis of which the above analysis has been carried out.

CHAPTER 2
PROJECT DETAILS

2.1 Project Corridor

The project corridor is one of the busiest route (NH-7) connecting north of India to Deccan and to south. It forms the part of main connectivity network joining commercial hubs like Hyderabad, Bengaluru and down south up to Kanyakumari.

Project corridor section starts from Km 373.275 (Dindigul Bypass) up to Km 426.60 (Samayanallur) in the state of Tamil Nadu. Samyanallore is located 12 km west of Madurai and is also the location of the Samyanallore thermal power station, one of the biggest power plants in Tamil Nadu.

The project stretch is connected to Karnataka easing traffic flow to Bengaluru and goods from Sivakashi are transported to Salem and Bangalore using this road.

The project corridor passes through predominantly agricultural land with patches of built-up areas, industrial areas, etc. Terrain of this project road section is generally characterized as plain.

Figure 2.1 to 2.3 shows the location of the project corridor at country/state/district levels respectively.

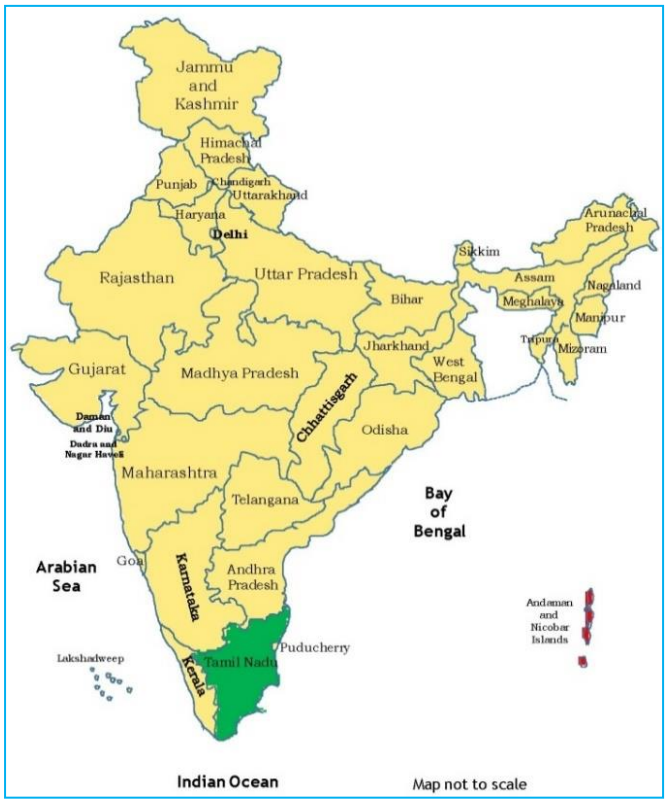


Figure 2-1 : Index Map of Project Highway - Country Level

Figure 2-2 : Index Map of Project Highway - State Level

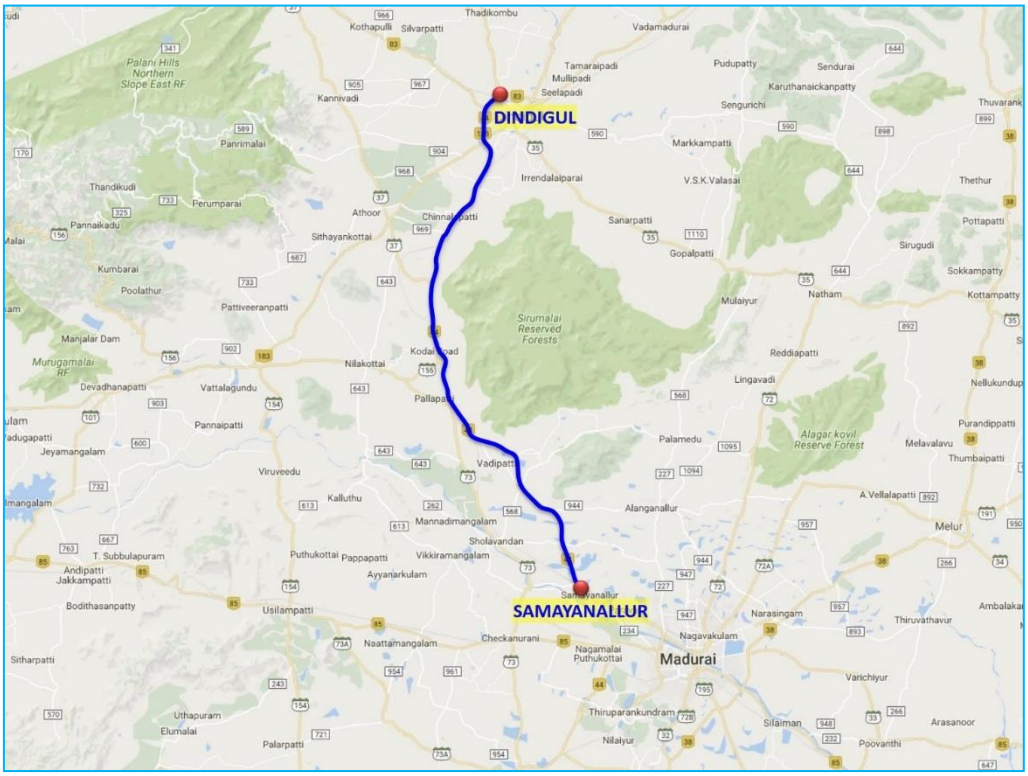


Figure 2-3 : Location Map of the Project Road

2.2 Corridor Description

NH-7 is a major North-South National Highway in India that runs through the states of Uttar Pradesh, Madhya Pradesh, Maharashtra, Telangana, Andhra Pradesh, Karnataka, and Tamil Nadu. The highway connects several important Indian cities such as Varanasi, Rewa, Jabalpur, Nagpur, Adilabad, Nirmal, and Armoor in (Nizamabad), Kamareddy, Hyderabad, Kurnool, Anantapur, Chikkaballapur, Bangalore, Krishnagiri, Salem, Madurai, Tirunelveli and Kanyakumari. A major part of NH 7 falls on the North-South Corridor of NHDP.

Adjoining land is predominantly used for agriculture. Several educational institutions, medium and heavy industries, hatcheries, poultry farms have been observed along the Project corridor.

Four lane project stretch from Dindigul to Samayanallur is homogeneous section having no major traffic diversion in between. It thus can be considered as one section from traffic point of view.

2.3 Salient Features

The salient features of the project corridor are as given below;

- Total Length of Project = 53.049 Kms
- Minor Bridges = 27 Nos.
- Flyovers = 03 Nos.
- ROB = 02 Nos.
- Culverts = 120 Nos.
- Vehicular Underpass = 08 Nos.
- Pedestrian Under passes = 02 Nos.
- Major Intersections = 07 Nos.
- Service Road = 17.180 Kms.
- Bus Bays = 28 Nos.
- Truck Lay Byes = 02 Nos.
- Toll Plaza Complex = 01 Nos.

The details of the structures are given below.

2.3.1 Minor Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-1 : List of Minor Bridges

Sr. No.	Chainage (Km)	Span Arrangement (m)	Total width of Structure (m)	Type of Super Structure
1	359.360	1 x 12.5	21.00	RCC I Girder
2	358.450	1 x 21	21.00	PSC I Girder
3	386.300	2 x 13.2	21.00	RCC I Girder
4	387.500	1 x 11.4	21.00	Slab with bearings
5	388.100	1 x 15.5	21.00	RCC I Girder
6	389.400	1 x 13	21.00	RCC I Girder
7	394.200	1 x 14.5	21.00	RCC I Girder
8	401.850	1 x 10	21.00	Slab with bearings
9	403.100	1 x 10.6	21.00	Slab with bearings
10	404.450	1 x 11.6	21.00	Slab with bearings
11	405.700	2 x 17.4	21.00	PSC I Girder
12	406.350	1 x 10	21.00	Slab with bearings
13	407.200	1 x 17.5	21.00	PSC I Girder
14	407.500	1 x 17.5	21.00	PSC I Girder
15	409.400	1 x 12.5	21.00	RCC I Girder
16	409.900	1 x 12.5	21.00	RCC I Girder
17	416.300	1 x 35	21.00	PSC Voided Slab
18	420.950	1 x 10.5	21.00	Slab with bearings
19	426.100	1 x 17.5	21.00	PSC I Girder
20	410.100	1 x 21	21.00	PSC I Girder
21	410.895	1 x 21	21.00	PSC I Girder
22	410.900	1 x 12.5	21.00	RCC I Girder
23	412.485	1 x 12.5	21.00	RCC I Girder
24	412.675	1 x 10.5	21.00	Slab with bearings
25	414.880	3 x 5	21.00	BOX
26	0.050	1 x 7	21.00	Minor Bridge
27	1.400	1 x 10.5	21.00	Minor Bridge

2.3.2 Flyovers & ROB's

The list of flyovers & ROB's along the project corridor is as given below

Table 2-2 : List of Flyovers & ROB's along Project Corridor

Sr. No.	Chainage (Km)	Span Arrangement (m)	Total Width of Super Structure	Type of Super Structure
1	374.550	2 x 34	21	PSC Box Girder
2	375.000	1 x 30 Skew = 32 degrees	21	PSC I Girder
3	376.585	1 x 30	21	PSC Voided Slab
4	379.950	1 x 30	21	PSC Voided Slab
5	394.850	2 x 43 +1 x 24 Skew = 71 degrees	21	BOX / PSC I Girder

2.4 Project Corridor Illustration

Following photographs illustrate project section along the corridor

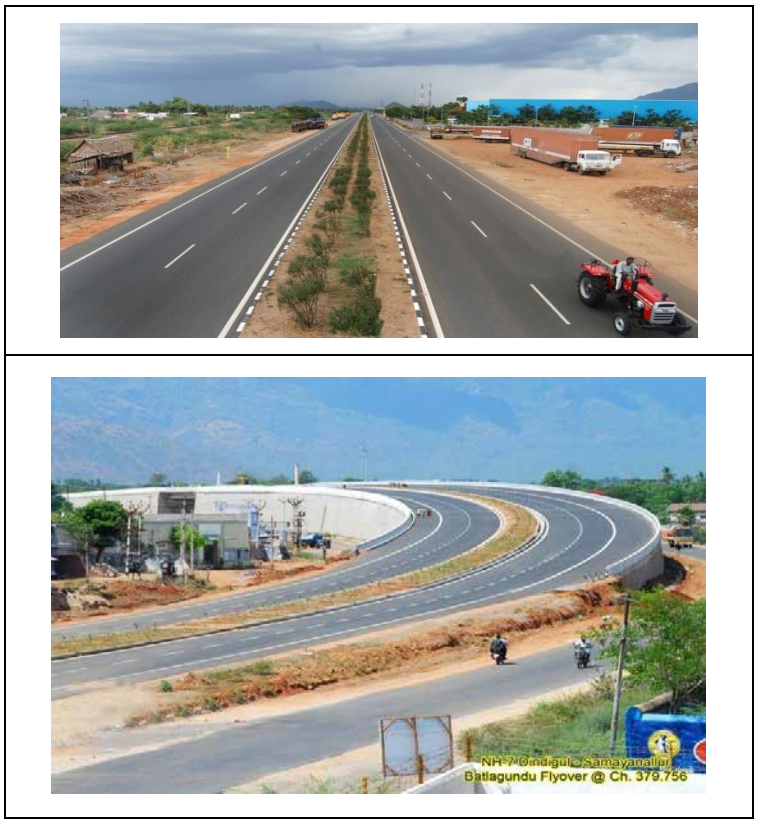


Figure 2-4 : Photographs showing Project Corridor

CHAPTER 3
TRAFFIC SURVEYS AND ANALYSIS

3.1 Traffic Surveys

During the course of our work we have collected required information for project corridor to understand the general traffic and travel characteristics on the corridor.

The following traffic data has been collected for project.

- Classified traffic volume counts at toll plaza location on Dindigul - Samayanallur section of NH-7 for base year 2015-16
- Local Component of traffic
- Component of Return Journey
- Component of Monthly Pass Journey

The main objective of the traffic data analysis is to:

- Determine the existing traffic movement characteristics of project
- Establish base year traffic
- Identification of travel patterns and modal split of project traffic
- Deriving growth factors for traffic forecasting
- Estimation of corridor traffic including traffic diversion if any
- Preparation of revenue model and projection of revenue as per toll policy for various scenarios

From traffic point of view project can be considered as one homogenous sections from Dindigul to Samayanallur. *Table 3-1* below lists provides details of locations from where traffic details have been collected.

Table 3-1 : Traffic Data Details

Sr. No.	Location	CTV	Single Journey Traffic	Multiple Journey	Monthly Pass	Local Traffic
1	Km 398.500 Kodai Road Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016

The locations of each of the traffic survey are illustrated in Figure 3-1.

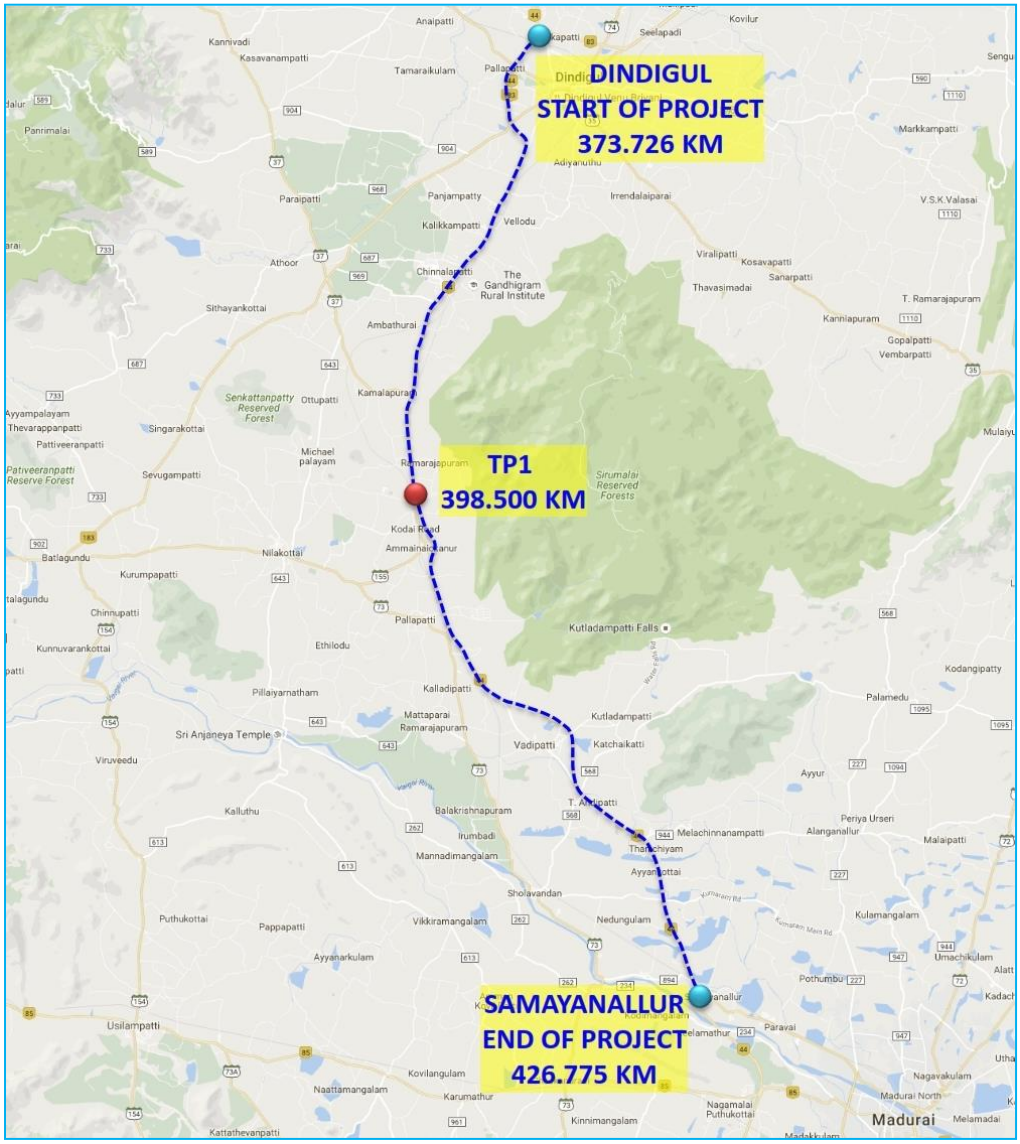


Figure 3-1 : Toll Plaza Locations

3.2 Classified Traffic Volume Count

The objective of conducting a Classified Traffic Volume Count is to understand the traffic flow pattern including modal split on a roadway. The Classified Traffic Volume Count survey has been provided by concessionaire of project highway from actual traffic data gathered at toll plaza locations based on monthly data shared with NHAI. These locations are indicated in ***Figure 3-1*** and listed in ***Table 3-1***.

The vehicles can broadly be classified into fast moving / motorized and slow moving / non-motorized vehicles, which can be further classified into specific categories of vehicles. The groupings of vehicles are further segregated to capture the tollable vehicle categories specifically and toll exempted vehicles are counted separately. The detailed vehicle classification system as per IRC: 64-1990 is given in ***Table 3-2***.

Table 3-2 : Vehicle Classification System

Vehicle Type	
Auto Rickshaw	
Passenger Car	Car, Jeep, Taxi & Van (Old / New Technology)
Bus	Mini Bus
	Standard Bus
Truck	Light Goods Vehicle (LCV)
	2 – Axle Truck
	3 Axle Truck (HCV)
	Multi Axle Truck (4-6 Axle)
	Oversized Vehicles (7 or more axles)
Other Vehicles	Agriculture Tractor, Tractor & Trailer

Source - IRC: 64 – 1990

However, since project highway is currently under toll operation, the data collected is corresponding to category of tollable vehicles. Following are the type of vehicles as per concession agreement.

- Car / Jeep / Van
- LCV
- Truck / Bus
- Multi Axle (MAV)
- Oversize Vehicle

3.3 Traffic Characteristic

Toll revenue of project highway does not solely depend on traffic volume. There are certain characteristics of traffic which have substantial potential to affect toll collection. Component of local traffic, component of passenger and commercial traffic, portion of return journey traffic, % of monthly pass traffic are some of such characteristics of traffic. These will be discussed in subsequent sections of report.

3.3.1 Traffic Data

Project concessionaire has provided Traffic data for base year 2015-16 as under at the toll plaza -

Table 3-3 : Traffic Data at Toll Plaza at Km 398.500

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	8285
2	LCV	1811
3	Truck/Bus	3113
4	Multi Axle	2507
	Total	**15716**

Volume of oversize vehicle was negligible

This data was then bifurcated to various components like through local, monthly, return journey etc. category. Same is discussed in detail in following section.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-4 : Historical Tollable Traffic at Toll Plaza at Km 398.500

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	2,476,270	2,560,124	2,783,244	1,411,200	1,547,947	6%
LCV (2)	607,741	598,765	627,604	316,905	330,132	2%
Bus/Truck (3)	1,065,041	1,103,814	1,089,608	572,603	573, 149	1%
Multi-axle (4)	857,247	879,929	878,110	447,067	488,531	1%
Total	5,006,301	5,142,634	5,378,567	2,747,777	2,939,759	4%

* Toll operations suspended for 16 days due to floods in Dec 2015

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project increased to 31,271 PCUs in 2016 from 28,604 PCUs in 2014, representing a CAGR of 5%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-5 : Historical AADT at Toll Plaza at Km 398.500

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	6,784	7,014	7,952	7,711	8,459	8%
LCV (2)	1,665	1,640	1,793	1,732	1,804	4%
Bus/Truck (3)	2,918	3,024	3,113	3,129	3,132	3%
Multi-axle (4)	2,349	2,411	2,509	2,443	2,670	3%
Total	13,716	14,089	15,367	15,015	16,064	6%
Total PCUs	28,604	29,396	31,271	30,689	32,574	5%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the DS Project's total traffic mix, 50%, 12%, 21% and 17% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 51%, 12%, 20% and 17% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of DS' operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the DS Project by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-6 : Historical Toll Revenue at Toll Plaza at Km 398.500

Category	(in Rs. Millions) For the FY ended March 31			(in Rs. Millions) For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	106.8	117.4	128.4	66.2	70.6	10%
LCV (2)	45.8	47.5	50.4	25.7	26.2	5%
Bus/Truck (3)	143.5	154.0	156.4	81.8	79.5	4%
Multi-axle (4)	225.6	248.9	251.6	129.5	138.3	6%
Total	521.7	568.9	586.8	303.2	314.6	6%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

Table 3-7 : Gross Monthly Toll Revenue at Toll Plaza at Km 398.500

Month	2016 (Rs. in millions)
April	52.4
May	53.1
June	51.8
July	51.8
August	49.8
September	51.2

3.4 Data Analysis

3.4.1 Analysis of Traffic Volume Count

Understanding the character of existing traffic forms the basis of traffic forecast. The various vehicle types having different sizes and characteristics can be converted into a single unit called Passenger Car Unit (PCU). Passenger Car equivalents for various vehicles are adopted based on recommendations of Indian Road Congress prescribed in "IRC-64-1990: Guidelines for Capacity of Roads in Rural areas". The adopted passenger car unit values (PCU) are presented in Table 3-4

Table 3-8 : PCU Factors Adopted for Study

Vehicle Type	PCUs
Car	1.0
Mini Bus	1.5
Standard Bus	3.0
LCV/LGV	1.5
2 Axle Truck	3.0
3 – 6 Axle Truck	4.5
MAV	4.5
Auto Rickshaw	1.0
Van/Tempo	1.0
Agriculture Tractor with Trailer	4.5
Agriculture Tractor without Trailer	1.5

Source: IRC: 64-1990

Traffic volume at each toll plaza was converted to PCU and same is presented as under

Table 3-9 : Traffic in PCU at Project Stretch

Toll Plaza Location	Traffic No	PCU	PCU Index
398.500	15716	31621	**2.01**

It can be observed from above that project traffic has PCU index above 2 which is a fair indicator of good mix being split between commercial and urban traffic.

3.4.2 Components of Traffic

As discussed previously, components of traffic volume play an important role in determining project revenue. A larger component of commercial traffic with higher

axle configuration adds to project revenue positively. Similarly, a larger component of local traffic affects the project revenue potential negatively.

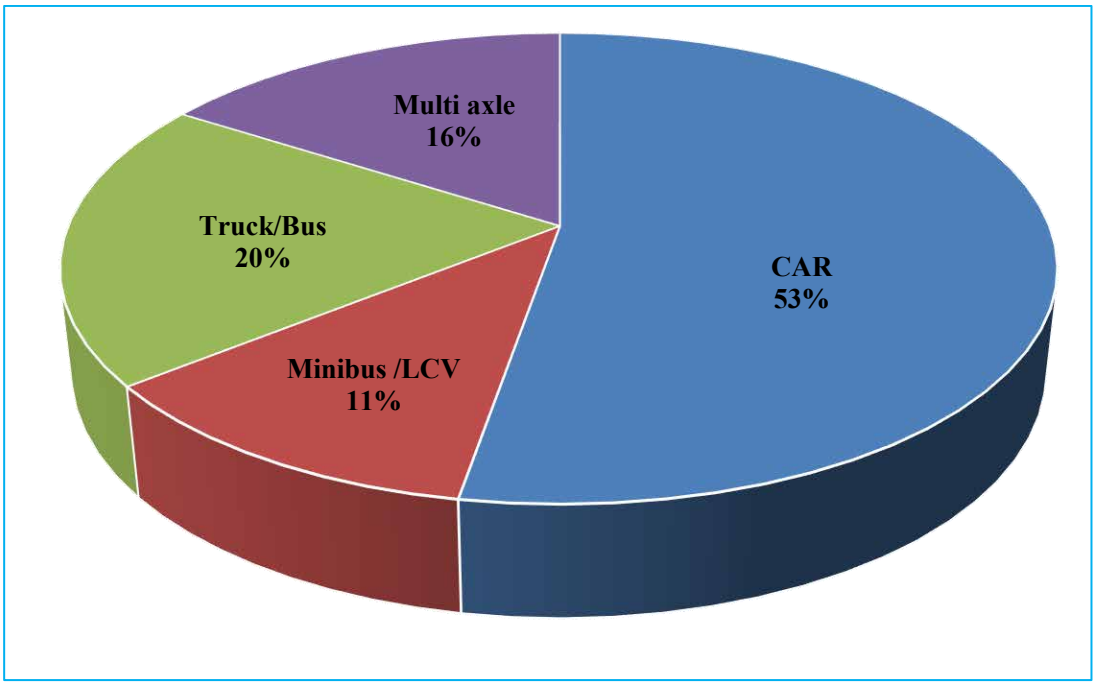


Figure 3-2 : Modal Split of Traffic at Toll Plaza 398.500

It is observed that car traffic forms 53% of total traffic at toll plaza location Km 398.500. Share of LCV and bus / truck was 11% and 20% respectively. Multi axle consists of 16% of total traffic. Over all about 40% of traffic is commercial in nature. Higher percentage of urban traffic is due to the fact that on both end of stretch there are developing urban centers of Dindigul and Madurai.

Another important bifurcation of traffic is components of traffic with respect to various type of toll ticketing like

1. Single Journey
2. Multi Journey
3. Monthly Pass (Local and General)

Following table provides numbers of vehicle falling in each of above category on base year 2015-16

Table 3-10 : Journey Type Bifurcation of Traffic at KM 398.500

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass
Car	44.7%	54.0%	0.2%	1.1%
Minibus /LCV	43.9%	53.9%	0.0%	2.2%
Truck/Bus	38.5%	26.0%	0.0%	35.5%
Multi axle	77.2%	22.4%	0.0%	0.4%

Following figure illustrate component of each type of journey in graphics for better understanding.

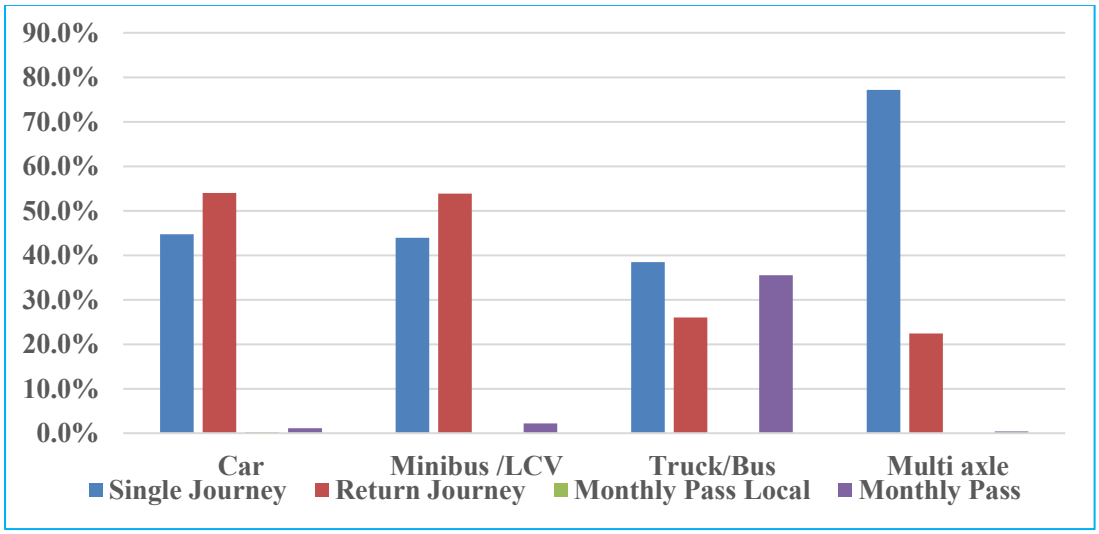


Figure 3-3 : Journey Type Bifurcation at Toll Plaza 398.500

It can be observed that car and mini bus / LC have higher share of return journey as compared to single journey. Multi axle and 2 axle have higher share of single journey. Over all return journeys represent 40% of the total traffic. High proportion of return journeys reflects presence of strong localized urban transport magnets. Characteristic of Multi axle and trucks are typical of rural highways.

3.4.3 Seasonal Variation in Traffic

Traffic on highway does not remain uniform throughout the year. Festivals, rains etc. are factors for such variation. Seasonal variation of traffic was worked out from the data available. Following figure depict monthly variation of AADT.

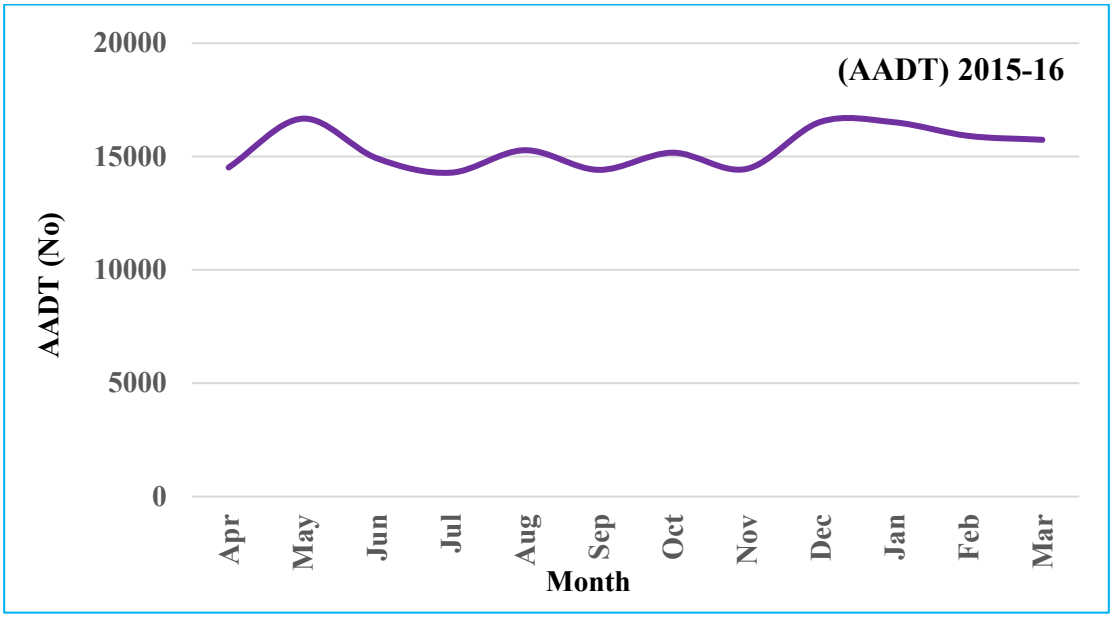


Figure 3-4 : Seasonal Variation of Traffic at Project Highway

It is observed that traffic volume reduces in the rainy season from August to November and then picks up after November during the harvest season. Maximum Season correction factor varies between 0.92 to 1.07.

3.5 Secondary Data Collection

There are several other factors which have substantial impact on traffic pattern and growth on any project corridor. Following are some of such important factors

- Industrial development around project corridor and its catchment
- Educational infrastructure along project corridor
- Demographic pattern
- Urban area development
- Tourism potential
- Upcoming major infrastructural or industrial projects
- Special industry in project corridor
- Overall trends of economic growth local as well as national / regional

Hence in addition to traffic details on project site, secondary data was also collected from the various sources. Typical secondary data includes the following:

1. Vehicle registration data of regional and national level.
2. Economic Data

a) GDP

b) NSDP

c) Population Growth

d) Per Capita Income growth

e) Industrial Growth

f) Special Industry Potential

g) Regional and National development vision / plan

h) Any other relevant data

3. Competing road network.

We have collected and utilized such underlying data in the study to estimate the growth and risk factors for traffic along the project corridor.

CHAPTER 4
INFLUENCE ZONE TRANSPORT NETWORK ANALYSIS

4.1 Introduction

Highway corridors behave like integrated circuit network and more often than not every road is connected to various networks having different origin and destinations. Traffic running on these networks behave like fluid and flows on network on alignment of least friction.

Following Factors can be considered as major contributors to friction on transportation network

- Travel Speed / Travel Time,
- Geometric deficiencies,
- Configuration of road,
- Riding comfort,
- Traffic delays,
- Length of road,
- Built up passing through,
- Terrain,
- Facilities

Following set of urban origin and destination have been selected for this analysis

- Dindigul to Vadipatty
- Vadipatty to Samayanallur

Following figures depict competing road network of above pair of origin & destinations

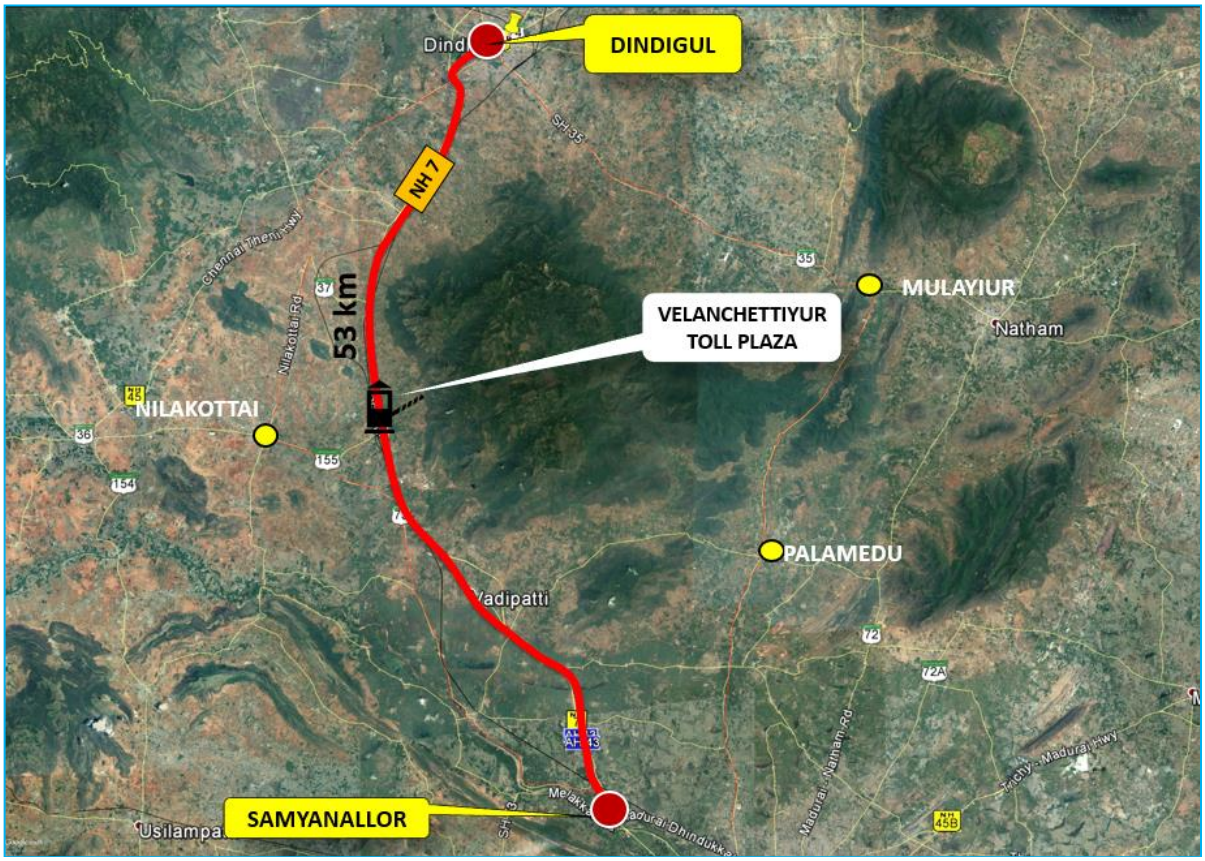


Figure 4-1 : Project Alignment Dindigul to Samayanallur

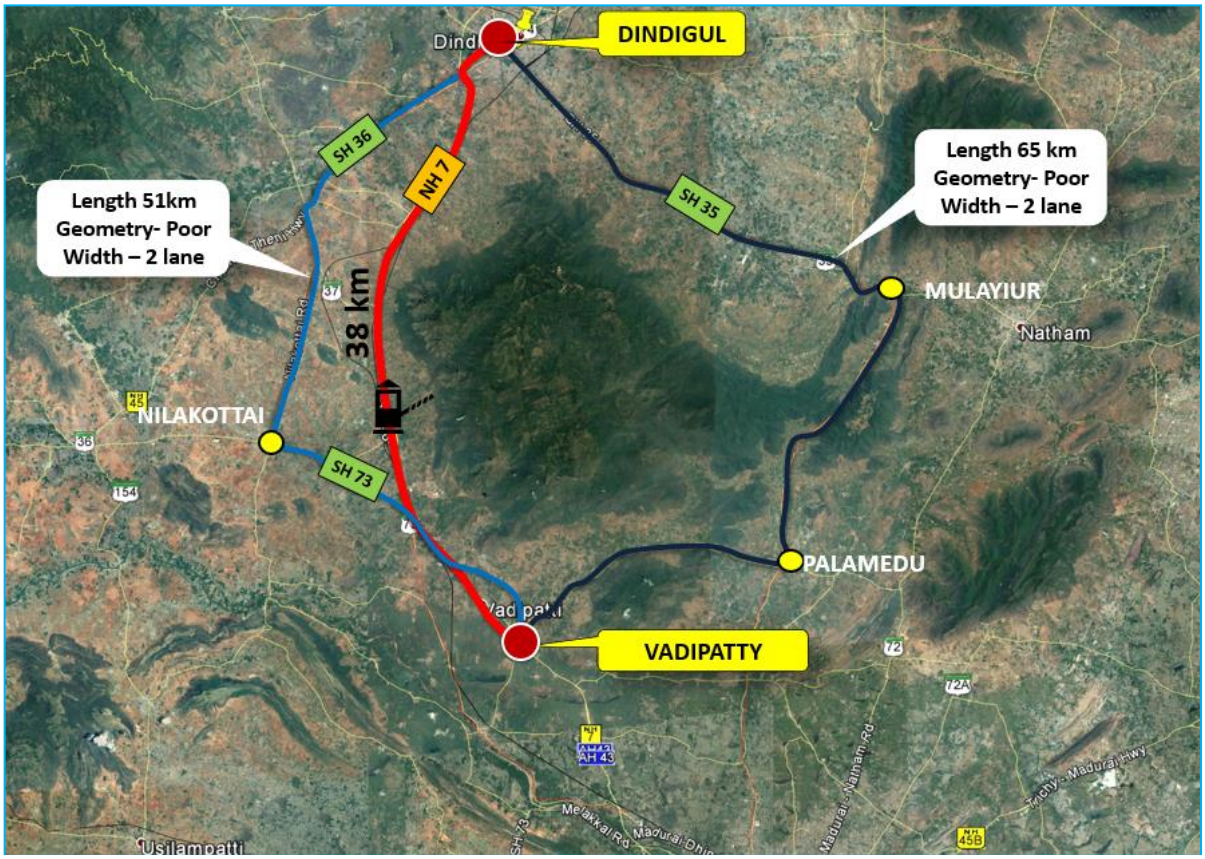


Figure 4-2 : Competing Roads Dindigul to Vadipatty

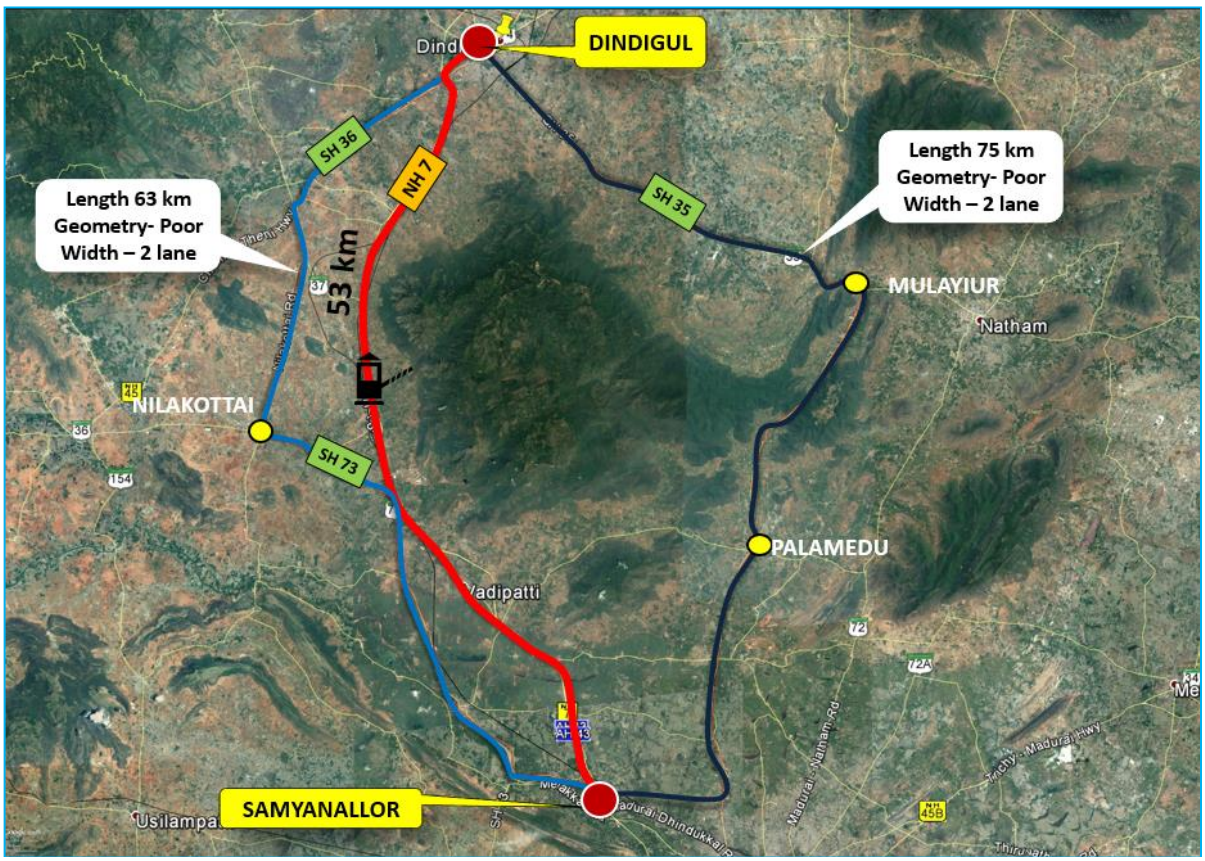


Figure 4-3 : Competing Roads Dindigul to Samayanallur

It can be observed that the project highway is the spine of the corridor between Dindigul to Samayanallur. There are several local roads and state highways which if integrated can form a competing road network. However most of these roads run across project corridor covering much longer distances for the same pairs of origin and destination as compared to project highway. Moreover, the geometry and quality of road is inferior as compared to project section of NH-7, adding to travel time and consequently the costs. These have sharp turns, bottlenecks and patches of damaged pavement.

The following table provides quantity cum quality analysis of competing roads.

Table 4-1 : Competing Roads Details

Sr. No	Route Details	Designation	Length (Km)	Avg. Speed (KMPH)	Time Taken (Min)	Observations
1	Dindigul to Vadipatty competing road (SH-35- Mulayiur-Palamedu road) on East side	Competing Road	65	40	98	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-7 not expected
	Dindigul to Vadipatty via Project Road NH-7	**Project Road**	**38**	**70**	**33**	
	Dindigul to Vadipatty competing road (SH-36- Nilakottai-SH-73) on West side	Competing Road	51	40	77	
2	Dindigul to Samayanallur competing road (SH-35- Mulayiur-Palamedu road) on East side	Competing Road	75	40	113	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-7 not expected
	Dindigul to Samayanallur via Project Road NH-7	**Project Road**	**53**	**70**	**45**	
	Dindigul to Vadipatty competing road (SH-36-Nilakottai-SH-73) on West side	Competing Road	63	40	95	

As can be observed from table above, the point regarding significant time saving and consequently cost savings for traffic which align to the project highway is reaffirmed. Time and fuel saving is a major criterion for selection of routes. Under these circumstances, it is not envisaged that commercial or passenger traffic would switch to competing roads from the project road. Further, it may be noted that since the project highway has already been commissioned and has a tolling history, the current traffic traversing the project corridor already factors in traffic diversion (if any) that may have taken place.

CHAPTER 5
GROWTH OF TRAFFIC ON PROJECT HIGHWAY

5.1 Introduction

Traffic growth is a function of the interplay of a number of contributory factors such as National economy, Government policy, socio-economic conditions of the people, and changes in land uses along the project corridor precincts etc. As these factors have several uncertainties associated with them, forecasts of traffic are dependent on the forecasts of factors such as population, gross domestic product (GDP), vehicle ownership, per capita income (PCI), agricultural output, fuel consumption etc. Future pattern of change in these factors can be estimated with only a reasonable degree of accuracy and hence the resultant traffic forecast levels may not be precise.

Traffic growth forecast for project corridor Dindigul - Samayanallur section of NH-7 has been carried out taking above factors in to consideration. "**IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**" is established best practice and has been used for traffic growth forecast.

5.2 Trend Analysis

One of the methods of estimation of future rate of traffic growth is to assume the same rate of growth as experienced in the past. However, it may be noted that major influencing factors which reflect Economic conditions such as GDP, agricultural output, industrial output, national policies etc. are susceptible to change over a longer period of time and necessary adjustments need to be made to past trends to account for these changes.

Thus, we have considered the Elasticity model of growth projection which is one of the most widely acceptable methods for traffic forecast and is recommended in **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**.

In this method, past trends of any vehicular data are paired with an economic indicator and a regression analysis is done to yield the economic model of growth. Growth of vehicular traffic varies for different type of vehicle. It is a proven fact that growth patterns for passenger and goods vehicles are different. Traffic growth on any highway typically depends on several economic parameters. The most important and direct parameters are given as under

- Per Capita Income
- Net State Domestic Product (NSDP)
- Population

It is observed that the ownership of a car is more closely related to affordability hence per capita is the index which closely fits with growth of car traffic among other criteria. In similar fashion, following pairs of vehicle type and independent variable can be established for elasticity modeling of growth.

- Car / Jeep - Par Capita Income
- Bus / Minibus - Population
- Trucks / Heavy / Goods Vehicle - NSDP
- Time series data of vehicle (both passenger and goods) Registered in the state of Tamil Nadu is used as the base data for analysis of growth

5.3 Estimation of Traffic Demand Elasticity

Elasticity of traffic demand is defined as the rate at which traffic intensity varies due to change in the corresponding indicator selected. Hence, in order to estimate the elasticity of traffic demand, it is necessary to establish the relationship between the growth in number of given category of vehicle with one of the economic variables considered, such as NSDP, per capita income and population growth. Latest available data for vehicle registration, per capita income, NSDP and population is used in analysis.

As per IRC: 108-1996 the model for estimating elasticity index for the project corridor is of the following form and is as given below:

$$Log\ (P) = k \times Log\ (EI) + A$$

Where,

P = *Number of Vehicles (Mode wise)*

EI = *Economic Indicator*

A = *Regression constant*

k = *Elasticity coefficient (Regression coefficient)*

The elasticity for car and bus (passenger vehicles) is calculated based on Population and Per Capita Domestic Product (PCDP) and the elasticity for trucks is calculated based on the Net State Domestic Product (NSDP).

Following tables and graphs depict regression and elasticity of growth model.

Table 5-1 : Per Capita Income Vs Car

Year	PCI	Car	Log PCI	Log Car	PCI Growth	Average Growth
2004	30062	657339	4.48	5.82		
2005	34126	714978	4.53	5.85	14%	
2006	39166	787085	4.59	5.90	15%	
2007	41314	871917	4.62	5.94	5%	
2008	43193	967310	4.64	5.99	5%	
2009	47394	1080445	4.68	6.03	10%	
2010	53507	1230492	4.73	6.09	13%	
2011	57093	1385143	4.76	6.14	7%	
2012	58360	1549950	4.77	6.19	2%	
2013	62361	1709528	4.79	6.23	7%	8.5%

Regression analysis of same is given in figure below

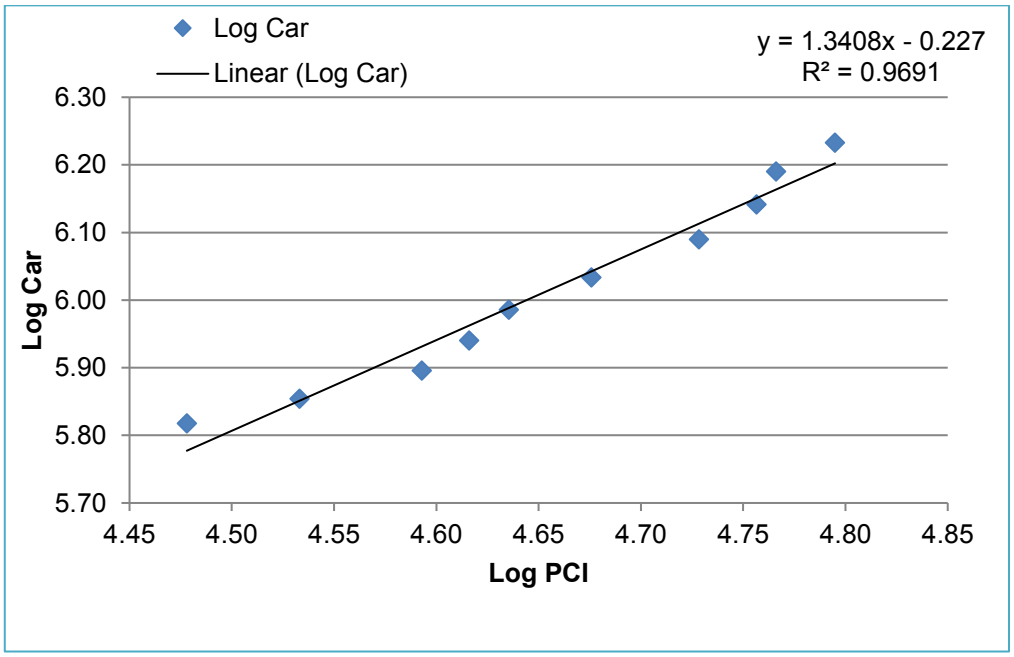


Figure 5-1 : Regression and Elasticity PCI vs. Car – Extrapolation

Table 5-2 : Population Vs Bus

Year	Population	Buses	Log Pop	Log Bus	Pop Growth	Average Growth
2004	64096000	37937	7.81	4.58		
2005	64623000	42109	7.81	4.62	0.8%	
2006	65135000	42999	7.81	4.63	0.8%	
2007	65629000	47765	7.82	4.68	0.8%	
2008	66106000	52617	7.82	4.72	0.7%	
2009	66566000	56338	7.82	4.75	0.7%	
2010	67012000	59240	7.83	4.77	0.7%	
2011	67444000	62725	7.83	4.80	0.6%	
2012	67862000	68096	7.83	4.83	0.6%	
2013	68265000	84488	7.83	4.93	0.6%	0.70%

Regression analysis of same is given in figure below

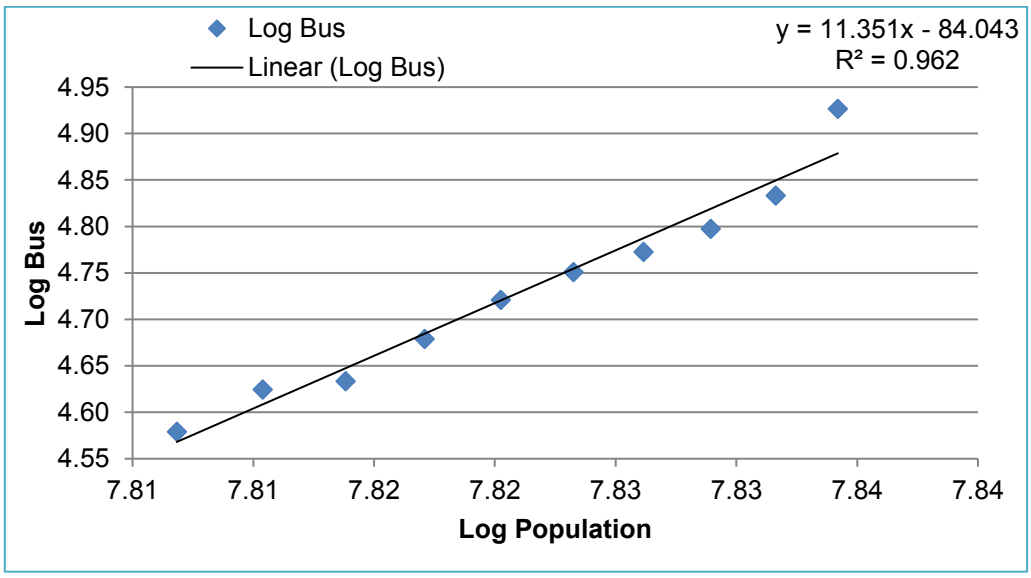


Figure 5-2 : Regression and Elasticity Population vs. Bus – Extrapolation

Elasticity of goods traffic has been worked out by regression analysis with NSDP. Following table represents the data and details.

Table 5-3 : Goods Traffic Vs NSDP

Year	NSDP	Trucks	Log NDSP	Log Truck	NSDP Growth	Average Growth (5 Year)
2004	19364500	220016	7.29	5.34		
2005	22158800	272756	7.35	5.44	14%	
2006	25628600	279984	7.41	5.45	16%	
2007	27234000	340542	7.44	5.53	6%	
2008	28674400	385948	7.46	5.59	5%	
2009	31676000	404326	7.50	5.61	10%	
2010	35996100	433814	7.56	5.64	14%	
2011	38650800	474226	7.59	5.68	7%	
2012	39747100	493564	7.60	5.69	3%	
2013	42718200	544201	7.63	5.74	7%	7.62%

Following figure depict regression analysis and extrapolation.

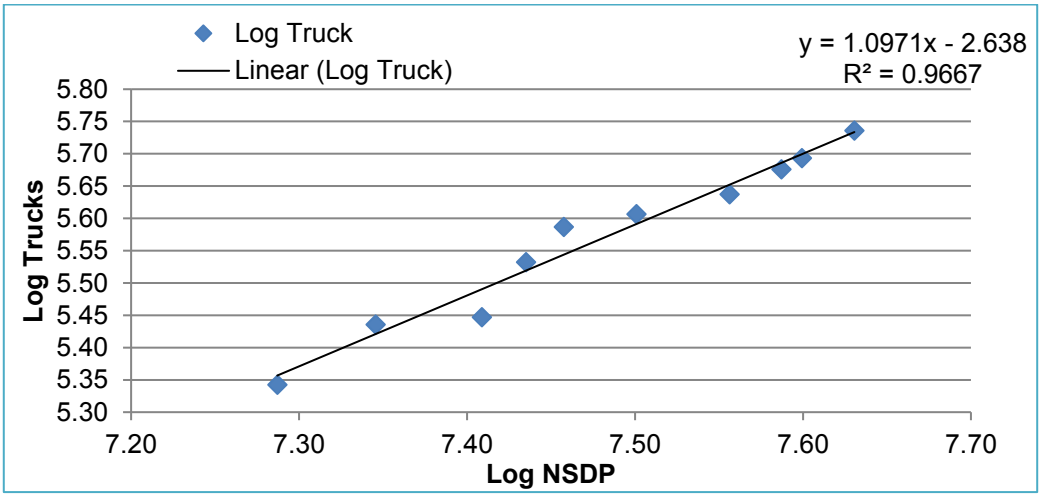


Figure 5-3 : Regression and Elasticity NSDP vs. Goods Traffic – extrapolation

Using the regression analysis above, we have arrived at the elasticity of traffic demand for each class of vehicle to a given change in relevant economic indicators. Average traffic growth of a vehicle class is multiplied by the corresponding elasticity coefficient to arrive at traffic growth. R^2 is statistical measure of how close the data are to the fitted regression line. It varies from 0 to 1. Higher the value of R^2 more representative is the regression model of data.

The results of these analyses for the good fit as reflected by R^2 values are presented in the Table below

Table 5-4 : Summary Regression Analysis

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient (y)	Average Growth	Growth Elastic Model
Tamil Nadu	Car/Jeep	PCI	y = 1.3408x - -0.227	R² = 0.9691	1.3408	8.52%	11.43%
	Bus	Population	y = 11.3505x - -84.0434	R² = 0.962	11.3505	0.70%	7.98%
	Truck	NSDP	y = 1.0971x - -2.638	R² = 0.9667	1.0971	7.62%	8.36%

While the economic model for predicting growth is a good tool, other local, regional, national factors such as proposed developments etc. should also be considered before finalizing growth factors. These factors are discussed in subsequent sections.

Concessionaire has carried out a sample survey of to analyze share of traffic of various states on project road. The study was done in 2012 at toll plaza. Survey was done for both side traffic and approximate sample size was 25% which can be considered as good sample. Following table provides summary of the same

Table 5-5 : Component Share of Various States in Project Traffic

State / Vehicle Type	Thailand	Karnataka	Kerala	ROI	Total
Car	84.21%	10.21%	3.00%	2.58%	**100.00%**
LCV	88.20%	7.22%	2.50%	2.08%	**100.00%**
2AT	91.88%	5.30%	1.10%	1.72%	**100.00%**
3AT	85.97%	5.20%	1.50%	7.33%	**100.00%**
MAV	84.13%	7.10%	2.20%	6.57%	**100.00%**

It can be observed that Tamil Nadu component is about 85%-90% in all categories of vehicles. Karnataka has part of next largest share of traffic volume.

In such case it would be apt to consider the growth perspective of Karnataka also at least for 3 Axle and MAV category of vehicle. A regression model for Karnataka traffic

growth was prepared for period from 2005-6 to 2014-15. Summary of same is given in following table

Table 5-6 : Summary Regression Analysis- Karnataka

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient	Average IV Growth (5yrs)	Growth Elastic Model	Remarks
Karnataka	Car/Jeep	PCI	y = 1.1164x - 2.7365	R^2 = 0.9969	0.8535	14.30%	12.20%	Excellent Regression
	Bus	Population	y = 1.8755x - 10.293	R^2 = 0.956	7.197	1.05%	7.54%	Excellent Regression
	Truck	NSDP	y = 1.1164x - 2.7365	R^2 = 0.8539	1.42	6.53%	9.27%	Good Regression

This would be suitably considered while working traffic growth projections.

5.4 Analysis of Historic Traffic Data

Historic traffic data forms useful information for any highway project. It provides useful information for establishing past trend of growth. Project stretch of Dindigul to Samayanallur has been commissioned and it under tolled operation June 2011.

The historical data available for corridor from 2010-11 to 2015-16 was analyzed. It exhibits steady growth in terms of passenger traffic. While as growth of commercial traffic is lesser as compared to passenger traffic. It may be due to ban on mining in state which has recently been lifted in 2015. Following table presents overall growth of traffic on project corridor from year 2012 to year 2016.

Table 5-7 : Past Traffic Trends

Type of Vehicle	Year 2010-11	Year 2015-16	Overall Growth % (CAGR)
Car	4121	7952	14.05%
LCV	2116	1793	-3.26%
Bus/ Truck	2999	3113	0.75%
MAV	1811	2509	6.74%

It is observed that growth of LCV has declined while as Bus / Truck recorded a negligible growth. MAV traffic grew at good rate. It is an established fact that due to

technology upgradation in logistic industry more and more LCV and 2 axle truck are being replaced with multi axle vehicle for transport of goods.

As recommended by **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways** "*This (historic growth) for short term projects but for long term projections it would be erroneous for assume that the past rate of growth would prevail for long time in future. Economic conditions are bound to change over long period and it would be necessary to modify the rate of growth accordingly*".

It is thus clear that while developing a futuristic growth projections for highway projects, long terms factors like growth of economy and upcoming developments in area have greater impact than past trends. Considering above, both historic trend and economic factors (elasticity) have been considered suitably to work out recommended growth rate of traffic on project corridor.

5.5 Other Factors Influencing Growth

There are many factors which have impact on traffic growth. As discussed previously these factors can be economic, social, educational, and industrial.

Potentiality of such factors for project highway is discussed as under.

ECONOMY

After witnessing a slowdown during 2008-09, the economy recovered in 2009-10, and a very high growth rate of GDP was recorded in 2010. Following figure depicts growth of GDP in India during the period.

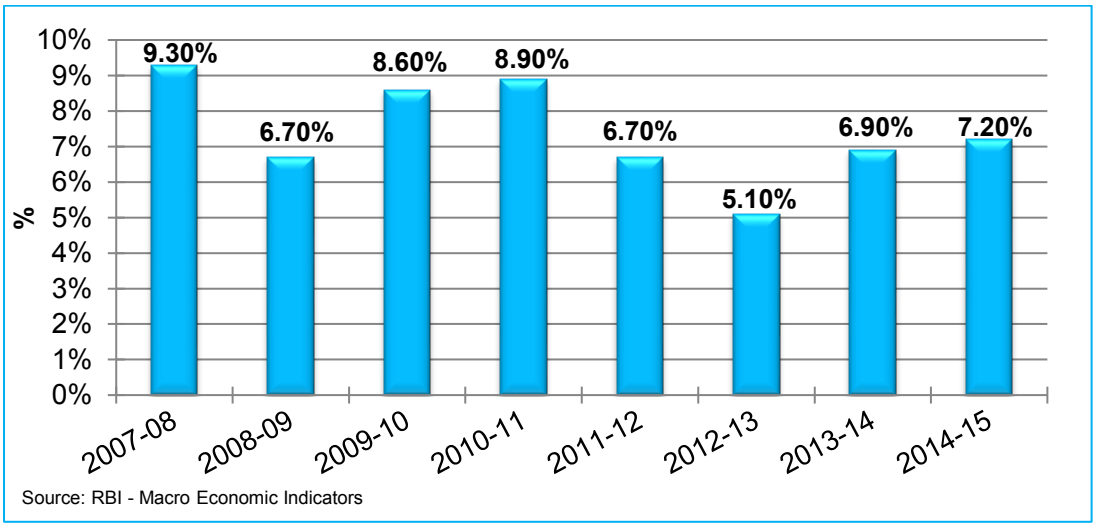


Figure 5-4 : Growth of GDP in India

After recording an all impressive growth of 8.9% in 2011, GDP declined between FY11 and FY14. GDP growth in 2014-2015 was pegged at 7.2% and is expected to be in the range of 7-8% going forward.

5.6 Developments Along and Around the Project Corridor & State

5.6.1 Developments around Dindigul Area

- **Dindigul** is a city in the South Indian state of Tamil Nadu. It is the administrative headquarters of the Dindigul district. Dindigul has several historical monuments, the Rock Fort being the most prominent. Industries in Dindigul include Lock making, leather, textile spinning, administrative services, agricultural trading, banking, agricultural machinery and educational services.
- Locks and steel safes are manufactured in Dindigul and operated as a co-operative sector. Locks manufactured in Dindigul are sold in national and international markets. The Tamil Nadu State Council for Science and Technology, through its research officers wing, has filed geographical indication for Dindigul locks
- Silk, muslin and blanket manufacturing is common in Dindigul. The city has the second largest textile spindling capacity in the State. Chinnalapatti silk, a brand of silk saree is produced out of Chinnalapatti located 11 km (6.8 mi) from the city.
- Dindigul was an important centre of trade in tobacco and manufacture of cigars. A favorite cigar of Winston Churchill called Churut, the 'Light of Asia', was produced in Dindigul. The tobacco industry is one of the main sources of employment for the inhabitants of Dindigul. The central government has a research center for tobacco in Vedasandur. This is one of the two centers in India. In modern times, it has the largest trading centre in the state for chewing tobacco and scented betel nuts. Well-known brands of scented chewing tobacco like Angu Vilas, Roja Supari etc. operate out of the city and sent to various places in the state and outside.
- Dindigul is also one of the leading leather producers and suppliers in the state.

5.6.2 Developments around Madurai Area

- **Samayanallur** is a small town located on NH-7, 12 kilometers from Madurai, Tamil Nadu. The main town just lies between the strip formed by the NH7 and Rail Track. On the south side is the river Vaigai and on the north side is Todaneri Lake.

- **Madurai** is a major city and cultural headquarters in the state of Tamil Nadu in India. It is the 31st largest urban agglomeration in India. Madurai is the third largest city by population in Tamil Nadu. Located on the banks of River Vaigai, Madurai has been a major settlement for two millennia and is one of the oldest continuously inhabited cities in the world.

  Madurai is an important industrial and educational hub in South Tamil Nadu. The city is home to various automobile, rubber, chemical and granite manufacturing industries. It has developed as a second-tier city for information technology (IT), and some software companies have opened offices in Madurai. The Tamil Nadu government has planned a satellite town for Madurai near Thoppur.

- **Education -** Madurai has been an academic centre of learning for Tamil culture, literature, art, music and dance for centuries. Madurai has important government educational institutes like the Madurai Medical College, Homeopathic Medical College, Madurai Law College, Agricultural College and Research Institute.
- Madurai is famed for its jasmine plantations, called "Madurai Malli", primarily carried out at the foothills of Kodaikanal hills and traded at the Madurai morning flower market. An average of 2,000 farmers sell flowers daily at the flower market.
- Madurai is one of the few rubber growing areas in South India, and there are rubber-based industries in Madurai. Gloves, sporting goods, mats, other utility products and automobile rubber components are the most produced items by these industries. There are numerous textile, granite and chemical industries operating in Madurai.
- Madurai is promoted as a second-tier city for IT. The state government proposed two IT-based Special Economic Zones (SEZ) in Madurai, and these have been fully occupied by various IT companies. Software Technology Parks of India, an agency of the Government of India, has authorised several such companies to receive benefits under its national information technology development program.
- Madurai is popularly called *Thoonga Nagaram* meaning the city that never sleeps, on account of the active night life. The city attracts many tourists from within the country and abroad. About 9,100,000 tourists visited

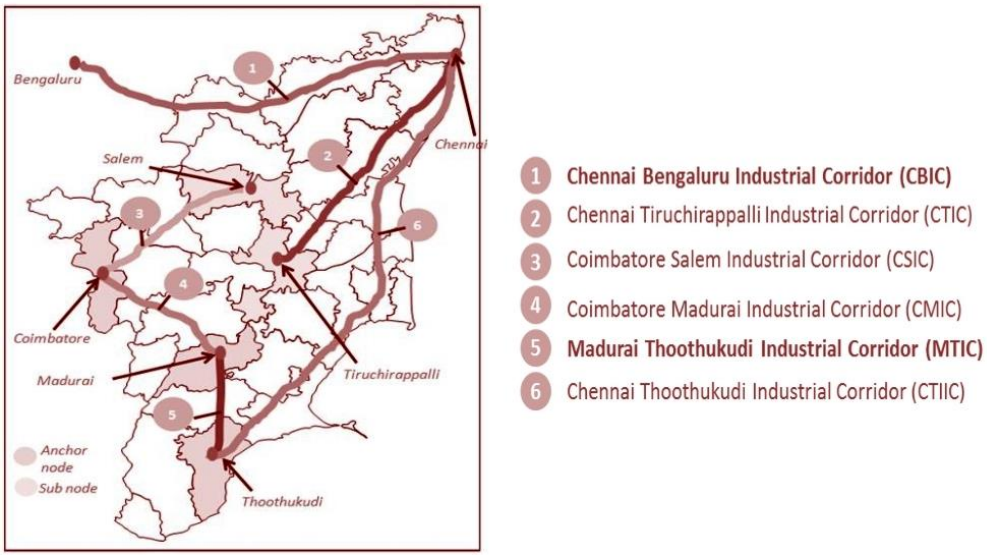
Madurai in 2010, including 524,000 foreigners. The major attractions in the area are

- Meenakshi Amman Temple, Koodal Azhagar Temple
- Pazhamudircholai Murugan Temple
- Kazimar Big Mosque, Goripalayam Mosque, Tirupparankunram Dargah
- Thirumalai Nayak Palace
- Gandhi Memorial Museum, Madurai
- The Eco park, Rajaji children's park,

Some of the big projects around the project corridor are detailed below

5.6.3 Madurai - Thoothukudi Industrial Corridor

Manufacturing, knowledge hubs, agri business and tourism zones are expected to come along the national highway NH 45B that connects Madurai to Tuticorin. The total infrastructure investment is estimated to be Rs 40,000 crore with an employment generation capacity of 18 lakhs. Madurai is expected to have a manufacturing hub spread over 5,000 hectares. A thermal energy hub, port based industries, an integrated ship building and ship repair yard complex spread over a similar area is proposed for Tuticorin, while a renewable energy hub is proposed for Tirunelveli. Two knowledge hubs are being proposed, one each in Madurai and Tirunelveli. Spread over 202.43 acres, Mahindra has proposed an international class education hub for the temple city while Tirunelveli would be home to IT, ITeS, BPO and KPO firms



5.6.4 Coimbatore - Madurai Industrial Corridor

Coimbatore - Madurai Industrial Corridor would cover areas such as Walayar, Pollachi and Mettuppalaiyam. The Coimbatore - Tirupur path would be a manufacturing and business investment region spread across 5,000 hectares, home to heavy engineering industries and precision tools. A logistics hub is proposed at Walayar. The Erode -Namakkal region has been designated as an agri business investment region that would be spread over a similar area and would house agro food processing industries, mega food parks an agro SEZs. The infrastructure estimate for the Coimbatore-Salem corridor is pegged at Rs 14,711 crore while the industrial investment for the region is estimated to be Rs 43,189 crore.

5.7 Recommended Growth Rates of Traffic

Based on the above analysis and after giving due consideration to the entire listed factors, overall growth rates are recommended for each category of vehicle. Rate of growth is moderated considering overall regional trend. It is also expected that as the economy moves from developing to developed, rate of growth diminishes. Same growth rate is not sustainable for long. It is established practice to stepdown future growth rates at interval of 5 years.

Impact of other important factors affecting growth is taken as under.

- A weightage of 30% and 70% is assigned to past trends and growth by elastic model respectively. The weightage of past trend growth has been kept at 20% in case of LCV and Bus / Truck as their growth is abnormally low.
- As per state share distribution of traffic, Karnataka growth rates of elastic model are assigned weightage 10% to car and MAV category while 90% weightage is given to Tamil Nadu elastic model growth rate. For LCV category only Tamil Nadu growth rates are considered. 5% weightage is given to Karnataka growth for bus / truck category and rest 95% to Tamil Nadu in line with traffic distribution.
- Due to technological advances in logistic industry greater preference is now given to Multi Axle (MAV) over conventional 2/3 Axle truck. To accommodate this in growth projection growth rate of MAV is stepped down in future year by lesser offset as compared to that of Car, LCV and Bus truck.

Additionally, final growth rate of MAV is brought up by 0.5% to accommodate conversion of 2 axle truck to multi axle MAV.

- Final growth rate of car is moderated by 1% to make it more representative.

Growth rates are recommended for three scenarios for sensitivity analysis namely **Optimistic, Pessimistic** and **Most Likely** with a positive and negative variation 0.5% from Most Likely case.

Table 5-8 : Recommended Growth Rates Optimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.80%	10.80%	9.55%	8.05%	6.55%
Mini Bus /LCV	6.60%	5.60%	4.10%	2.60%	1.10%
Truck / Bus	7.10%	6.10%	4.60%	3.10%	1.60%
Multi Axle	9.00%	8.50%	7.50%	6.50%	5.50%

Table 5-9 : Recommended Growth Rates Pessimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.80%	9.80%	8.55%	7.05%	5.55%
Mini Bus /LCV	5.60%	4.60%	3.10%	1.60%	0.10%
Truck / Bus	6.10%	5.10%	3.60%	2.10%	0.60%
Multi Axle	8.00%	7.50%	6.50%	5.50%	4.50%

Table 5-10 : Recommended Growth Rates Most Likely

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.30%	10.30%	9.05%	7.55%	6.05%
Mini Bus /LCV	6.10%	5.10%	3.60%	2.10%	0.60%
Truck / Bus	6.60%	5.60%	4.10%	2.60%	1.10%
Multi Axle	8.50%	8.00%	7.00%	6.00%	5.00%

CHAPTER 6
TRAFFIC FORECAST

6.1 Traffic Projections

Growth rates recommended in previous section of report are used to arrive at traffic projections for future years. Toll plaza wise futuristic traffic projection is given in tables below.

These projections have been done for following three cases of growth

1. Optimistic Scenario
2. Pessimistic Scenario
3. Most Likely Scenario

Table 6-1 : Total Tollable Traffic @ Toll Plaza 1- 398.500 KM
(Optimistic Growth Scenario)

Year	CAR	LCV	Truck/Bus	Multi axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	8906	1912	3334	2733	**16885**	**34459**
2017-18	9957	2038	3571	2979	**18545**	**37561**
2018-19	11131	2172	3825	3247	**20375**	**40953**
2019-20	12444	2315	4097	3540	**22396**	**44670**
2020-21	13788	2445	4347	3840	**24420**	**48365**
2021-22	15278	2582	4612	4166	**26638**	**52384**
2022-23	16929	2727	4893	4519	**29068**	**56752**
2023-24	18757	2879	5192	4903	**31731**	**61508**
2024-25	20784	3041	5508	5320	**34653**	**66686**
2025-26	22769	3166	5762	5719	**37416**	**71498**
2026-27	24944	3296	6027	6148	**40415**	**76682**

Table 6-2 : Total Tollable Traffic @ Toll Plaza 1- 398.500 KM
(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	8827	1893	3303	2708	**16731**	**34143**
2017-18	9781	1999	3504	2925	**18209**	**36875**
2018-19	10837	2110	3718	3159	**19824**	**39837**
2019-20	12007	2229	3944	3412	**21592**	**43050**
2020-21	13183	2331	4144	3667	**23325**	**46175**
2021-22	14476	2438	4355	3942	**25211**	**49553**
2022-23	15895	2549	4577	4237	**27258**	**53190**
2023-24	17453	2666	4811	4554	**29484**	**57116**
2024-25	19162	2789	5056	4896	**31903**	**61354**
2025-26	20800	2876	5238	5214	**34128**	**65166**
2026-27	22578	2965	5427	5553	**36523**	**69243**

Traffic projections for Most Likely scenario are given as under

Table 6-3 : Total Tollable Traffic @ Toll Plaza 1- 398.500 KM
(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	8867	1903	3319	2720	**16809**	**34302**
2017-18	9869	2020	3538	2951	**18378**	**37218**
2018-19	10984	2143	3772	3202	**20101**	**40395**
2019-20	12225	2273	4021	3474	**21993**	**43854**
2020-21	13484	2389	4247	3751	**23871**	**47263**
2021-22	14873	2511	4485	4051	**25920**	**50957**
2022-23	16405	2639	4736	4375	**28155**	**54955**
2023-24	18094	2773	5001	4724	**30592**	**59280**
2024-25	19957	2914	5281	5102	**33254**	**63972**
2025-26	21762	3018	5497	5459	**35736**	**68261**
2026-27	23730	3127	5723	5841	**38421**	**72870**

CHAPTER 7

FORECAST OF TOLL REVENUE

7.1 General

This chapter presents the tolling rate calculations, categories and toll revenue of the project.

7.2 Discount Categories

Fee schedule of agreement of Dindigul - Samayanallur section of NH-7 is based on old toll policy. As per the Toll Notification (Schedule G) the following discounts have been considered:

1. Monthly Pass: For frequent user's monthly pass would be issued at fee 30 time the single journey fee. There are other local monthly passes for car /Jeep/ Van category I and II and school bus @ Rs.150, Rs.300 and Rs.1000 respectively.
2. Multiple Journeys (for Return Trip): Will be charged at 1.5 times single journey.
3. Single Journey: Full single journey toll would be charged to this category of vehicles who are infrequent travelers or whose frequency does not yield any discount from the above categories.
4. There are several categories of local discounts.
    a) Local Bus / truck and LCV (within 20 km) will be charged @ Rs. 25 and 15 respectively. Rate will be constant throughout concession period

Building of inflation and escalation of rate based on WPI are done as per toll notification (Schedule G) as given under also.

$$\text{Base Fee} \times \frac{\text{WPI-B}}{\text{WPI-A}} \times \text{length of the said section.}$$

Where

- WPI-A = is the Wholesale Price Index of June, 1997 (131.4).
- WPI-B = is the Average Wholesale Price Index for the year ending March, 31st preceding the fee revision date.

7.3 Estimation of Toll Rates

As per the applicable MORTH notification and Schedule G of contract agreement, the following Base rate of fee for the categories mentioned in the table stands true in the National Highways Fee Rules applicable for contract.

Table 7-1 : Base Toll Rates 19997-98

Type of Vehicle	Base Rate of Fee / Km (in Rs.)
Car, Jeep, Van or Jeep	0.40
Light Commercial Vehicle, (LCV)	0.70
Bus or Truck (2 Axle)	1.40
MAV (> 2 axle)	2.25

Factor of inflation / growth has been incorporated as per Schedule G. WPI are available up to 2015-16. Following graph provides projection of rate of inflation (WPI) in India. Data has been taken from Office of Economic Advisor web site (www.eaindustry.nic.in)

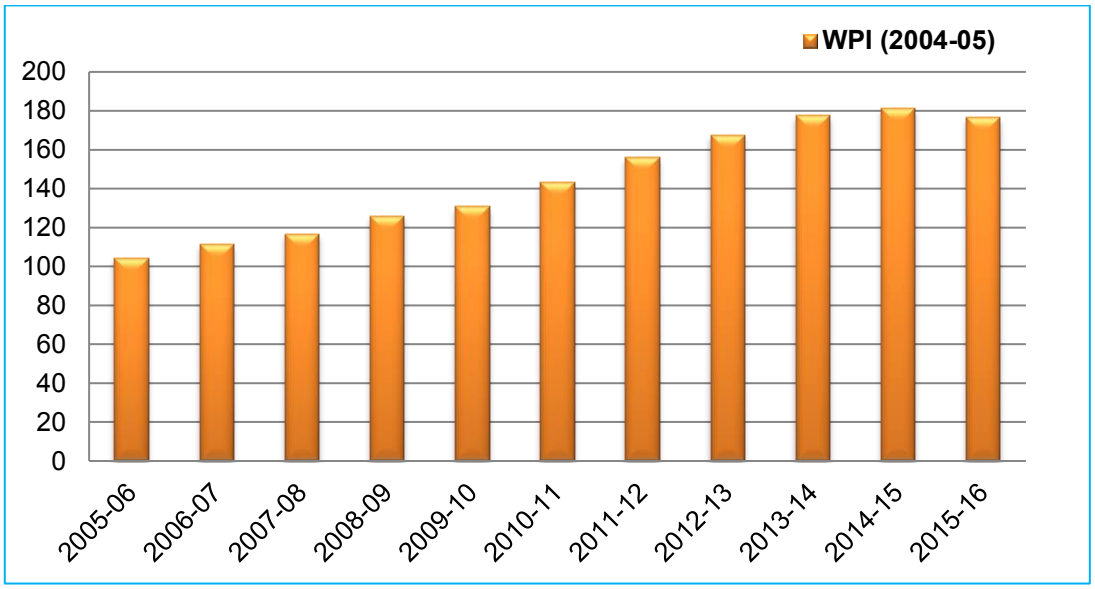


Figure 7-1 : Historical Rate of WPI Inflation in India

Average inflation in WPI in last 10 years is 5.5%. Taking future trends of economy in to consideration, following average WPI inflation is used for projections of toll rates

- Up to Year 2018 - 4.0%
- 2019-21 - 5.0%
- 2022-26 - 4.0%
- 2027-31 - 3.0%
- 2032-40 - 2.0%

Toll rates are calculated as per guidelines provided in schedule G for the concession period and are given below.

Thus, worked out rates for various categories of vehicle and discounts are given as under

Table 7-2 : Toll Rates for Single Journey @ Toll Plaza 1- 398.500 KM

Year	Car/Jeep /Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car - LCO	LCV - LTO	Truck/ Bus - LTO
2016-17	55	95	185	300	15	15	25
2017-18	55	95	195	310	15	15	25
2018-19	55	100	200	325	15	15	25
2019-20	60	105	210	340	15	15	25
2020-21	65	110	220	355	15	15	25
2021-22	65	115	230	375	15	15	25
2022-23	70	120	240	390	15	15	25
2023-24	70	125	250	405	15	15	25
2024-25	75	130	260	420	15	15	25
2025-26	80	135	270	435	15	15	25
2026-27	80	140	285	455	15	15	25

Table 7-3 : Toll Rates for Multiple Journeys @ Toll Plaza 1- 398.500 KM

Year	Car	Mini Bus /LCV	Truck/ Bus	Multi Axle
2016-17	80	140	280	445
2017-18	85	145	290	465
2018-19	85	150	300	485
2019-20	90	160	315	510
2020-21	95	165	330	535
2021-22	100	175	350	560
2022-23	105	180	360	585
2023-24	110	190	375	605
2024-25	110	195	390	630
2025-26	115	205	410	655
2026-27	120	210	425	680

Table 7-4 : Toll Rates for Monthly Pass @ Toll Plaza 1- 398.500 KM

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car – LT1	Car – LT2	School Bus
2016-17	1590	2785	5565	8950	150	300	1000
2017-18	1655	2895	5790	9305	150	300	1000
2018-19	1720	3010	6020	9680	150	300	1000
2019-20	1805	3160	6325	10160	150	300	1000
2020-21	1895	3320	6640	10670	150	300	1000
2021-22	1990	3485	6970	11205	150	300	1000
2022-23	2070	3625	7250	11650	150	300	1000
2023-24	2155	3770	7540	12115	150	300	1000
2024-25	2240	3920	7840	12600	150	300	1000
2025-26	2330	4075	8155	13105	150	300	1000
2026-27	2425	4240	8480	13630	150	300	1000

7.4 Toll Revenue

As indicated earlier, toll revenue on the Project Road has been calculated under in all three scenarios. The estimates of toll revenue under ***Optimistic***, ***Pessimistic*** and ***Most Likely*** growth scenarios are presented in the following section.

7.5 Toll Revenue at all toll plazas under Scenarios

Toll Revenue estimates under most likely scenario at each of the toll plaza up to 2026-27 (Expected End of Concession Period) starting from the year 2016-17 are shown in tables below.

Overloading of commercial vehicles is a known phenomenon on Indian roads. Currents project witnessed instances of overloading. These vehicles can be charge at extra higher rate as per contract to discourage overloading. A sample study done at Hosur Krishnagiri section of NH-7 by concessionaire shows that at present overloading charges can be translated to about 7% extra revenue. For next 2-3 years, this trend may continue at same % then it would gradually diminish over a period of say 8-10 years.

Following table provides expected component of revenue from overloading

Table 7-5 : Expected Overloading Revenue

Year	Expected Revenue from Overloading
2016-17	7%
2017-18	7%
2018-19	7%
2019-20	5%
2020-21	5%
2021-22	4%
2022-23	4%
2023-24	3%
2024-25	3%
2025-26	2%
2026-27	2%

Toll revenue projections, excluding revenue from overloading, are given in following tables

Table 7-6 : Toll Revenue Optimistic Scenario (Rs. Crores)

Year	Toll at Plaza 398.500	Total
2016-17	69.32	**69.32**
2017-18	78.38	**78.38**
2018-19	87.91	**87.91**
2019-20	100.95	**100.95**
2020-21	114.65	**114.65**
2021-22	130.15	**130.15**
2022-23	147.11	**147.11**
2023-24	165.42	**165.42**
2024-25	184.32	**184.32**
2025-26	206.76	**206.76**
2026-27	229.37	**229.37**

Table 7-7 : Toll Revenue Pessimistic Scenario (Rs. Crores)

Year	Toll at Plaza 398.500	Total
2016-17	68.30	**68.30**
2017-18	76.51	**76.51**
2018-19	85.02	**85.02**
2019-20	96.72	**96.72**
2020-21	108.83	**108.83**
2021-22	122.40	**122.40**
2022-23	137.06	**137.06**
2023-24	152.70	**152.70**
2024-25	168.57	**168.57**
2025-26	187.36	**187.36**
2026-27	205.91	**205.91**

Table 7-8 : Toll Revenue Most Likely Scenario (Rs. Crores)

Year	Toll at Plaza 398.500	Total
2016-17	68.81	**68.81**
2017-18	77.44	**77.44**
2018-19	86.44	**86.44**
2019-20	98.79	**98.79**
2020-21	111.68	**111.68**
2021-22	126.20	**126.20**
2022-23	141.97	**141.97**
2023-24	158.88	**158.88**
2024-25	176.20	**176.20**
2025-26	196.74	**196.74**
2026-27	217.25	**217.25**

CHAPTER 8
OPERATION & MAINTENANCE COST

8.1 General

While traffic and toll rates account income of project. Capital cost of construction and O & M cost form part of expenses. Health of any highway project considerably depends on pattern of its O&M cost. For these purpose, major O&M elements such as civil infrastructure, toll system and manpower's, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analyzed. As per condition of contract, major maintenance including overlay of wearing course would be done at interval of 5 years. Concessionaire has carried out major repair and renewal in 2016 hence as per condition of contract next periodic repair would be taken up after 5 years. Same is considered while developing cost of maintenance and repair.

8.2 Major Elements of maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

8.3 Project Details

Following are project parameters which would contribute towards cost of operation and maintenance.

Table 8-1 : Project Parameters for O & M

Item	Parameter	Quantity	Unit
Length of Road	KM	53.04	KM
Main Carriageway	Paved Area	946496	SQM
Service Road	Paved Area	94010	SQM
Bus bays	Paved Area	20580	SQM
Truck Lay bye	Paved Area	2925	SQM
Structure		**15853**	SQM
Major Bridge	Area	0	SQM
Minor Bridge	Area	2833	SQM
Flyover	Area	13020	SQM
RCC Crash Barrier	Length	4015	RMT
Metal Beam Crash Barrier	Length	10605	RMT
Guard Post	Nos	21210	No.
Kerb Detail	Length	106050	RMT

Operation and maintenance cost of project depends number of factors like quality of construction, response of maintenance team to early damage, local climate (rain etc.).

8.4 Operation & Maintenance Cost

Following are project parameters which would contribute towards cost of operation and maintenance.

Future cost of operation and maintenance is estimate on engineering judgment and experience basis. Keeping all above factors in view, following can be basis of working out cost of operation and maintenance for project corridor from Dindigul to Samayanallur section on NH-7 in state of Tamil Nadu.

b) **Annual Regular Maintenance** – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll plaza maintenance, Toll collection, other services like medical help and rescue operations etc.

c) **Periodic Maintenance** – This will be done on periodic basis say every 5 years. It will consist of overlaying of wearing course and painting and marking. Some pavement strengthening is also anticipated in few sections. Ministry in its Specifications for Road & Bridge Works (5th Revision) has included Micro Surfacing as surface sealing and renewal treatment. NHAI has also issued instruction to use Micro Surfacing for periodic renewal course vide letter dated

15th November 2016. In light of above, Micro Surfacing is considered as overlay course in 45% of the project stretch. For balance 55% normal asphalt course is considered. Also, from practicality of construction and traffic operation on project road, Major Maintenance and Repair (MMR) work is spread over a period of 2 years. Toll operation on project road commenced in year 2009-10. Considering 5 years MMR cycle, next cycle of MMR is expected in year 2021-22.

Cost for above operations is taken on prevailing rates.

Following table provides year wise details of operation and maintenance cost.

Table 8-2 : Year wise Details of Regular Operation & Maintenance Cost

Year	Total Regular O & M Expenditure (Rs. Crores) Current Price	Escalation Factor	Total Regular O & M Expenditure (Rs. Crores) with Escalation
2016-17	6.24	1.04	6.48
2017-18	6.24	1.08	6.74
2018-19	6.24	1.14	7.08
2019-20	6.24	1.19	7.44
2020-21	6.24	1.25	7.81
2021-22	6.24	1.30	8.12
2022-23	6.24	1.35	8.44
2023-24	6.24	1.41	8.78
2024-25	6.24	1.46	9.13
2025-26	6.24	1.51	9.41
2026-27	6.24	1.55	9.69

Table 8-3 : Year wise Details of Major Maintenance & Repair (MMR) Cost

Year	Total Length of Project Road (Km)	No. of Lanes	Total Lane Km	Normal Overlay Lane Km Length (55% of the total)	Micro Surfacing Lane Km Length (45% of the total)	Rate of Normal Overlay Per Km Per Lane (Rs. Cr.)	Rate of Micro Surfacing Overlay Per Km Per Lane (Rs. Cr.)	Total Cost of Major Maintenance & Repair Current Price Rs Cr	Escalation Factor	Total Cost of Major Maintenance & Repair at Escalated Price Rs. Cr
2016-17	53.05	4	212.20							
2017-18	53.05	4	212.20							
2018-19	53.05	4	212.20							
2019-20	53.05	4	212.20							
2020-21	53.05	4	212.20							
2021-22	53.05	4	212.20	58.35	47.74	0.16	0.05	11.72	1.25	14.68
2022-23	53.05	4	212.20	58.35	47.74	0.16	0.05	11.72	1.25	14.68
2023-24	53.05	4	212.20							
2024-25	53.05	4	212.20							
2025-26	53.05	4	212.20							
2026-27	53.05	4	212.20							

Following graph depicts Year wise operation and maintenance cost illustratively. Higher cost columns represent periodic & special Repair years.

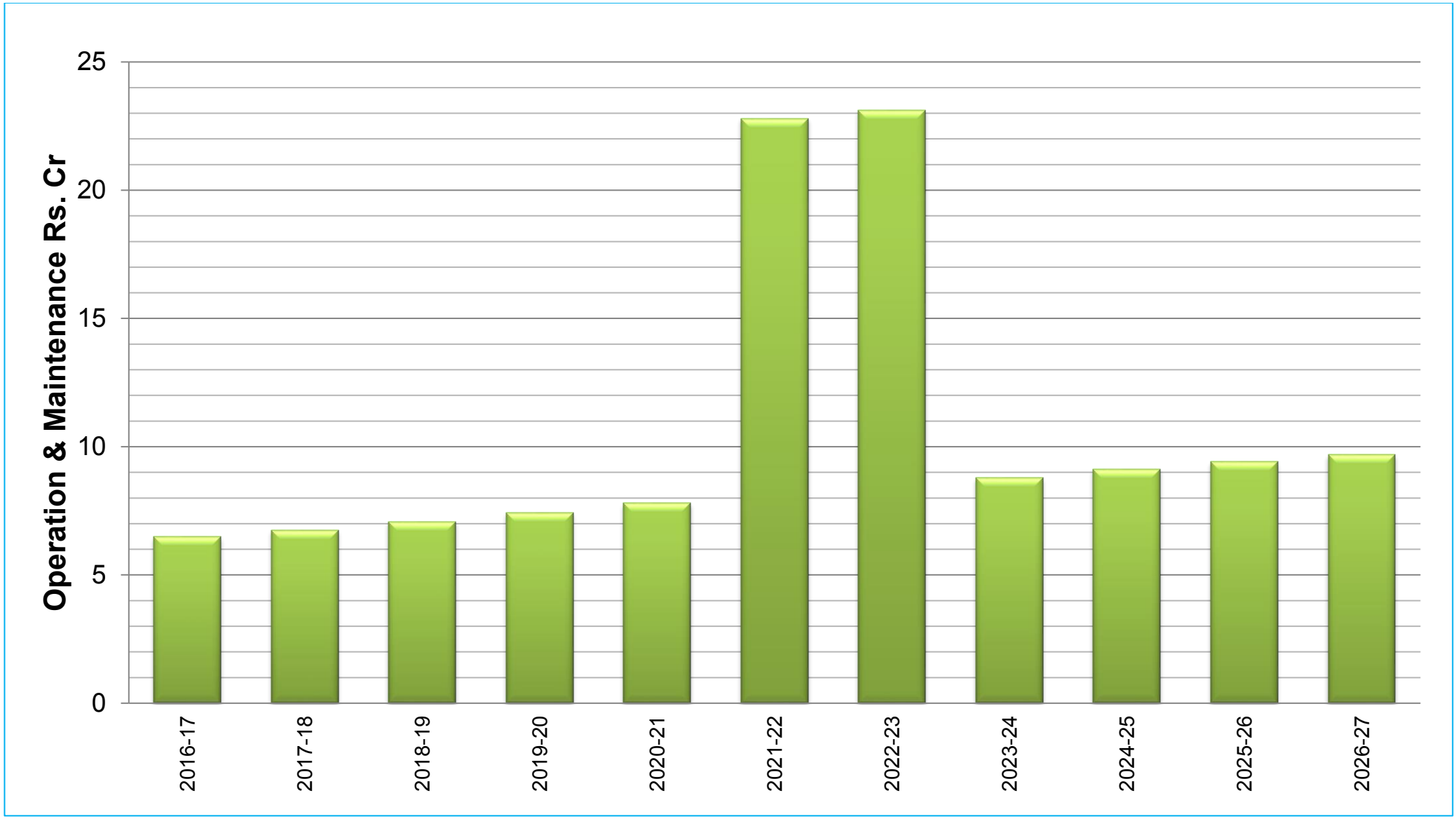


Figure 8-1 : Year wise Operation & Maintenance Cost

CHAPTER 9
CONCLUSION & RECOMMENDATIONS

9.1 Conclusion & Recommendations

Project stretch of Dindigul to Samayanallur section of NH-7 in state of Tamil Nadu from km 373.275 to km 426.60 is presently a four lane road. The road is in sound condition and serves healthy traffic volumes. The project corridor is a part of critical North – South connectivity via national highway NH-7. There are many upcoming projects in area which are proposed to boost economic growth of area and add value to development of the region. All the developments considered in the Report have the potential to have a positive impact to traffic flow on project. Following can considered as major outcome of study

a) There is a healthy volume of tollable traffic running on project

b) Project corridor has the potential to witness traffic growth @ about 8% annually in near future due to various development in area and overall development of economy

c) Project corridor does not have risk of traffic leakage on account of competing roads of comparable quality

d) Project infrastructure is in good condition and its maintenance costs are feasible for the successful operation of the toll road

Based on above it can be considered a stable healthy project from traffic and revenue point of view.

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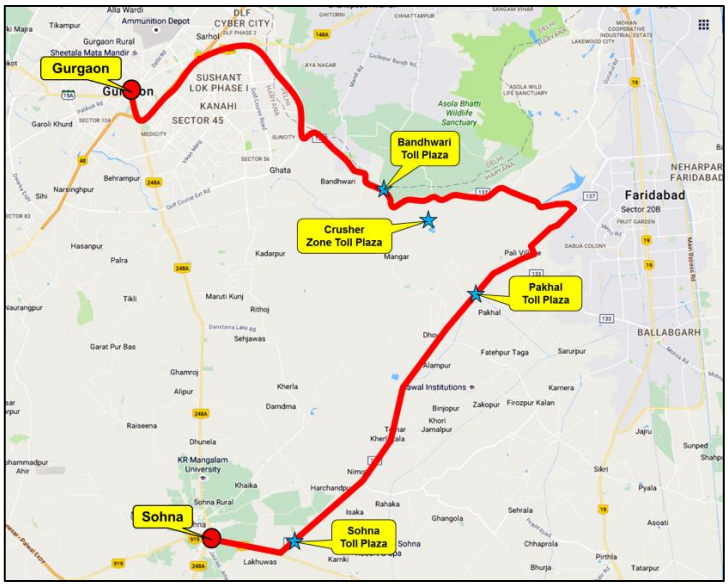

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RELIANCE

Reliance Infrastructure InvIT Fund

Traffic Study for Gurgaon Faridabad Toll Road

Traffic Report

December 2016

SYSTRA

SYSTRA INDIA

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Chapter 1 Introduction

1.1 Preamble

The expansion and development of efficient road network is one of the prerequisites for country's economic progress. Over the years, roads have emerged as preferred mode of transport in India and figures suggest that highways carry 60% of freight and 80% of passenger traffic.

Haryana Government has authorised Haryana Public Works Department (Building & Roads Branch) for construction of 33.10 kms long 4-lane corridor between Gurgaon and Faridabad and improvement / reconstruction of 33.98 kms long Ballabhgarh-Sohna Road. Both these roads are in Gurgaon and Faridabad Districts of Haryana. This Project was executed by *Reliance Infrastructure Limited* (GF Toll Road Private Limited) on BOT basis. The project construction works have been completed and the commercial operation commenced in June 2012.

On January 31, 2009, the Haryana Public Works Department and GF Toll Road Private Limited entered into a concession agreement in respect of the Gurgaon Faridabad Project. GF Toll Road Private Limited was engaged to upgrade the existing road from Km 0.00 to Km 24.31 on the section of the Gurgaon – Faridabad road, Km 0.00 to Km 6.10 of the section of the MCF road, Km 0.00 to Km 3.10 of the section of the Crusher Zone road, Km 0.00 to Km 28.58 of the section of the Ballabhgarh – Lukhawas junction road and Km 0.00 to Km 4.10 of the section of the Pali – Bhakri road. The total length of road to be widened from two to four lanes was 66.19 Kms, on a BOT basis. Haryana PWD (B&R) Bench granted GF Toll Road Private Limited a concession for a period of 17 years for this project. A one-time premium of Rs. 150.3 crores was payable to the NHAI within 30 days of financial close. The concession period commenced on May 31, 2009 and is expected to expire on May 30, 2036. A provisional certificate of completion was issued on June 29, 2012. GF Toll Road Private Limited began collecting tolls with respect to this project on June 29, 2012. The Haryana Public Works Department owns the land that underlies the GF Project.

Reliance Infrastructure InvIT Fund has engaged *M/s Systra MVA Consulting (India) Private Limited* as Consultants for carrying out necessary traffic studies and assess the future traffic and toll potential of project along with related Operation and Maintenance expenditure involved

1.2 Project Corridor

The project road includes four stretches of roads in state of Haryana as shown in the Table 1:1 below. Project Corridors include, 33.10 kms long 4-lane corridor between Gurgaon and Faridabad and 33.98 kms long Ballabhgarh-Sohna Road.

Table 1:1 – Project Corridor

Road Name	Length
Gurgaon Faridabad Road	24.31 km
Crusher Road	3.10 km

Road Name	Length
Ballabgarh Sohna Road	32.7 km
MCF Road	6.1 km
Total	66.19 km

Figure 1:1 Toll Plaza on Crusher Zone Road

Figure 1:2 shows the project corridor and location of toll plazas. There are four toll plazas that are in operation on the project corridor:

- Gurgaon – Faridabad Road – Bandhwari Toll Plaza at km12+450 (**Figure 1:4**)
- Ballabhgarh Sohna Road : i) Pakhal Toll Plaza at 12+050 km and ii) Sohna Toll Plaza at km 28+601 (**Figure 1:5** and **Figure 1.5**)
- Crusher Zone Road : Crusher Zone Toll Plaza at km 0+955 (**Figure 1:6**)

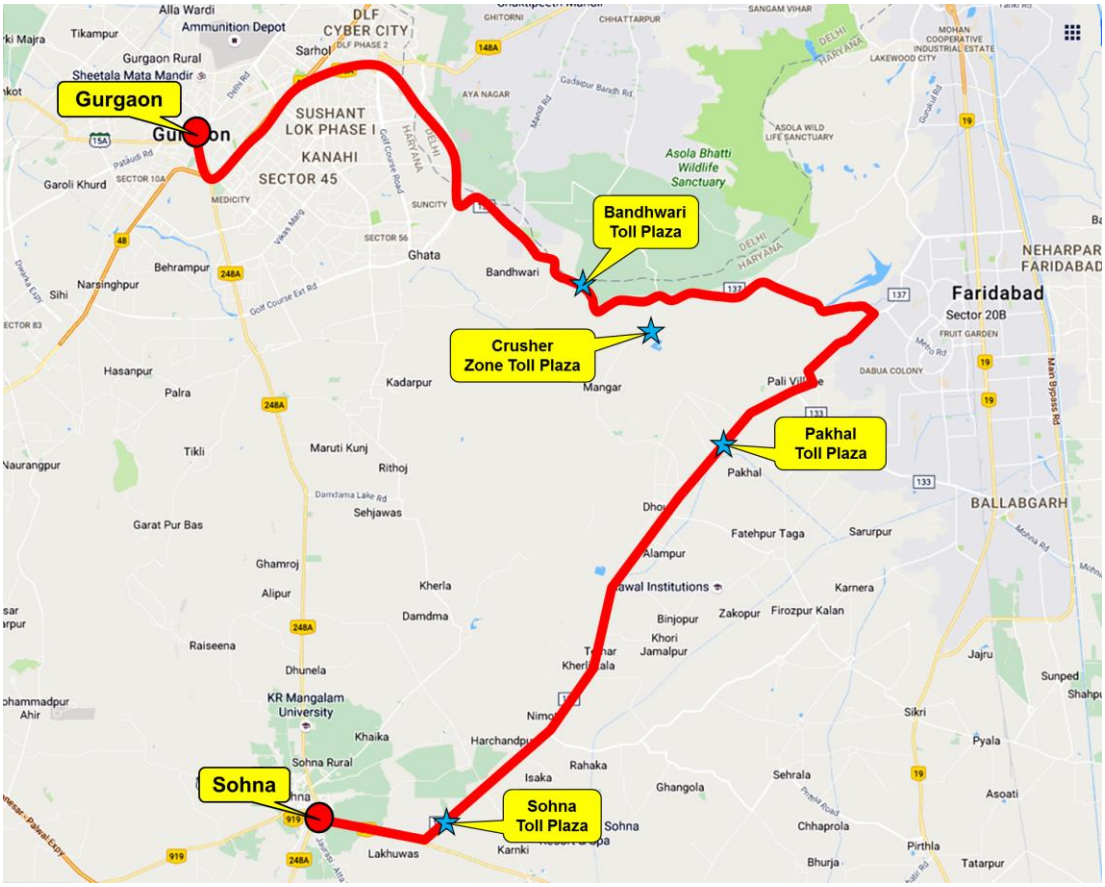


Figure 1:2 Project Corridor

Figure 1:3 Existing Toll Plaza Location at Bandhwari on Gurgaon Faridabad Road

Figure 1:4 Existing Toll Plaza at Pakhal (BS1) on Ballabhgarh Sohna Road

Figure 1:5 Existing Toll Plaza Location at Sohna (BS2) on Ballabhgarh Sohna Road

Figure 1:6 Existing Toll Plaza Location near Crusher Zone on Crusher Zone Road

1.3 Objectives & Scope of Work

The main objective of the study is to assess the future traffic and toll potential of project along with related Operation & Maintenance expenditure involved. The scope of consultancy services broadly covers the following:

- ✓ 7 days Video graphic traffic count at the existing toll plazas to derive the Average Daily Traffic (ADT).
- ✓ 24 hours Origin-Destination Survey at all the toll plaza locations to assess the existing travel pattern of vehicles plying on the project road including origin and destination.
- ✓ Analysis of past traffic data provided by the Concessionaire.
- ✓ Establish seasonality factors using toll traffic data.
- ✓ Estimation of Annual Average Daily Traffic (AADT).
- ✓ Estimation of traffic diversion/leakage, if any.
- ✓ Traffic projections for the remaining concession period.
- ✓ Estimation of toll revenue as per categories of traffic streams stipulated in the Concession Agreement for the remaining concession period.
- ✓ Prepare a Report on Revenue and Traffic Forecast.
- ✓ O&M cost analysis (O&M Cost per km) including projections based on the historical cost incurred/ booked by the toll operator.

1.4 Report Structure

For the above Scope of Work, Systra MVA has carried out a series of investigations. This report presents details on various surveys carried out for estimation of toll traffic and revenue on the Project Road, as well as findings from the analysis of survey data.

This Final Report is organized under five Chapters. **Chapter 1** deals with the Introduction and objectives of the study and the project corridor details. **Chapter 2** covers Study Approach & Methodology and a review of the secondary data collected is presented in **Chapter 3** . **Chapter 4** deals with the traffic surveys and their analysis. Estimation of traffic growth rates, traffic forecast, toll revenue estimation and O&M Cost is presented in **Chapter 5.**

Chapter 2 Study Approach & Methodology

2.1 General

The estimation of tollable traffic requires development of well-defined objectives and traffic database containing relevant information concerning traffic flow characteristics. The broad methodology followed for the present study is presented in **Figure 2:1**.

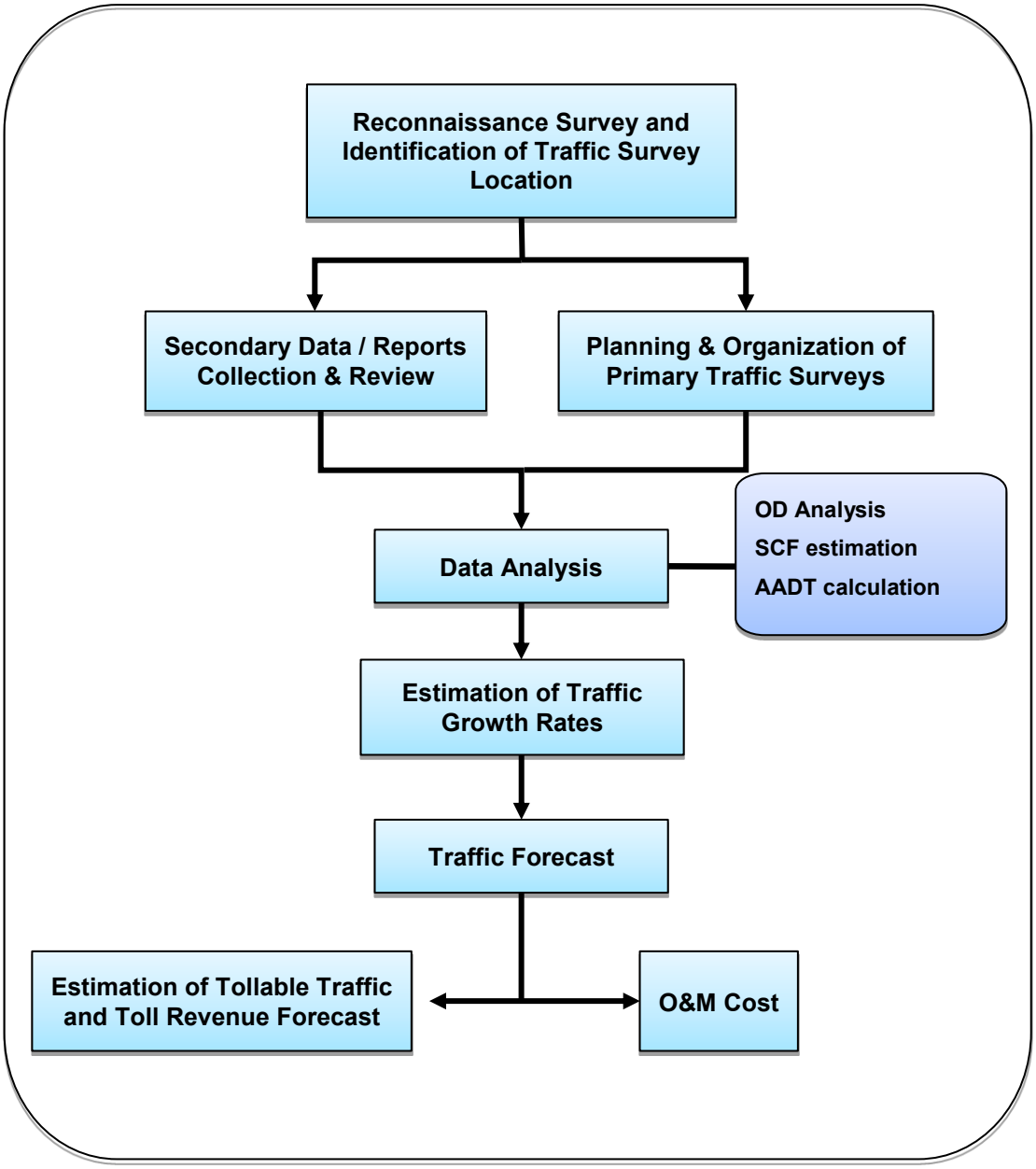


Figure 2:1: Broad Study Methodology

2.2 Primary Traffic Surveys

For traffic projections and toll revenue estimation, base year traffic volume on the project corridor and traffic characteristics like *local, through* traffic, proportion of frequent vehicles opting for return pass, monthly pass, etc. are required. To obtain these details, various surveys and studies were organized. The various traffic surveys carried out as part of the present study, the survey methodology and the survey schedule are presented in detail in the following sections. The review of secondary data collected is presented in **Chapter 3.**

The following primary surveys, in addition to the secondary data from various sources, are identified to establish the traffic & travel characteristics on the project corridor:

1. Detailed Inventory within project corridor and adjoining roads in Project Influencing Area
2. Video graphic Traffic Volume Count
3. Origin and Destination Survey

The project corridor and the survey location are schematically shown in **Figure 2:2** . It can be observed that the entire project stretch is covered extensively and appropriately in terms of capturing the traffic flows and characteristic of the project road. The survey methodology and the schedule is discussed in the following sections.

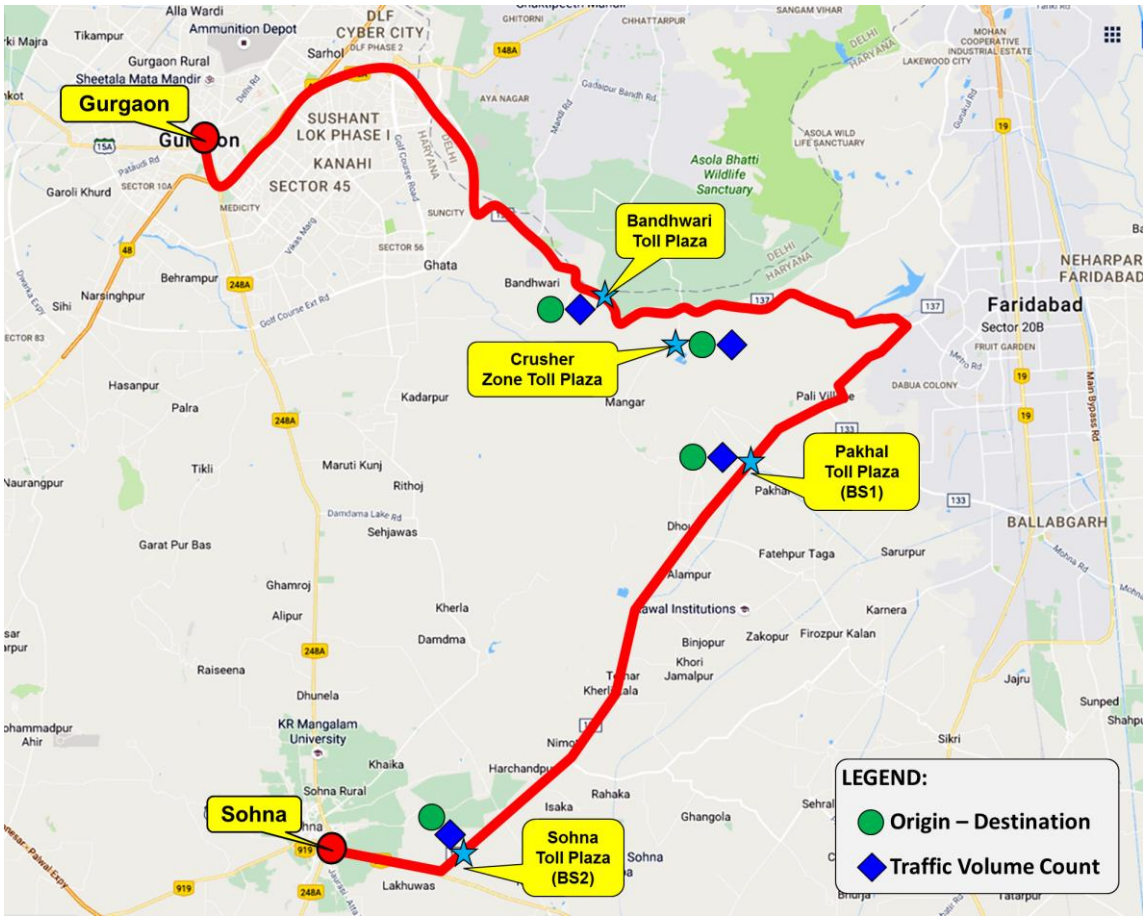


Figure 2:2 : Traffic Survey Locations

2.3 Classified Traffic Volume Count Survey

The 7-day (24 hours, both directions) Video graphic traffic volume count survey was carried out at the four toll plaza locations (Pakhal Toll Plaza (BS1) at km12+050, Sohna Toll Plaza (BS2) at km 28+601, Crusher Zone Toll Plaza at km 0+955 and Bandhwari Toll Plaza at km 12+450). Traffic was recorded using video cameras (Refer **Figure 2:3**) and data was extracted. Sufficient lighting arrangement were ensured for the video recording during night time. The traffic volume count data was processed using the commonly used spread sheet package. The processed hourly traffic volume data was compiled direction-wise.

Figure 2:3: Camera Location for Extraction

Data collected from site was analyzed to study daily variation and hourly variation of traffic, traffic composition and Average Daily Traffic (ADT) at the survey location. The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress as per IRC: 64-1990 *Guidelines for Capacity of Roads in Rural Areas* were adopted.

Average Daily Traffic (ADT)

Daily traffic volume by vehicle type and direction were added separately and averaged to determine the Average Daily Traffic.

Annual Average Daily Traffic (AADT)

To account for the seasonal variation in the traffic, seasonal correction factors were worked out using past toll traffic data from the toll operator. Seasonal variation factors were estimated for each category of vehicle.

2.4 Origin and Destination Survey

The origin and destination (OD) survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic along the study corridor. The OD survey was carried out for one day (24 hours) on a typical weekday at the toll plaza locations (Pakhal Toll Plaza (BS1) at km 12+050, Sohna Toll Plaza (BS2) at km 28+601, Crusher Zone Toll Plaza at km 0+955 and Bandhwari Toll Plaza at km 12+450) (Refer **Figure 2:4**).

Figure 2:4: Origin Destination Survey

Roadside Interview method was adopted for conducting the survey. The vehicles were stopped on random sample basis and the drivers/ users were interviewed by trained enumerators to collect the needed information/data. The survey format is finalized keeping in view the existing concessions as per Concession Agreement. The pertinent information in respect of travel characteristics including the following were collected during the OD Surveys;

- Origin zone & Destination zone of the trip
- Trip Purpose
- Frequency of travel
- Trip Length
- Type of Commodity (Commercial Vehicles)

2.5 Secondary Data collection

In addition to the data collected through primary surveys, the following data/ information was collected from toll operator and various sources. Review of the secondary data collected is presented in **Chapter 3.**

- Registered motor vehicles data from the Road Transport Authority (RTA) for the Project Influencing states.
- Past toll traffic data
- Net State Domestic Product for the major influencings states of project corridor traffic.
- Competing facilities that could affect the traffic on project corridor in future.

2.6 Survey Schedule

The traffic surveys were carried out in consultation with the Client and survey schedule is presented in the **Table 2:1**.

Table 2:1: Survey Schedule

S. No	Type of Surveys	Chainage Location	Duration
1	7 Day Video graphic Volume Count	Km 12+050 (Pakhal Toll Plaza (BS1))	28th September to 5th October 2016 (7 Days)
2	Origin Destination Survey	Km 12+050 (Pakhal Toll Plaza (BS1))	24 Hours (30th September 2016)
3	7 Day Video graphic Volume Count	Km 28+601 (Sohna Toll Plaza (BS2))	28th September to 5th October 2016 (7 Days)
4	Origin Destination Survey	Km 28+601 (Sohna Toll Plaza (BS2))	24 Hours (1st October 2016)
5	7 Day Video graphic Volume Count	Km 0+955 (Crusher Zone Toll Plaza)	28th September to 5th October 2016 (7 Days)
6	Origin Destination Survey	Km 0+955 (Crusher Zone Toll Plaza)	24 Hours (30th September 2016)
7	7 Day Video graphic Volume Count	Km 12+450 (Bandhwari Toll Plaza)	28th September to 5th October 2016 (7 Days)
8	Origin Destination Survey	Km 12+450 (Bandhwari Toll Plaza)	24 Hours (29th September 2016)

2.7 Traffic Data Analysis

Detailed analysis of the primary survey data and secondary data was undertaken to assess the traffic and travel characteristics of the project corridor. Daily traffic volume by vehicle type and direction at the survey location was used in determining Average Daily Traffic (ADT). The Annual Average Daily Traffic (AADT) was determined after applying seasonal correction factors to ADT. The tollable traffic was assessed after taking into account the toll exempted vehicles.

2.8 Traffic Forecasting

The accuracy of traffic forecast depends upon the accuracy of the growth factors. To establish the future traffic growth rates, following approaches were explored.

- Growth in registered motor vehicles
- Transport Demand Elasticity Approach

The growth rates are assessed for three scenarios viz. optimistic, realistic and pessimistic. Based on these growth rates, traffic was projected for the reaming concession period. The diversion of traffic due to competing facilities, if any, as well as the generated traffic due to proposed new developments is also taken into consideration while estimating the future traffic.

2.9 Toll Revenue Estimation

The project is a toll road project. Tollable traffic on section of the project corridor was derived from the analysis of primary surveys. The base year tollable traffic was projected to future years using the adopted growth rates and toll revenue is estimated for each year using the specified toll rates as per the Concession Agreement. While estimating the toll revenue, toll exempted vehicles and various applicable concessions, if any, was taken into consideration.

2.9.1 Toll Exempted Vehicles

The toll exempted vehicles as per the Notification dated 10th January 2012, by Haryana Government are as follows;

- ✓ Two wheelers
- ✓ Tractor trolley carrying agriculture produce
- ✓ Defence Vehicles
- ✓ Ambulances/ Funeral Vans
- ✓ Police Vehicles/ Fire Fighting Vehicles
- ✓ Local Traffic (non-commercial) in the vicinity of toll road, and
- ✓ Non-commercial vehicles owned by all State Government, Government of India and Haryana State Government Undertaking

Chapter 3 Review of Secondary Data

3.1 General

The project corridor connects important places of Haryana (Gurgaon, Faridabad, Sohna, Ballabhgarh and Crusher Zone). The traffic intensity on any highway is a function of population, Net State Domestic Product (NSDP) and number of registered motor vehicles in the influencing area. The growth in each parameter will have significant impact on the traffic intensity on the project corridor. For the estimation of future traffic on the corridor and toll revenues, Consultants have collected extensive secondary information/ data including the following:

- Population of Haryana State
- Net State Domestic Product (NSDP) of Haryana State and major influencings states of project corridor traffic
- Registered Motor Vehicles in Haryana
- Past traffic data at the four toll plazas located on project road

3.2 Population of Haryana

Growth in population in project road influence area will have significant impact on the passenger traffic on the project corridor. **Table 3**:1 shows the population of Haryana State.

Table 3:1 Population Details

State/ District	Persons (Census 2011)	Growth Rate - 2001-2011 (%)
Haryana	25353081	19.9
Panchkula	558890	19.3
Ambala	1136784	12.1
Yamunanagar	1214162	16.6
Kurukshetra	964231	16.8
Kaithal	1072861	13.4
Karnal	1506323	18.2
Panipat	1202811	24.3
Sonipat	1480080	15.7
Jind	1332042	12.0
Fatehabad	941522	16.8
Sirsa	1295114	16.0
Hisar	1742815	13.4
Bhiwani	1629109	14.3
Rohtak	1058683	12.6
Jhajjar	956907	8.7
Mahendragarh	921680	13.4
Rewari	896129	17.1
Gurgaon	1514085	73.9
Mewat	1089406	37.9

State/ District	Persons (Census 2011)	Growth Rate - 2001-2011 (%)
Faridabad	1798954	31.7
Palwal	1040493	25.5

**Source : Census of India*

The population growth in Haryana during 2001-2011 is about 20%. The growth observed is maximum in Gurgaon District (74%) followed by Mewat District (38%). Minimum growth is in Jhajjar District (9%).

3.3 Net State Domestic Product (NSDP) of Influencing States

In estimating travel demand elasticity, it is logical to relate growth in passenger and freight traffic with Net State Domestic Product (NSDP) and population. The compiled data of NSDP at constant prices (2004-2005) for Influencing States of project road traffic are presented in **Table 3**:2.

Table 3:2 NSDP of Influencing States at Constant Prices (2004-2005)

Year	Rajasthan		Uttar Pradesh		Delhi		Haryana	
	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change
2004-05	112636	--	231029	--	94716		86222	-
2005-06	120202	7%	244514	6%	104473	10%	94011	9%
2006-07	134350	12%	263935	8%	117444	12%	104700	11%
2007-08	140471	5%	280851	6%	130683	11%	112896	8%
2008-09	152284	8%	302192	8%	146961	12%	121588	8%
2009-10	161160	6%	320989	6%	159044	8%	136780	12%
2010-11	190130	18%	346621	8%	172235	8%	146053	7%
2011-12	202683	7%	364684	5%	187672	9%	158524	9%
2012-13	203298	0%	383644	5%	205396	9%	167389	6%
2013-14	212524	5%	403523	5%	224655	9%	178458	7%
2014-15	2,37,529	12%	427759	6%	189837	6%	189837	6%

Source: Economic Survey of respective States

3.4 Registered Motor Vehicles

Registered motor vehicles growth in the project corridor influence area is considered as an alternative approach in estimating the traffic growth in the absence of any additional information or usable past traffic data on the project road. Also, this can be used in determining the travel demand elasticity. Consultants have collected the data related to registered motor vehicles Haryana and the same are presented in **Table 3:3**.

Table 3:3 Registered Motor Vehicles in Haryana

Year	Car	Bus	LCV	Trucks & MAV
2005-06	469109	19986	43775	134714
2006-07	551020	22101	49850	154013
2007-08	650265	26906	54596	167983
2008-09	730544	29516	58770	175091
2009-10	836293	33520	62771	189021
2010-11	968980	35646	71759	203421
2011-12	1110721	39153	78977	292735
2012-13*	1221793	43068	86875	322009
2013-14*	1343972	47375	95562	354209
2014-15*	1478370	52113	105118	389630
Avg Annual GR (2005-06 to 2014-15)	13.60%	11.24%	10.22%	12.52%

*# Source: Motor Transport Statistics of Haryana * Estimated*

3.5 Toll Traffic Data from Existing Toll Plazas

The toll traffic data for the last 3 years (April 2013 to June 2016) is collected for the four toll plazas, viz. CH: km 12+050, CH: km 28+601 on Ballabgarh - Sona, Crusher Zone and Bandhwari. The summary of the average daily toll traffic data collected is presented in **Table 3**:4 and **Table 3**:**5** for CH: km 12+050, CH: km 28+601, Crusher Zone and Bandhwari Toll Plazas. This data is used for assessing the seasonality factors and trend of traffic growth on the project corridor.

Table 3:4 Average Daily Toll Traffic Data– CH: km 12+050 & CH: km 28+601

Month/ Year	BS 1					BS 2				
	Car	LCV	Bus	Truck	MAV	Car	LCV	Bus	Truck	MAV
Apr-13	403	199	45	719	46	247	219	16	1430	83
May-13	320	187	43	643	47	239	207	19	1161	78
Jun-13	416	196	28	726	46	200	199	11	1102	74
Jul-13	342	202	27	668	47	193	198	19	1141	75
Aug-13	364	198	31	590	48	156	181	17	1217	73
Sep-13	327	199	43	727	51	124	192	14	1423	77
Oct-13	307	191	32	709	52	150	200	16	1427	77
Nov-13	326	173	36	523	43	187	174	14	1445	65
Dec-13	367	194	83	556	50	195	196	15	1600	74
Jan-14	415	198	85	689	57	184	193	9	1437	80
Feb-14	532	248	61	700	62	281	201	20	1153	80
Mar-14	472	237	131	752	57	244	166	14	1459	72
Apr-14	548	219	87	798	49	256	196	19	1946	70
May-14	593	213	38	733	49	205	192	16	2532	78
Jun-14	584	186	26	555	52	313	241	16	2178	106
Jul-14	604	280	56	693	48	207	195	13	1501	72
Aug-14	766	262	82	602	51	210	200	20	1615	78
Sep-14	801	282	104	571	53	185	220	20	1595	88
Oct-14	758	241	55	472	51	218	196	25	1416	79

Month/ Year	BS 1					BS 2				
	Car	LCV	Bus	Truck	MAV	Car	LCV	Bus	Truck	MAV
Nov-14	841	274	93	564	57	478	223	27	1609	86
Dec-14	847	296	118	579	56	510	219	12	1834	75
Jan-15	906	276	75	573	60	605	194	27	1602	79
Feb-15	1160	316	92	665	66	698	223	35	1676	83
Mar-15	979	286	91	653	57	668	205	24	1620	79
Apr-15	1220	319	94	620	65	777	242	31	1560	82
May-15	1332	304	93	594	66	925	230	34	1378	84
Jun-15	1429	293	45	560	63	961	224	26	1454	73
Jul-15	1463	289	54	497	59	1182	224	33	1280	77
Aug-15	1885	268	109	467	57	1197	252	30	1277	84
Sep-15	1700	299	99	522	71	1119	273	33	1454	93
Oct-15	1738	292	85	506	75	1251	281	28	1456	100
Nov-15	1732	278	108	400	56	1406	260	33	903	82
Dec-15	1643	292	97	408	56	1259	269	34	903	79
Jan-16	1822	306	89	341	64	1300	273	32	869	106
Feb-16	2252	363	106	370	75	1469	293	41	689	116
Mar-16	2373	354	109	316	63	1523	288	36	781	110
Apr-16	2368	382	103	292	63	1502	301	36	692	110
May-16	2507	363	75	305	68	1423	293	32	678	113
Jun-16	2326	338	69	314	63	1307	298	30	901	118
Jul-16	2307	350	59	263	63	1378	290	38	705	109
Aug-16	2413	362	144	265	64	1327	304	33	703	118
Sep-16	2298	415	107	292	72	1345	335	34	759	145

Table 3:5 Average Daily Toll Traffic Data– Crusher Zone & Bandhwari

Month/ Year	Crusher Zone					Bandhwari				
	Car	LCV	Bus	Truck	MAV	Car	LCV	Bus	Truck	MAV
Apr-13	24	78	0	1892	1	24673	2756	208	909	187
May-13	35	55	0	1153	0	25032	2727	208	885	181
Jun-13	32	94	0	1563	1	26586	2796	187	904	242
Jul-13	28	115	0	1952	9	26219	2702	199	877	185
Aug-13	29	96	0	1944	6	23846	2453	188	835	182
Sep-13	26	137	0	2115	3	25027	2774	221	938	217
Oct-13	30	115	0	2074	5	25435	2814	219	953	218
Nov-13	37	123	0	2106	6	25655	2548	211	898	202
Dec-13	47	143	0	2229	6	25922	2600	221	1006	219
Jan-14	70	164	0	2186	4	26725	2822	243	938	221
Feb-14	77	157	0	2080	3	30081	2706	229	935	231
Mar-14	139	216	0	2560	3	28231	2812	230	917	239
Apr-14	133	221	0	2541	4	28189	2808	225	827	222

Month/ Year	Crusher Zone					Bandhwari				
	Car	LCV	Bus	Truck	MAV	Car	LCV	Bus	Truck	MAV
May-14	643	212	0	2400	4	25704	2640	218	800	206
Jun-14	483	186	0	1894	5	20660	2303	174	705	174
Jul-14	510	184	0	1748	1	28607	2738	201	1098	201
Aug-14	582	208	0	1883	2	27768	2553	208	1094	199
Sep-14	694	243	0	2043	2	29153	2889	212	1173	227
Oct-14	613	196	0	1759	1	27800	2531	244	1053	190
Nov-14	585	214	0	1704	3	29065	2780	259	1200	235
Dec-14	603	202	0	1798	3	31115	2544	231	1141	205
Jan-15	659	165	0	1681	2	32368	2595	236	1107	203
Feb-15	673	185	0	1824	2	33744	2761	254	1207	230
Mar-15	678	219	0	1843	2	32273	2677	232	1219	205
Apr-15	777	207	0	1799	2	31028	2721	239	1305	219
May-15	753	194	0	1772	2	30299	2681	251	1373	211
Jun-15	729	197	0	1695	3	31012	2551	182	1448	216
Jul-15	823	202	0	1825	2	33592	2721	233	1504	222
Aug-15	784	187	4	1508	4	29844	2687	247	1689	206
Sep-15	835	220	0	1735	2	31447	2854	231	1637	236
Oct-15	728	228	0	1701	5	30386	2851	258	1603	218
Nov-15	612	178	0	1467	2	29223	2701	273	1313	231
Dec-15	684	149	0	1533	5	32949	2923	249	1629	259
Jan-16	706	173	0	1599	22	33792	3015	280	1780	293
Feb-16	558	166	0	1848	3	35953	3029	328	1592	316
Mar-16	552	187	0	1890	5	35478	3160	286	1716	337
Apr-16	553	167	0	1778	4	36661	3069	318	1692	324
May-16	597	183	0	1843	11	36208	3094	313	1663	320
Jun-16	614	196	0	1896	12	36459	3038	301	1772	345
Jul-16	548	160	0	1626	11	35801	2905	280	1490	342
Aug-16	502	156	0	1618	8	36379	2984	315	1555	351
Sep-16	573	145	0	1651	11	37122	3180	290	1619	436

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3:6 Tollable Traffic Count by Category of Vehicles

Modes	For the FY ended March 31			For the six months ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016	2015	2016	
Car[(1)]	9763748	11170184	13069267	6316891	7457771	16%
LCV[(2)]	1178764	1213170	1309865	629515	710923	5%
Bus/Truck[(3)]	1853798	2074061	1924626	1007062	882895	2%
Multi-axle[(4)]	124186	126250	148753	67020	100094	9%
Total	12920496	14583665	16452511	8020489	9151683	13%

Source: TMS Data

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

3.6 Historical Tollable Annual Average Daily Traffic

The tollable annual average daily traffic for the project increased to 58,681 PCUs in 2016 from 48,362 PCUs in 2014, representing a CAGR of 10%. The **Table 3:7** below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3:7 Historical Tollable Annual Average Daily Traffic

Modes	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 –FY16 (%)
	2014	2015	2016	2015	2016	
Car(1)	26750	30603	35708	34519	40753	16%
LCV(2)	3229	3324	3579	3440	3885	5%
Bus/Truck(3)	5079	5682	5259	5503	4825	2%
Multi-axle(4)	340	346	406	366	547	9%
Total	35399	39955	44952	43828	50009	13%
Total PCUs	48362	54192	58681	57836	63515	10%

Source: TMS Data
Notes:
(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On an average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the GF Project's total traffic mix, 78%, 9%, 12% and 1% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 80%, 8%, 12%, and 1% of tollable traffic, respectively.

3.7 Toll Structure at Existing Toll Plazas

Existing toll structure including toll concessions at the toll plazas on the project corridor is summarized in **Table 3:8.**

Table 3:8 Toll Structure at Existing Toll Plazas

Sr No	Particulars of the type of vehicles on which toll is to be levied	Initial Rate applicable upto the first 3 years (in Rupees)	Graded rate applicable in rupees			
			After 3 years and upto 6 years	After 6 years and upto 9 years	After 9 years and upto 12 years	Beyond 12 years
1	Motor trucks (laden with goods or unladen) upto 10 tyres	200	230	250	280	300
2	Motor Bus with or Without passengers including School Bus	100	110	130	150	170
3	Tractor Trolley carrying quarry g building material etc. (No toll to be levied on tractors carrying agricultural produce)	50	60	70	70	80
4	Light Commercial Vehicle (LCV) and Low Powered trucks (LPT)	100	110	120	130	140
5	Multi-axle vehicles having more than 10 tyres and other heavy vehicles such as cranes, dozers, earth movers, road rollers etc.	250	300	300	350	350

Sr No	Particulars of the type of vehicles on which toll is to be levied	Initial Rate applicable upto the first 3 years (in Rupees)	Graded rate applicable in rupees			
			After 3 years and upto 6 years	After 6 years and upto 9 years	After 9 years and upto 12 years	Beyond 12 years
6	Car, Jeep, Pickup Van ,Three wheelers, Station wagon	15	20	25	30	40

Other conditions;

1) Once the toll has been paid, the vehicle need not to pay further toll within the toll road or crossing the toll road through same or other toll plaza. However, if the same wishes to re-enter the toll road it has to pay toll as per applicable rates

2) Daily pass- One and a half times the corresponding each trip rates as mentioned above. When the same vehicle has to cross the toll plaza more than once in a day, the users shall have the option to pay one and half times of the above rates while crossing the road in the first trip itself. However, in case of commercial vehicles, the users may avail of only return journey during the same day by paying one and half times the above rates.

3) Monthly pass – For commercial vehicles, thirty times the corresponding single trip rates and for others, twenty times the corresponding single trip rates as mentioned above.

4) Following types of vehicles are exempted from payment toll

i. Two-wheelers
ii. Tractor trolley carrying agriculture produce
iii. Defence vehicles,
iv. Ambulances/ funeral vans,
v. Police Vehicles, Fire fighting vehicles,
vi. Local traffic (non-commercial) in the vicinity of toll road, and
vii. Non-commercial vehicles owned by all State Government, Government of India and Haryana State Government Undertaking.

Chapter 4 Traffic Surveys and Analysis

4.1 General

This Chapter presents details about the various traffic surveys carried out as part of the present study and the survey data analysis. The results of analysis will form input for estimation of tollable traffic and toll revenue.

4.2 Classified Traffic Volume Count Survey

Video graphic traffic volume count survey was carried out at the four toll plaza locations on the project corridor; Pakhal Toll Plaza (BS1) at km12+050 and Sohna Toll Plaza (BS2) at km 28+601 on Ballabhgarh Sohna Road, Crusher Zone Toll Plaza at km 0+955 on Cursher Zone Road, and Bandhwari Toll Plaza at km 12+450 on Gurgaon-Faridabad Road. The traffic volume count surveys were carried out for 7 days, from 28th September to 5th October 2016. The video graphic data was extracted for all the 7 days. During the data extraction, toll exempted vehicles were counted separately. The extracted video graphic data was analyzed to study the hourly variation and daily variation of traffic, peak hour share, traffic composition and Average Daily Traffic (ADT) at all the survey locations. Seasonality factors were applied for obtaining the Annual Average Daily Traffic (AADT).

4.3 Passenger Car Units

The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress in *Guidelines for Capacity of Roads in Rural Areas* (IRC: 64-1990) were used (**Table 4**:1).

Table 4:1 PCU Factors

Vehicle Type	PCU Factor	Vehicle Type	PCU Factor
Car/Jeep	1.00	LCV	1.50
Van/Tempo (passenger)	1.00	2-Axle Truck	3.00
Mini Bus	1.50	3-Axle Rigid Truck	3.00
Standard Bus	3.00	MAV	4.50

Source: Guidelines for Capacity of Roads in Rural Areas (IRC 64-1990)

4.4 Average Daily Traffic

Daily traffic volume by vehicle type and direction is added separately and averaged to determine the Average Daily Traffic (ADT). ADT, observed at the survey locations, in vehicles and in PCUs, are presented in **Table 4**:2 and shown in **Figure 4:1**.

Table 4:2 Average Daily Traffic

Mode	BS Road - Km 12+050 (BS 1)		BS Road - Km 28+601 (BS 2)		Crusher Zone		GF Road - Bandhwari	
	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)
Car/Auto Rickshaw	4491	4491	2622	2622	770	770	36269	36269
LCV	687	1031	674	1011	128	192	3250	4875

Mode	BS Road - Km 12+050 (BS 1)		BS Road - Km 28+601 (BS 2)		Crusher Zone		GF Road - Bandhwari	
	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)
Bus	135	404	55	164	1	3	389	1167
Truck	1172	3515	1248	3744	4181	12544	1786	5359
MAV	244	1099	247	1110	141	635	446	2006
Tractor	41	62	--	--	--	--	--	--
OSV	--	--	--	--	51	244	73	441
Car/Auto Exempted	126	126	4	4	17	17	1538	1538
LCV Exempted	3	4	0	1	4	6	41	62
Bus Exempted	1	4	0	0	0	0	8	23
Truck Exempted	3	9	1	3	1	3	50	149
MAV Exempted	1	6	1	3	0	1	2	9
Tractor Exempted	92	138	--	--	--	--	--	--
OSV Exempted	--	--	--	--	1	3	25	148
Total	**6996**	**10889**	**4851**	**8661**	**5295**	**14419**	**43877**	**52045**

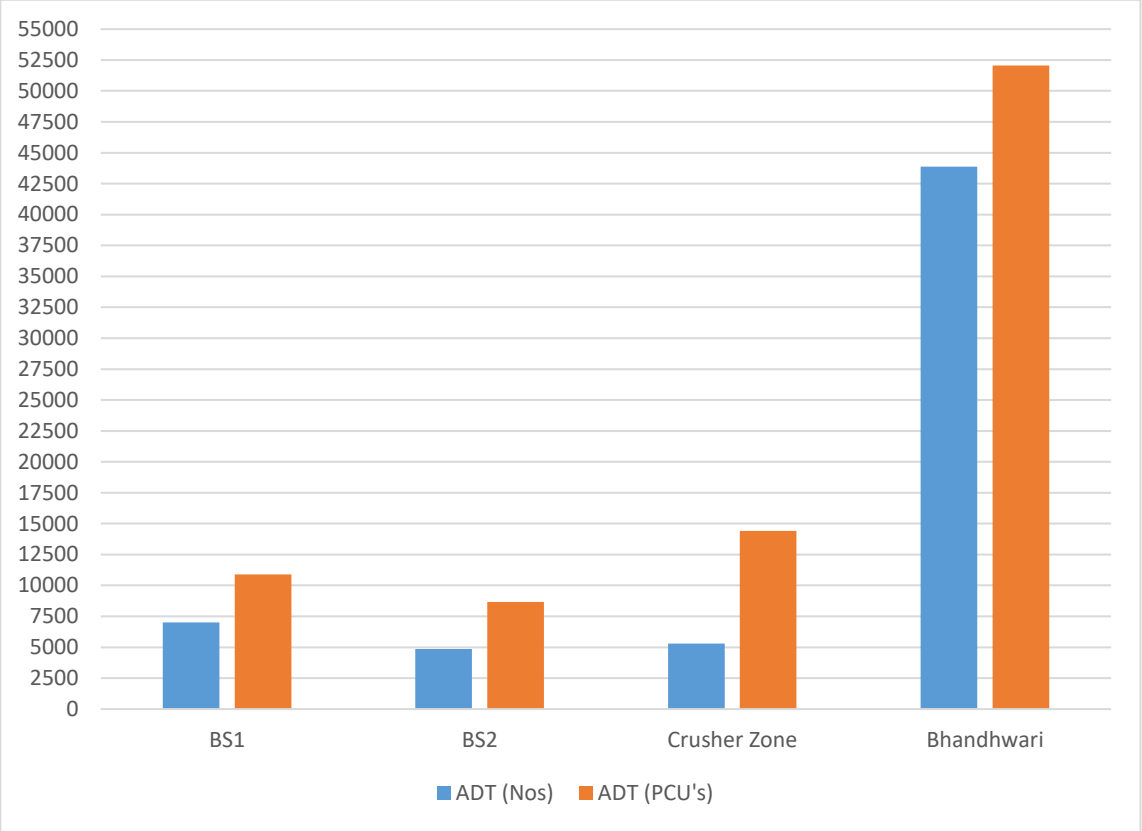


Figure 4:1 Average Daily Traffic

4.5 Daily Variation of Traffic

Daily traffic variation in terms of vehicles as well as in PCUs at each of the survey locations is presented in

Table 4:3 and graphically shown in **Figure 4:2** to **Figure 4:5**.

Table 4:3 Daily Variation of Traffic

Date	Day	BS1		BS2		Crusher Zone		Bandhwari	
		Total Vehicles	Total PCUs	Total Vehicles	Total PCUs	Total Vehicles	Total PCUs	Total Vehicles	Total PCUs
28-Sep-16	Wednesday	7368	11449	5119	9202	5216	14266	48894	58110
29-Sep-16	Thursday	7328	11729	5226	9536	5056	13837	48411	56556
30-Sep-16	Friday	6412	10199	4708	8419	5429	14747	52066	61829
01-Oct-16	Saturday	5778	8859	4100	7244	5165	14092	35936	43678
02-Oct-16	Sunday	7467	11589	4959	8851	6756	18775	25697	31859
03-Oct-16	Monday	7174	10946	4859	8551	4609	12280	48397	56549
04-Oct-16	Tuesday	7446	11451	4984	8824	4835	12940	47735	55738
Average Daily Traffic		**6996**	**10889**	**4851**	**8661**	**5295**	**14419**	**43877**	**52045**

The salient observations at each survey location are as follows.

- ❖ BS1 toll plaza has registered maximum vehicles on Sunday with 7467 vehicles, which is also highest in terms of PCUs (11589 PCUs). Monday can be considered as average traffic day.
- ❖ BS 2 toll plaza has registered maximum vehicles on Thursday with 5226 vehicles which is also highest in terms of PCUs (9536 PCUs). Monday can be considered as average traffic day.
- ❖ Crusher Zone toll plaza has registered maximum vehicles on Sunday with 6756 vehicles which is also highest in terms of PCUs (18775 PCUs). Wednesday and Saturday can be considered as average traffic days.
- ❖ Bandhwari toll plaza has registered maximum vehicles on Friday with 52066 vehicles which is also highest in terms of PCUs (61829 PCUs). Traffic is lowest on Sunday and Tuesday can be considered as average traffic day.

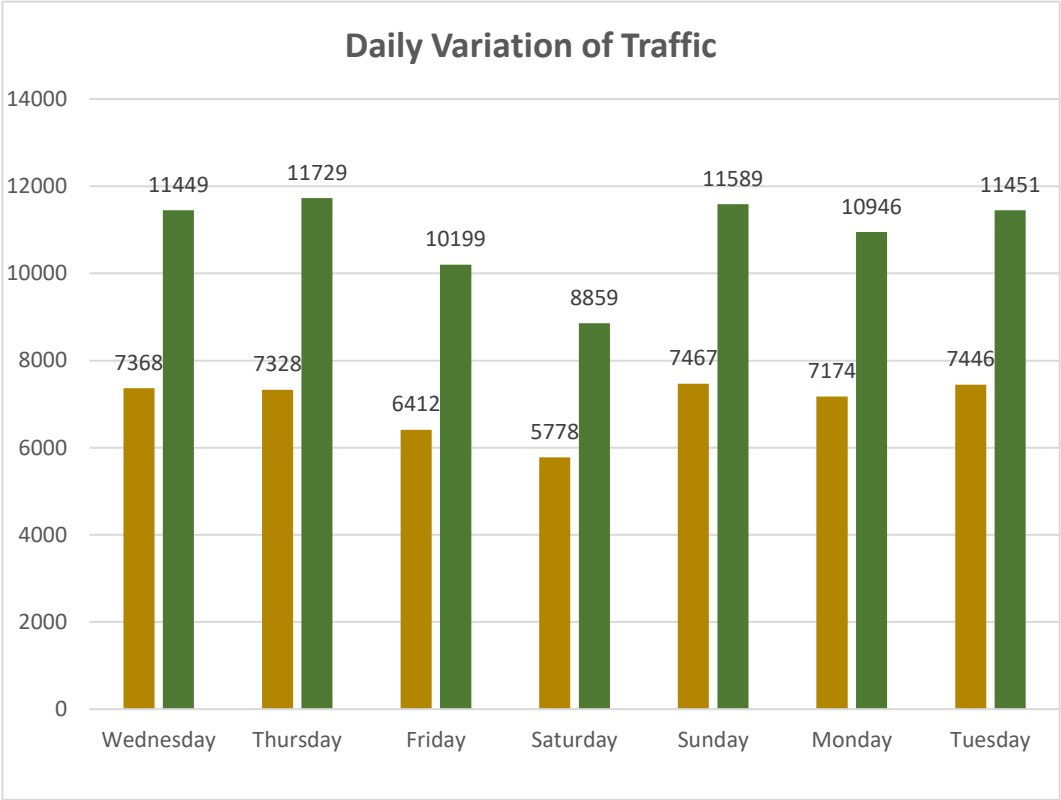


Figure 4:2 Daily Variation of Traffic – BS1 Toll Plaza

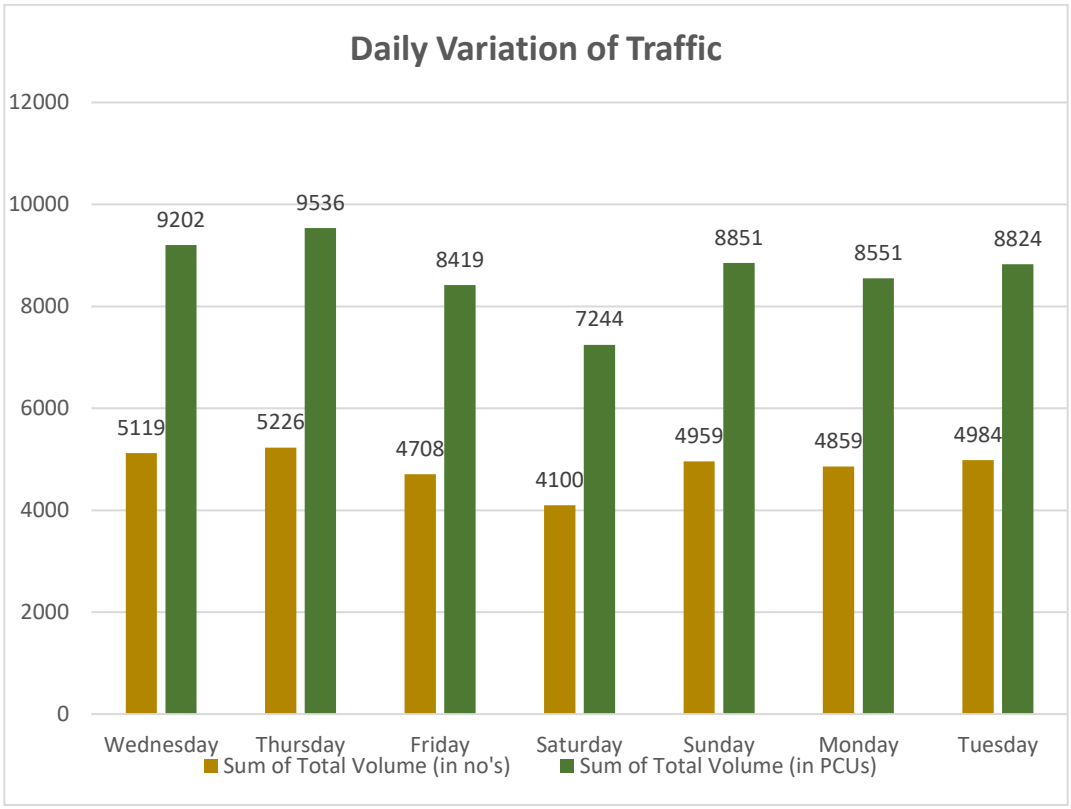


Figure 4:3 Daily Variation of Traffic – BS2 Toll Plaza

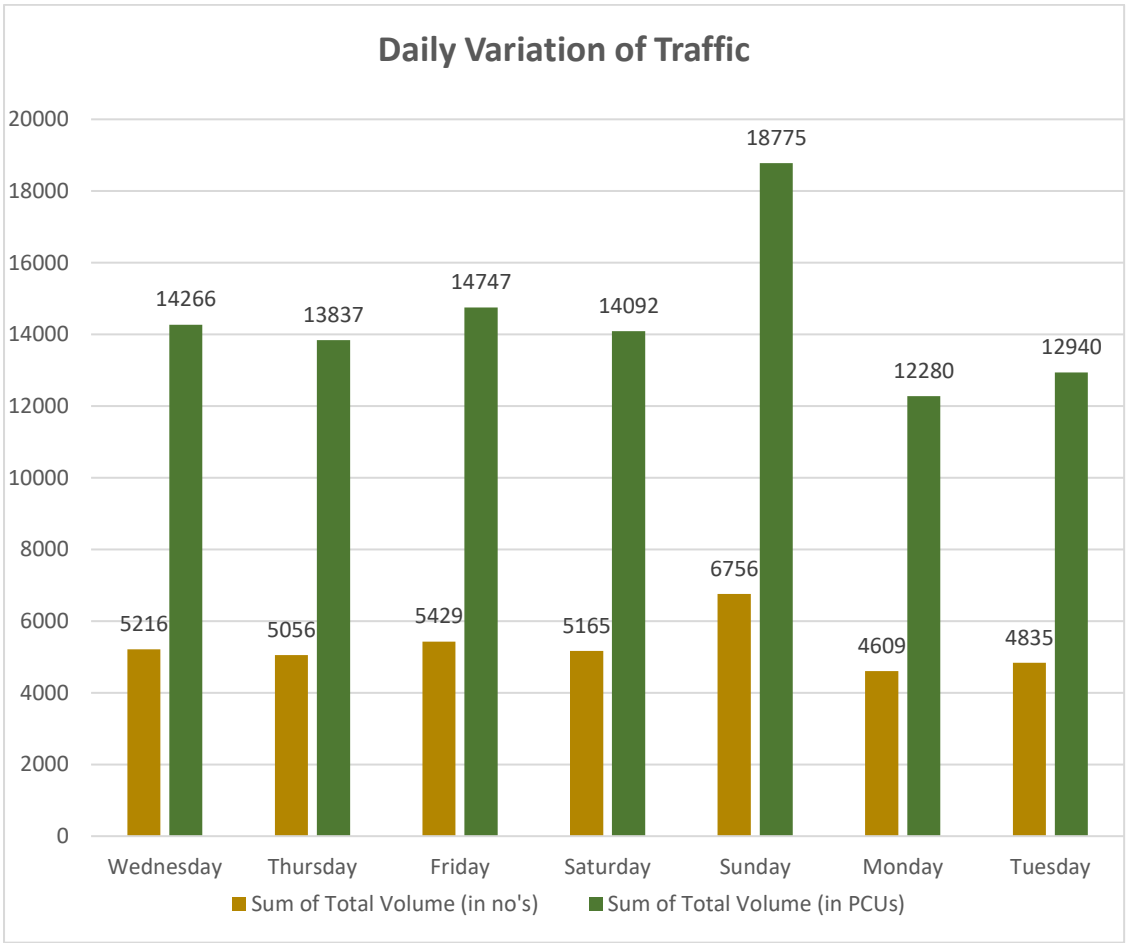


Figure 4:4 Daily Variation of Traffic – Crusher Zone Toll Plaza

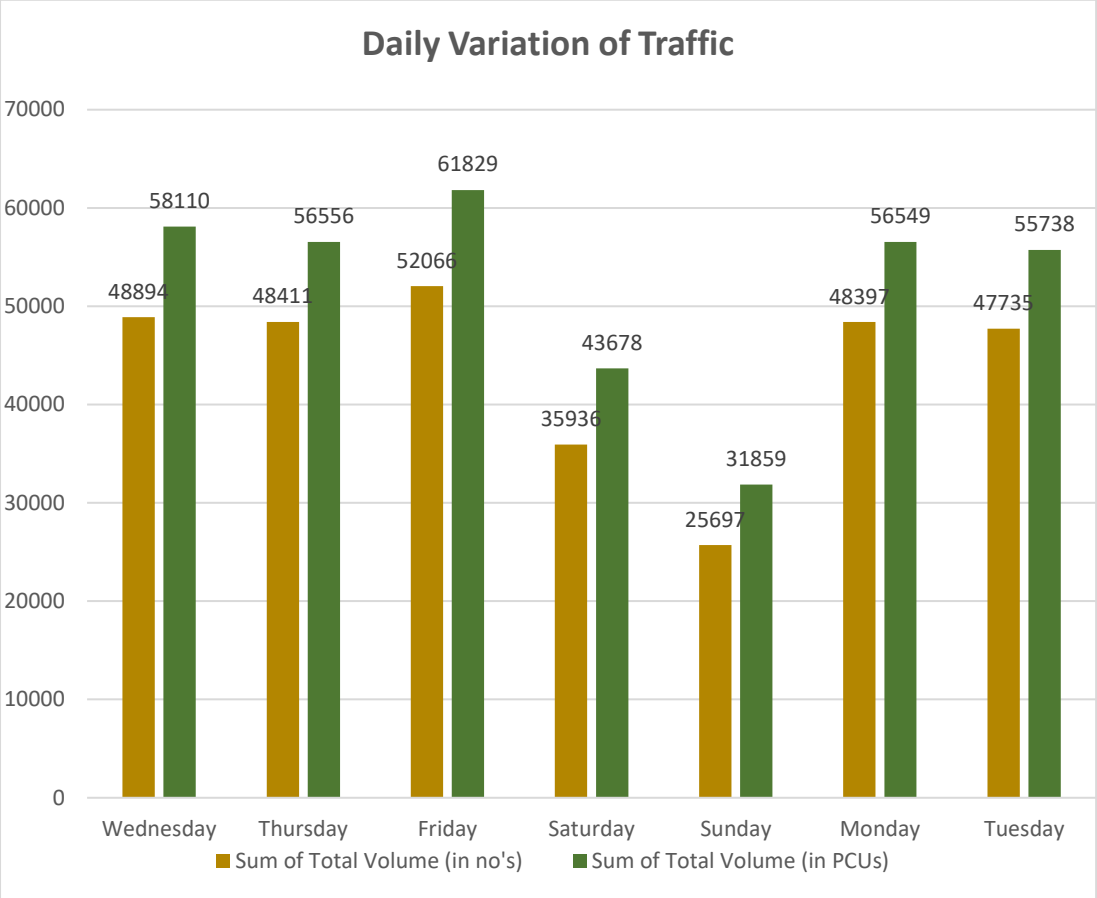


Figure 4:5 Daily Variation of Traffic – Bandhwari Toll Plaza on GF Road

The mode-wise traffic breakup for the 7 days of traffic count and the ADT at the survey locations are presented in **Table 4**:4 to **Table 4**:7**.**

Table 4:4 Mode-wise Traffic – BS1 Toll Plaza

Mode	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Car/3W	4807	4655	4052	4050	4987	4829	4936
LCV	793	779	724	319	691	719	803
Bus	152	174	83	64	165	160	153
Truck	1231	1317	1167	1020	1204	1103	1180
Mav	242	276	244	197	276	235	250
Tractor	143	127	142	128	144	128	124
Total	**7368**	**7328**	**6412**	**5778**	**7467**	**7174**	**7446**

Table 4:5 Mode-wise Traffic – BS2 Toll Plaza

Mode	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Car/3W	2687	2711	2498	2438	2717	2666	2662
LCV	765	760	718	314	674	706	782

Mode	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Bus	87	46	49	43	48	63	47
Truck	1336	1429	1198	1111	1241	1181	1247
Mav	244	280	245	194	279	243	246
Total	**5119**	**5226**	**4708**	**4100**	**4959**	**4859**	**4984**

Table 4:6 Mode-wise Traffic – Crusher Zone

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Car/3W	742	757	837	769	827	770	805
LCV	148	93	114	118	176	144	132
Truck	4126	3994	4286	4081	5497	3559	3734
Mav	154	152	139	134	178	100	133
OSV	46	54	53	61	78	36	31
Total	**5216**	**5056**	**5429**	**5165**	**6756**	**4609**	**4835**

Table 4:7 Mode-wise Traffic – Bandhwari Toll Plaza on GF Road

Mode	Bandhwari						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Car/3W	41530	42154	44964	30085	22037	42339	41539
LCV	4435	3476	3732	3277	1326	3296	3496
Bus	432	426	480	301	270	431	436
Truck	1860	1853	2217	1722	1613	1798	1790
Mav	514	441	575	465	348	413	378
OSV	123	61	98	86	103	120	96
Total	**48894**	**48411**	**52066**	**35936**	**25697**	**48397**	**47735**

4.6 Average ADT

Location-wise variation of traffic (tollable) with respect to average in terms of vehicles and PCUs observed at the survey locations is presented in **Table 4**:8.

Table 4:8 Minimum, Maximum and Average Daily Traffic

Location	BS1 Toll Plaza		BS2 Toll Plaza		Crusher Zone Toll Plaza		Bandhwari Toll Plaza	
	Total Vehicles.	Total PCUs	Total Vehicles.	Total PCUs	Total Vehicles.	Total PCUs	Total Vehicles.	Total PCUs
ADT	6996	10889	4851	8661	5295	14419	43877	52045
Maximum Daily Traffic	7467	11729	5226	9536	6756	18775	52066	61829
Minimum Daily Traffic	5778	8859	4100	7244	4609	12280	25697	31859
% Variation of Max Traffic w.r.t. ADT	6%	7%	7%	9%	22%	23%	16%	16%
% Variation of Min Traffic w.r.t. ADT	-21%	-23%	-18%	-20%	-15%	-17%	-71%	-63%

The salient observations are as follows:

- ❖ BS1 toll plaza has minimum variation in terms of vehicles (6% with respect to ADT) and maximum variation in terms of PCU's (23% with respect to ADT).
- ❖ BS2 toll plaza has minimum variation in terms of vehicles (7% with respect to ADT) and maximum variation in terms of PCU's (20% with respect to ADT).
- ❖ Crusher Zone toll plaza has minimum variation in terms of vehicles (15% with respect to ADT) and maximum variation in terms of PCU's (23% with respect to ADT).
- ❖ Bandhwari toll plaza has minimum variation in terms of vehicles and PCU's (16% with respect to ADT) and maximum variation in terms of vehicles (71% with respect to ADT). This is due to very low work based trips on Sunday on Gurgaon – Faridabad stretch.

4.7 Hourly Variation of Traffic

Average hourly variation of traffic observed at the four survey locations is presented in **Figure 4:6** to **Figure 4:9**. Important inferences drawn from analysis are presented below:

- ➢ At *BS1 Toll Plaza location*, it is observed that peak period occurs between 08.00 hours and 09.00 hours with maximum peak hour traffic of 721 PCUs
- ➢ At *BS2 Toll Plaza location*, it is observed that peak period occurs between 14.00 hours and 15.00 hours with maximum peak hour traffic of 482 PCUs
- ➢ At *Crusher Zone Toll Plaza location*, it is observed that peak period occurs between 07.00 hours and 08.00 hours with maximum peak hour traffic of 1269 PCUs
- ➢ At *Bandhwari Toll Plaza location*, it is observed that peak period occurs between 08.00 hours and 09.00 hours with maximum peak hour traffic of 3517 PCUs

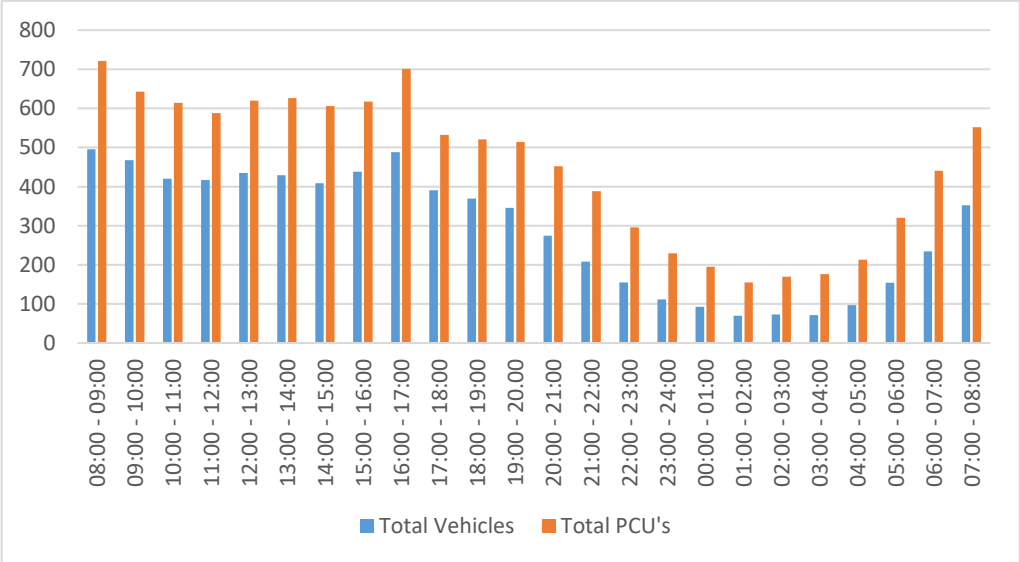


Figure 4:6 Hourly Variation of Traffic – BS1 Toll Plaza

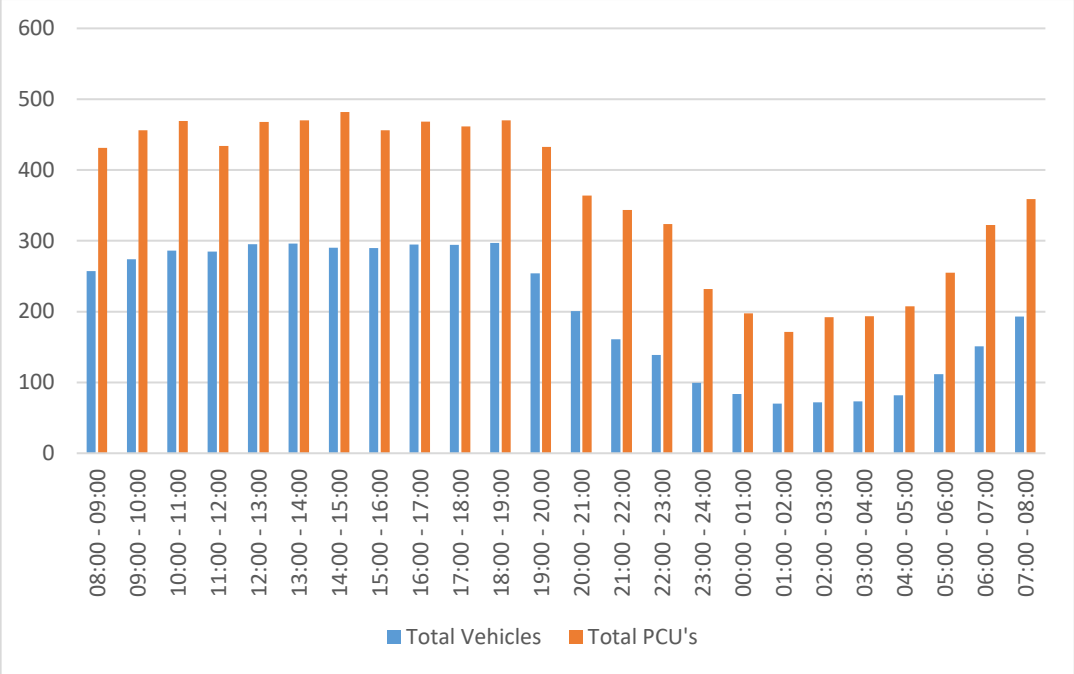


Figure 4:7 Hourly Variation of Traffic – BS2 Toll Plaza

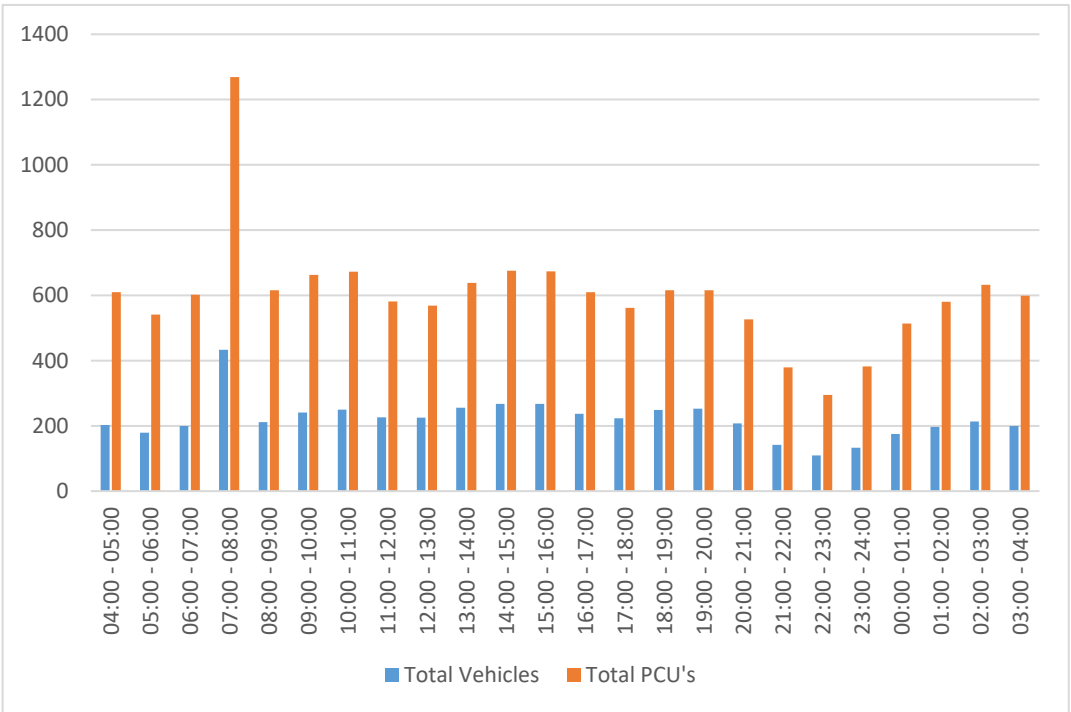


Figure 4:8 Hourly Variation of Traffic – Crusher Zone Toll Plaza

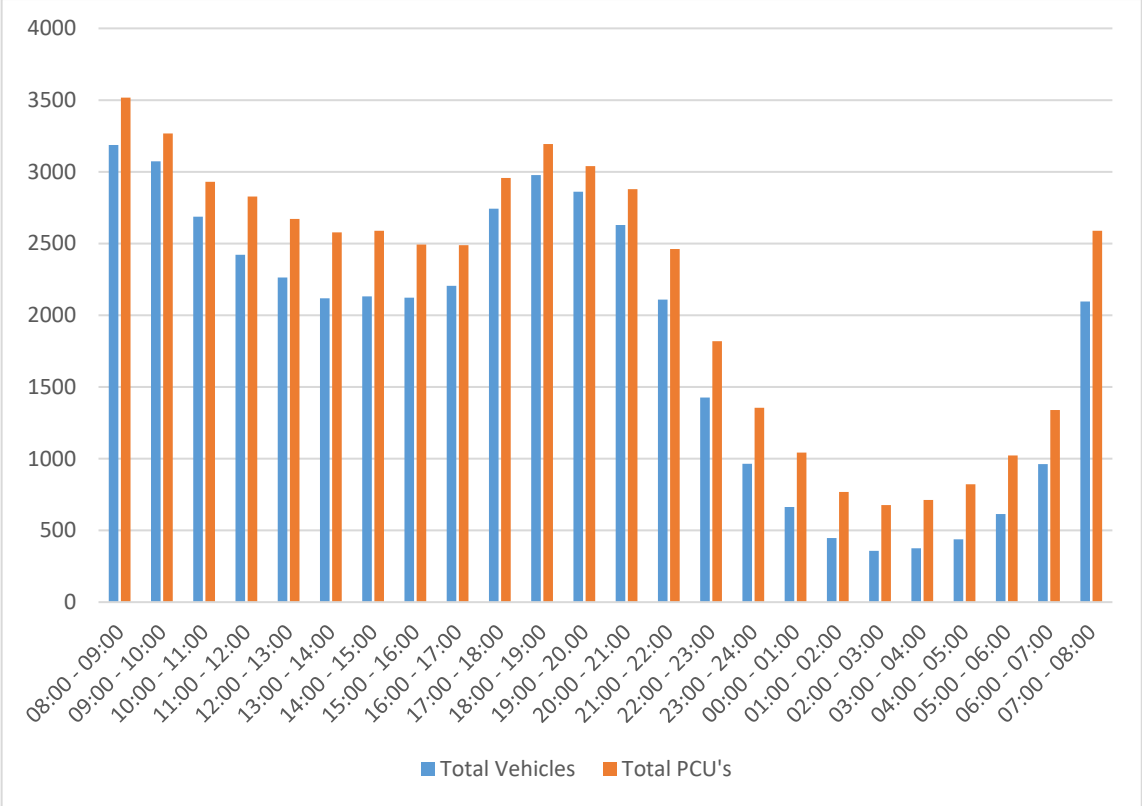


Figure 4:9 Hourly Variation of Traffic – Bandhwari Toll Plaza on GF Road

4.8 Traffic Composition

Average composition of traffic observed at the volume count survey locations are presented in **Table 4**:9 and graphically shown in **Figure 4:10** to **Figure 4:13.**

Table 4:9 Average Traffic Composition

Mode	Percentage Composition			
	BS1	BS2	Crusher Zone	Bandhwari
Car/ Auto Rickshaw	66%	54%	15%	86%
LCV	10%	14%	2%	8%
Bus	2%	1%	0%	1%
Truck	17%	26%	79%	4%
MAV	4%	5%	3%	1%

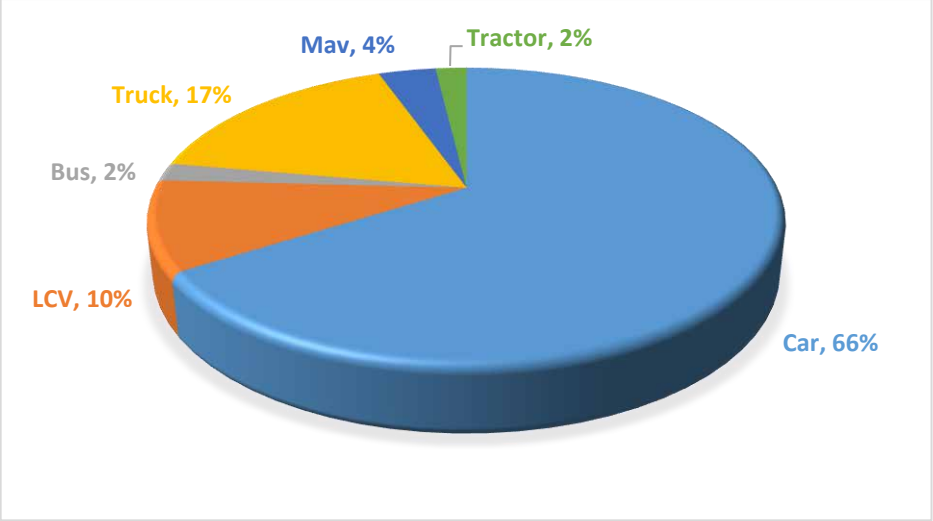


Figure 4:10 Traffic Composition – BS1 Toll Plaza

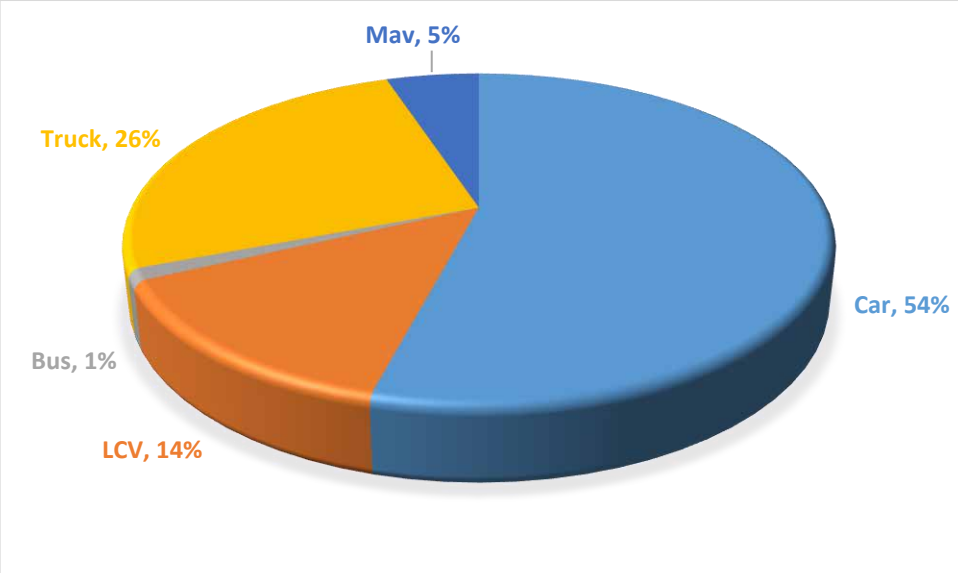


Figure 4:11 Traffic Composition – BS2 Toll Plaza

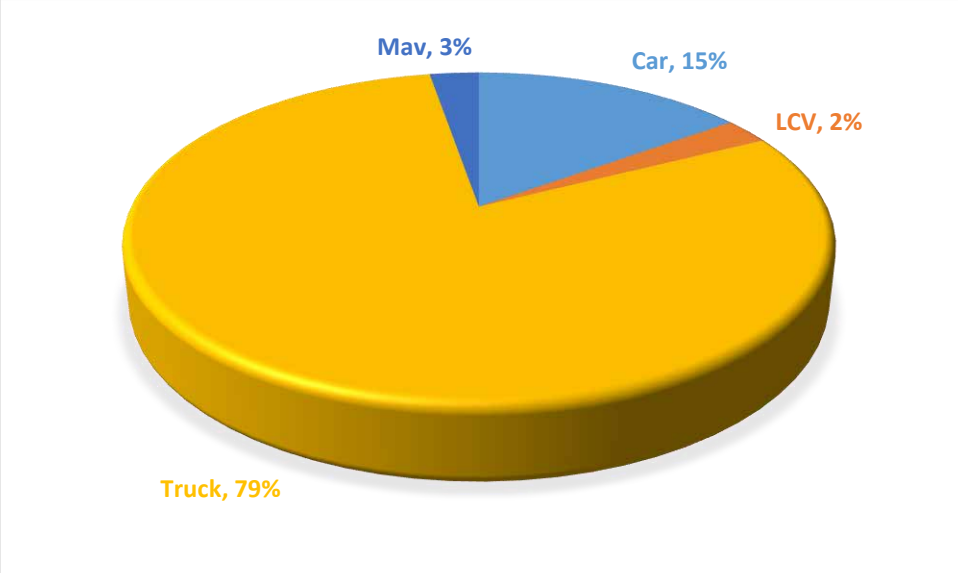


Figure 4:12 Traffic Composition – Crusher Zone Toll Plaza

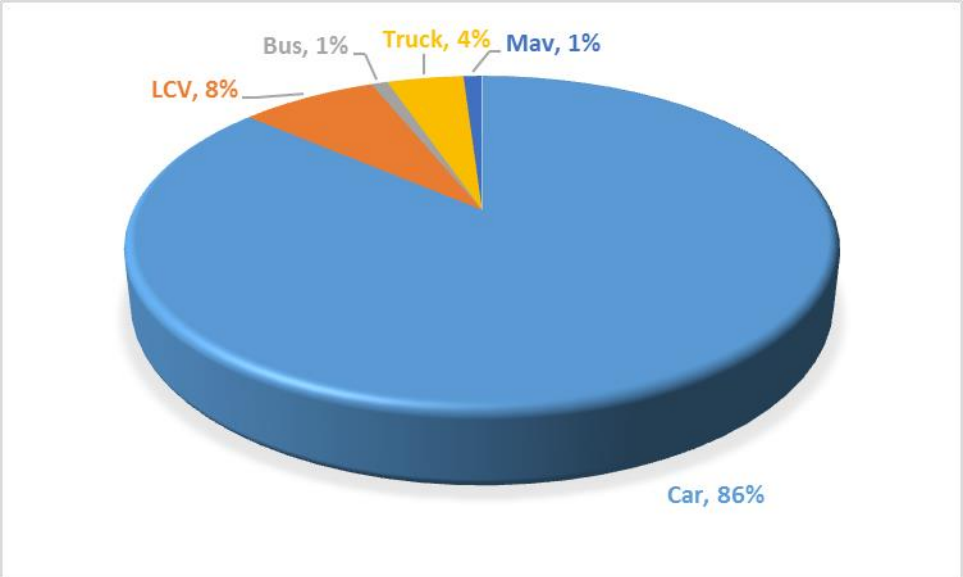


Figure 4:13 Traffic Composition – Bandhwari Toll Plaza on GF Road

The major inferences drawn are:

- Car/Jeep/ 3Wheeler is the major mode observed at BS1, BS2 and Bandhwari toll plaza with 66%, 54% and 86% respectively.
- On the other side share of freight vehicles is high at Crusher Zone toll plaza due to the presence of Crusher Zone.

4.9 Estimation of Seasonal Correction Factors

To account for the seasonal variation in the traffic, seasonal variation factors have been worked out using past toll traffic data collected from toll operator. The data used for estimating the seasonality factors is presented in **Chapter 3**. The factors have been estimated separately for passenger vehicles and freight vehicles by taking the ratio of monthly average to actual counting month. It may be noted that, surveys have been carried out for 3 days in the month of September and 4 days in October. Therefore, weighted average of September and October with respect to number of survey days in each month has been estimated. The Seasonal Correction Factors are presented in **Table 4:10.**

Table 4:10 Seasonal Correction Factors

Mode	BS1	BS2	Crusher Zone	Bandhwari
Car	1.08	1.06	1.02	1.04
LCV	1.04	0.93	0.94	0.98
Bus	1.00	1.08	1.00	0.99
Truck	0.91	0.92	1.05	0.96
MAV	0.88	0.93	1.10	1.02

4.2.9 Annual Average Daily Traffic

Considering the above seasonal correction factors, Annual Average Daily Traffic at the survey locations on the project corridor is estimated. The mode wise Annual Average Daily Traffic (AADT) at the toll plaza locations is presented in **Table 4**:11.

Table 4:11 Annual Average Daily Traffic

Mode		Bandhwari		BS1		BS2		CZ	
		ADT	AADT	ADT	AADT	ADT	AADT	ADT	AADT
Passenger Vehicles	Car	36269	37592	4491	4828	2622	2779	770	786
	BUS	389	373	135	140	55	59	1	1
Commercial Vehicles	LCV	3250	3190	687	685	674	627	128	121
	Truck	1786	1765	1172	1066	1248	1148	4181	4390
	3-6 Axles	446	457	244	214	247	229	141	155
	>6 Axles	73	75	0	0	0	0	51	56
Tractor		0	0	41	38	0	0	0	0
Tollable Traffic		**42213**	**43452**	**6770**	**6971**	**4846**	**4842**	**5272**	**5509**
Toll Exempted Car		1538	1594	126	135	4	4	17	17
Toll Exempted Bus		8	7	1	1	0	0	0	0
Toll Exempted LCV		41	41	3	3	0	0	4	4
Toll Exempted 2 Axle		50	49	3	3	1	2	1	1
Toll Exempted 3Axle/MAV		2	2	1	1	1	1	0	0
Tractor-Exempt				92	84				
OSV Exempted		25	25	0		0	0	1	1
Toll Exempted Vehicles		**1664**	**1718**	**226**	**227**	**6**	**7**	**23**	**23**
Total		**43877**	**45170**	**6996**	**7198**	**4852**	**4849**	**5295**	**5532**

4.10 Origin – Destination Survey

4.10.1 General

The origin-destination survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic on the project corridor. The results of these surveys are useful in estimating the traffic split / segmentation and in assessing the traffic characteristics of vehicles. The O-D survey was carried out for 24 hours, simultaneously along with traffic volume count survey, at all the 4 toll plaza locations i.e. at Bandhwari Toll Plaza on 29th September 2016, Pakhal Toll Plaza (BS1) on 30th September 2016, Crusher Zone Toll Plaza on 30th September 2016 and Sohna Toll Plaza (BS2) on 1st October 2016 and.

4.10.2 Sample Size

Sample size achieved during the OD survey as percentage to the total traffic is presented in **Table 4**:12**.**

Table 4:12 Sample Size of OD Survey

Mode	BS1	BS2	CZ	Bandhwari
Car/Auto Rickshaw	13%	20%	26%	10%
LCV	63%	58%	67%	24%
Bus	67%	84%	--	46%
Truck	58%	45%	60%	53%
MAV	52%	29%	33%	42%

4.10.3 Zoning System

For understanding the spatial dimensions of the trip characteristics of the vehicles interviewed during the O-D survey, it is required to code the origin and destination of trip. Broad zoning system was developed to analyse the O-D data collected from the field. The zoning system was evolved mainly considering the toll notification issued by *Public Works Department of Haryana Government.* Local non-commercial travellers within the vicinity of toll plaza are exempted from the toll. This has been considered while finalizing the zoning system. In all, total 271 Traffic Analysis Zones (TAZ) were considered. The details of traffic zones and codes adopted for the study are presented in **Annexure**. The pictorial representation of zoning is given in the **Figure 4:14**.

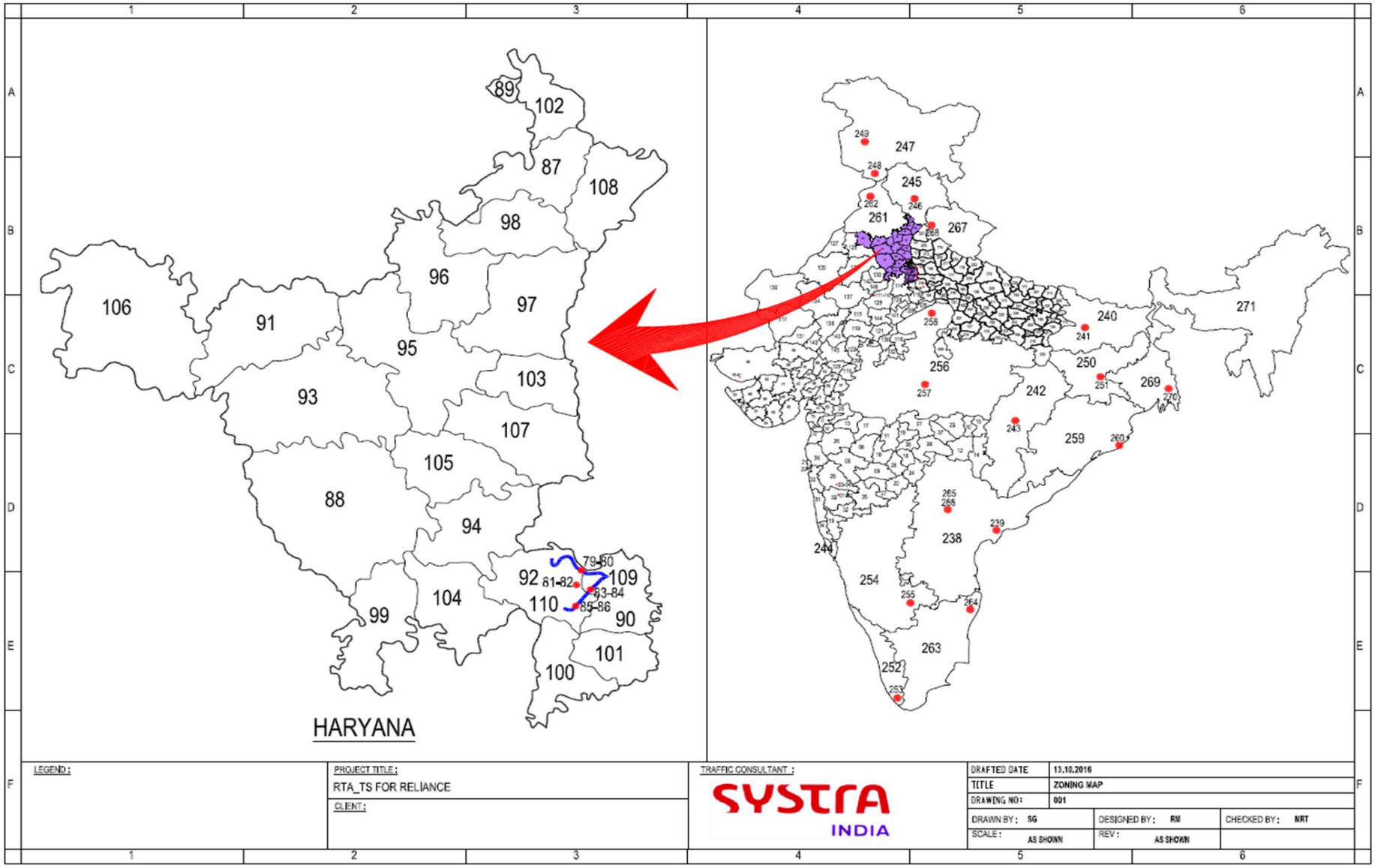


Figure 4:14 Zoning System

The proportion of vehicles with both origin and destination within Haryana State are presented in **Table 4:13**. It can be observed that maximum proportion of Cars are within Haryana. With regard to the commercial vehicles, maximum proportion is having either Origin or destination within Haryana. The other major origin/destination is Delhi.

Table 4:13 Trips within Haryana

Mode	BS1	BS2	CZ	Bandhwari
Car	87%	88%	85%	94%
Mini Bus	76%	89%	0%	92%
Pvt. Bus	78%	97%	0%	93%
LCV	78%	92%	76%	95%
2-3 Axle Truck	77%	88%	74%	94%
MAV	61%	86%	65%	88%

The following tables **Table 4**:**14** and **Table 4:15** show the major traffic generators along with their percentage contribution. From the following table, it can be inferred that majority of the traffic is from Haryana. A significant amount of car traffic on Gurgaon Faridabad road comprises of daily commuter traffic between Gurgaon to Faridabad/ Noida/ South East Delhi.

Table 4:14 Major Traffic Generators – Passenger Vehicles

Cities		BS1	BS2	CZ	Bandhwari
Haryana	Faridabad	51%	25%	44%	39%
	Gurgaon	1%	7%	15%	53%
	Ballabhgarh	16%	8%	5%	1%
	Sohna	15%	34%		
	Other Districts of Haryana	3%	9%	3%	
Other States		13%	16%	39%	6%

Table 4:15 Major Traffic Generators– Goods Vehicles

Cities		BS1	BS2	CZ	Bandhwari
Haryana	Faridabad	31%	38%	21%	40%
	Gurgaon	2%	5%	9%	49%
	Ballabhgarh	8%	5%	2%	1%
	Sohna	15%	16%	2%	--
	Bhiwani		8%		--
	Other Districts of Haryana	10%	8%	9%	1%
Other States		31%	18%	57%	8%

4.10.4 Commodity

During OD Survey the commodity which is carried by the goods vehicle was also noted. It is observed that at BS1, BS2 and Crusher Zone toll plaza, construction material is the major commodity being carried. Crusher Zone has very high density of Trucks and MAV. Currently there are about 162 crushers operating in the area. Most of the stone is being

brought from the quarries in Alwar and from Kotputli in Rajasthan. Stone is crushed by a series of conveyer belts and is transported back for construction purpose.

At Bandhwari toll plaza location, “Other” commodity has higher percentage, followed by iron and machinery. **Table 4:16** and **Figure 4:15** show the commodity distribution observed at toll plaza locations.

Table 4:16 Commodity Distribution

Commodity	BS1	BS2	Crusher Zone	Bandhwari
Empty	45%	41%	49%	39%
Agricultural Products	3%	7%	-	3%
Forest Products	1%	5%	-	3%
Fuel, Oil & Gas	3%	6%	-	4%
Construction Materials	22%	28%	50%	5%
Fruits and Vegetables	1%	4%	-	4%
Powder	2%	3%	--	2%
Textiles	1%	2%	--	3%
Chemicals & Fertilizer.	--	--	--	1%
Iron & Steel	7%	2%	--	6%
Machinery	2%	1%	--	6%
Consumer Goods	--	--	--	3%
Timber & furniture	3%	--	--	2%
Poultry, cattle & feed	1%	--	--	1%
Iron ore	--	--	--	4%
Other	10%	1%	1%	12%

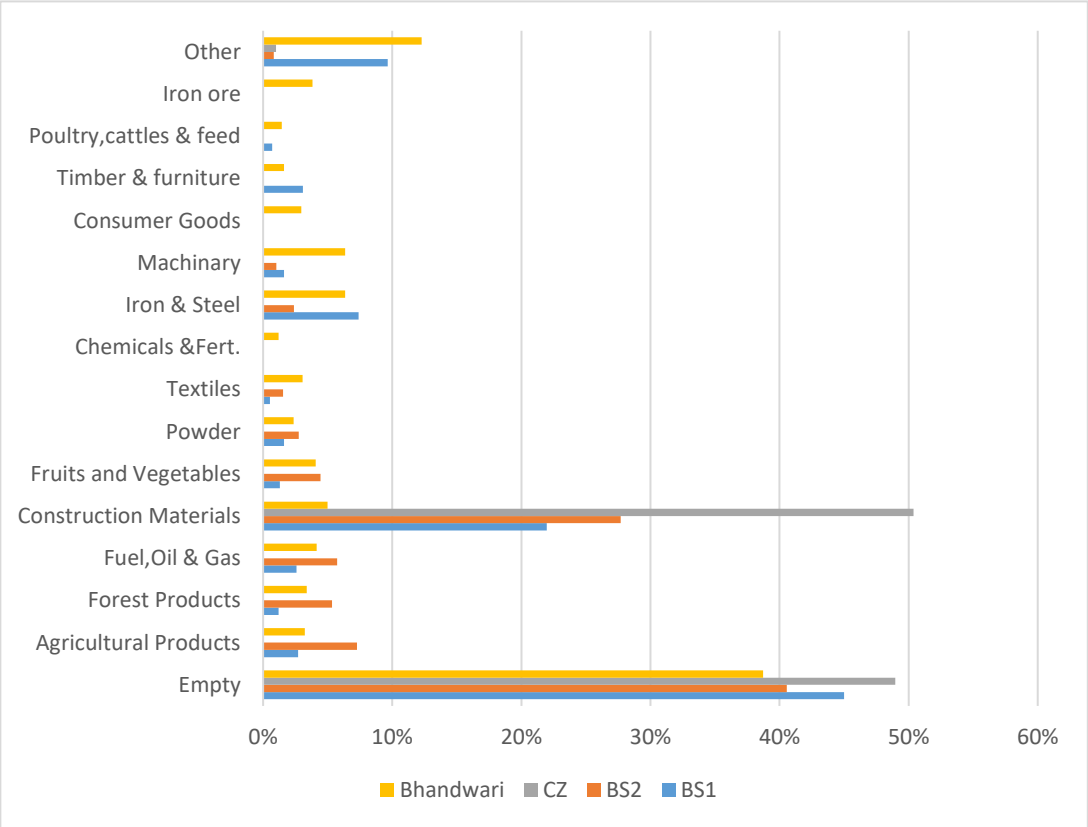


Figure 4:15 Commodity Distribution

4.10.5 Trip Length

a) BS1 Toll Plaza

The trip length of the journey was enquired during OD survey and the analysis of the same is carried out. **Table 4:17** & **Table 4:18** present mode-wise trip length frequency distribution at the BS 1 toll plaza survey location. It can be observed that maximum proportion of trips is observed within 75 km and 100 km range for passenger and goods vehicles respectively. Majority of goods vehicles are destined to Gurgaon and border district of Rajasthan which is about 100 km. Graphical representation of trip length frequency distribution is presented in **Figure 4:16** and **Figure 4:17**.

Table 4:17 Trip Length Frequency Distribution: BS1 Toll Plaza - Passenger Vehicles

Distance (km)	Car	Mini Bus	Private Bus	Govt. Bus
0-25	43%	19%	40%	29%
25-50	35%	68%	56%	35%
50-75	12%	6%	0%	6%
75-100	4%	3%	0%	18%
100-125	1%	3%	0%	0%
125-150	2%	0%	0%	0%
150-175	1%	0%	0%	6%
175-200	0%	0%	0%	0%
200-300	0%	0%	0%	0%
300-400	0%	0%	4%	0%
400-500	0%	0%	0%	0%
500-600	0%	0%	0%	0%
600-700	0%	0%	0%	0%
>700	1%	0%	0%	6%

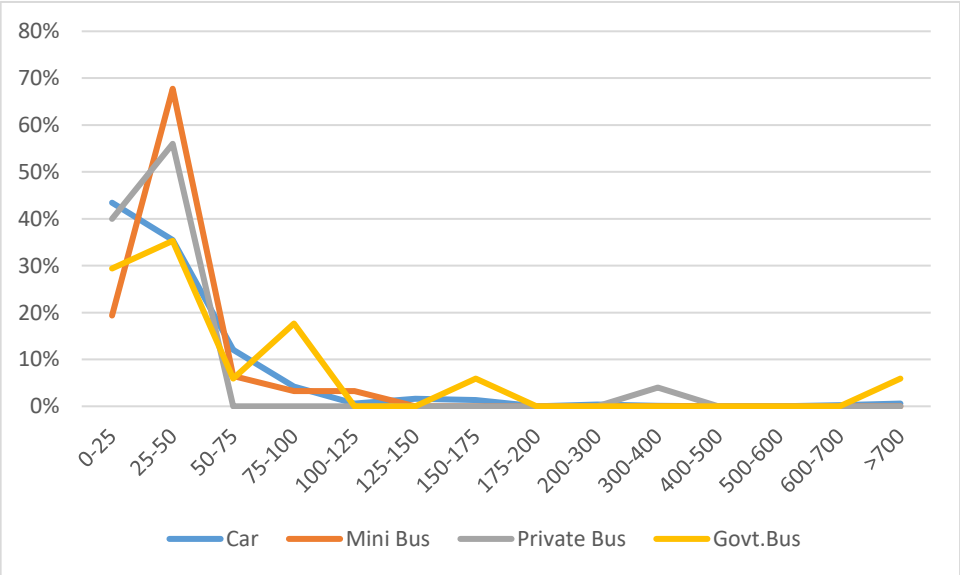


Figure 4:16 Trip Length Frequency Distribution: BS1 Toll Plaza - Passenger Vehicles

Table 4:18 Trip Length Frequency Distribution: BS1 Toll Plaza – Goods Vehicles

Distance (km)	Mini LCV	LCV	2 AXLE Truck	3-6 AXLE Truck	MAV
0-25	17%	25%	13%	13%	8%
25-50	37%	30%	34%	26%	16%
50-75	18%	23%	20%	16%	17%
75-100	12%	8%	21%	16%	19%
100-125	2%	1%	1%	2%	3%
125-150	4%	3%	2%	4%	4%
150-175	0%	1%	1%	1%	2%
175-200	4%	4%	2%	6%	4%
200-300	3%	3%	1%	8%	5%
300-400	0%	1%	2%	2%	2%
400-500	0%	0%	0%	1%	0%
500-600	0%	0%	0%	0%	0%
600-700	1%	0%	1%	0%	2%
700-800	0%	0%	0%	1%	1%
800-1000	0%	0%	1%	1%	4%
1000-1500	0%	0%	0%	1%	1%
>1500	1%	0%	0%	2%	13%

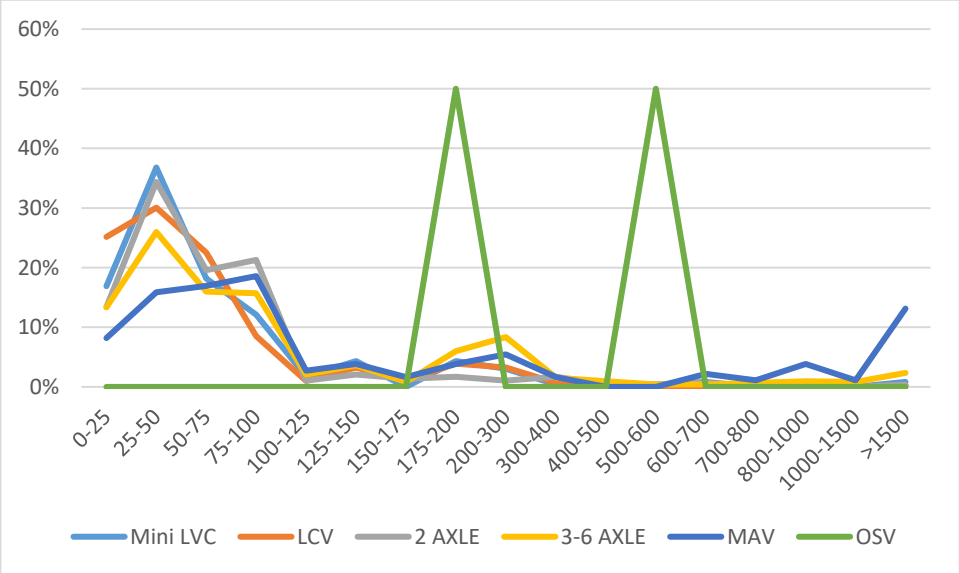


Figure 4:17 Trip Length Frequency Distribution: BS1 Toll Plaza – Goods Vehicles

Table 4:19 and **Table 4:20** present mode-wise trip length frequency distribution at the BS2. It can be observed that maximum proportion of trips is observed within 50 km range and 125 km range for passenger and goods vehicle respectively. Graphical representation of trip length frequency distribution is presented in **Figure 4:18** and **Figure 4:19**.

Table 4:19 Trip Length Frequency Distribution: BS2 Toll Plaza - Passenger Vehicles

Distance (km)	Car	Mini Bus	Bus	Govt. Bus
0-25	33%	57%	22%	25%
25-50	37%	29%	78%	70%
50-75	14%	0%	0%	0%
75-100	7%	0%	0%	5%

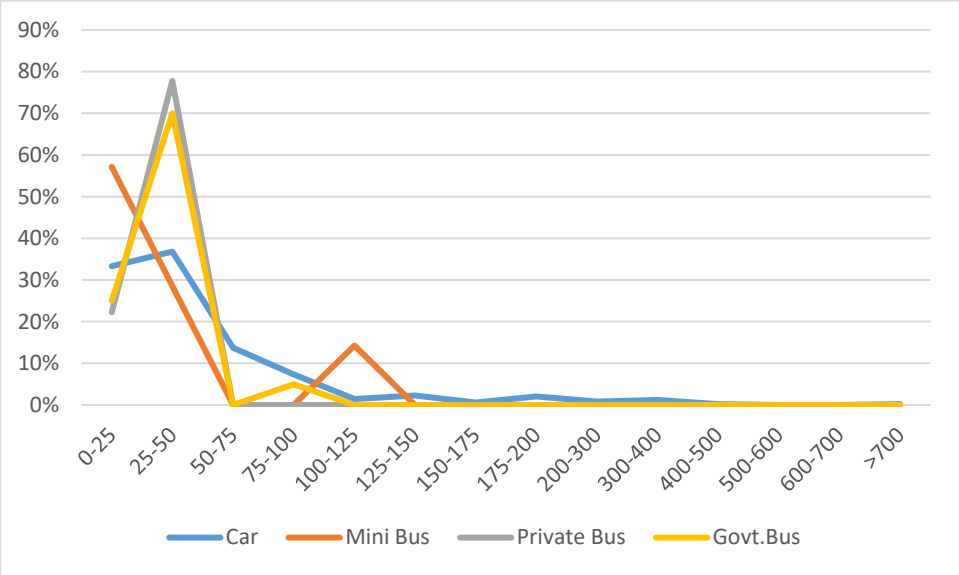


Figure 4:18 Trip Length Frequency Distribution: BS2 Toll Plaza - Passenger Vehicles

Table 4:20 Trip Length Frequency Distribution: BS2 Toll Plaza – Goods Vehicles

Distance (km)	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV	OSV
0-25	5%	7%	11%	7%	1%	0%
25-50	36%	34%	29%	17%	3%	11%
50-75	22%	43%	27%	14%	12%	22%
75-100	18%	8%	15%	25%	16%	33%
100-125	11%	2%	5%	14%	20%	0%
125-150	4%	6%	5%	10%	10%	0%
150-175	3%	0%	1%	3%	14%	0%
175-200	0%	0%	3%	4%	5%	0%
200-300	0%	0%	3%	4%	11%	11%
300-400	1%	0%	0%	2%	4%	0%

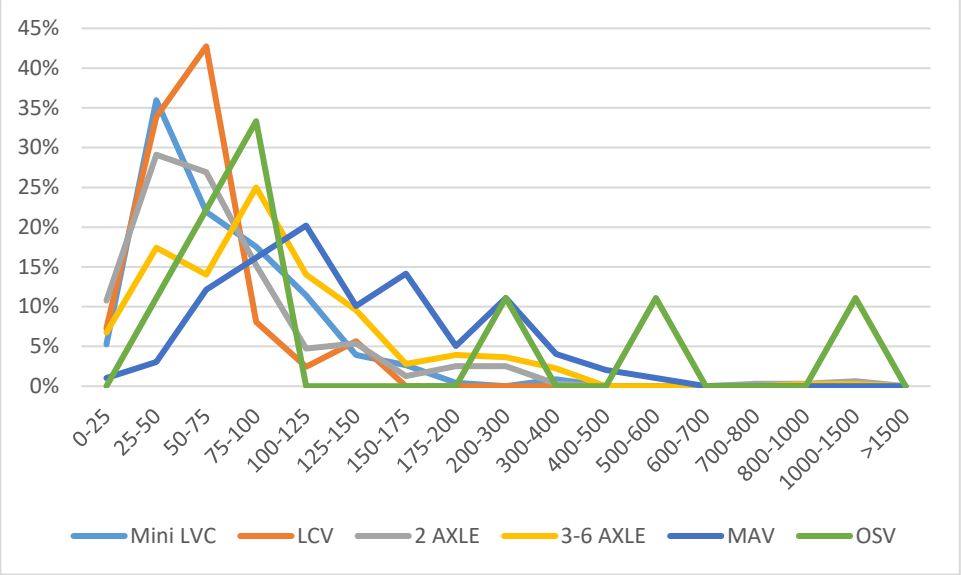


Figure 4:19 Trip Length Frequency Distribution: BS2 Toll Plaza – Goods Vehicles

b) Crusher Zone Toll Plaza

Table 4:21 and **Table 4:22** present mode-wise trip length frequency distribution at the Crusher Zone Toll Plaza location. It can be observed that maximum proportion of trips is observed within 50 km range and 150 km range for passenger and goods vehicle respectively. Graphical representation of trip length frequency distribution is presented in **Figure 4:20** and **Figure 4:21**.

Table 4:21 Trip Length Frequency Distribution: Crusher Zone Toll Plaza – Passenger Vehicles

Distance (km)	Car
0-25	69%
25-50	24%
50-75	4%
>100	1%

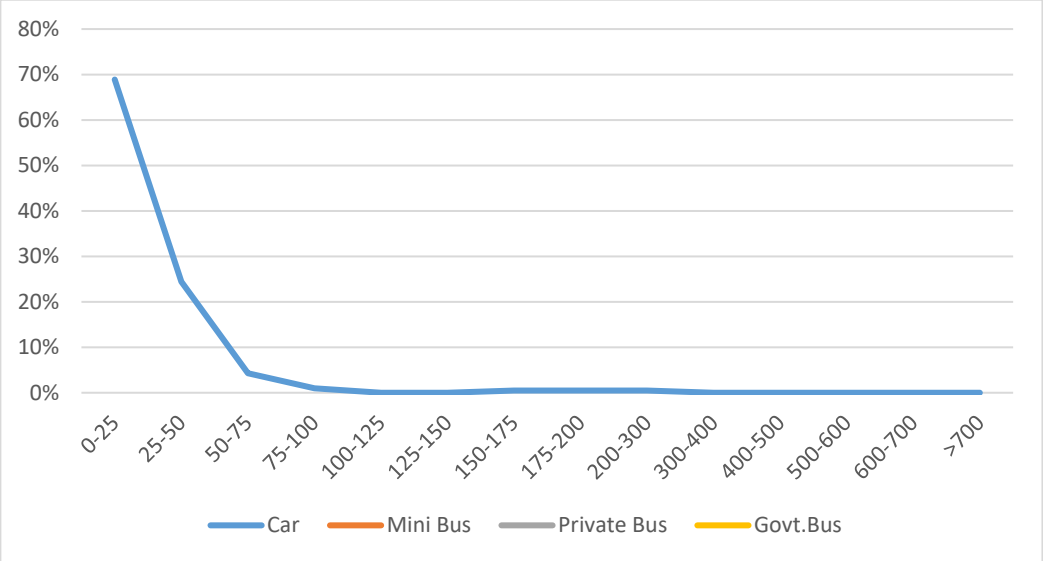


Figure 4:20 Trip Length Frequency Distribution: Crusher Zone Toll Plaza – Passenger Vehicles

Table 4:22 Trip Length Frequency Distribution: Crusher Zone Toll Plaza – Goods Vehicles

Distance (km)	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV
0-25	59%	48%	57%	40%	26%
25-50	23%	37%	32%	27%	22%
50-75	14%	5%	4%	6%	4%
75-100	0%	0%	1%	2%	2%
100-125	5%	2%	0%	0%	2%
125-150	0%	0%	1%	2%	11%
150-175	0%	0%	0%	1%	2%
175-200	0%	5%	2%	16%	17%
200-300	0%	3%	1%	5%	9%

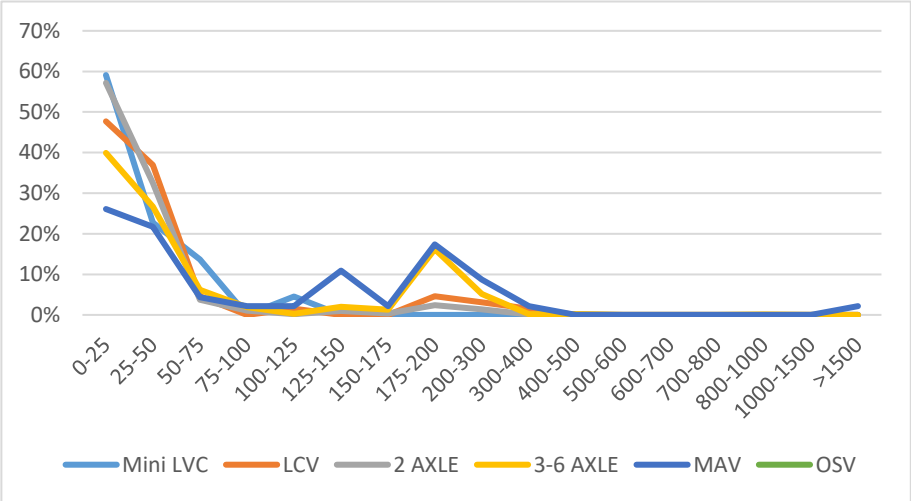


Figure 4:21 Trip Length Frequency Distribution: Crusher Zone Toll Plaza – Goods Vehicles

c) Bandhwari Toll Plaza

Table 4:23 and **Table 4:24** present mode-wise trip length frequency distribution at the survey location (Bandhwari). It can be observed that maximum proportion of trips is observed within 75 km and 100 km range for passenger and goods vehicles respectively. Graphical representation of trip length frequency distribution is presented in **Figure 4:22** and **Figure 4:23**

Table 4:23 Trip Length Frequency Distribution: Bandhwari Toll Plaza – Passenger Vehicles

Distance	Passenger Bandhwari			
	Car	Mini Bus	Private Bus	Govt.Bus
0-25	1%	0%	19%	0%
25-50	60%	33%	48%	50%
50-75	29%	58%	5%	50%
75-100	8%	8%	19%	0%

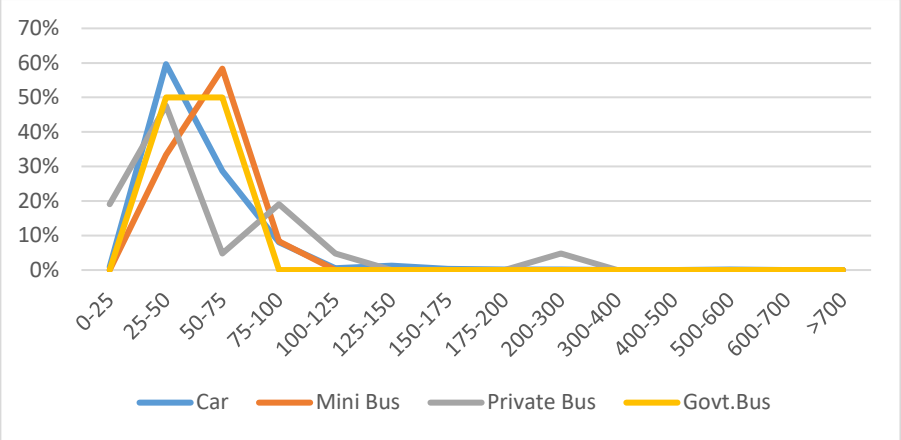


Figure 4:22 Trip Length Frequency Distribution: Bandhwari Toll Plaza – Passenger Vehicles

Table 4:24 Trip Length Frequency Distribution: Bandhwari Toll Plaza – Goods Vehicles

Distance (km)	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV	OSV
0-25	13%	8%	3%	2%	7%	12%
25-50	71%	73%	74%	74%	47%	40%
50-75	8%	11%	11%	8%	8%	12%
75-100	2%	2%	2%	4%	9%	12%
100-125	2%	0%	1%	1%	7%	2%
125-150	1%	0%	3%	3%	1%	5%
150-175	1%	0%	0%	1%	0%	0%
175-200	0%	1%	1%	2%	7%	0%
200-300	1%	1%	2%	3%	4%	7%
300-400	0%	2%	2%	3%	5%	7%

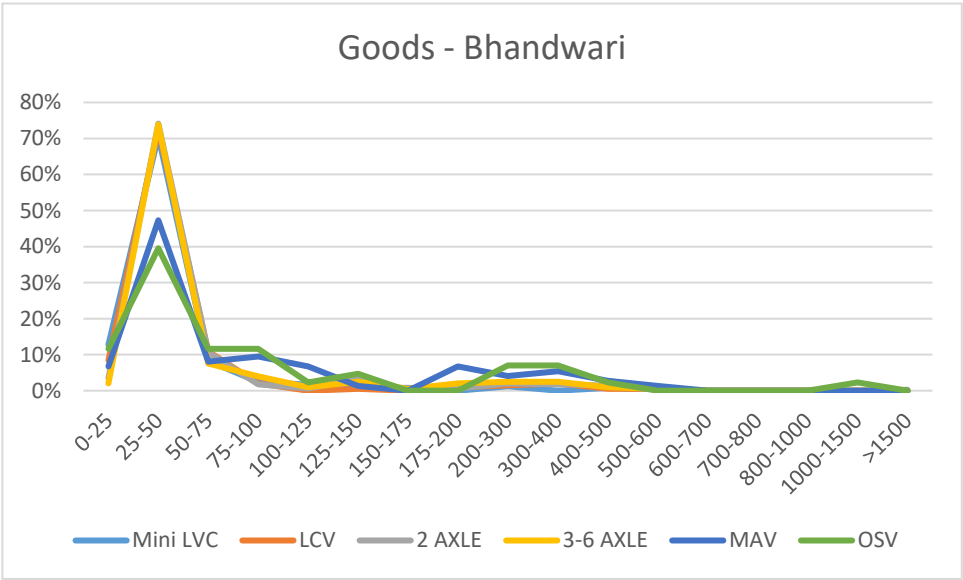


Figure 4:23 Trip Length Frequency Distribution: Bandhwari Toll Plaza – Goods Vehicles

4.10.6 Trip Frequency

OD survey data has been analysed for assessing the proportion of users using single journey, return journey and monthly pass. The observed traffic segmentation at Toll Plazas locations is given in **Table 4:25** to

Table 4:28 and the same is shown graphically in **Figure 4:24** to **Figure 4:27.**

Table 4:25 Traffic Segmentation - BS1 Toll Plaza

Mode	Single Journey	Return Journey	Monthly Pass
Car	25%	60%	15%
LCV	28%	56%	16%
Bus	5%	31%	64%
Truck	24%	59%	17%
MAV	69%	26%	5%

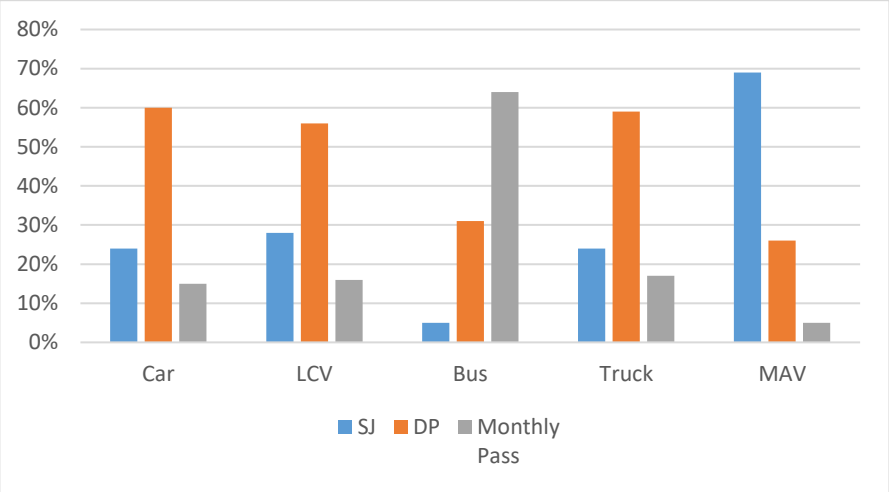


Figure 4:24 Traffic Segmentation– BS1 Toll Plaza

Table 4:26 Traffic Segmentation – BS2 Toll Plaza

Mode	Single Journey	Return Journey	Monthly Pass
Car	24%	60%	15%
LCV	28%	56%	16%
Bus	5%	31%	64%
Truck	24%	59%	17%
MAV	69%	26%	5%

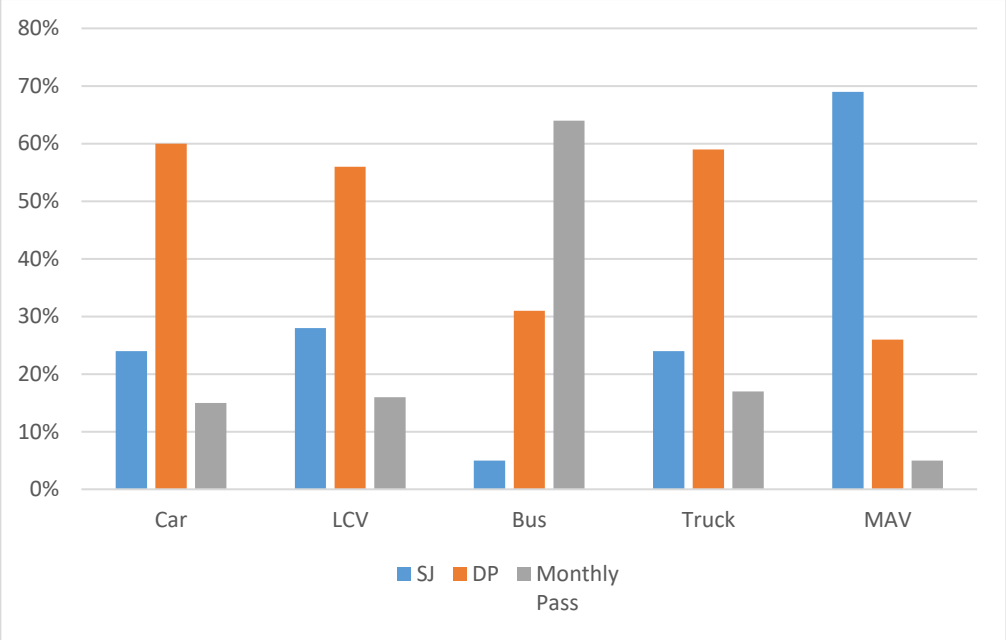


Figure 4:25 Traffic Segmentation– BS2 Toll Plaza

Table 4:27 Traffic Segmentation – Crusher Zone Toll Plaza

Mode	Single Journey	Return Journey	Monthly Pass
Car	1%	35%	65%
LCV	1%	56%	53%
Bus	3%	18%	79%
Truck	1%	22%	77%
MAV	10%	43%	47%

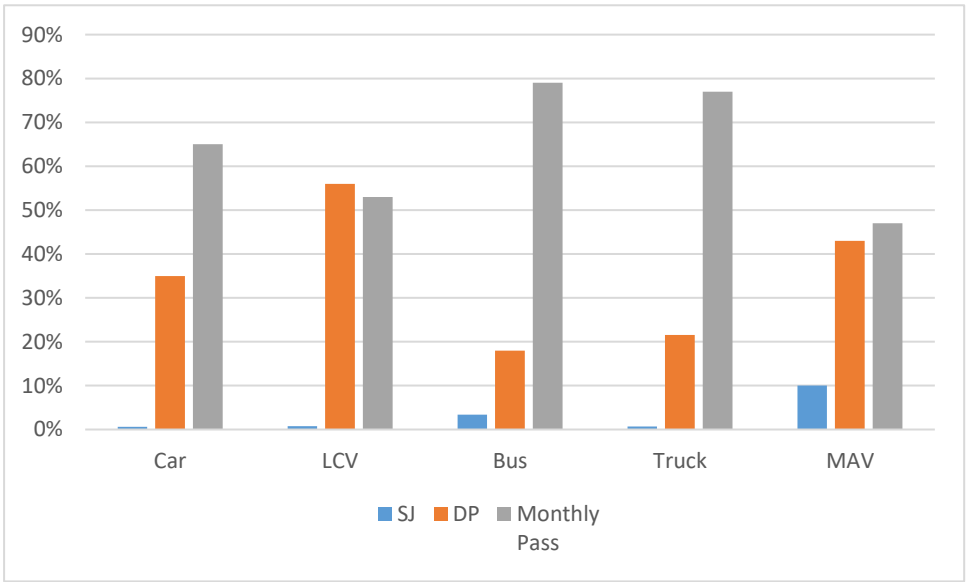


Figure 4:26 Traffic Segmentation– Crusher Zone Toll Plaza

Table 4:28 Traffic Segmentation – Bandhwari Toll Plaza

Mode	Single Journey	Return Journey	Monthly Pass
Car	19%	54%	27%
LCV	18%	55%	27%
Bus	10%	46%	44%
Truck	21%	74%	5%
MAV	55%	45%	0%

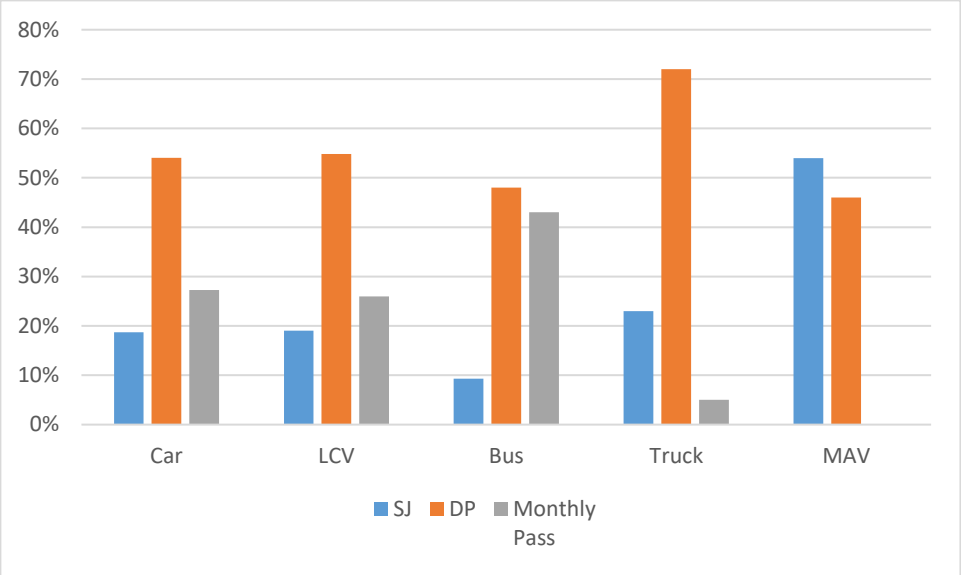


Figure 4:27 Traffic Segmentation– Bandhwari Toll Plaza

4.10.7 Local Vehicles

As per the existing toll concession, local travellers are exempted from the toll. The proportion of local travellers (Car/ Jeep/ Van) within vicinity of toll plaza is about 6%, 5%, 8% and 8% at BS1, BS2, CZ and Bandhwari Toll Plazas respectively. This data was estimated based on the OD survey analysis.

Chapter 5 Traffic Forecast and Toll Revenue Analysis

5.1 General

Assessment of traffic growth rates by various methods and traffic forecast for horizon years up to year 2027 are presented in this Chapter. Based on the traffic projections and toll rates, tollable traffic and toll revenue has been estimated and presented in this Chapter.

5.1.1 Assessment of Traffic Growth Rates

Long term forecasting of traffic on the project road during the time horizon of the study is required for assessing the financial viability of the project. To establish the future traffic growth rates, various approaches, including Transport Demand Elasticity Approach, were attempted.

5.1.2 Growth Rates Based on Past Toll Traffic Data

Consultants had carried out detailed analysis of the past toll traffic data of the four toll plazas on the project corridor. The average traffic growth rate observed during the period 2013-2016 is 50%, 18% 8.4% and 14% for BS1, Crusher Zone, BS2 and Bandhwari toll plaza locations respectively. For assessing the traffic growth rates, based on historical traffic data, at least 10 years' time series data are required. As only three years' toll traffic data is available, it is not appropriate to conclude the growth in traffic based on three years' traffic data. It is worth mentioning the latest IRC 108-2015 (Guidelines for Traffic Forecast on Highways) recommended that the past growth rates cannot be used directly for estimating future traffic on the project corridor.

5.1.3 Growth Rates based on Registered Motor Vehicles

If the area of influence is well defined and the general development pattern of influence area remains the same, then it can be assumed that traffic growth rate is approximately equal to the average growth rate of vehicle registration. It may be emphasized that the project corridor indicates a strong influence of Haryana State in the traffic generation/ attraction. For BS1 toll plaza location, it is found that about 87% of passenger traffic and 90% of freight traffic are originating from or destined to Haryana. In case of BS2 toll plaza location, it is 88% and 90%. The corresponding numbers for Crusher Zone toll plaza is 86% and 59%. At Bandhwari Toll Plaza location, about 90% of Passenger and goods traffic is from Haryana Therefore, there is a strong influence of number of registered vehicles Haryana on project road traffic.

However, assuming that the traffic growth rate equal to the average growth of vehicle registration may not be correct, unless the area of influence is well defined and the general development pattern of influence area remains same. However, this would be an alternative approach in the absence of any additional information or usable past traffic data on the project road. As transport demand elasticity approach is more proven approach, Consultants propose to adopt the growth rates derived from this approach.

5.1.4 Transport Demand Elasticity Approach

Long term forecasting of the project road traffic, during the time horizon of the study, is required for designing the highway and assessing the financial viability of the proposed investment for improving the facility.

As the growth of vehicle population can also be related to other influences, it is logical to relate vehicle population with one or more logically derived independent variables for deriving elasticity of transport demand. Elasticity of transport (traffic) demand, in the present context, is defined as the ratio of percentage change in traffic to the percentage change in socio-economic parameters. The concept of developing regression equation to relate the dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes.

The process involves establishing a relationship between the traffic levels on the project corridor and Net State Domestic Product (NSDP) of the State contributing traffic on to the project corridor. This approach is even recommended by the recent Indian Roads Congress (IRC) *Guidelines for Traffic Forecast on Highways IRC: 108-2015.*

Elasticity in the present context is defined as the ratio of percentage change in traffic to the percentage change in socio-economic parameters. The concept of developing regression equation to express dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes. In the present case, the dependent variable is the registered motor vehicles in the zone of influence (District/ State). The preferred dependent variable would have been past time series traffic on the project corridor. Number of registered motor vehicles growth in Haryana, Rajasthan, Delhi and Uttar Pradesh and Rest of India is taken as dependent variable. The independent variables are socio-economic parameters. The choice of independent variable depends upon vehicle type under consideration. It is logical to relate growth in traffic with NSDP/ PCI and Population. The vehicles types have been clubbed into two categories; passenger vehicles and freight/ goods vehicles. The independent variable used in case of passenger vehicles is Population and PCI and in case of freight vehicles NSDP is used.

It is possible to predict independently the socio-economic variables like population, per capita income (PCI), NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach. Based on the above considerations, the growth rates based on elasticity approach have been adopted for projecting future traffic.

The traffic growth rates, by vehicle type, are obtained by running simple regression and fitting the regression equation with prospective values of independent variables. Separate equations using PCI and registered motor vehicles have been developed for influencing states for passenger vehicles. Similarly, equations by using NSDP and registered motor vehicles of influencing states are developed for freight vehicles. Traffic growth rate projections are done using the below formula;

$$T = \left[\left(1 + \frac{P}{100}\right) * \left(1 + \frac{R}{100}\right) - 1\right] * 100 * E$$

Where:

T - Traffic growth rate (in %)

P - Growth rate of population

R - Growth rate of per capita NSDP /per capita income

E - Elasticity.

The growth rates for the horizon years are arrived by taking the average of the Net State Domestic Product at constant price. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down. India GDP has been considered for estimation of future NSDP of influencing states. India's current GDP growth during 2015-16 is 7.6% and *World Economic Outlook* (October 2016) has projected India's GDP growth as 7.6% for 2017.

Elasticity values for different sections of the project corridor have been arrived based on the *Weightage Factors*. These weightage factors are assessed considering the contribution of the traffic on the project corridor based on primary traffic surveys (OD Survey) and the average weightage factors are presented in **Table 5:1** to **Table 5:2** for passenger vehicles and freight vehicles for toll plazas.

Table 5:1 : Weightage Factors - Passenger Vehicles (%)

Location	Haryana	Rajasthan	Delhi	UP	ROI
BS1	87%	6%	6%	1%	0%
BS2	88%	3%	5%	1%	3%
Crusher Zone	86%	0%	9%	4%	1%
Bandhwari	94%	0%	4%	1%	1%

Table 5:2: Weightage Factors– Freight Vehicles (%)

Location	Haryana	Rajasthan	Delhi	UP	ROI
BS1	90%	6%	0%	1%	3%
BS2	90%	6%	0%	1%	3%
Crusher Zone	59%	5%	11%	4%	21%
Bandhwari	91%	1%	6%	2%	0%

** ROI – Rest of India*

5.1.5 Economic Growth of Project influencing Areas

Growth of traffic on the project road depends on the existing development and future growth prospects of the PIA. A number of econometric indicators for the PIA states, as published by Central Statistical Organisation/ Economic Survey Reports have been studied to assess their past performance. Some of the salient features are presented below;

- **Haryana**

  Haryana's economy expanded at a CAGR of 13.4% during FY2005 to FY2015, higher than the national average of 12.6%. After expanding at a good pace of 9.4% in FY2013, industrial growth declined to 2.8% in FY2014, before recovering to 5.9% in FY2015. Similarly, the pace of growth of the services sector moderated from a good 10.0% in FY2013 to 8.5% in FY2015, before rising to a robust 11.5% in FY2015. In contrast, after contracting by 2.0% in FY2013, agricultural output rose by 3.1% in FY2014, before reverting to a mild 0.7% contraction in FY2015. The motor vehicles registered in Haryana expanded at a CAGR of 11.5%, during FY2006 to FY2013, higher than the 10.7% all-India growth.

- **Rajasthan**

  Rajasthan's economy expanded at a CAGR of 14.3% during FY2005 to FY2015, exceeding the national average of 12.6%. After averaging 8.5% during FY2013 and FY2014, the growth in Rajasthan's services sector improved to a robust 10.7% in FY2015. Moreover, industrial growth rose from a mild 0.3% in FY2013 to 2.7% in FY2014, and further to 5.9% in FY2015. Agricultural growth in Rajasthan doubled from 3.0% in FY2013 to 6.0% in FY2014, subsequent to which the sector recorded a contraction of 0.9% in FY2015. The motor vehicles registered in Rajasthan expanded at a CAGR of 11.3% during FY2006 to FY2013, higher than 10.7% growth at the all-India level.

- **Delhi**

  Delhi is one of the fastest growing states of the country. At current prices, the Gross State Domestic Product (GSDP) of Delhi was US$ 85.4 billion in 2015-16. Between 2004-05 and 2015-16, the GSDP of the state grew at a compound annual growth rate (CAGR) of 12.9 per cent. The state government expects to register growth of 11 per cent to 11.5 per cent by the end of 2017. At current prices, the Net State Domestic Product (NSDP) of Delhi was US$ 78.38 billion in 2015-16.

  Delhi has an attractive real estate market and is a preferred tourist destination. Owing to its location, connectivity and rich cultural history, Delhi has always been a prime tourist attraction of the country.

- **Uttar Pradesh**

  It is the largest producer of food grains among all states in India and accounted for about 19 per cent share in the country's total food grain output in 2014-15. Between 2004-05 and 2014-15, Gross State Domestic Product (GSDP) expanded at a Compound Annual Growth Rate (CAGR) of 10.72 per cent whereas the Net State Domestic Product (NSDP) expanded at a CAGR of 10.66 per cent. The motor vehicles registered in Uttar Pradesh expanded at a CAGR of 12.84% during FY2005 to FY2014, higher than 10.7% growth at the all-India level.

Table 5:3 presents the average annual economic growth rate (2005 - 2015) indicators for different influencing states of the project corridor. Highest growth rate of 8.93% in NSDP is observed for Delhi state followed by Haryana with 8.12%.

Table 5:3: Growth in Economic Indicators during 2005-2015

State	NSDP	Population	PCI
Haryana	8.12%	1.73%	6.5%
Rajasthan	7.86%	1.82%	5.94%
Uttar Pradesh	6.41	1.76	4.62%
Delhi	8.93%	1.55%	7.27%

5.1.6 PIA Outlook

For determining the perspective growth of the PIA States, their long and short term past growth were considered, along with their performances relative to India's and the opportunities for growth for each of them. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down.

5.1.7 Estimated Traffic Growth Rates

Based on the derived elasticity values and the projected growth in economy of PIA, traffic growth rates have been estimated and presented in **Table 5:4** and **Table 5:7**

Table 5:4: Estimated Traffic Growth Rates (% per annum) – BS1

Financial Years	Passenger Car	Bus	LCV	2 -3 Axle Truck	MAV (4-6 Axles)
Up to 2019	10.0	8.0	8.0	8.0	8.0
2019-2020	8.5	7.0	6.5	7.0	6.5
2020-2023	6.5	5.5	5.0	5.5	5.0
2023-2027	4.0	3.0	3.0	3.0	3.0

Table 5:5: Estimated Traffic Growth Rates (% per annum) – BS2

Financial Years	Passenger Car	Bus	LCV	2 -3 Axle Truck	MAV (4-6 Axles)
Up to 2019	10.0	8.0	8.0	8.0	7.5
2019-2020	8.5	6.5	6.5	6.5	6.5
2020-2023	6.5	5.0	5.0	5.0	5.0
2023-2027	4.0	3.0	3.0	3.0	3.0

Table 5:6: Estimated Traffic Growth Rates (% per annum) – Crusher Zone

Financial Years	Passenger Car	Bus	LCV	2 -3 Axle Truck	MAV (4-6 Axles)
Up to 2019	9.5	5.5	8.0	7.5	7.0
2019-2020	8.0	5.0	6.5	6.5	6.0
2020-2023	6.5	3.5	5.0	5.0	4.5
2023-2027	3.5	2.0	3.0	3.0	2.5

Table 5:7: Estimated Traffic Growth Rates (% per annum) – Bandhwari

Financial Years	Passenger Car	Bus	LCV	2 -3 Axle Truck	MAV (4-6 Axles)
Up to 2019	10.0	8.0	8.0	8.0	8.0
2019-2020	8.5	7.0	6.5	7.0	6.5
2020-2023	6.5	5.5	5.0	5.5	5.0
2023-2027	4.0	3.0	3.0	3.0	3.0

5.1.8 Key Growth Factors

The Central NCR (earlier the Delhi Metropolitan Area) as defined in the Regional Plan - 2021, comprises of the notified / controlled development areas of the neighbouring towns of Ghaziabad - Loni, Noida, Gurgaon-Manesar, Faridabad-Ballabhgarh, Bahadurgarh and Sonepat-Kundli, and the extension of the ridge in Haryana, having an area of about 2000 sq. kms. It has been suggested that the opportunities presented by the Central NCR should be maximized to enable it to compete effectively with the NCT of Delhi, offering comparable employment, economic activities, comprehensive transport system, housing, social infrastructure and quality of life and environment.

In the Rest of the NCR (approximately 29,795 sq. kms.), the basic policy of the Regional Plan - 2021 is aimed at accelerated development of the urban and rural areas. For this, infrastructure is being substantially upgraded at local and regional level (both by the State and Central Government) in order to induce growth in these areas, specifically in identified settlements / Metro Centres. This will make them more attractive for locating economic and allied activities and for attracting private sector investment. The rapid growth in NCR would have significant impact on the project road traffic.

Due to massive urban development in Gurgaon, Faridabad, Ballabhgarh, Sohna passenger traffic is showing tremendous growth in this region. This will continue for several years to come. Currently there are about 162 crushers operating in the area. Most of the stone is being brought from the quarries in Alwar and from Kotputli in Rajasthan. Stone is crushed by a series of conveyer belts and is transported back for construction purpose. Crusher area has potential for good growth as NCR area is undergoing through massive construction activity. Therefore, more truck traffic will be plying on BS2, BS1, and CZ toll plaza locations in future.

5.1.9 Suggested Elasticity Values

Derived elasticity values obtained for some vehicle types are low/high, which could be attributed mainly to the inconsistency in the data due to variety of reasons. Therefore, to make a realistic estimate of the traffic growth rates, necessary updation in the elasticity values is done considering the current scenario and the recommended standard elasticity values.

The shift from public transport to personalized modes is one of the major changes occurred over the past few years. This has led in elasticity of bus lower than unity. The growth in per capita income won't assure an increasing trend in car, as the trend may reach saturation and a decline may take place.

- **Car**

  It is likely that this growth would slow down over time as the market becomes more mature and saturated, therefore elasticity can be expected to decline over time.

- **Trucks**

  There are has been a rapid shift in freight transport in last decade. With enhance carrying capacity of LCV and better operational efficiencies of MAV over 2 Axle Truck for longer distance travel, there is a huge fluctuation in trend of truck traffic. This has been duly considered while finalising the growth rates for good vehicles and higher elasticity values for MAV have been considered as compared to 2 Axle trucks

5.1.10 Variable Elasticity Value

Elasticity value is the factor by which the socio-economic growth rate is multiplied to get the growth rate of traffic. Traffic is directly linked to the economic growth such as per capita income, population and NSDP/GDP. According to IRC-108, elasticity based econometric model for highway projects could be derived in the following form:

Log e (P) = A0 + A1 Log e (EI)
where:
P = Traffic volume (of any vehicle type)
EI = Economic Indicator (GDP/NSDP/Population/PCI)
A0 = Regression constant;
A1 = Regression co-efficient (Elasticity Index)

In coming years the Economic indicators will be reducing. Hence the regression coefficient will taper down. This tapering in elasticity is considered while deriving the traffic growth rates. **Table 5:8** shows the recommended elasticity values.

Table 5:8: **Recommended Elasticity Values**

Location	Financial Years	Car	Bus	LCV	2 Axle	MAV	Tractor
BS1	Up to 2019	0.93	0.93	1.28	0.58	1.16	0.58
	2019-2020	0.81	0.92	1.04	0.58	1.04	0.58
	2020-2023	0.79	0.73	0.97	0.48	0.97	0.48
	2023-2027	0.73	0.73	1.02	0.58	1.02	0.44
BS2	Up to 2019	1.04	0.93	1.27	0.58	1.16	0.58
	2019-2020	0.88	0.88	0.99	0.55	0.99	0.55
	2020-2023	0.81	0.70	0.93	0.46	0.93	0.46
	2023-2027	0.70	0.70	0.97	0.56	0.97	0.42
Crusher Zone	Up to 2019	1.05	0.00	0.87	0.35	1.17	
	2019-2020	0.94	0.00	0.72	0.28	0.89	
	2020-2023	0.93	0.00	0.64	0.23	0.70	
	2023-2027	0.98	0.00	0.70	0.28	0.56	
Bandhwari	Up to 2019	1.19	0.83	0.83	0.48	1.19	0.60
	2019-2020	0.92	0.69	0.80	0.46	1.03	0.57

Location	Financial Years	Car	Bus	LCV	2 Axle	MAV	Tractor
	2020-2023	0.76	0.55	0.65	0.44	0.87	0.44
	2023-2027	0.69	0.46	0.57	0.34	0.92	0.34

5.1.11 Non-Compliance

During the traffic surveys, it was found that certain vehicles are not paying toll. 16% and 9% of car passengers were not paying toll at BS1 and BS2 toll plaza locations respectively. Similarly, at Crusher zone toll plaza about 21% of car users were not paying toll. At Bandhwari toll plaza, about 10% Truck users were not paying toll, again the absolute number is small. We understand that the Concessionaire is already taking necessary measures to avoid non-compliance. This has been duly considered, by reducing the traffic growth rates suitably in the initial years.

When compared with historical toll data for FY 2016, from the AADT it is observed that only 50% MAVs at GF Toll Plaza have paid toll. 38% freight vehicles have actually paid toll at Crusher Zone. At BS1 & BS2 30% are non-compliant.

5.1.12 Suggested Traffic Growth Rates

The estimated growth rates based on past traffic data have no definite trend. Therefore, registered motor vehicles growth is explored. These past growth rates cannot be used for estimating future traffic on the project road. The future traffic may not follow these growth rates due to several reasons, like changes in price of new vehicles, fuel and taxes on several commodities. Any substantial change in policy (e.g., fare, travel time, loading and unloading of goods, etc.) and infrastructure (e.g. improvement of existing rail services, new railway line, etc.) may also affect the traffic volume on the project road.

It is possible to predict independently the socio-economic variables like population, per capita income, NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach. Based on the above discussions, the growth rates based on elasticity approach have been adopted for projecting future traffic.

Based on the suggested elasticity values**,** the traffic growth rates have been estimated for three scenarios: (1) Realistic Scenario, (2) Optimistic Scenario and (3) Pessimistic Scenario. The key growth factors, indicated in the above sections, have been considered while finalising the traffic growth rates. While estimating the growth rates for freight vehicles, the decreasing trend in growth of 2 axle Trucks is taken into consideration and the same is counter balanced in the growth of LCV & MAV. Due consideration has been given for the gradual reduction of Non-compliance traffic. The suggested traffic growth rates are presented **Table 5:9**.

Table 5:9: Suggested Traffic Growth Rates (%)

	Realistic						Optimistic						Pessimistic					
	BS1																	
Financial Years	Vehicle Type																	
	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor
Up to 2019	8	8	11	5	10	5	9	9	12	6	11	6	6	6	9	3	8	3
2019-2020	7	8	9	5	9	5	8	9	10	6	10	6	5	6	7	3	7	3
2020-2023	6.5	6	8	4	8	4	7.5	7	9	5	9	5	4.5	4	6	2	6	2
2023-2027	5	5	7	4	7	3	6	6	8	5	8	4	3	3	5	2	5	1
	BS2																	
Financial Years	Vehicle Type																	
	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor
Up to 2019	9	8	11	5	10	5	10	9	12	6	11	6	7	6	9	3	8	3
2019-2020	8	8	9	5	9	5	9	9	10	6	10	6	6	6	7	3	7	3
2020-2023	7	6	8	4	8	4	8	7	9	5	9	5	5	4	6	2	6	2
2023-2027	5	5	7	4	7	3	6	6	8	5	8	4	3	3	5	2	5	1
	Crusher Zone																	
Financial Years	Vehicle Type																	
	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor
Up to 2019	9	0	7.5	3	10	0	10	0	8.5	4	11	0	7	0	5.5	1	8	0
2019-2020	8.5	0	6.5	2.5	8	0	9.5	0	7.5	3.5	9	0	6.5	0	4.5	0.5	6	0
2020-2023	8	0	5.5	2	6	0	9	0	6.5	3	7	0	6	0	3.5	0	4	0
2023-2027	7	0	5	2	4	0	8	0	6	3	5	0	5	0	3	0	2	0
	Bandhwari																	
Financial Years	Vehicle Type																	
	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor	Car	Bus	LCV	Trucks	MAV	Tractor
Up to 2019	10	7	7	4	10	5	11	8	8	5	11	6	8	5	5	2	8	3
2019-2020	8	6	7	4	9	5	9	7	8	5	10	6	6	4	5	2	7	3
2020-2023	7	5	6	4	8	4	8	6	7	5	9	5	5	3	4	2	6	2
2023-2027	6	4	5	3	8	3	7	5	6	4	9	4	4	2	3	1	6	1

5.2 Alternate Route

The consultant have studied the road network in the surrounding area of the project corridor and found no potential alternate route to bypass the four toll plazas.

5.3 Traffic Forecast

Daily traffic volume of 7 days traffic count, by vehicle type, at each of the four locations, is added separately and averaged to determine the Average Daily Traffic (ADT). Seasonal variation factors (given in Chapter 4) have been applied to get Annual Average Daily Traffic (AADT). The AADT for the base year (2017) is presented in **Table 5:10**.

Table 5:10: Annual Average Daily Traffic

Mode`		BS1		BS2		Crusher Zone		Bandhwari	
		ADT	AADT	ADT	AADT	ADT	AADT	ADT	AADT
Passenger Vehicles	Car	4491	4828	2622	2779	770	786	36269	37592
	Bus	135	140	55	59	1	1	389	373
Commercial Vehicles	LCV	687	685	674	627	128	121	3250	3190
	Truck	1172	1066	1248	1148	4181	4390	1786	1765
	MAV	244	214	247	229	141	155	446	457
	>6 Axles	0	0	0	0	51	56	73	75
	Tractor	41	38	0	0	0	0	0	0
Tollable Traffic		**6770**	**6971**	**4846**	**4842**	**5272**	**5509**	**42213**	**43452**

5.3.1 Tollable Traffic Forecast

Using the growth rates presented in **Table 5:9**, the tollable traffic has been projected up to the horizon year 2027. Traffic forecast for realistic scenario in terms of vehicles and PCUs for both the toll plaza locations are presented in **Table 5:11** to **Table 5:14** for Realistic.

Table 5:11: Tollable Traffic Forecast - BS1 Toll Plaza

Financial Year	Car/Jeep /Van	Bus	LCV	2-Axle Trucks	MAV (3-6 Axles)	Tractor	Total Vehicles	Total (PCUs)
2017	4828	140	685	1066	214	38	6971	10494
2018	5214	151	760	1119	235	40	7520	11285
2019	5579	163	829	1175	257	42	8045	12056
2020	5942	176	903	1234	280	44	8579	12853
2021	6328	187	976	1283	302	46	9122	13630
2022	6739	198	1054	1335	326	48	9700	14458
2023	7178	210	1138	1388	352	49	10315	15339
2024	7536	221	1218	1444	377	51	10846	16128
2025	7913	232	1303	1501	403	52	11405	16960
2026	8309	243	1394	1561	432	54	11993	17837
2027	8724	255	1492	1624	462	56	12613	18761

Table 5:12: Tollable Traffic Forecast – BS2 Toll Plaza

Financial Year	Car/Jeep/Van	Bus	LCV	2-Axle Trucks	MAV	Total Vehicles	Total (PCUs)
2017	2779	59	627	1148	229	4842	8371
2018	3029	64	696	1205	252	5246	9014
2019	3271	69	759	1266	275	5639	9648

Financial Year	Car/Jeep/Van	Bus	LCV	2-Axle Trucks	MAV	Total Vehicles	Total (PCUs)
2020	3500	74	827	1329	299	6030	10297
2021	3745	79	893	1382	323	6423	10922
2022	4008	84	964	1437	349	6842	11588
2023	4288	89	1042	1495	377	7290	12297
2024	4503	93	1115	1555	403	7668	12933
2025	4728	98	1193	1617	432	8066	13602
2026	4964	102	1276	1682	462	8486	14309
2027	5212	108	1365	1749	494	8928	15053

Table 5:13: Tollable Traffic Forecast – Crusher Zone Toll Plaza

Financial Year	Car/ Jeep/Van	LCV	2-Axle Trucks	MAV (3-6 Axles)	MAV (7 and more Axles)	Total Vehicles	Total (PCUs)
2017	785	121	4390	155	56	5508	15089
2018	856	130	4522	171	62	5741	15663
2019	928	139	4635	184	67	5953	16171
2020	1003	148	4751	199	72	6173	16697
2021	1083	156	4846	211	76	6372	17148
2022	1169	164	4943	223	81	6581	17615
2023	1263	173	5041	237	86	6801	18101
2024	1351	182	5142	246	89	7012	18563
2025	1446	191	5245	256	93	7232	19040
2026	1547	201	5350	266	96	7461	19533
2027	1656	211	5457	277	100	7701	20043

Table 5:14: Tollable Traffic Forecast – Bandhwari Toll Plaza

Financial Year	Car/ Jeep/Van	Bus	LCV	2-Axle Trucks	MAV (3-6 Axles)	MAV (7 and more Axles	Total Vehicles	Total (PCUs)
2017	37592	373	3190	1765	457	75	43452	51183
2018	41351	399	3413	1835	502	83	47584	55806
2019	44660	423	3652	1909	547	90	51281	60002
2020	47786	448	3908	1985	597	98	54822	64075
2021	51131	470	4142	2065	644	106	58559	68327
2022	54710	494	4391	2147	696	115	62553	72868
2023	58540	519	4654	2233	752	124	66821	77716
2024	62052	539	4887	2300	812	134	70724	82156
2025	65775	561	5132	2369	877	144	74858	86858
2026	69722	583	5388	2440	947	156	79236	91837
2027	73905	607	5658	2513	1023	168	83874	97111

5.4 Toll Revenue Estimation

5.4.1 Schedule of User fee

The schedule of user fee is shown in **Table 5:15**

Table 5:15: User Fee

S. No	Particulars of the type of vehicles on which toll is to be levied	Initial Rate applicable upto the first 3 years (in Rupees)	Graded rate applicable in rupees			
			After 3 years and upto 6 years	After 6 years and upto 9 years	After 9 years and upto 12 years	Beyond 12 years
1	Motor trucks (laden with goods or unladen) upto 10 tyres	200	230	250	280	300
2	Motor Bus with or Without passengers including School Bus	100	110	130	150	170
3	Tractor Trolley carrying quarry g building material etc. (No toll to be levied on tractors carrying agricultural produce)	50	60	70	70	80
4	Light Commercial Vehicle (LCV) and Low Powered trucks (LPT)	100	110	120	130	140
5	Multi-axle vehicles having more than 10 tyres and other heavy vehicles such as cranes, dozers, earth movers, road rollers etc.	250	300	300	350	350
6	Car, Jeep, Pickup Van ,Three wheelers, Station wagon	15	20	25	30	40

5.4.2 Wholesale Price Index (WPI)

The annual rate of inflation, based on monthly WPI, stood at 3.57% (provisional) for the month of September, 2016 (over September, 2015) as compared to 3.74% (provisional) for the previous month and -4.59% during the corresponding month of the previous year. Build-up inflation rate in the financial year so far was 4.28% compared to a build-up rate of 0.23% in the corresponding period of the previous year. The adopted WPI for the horizon years are given in **Table 5:16**.

Table 5:16 Wholesale Price Index for the Entire Concession Period

Up to FY 2018	Up to FY 2021	Up to FY 2026	Up to FY 2031	Beyond
4.00%	5.00%	4.00%	3.00%	2.00%

5.4.3 Toll Concessions

As per the toll notification:

1) Once the toll has been paid, the vehicle need not to pay further toll within the toll road or crossing the toll road through same or other toll plaza. However, if the same wishes to re-enter the toll road it has to pay toll as per applicable rates

2) Daily pass- One and a half times the corresponding each trip rates as mentioned above. When the same vehicle has to cross the toll plaza more than once in a day, the users shall have the option to pay one and half times of the above rates while crossing the road in

the first trip itself. However, in case of commercial vehicles, the users may avail of only return journey during the same day by paying one and half times the above rates.

3) Monthly pass – For commercial vehicles, thirty times the corresponding single trip rates and for others, twenty times the corresponding single trip rates as mentioned above.

4) Following types of vehicles are exempted from payment toll

i. Two-wheelers
ii. Tractor trolley carrying agriculture produce
iii. Defence vehicles,
iv. Ambulances/ funeral vans,
v. Police Vehicles, Fire fighting vehicles,
vi. Local traffic (non-commercial) in the vicinity of toll road, and
vii. Non-commercial vehicles owned by all State Government, Government of India and Haryana State Government Undertaking.

5.4.4 Adopted Toll Concessions

Considering all the above factors and based on the results of OD Survey and toll traffic data, Consultants adopted the following toll concessions for different categories of tollable vehicles as given **Table 5:17**

Table 5:17 Adopted Toll Concessions

Location	Type of Road User	Sin. Use	Return	Monthly Pass	Local
BS1	Car/Jeep/Van	22.6%	56.4%	14.1%	6.0%
	Bus	5.0%	31.0%	64.0%	0.0%
	LCV	28.0%	56.0%	16.0%	0.0%
	2-Axle Trucks	24.0%	59.0%	17.0%	0.0%
	MAV (3-6 Axles)	69.0%	26.0%	5.0%	0.0%
	MAV (7 and more Axles)	100.0%	0.0%	0.0%	0.0%
	Tractor	24.0%	60.0%	15.0%	0.0%
BS2	Car/Jeep/Van	22.8%	57.0%	14.3%	5.0%
	Bus	5.0%	31.0%	64.0%	0.0%
	LCV	28.0%	56.0%	16.0%	0.0%
	2-Axle Trucks	24.0%	59.0%	17.0%	0.0%
	MAV (3-6 Axles)	69.0%	26.0%	5.0%	0.0%
	MAV (7 and more Axles)	100.0%	0.0%	0.0%	0.0%
	Tractor	24.0%	60.0%	15.0%	0.0%
Crusher Zone	Car/Jeep/Van	0.6%	32.2%	59.8%	8.0%
	Bus	3.4%	18.0%	79.0%	0.0%
	LCV	0.8%	56.0%	53.0%	0.0%
	2-Axle Trucks	0.7%	21.5%	77.0%	0.0%
	MAV (3-6 Axles)	10.0%	43.0%	47.0%	0.0%
	MAV (7 and more Axles)	100.0%	0.0%	0.0%	0.0%
	Tractor	0.6%	35.0%	65.0%	0.0%
Bandhwari	Car/Jeep/Van	17.2%	49.7%	25.1%	8.0%
	Bus	9.3%	48.0%	43.0%	0.0%
	LCV	19.0%	54.8%	26.0%	0.0%
	2-Axle Trucks	23.0%	72.0%	5.0%	0.0%

Location	Type of Road User	Sin. Use	Return	Monthly Pass	Local
	MAV (3-6 Axles)	54.0%	46.0%	0.0%	0.0%
	MAV (7 and more Axles)	100.0%	0.0%	0.0%	0.0%
	Tractor	18.7%	54.1%	27.2%	0.0%

5.4.5 Toll Revenue

An assessment of likely toll revenue has been made by applying the estimated toll rates to the projected tollable traffic. Traffic forecast given in Section 5.3 includes the non-compliance vehicles. Also, though AADT is estimated based on the traffic count surveys and the seasonal correction factors, it is felt that the observed Annual Average Daily Traffic would be more appropriate for the traffic forecast, as it takes account of non-compliance traffic. Therefore, actual historical toll traffic data provided by the Client is used to forecast the Toll revenue. The tollable traffic for the FY 2016 is taken as base to project the toll revenue. Toll revenue on the project road is estimated using growth rates and presented in **Table 5:18**. The total estimated annual toll revenue from the four toll plazas is about Rs. 832 Million in 2017 and Rs. 3292 Million in 2027. The toll revenue based on the traffic counts from surveys is about Rs 26 lakhs per day whereas, actual Toll Revenue collected is about Rs 17 lakhs.

Table 5:18 Estimated Annual Toll Revenue (Rs. Million)

FY	Realistic	Optimistic	Pessimistic
2017	832	840	822
2018	1122	1143	1096
2019	1669	1716	1609
2020	1817	1884	1719
2021	1917	2006	1780
2022	2258	2385	2058
2023	2446	2608	2188
2024	2567	2761	2253
2025	3046	3306	2623
2026	3292	3606	2781
2027	540	597	448

*toll revenue for FY 2027 is for 16% of the year

5.5 Operation and Maintenance Cost

5.5.1 General

The toll revenue account for the returns of the project. While the Operation and Maintenance cost apart from the Capital Cost account for expenditure towards the project cost. For this purpose, major O&M elements such as civil infrastructure, toll system and manpower, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analysed based on the data provided by Client.

5.5.2 Major Element of Maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure

- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

5.5.3 Project Parameters for O & M

Operation and Maintenance cost of the project depends on a number of factors like quality of construction, response of maintenance team to early damage, climate.

Future cost of operation and maintenance is the estimate made on engineering judgement and experience basis. Keeping all above factors in view, following can be basis of working out cast operation and maintenance for project corridor.

a. Annual Regular Maintenance – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll Collection, toll plaza maintenance, other services mile medical help and rescue operation etc.

b. Periodic Maintenance this will be done on periodic basis say. It usually consists of overlaying of wearing course, Road Marking. Some pavement strengthening is also anticipated in few sections. As project stretch is long periodic maintenance items have also been spread on annual basis from execution point of view. Since the project is commissioned and traffic is running for 2 years, periodic maintenance shall be as per condition of pavement and other infrastructure. Inputs of the concessionaire have been taken in this regard.

Cost for above operations is taken on prevailing rates. Following **Table 5:19**

provides financial year wise details of operation and maintenance cost.

Table 5:19 Major Maintenance Cost

Year	Base Year Expenditure	Renewal Cost of BC	Micro Surfacing Cost	Escalation Factor	Total Expenditure	Remarks
FY 2018	29.50	23.23	6.27	1.04	15.34	**Major Maintenance**
FY 2019	29.50	23.23	6.27		15.34	**Major Maintenance**
FY 2024	29.50	23.23	6.27	1.35	19.98	**Major Maintenance**
FY 2025	29.50	23.23	6.27		19.98	**Major Maintenance**

Table 5:20 O&M Cost (in Rs Crores)

Year	Base Cost	Escalation Factor	Total Expenditure
FY 2017	16.5	1.00	16.5
FY 2018	16.5	1.04	17.2
FY 2019	16.5	1.09	18.0
FY 2020	16.5	1.15	18.9
FY 2021	16.5	1.20	19.9
FY 2022	16.5	1.25	20.7
FY 2023	16.5	1.30	21.5
FY 2024	16.5	1.35	22.3
FY 2025	16.5	1.41	23.2
FY 2026	16.5	1.46	24.2
FY 2027	16.5	1.51	24.9

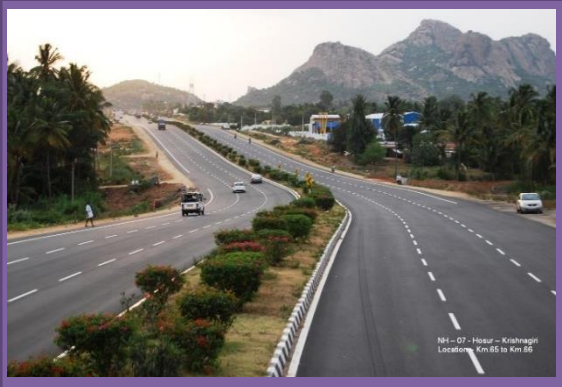
Annexure

	Zone Name	Region		Zone Name	Region
1	PS_Anewadi TP1_10KM	Toll Plaza1	74	Valsa	
2	PS_Anewadi TP1_20KM		75	Kandla Port	
3	PS_Khedshivpur_TP2_10KM	Toll Plaza 2	76	Mundra Port	
4	PS_Khedshivpur_TP2_20KM		77	Mandivi Port	
5	Ahmadnagar		78	Hazira Port	
6	Akola		79	GF_TP1_10KM	Toll Plaza1
7	Amravati		80	GF_TP1_20KM	
8	Aurangabad		81	GF_TP2_10KM	Toll Plaza 2
9	Beed		82	GF_TP2_20KM	
10	Bhandara		83	GF_TP3_10KM	Toll Plaza3
11	Buldhana		84	GF_TP3_20KM	
12	Chandrapur		85	GF_TP4_10KM	Toll Plaza 4
13	Dhule		86	GF_TP4_20KM	
14	Gadchiroli		87	Ambala	
15	Gondia		88	Bhiwani	
16	Hingoli		89	Chandigarh	
17	Jalgaon		90	Faridabad	
18	Jalna		91	Fatehabad	
19	Kolhapur		92	Gurgaon	
20	Latur		93	Hisar	
21	Mumbai Suburban		94	Jhajjar	
22	Mumbai	Maharashtra	95	Jind	
23	Nagpur		96	Kaithal	
24	Nanded		97	Karnal	
25	Nandurbar		98	Kurukshetra	
26	Nashik		99	Mahendragarh	Haryana
27	Osmanabad		100	Mewat	
28	Parbhani		101	Palwal	
29	Pune		102	Panchkula	
30	Raigad		103	Panipat	
31	Ratnagiri		104	Rewari	
32	Sangli		105	Rohtak	
33	Satara		106	Sirsa	
34	Sindhudurg		107	Sonipat	
35	Solapur		108	Yamunanagar	
36	Thane		109	Ballabhgarh	
37	Wardha		110	Sohna	
38	Washim		111	JR_TP1_10KM	Toll Plaza
39	Yavatmal		112	JR_TP1_20KM	
40	KM_Mokha_TP1_10KM	Toll Plaza	113	Ajmer	
41	KM_Mokha_TP1_20KM		114	Alwar	
42	Ahmedabad		115	Banswara	
43	Amreli		116	Baran	
44	Anand		117	Barmer	
45	Aravalli		118	Bharatpur	
46	Banaskantha		119	Bhilwara	
47	Bharuch		120	Bikaner	
48	Bhavnagar		121	Bundi	
49	Botad		122	Chittaurgarh	
50	Chhota Udaipur		123	Churu	
51	Dahod		124	Dausa	
52	Dang		125	Dhaulpur	
53	Devbhoomi Dwarka		126	Dungarpur	
54	Gandhinagar		127	Ganganagar	
55	Gir Somnath		128	Hanumangarh	
56	Jamnagar		129	Jaipur	Rajasthan
57	Junagadh	Gujarat	130	Jaisalmer	
58	Kheda		131	Jalor	
59	Kutch		132	Jhalawar	
60	Mahisagar		133	Jhunjhunun	
61	Mehsana		134	Jodhpur	
62	Morbi		135	Karauli	
63	Narmada		136	Kota	
64	Navsari		137	Nagaur	
65	Panchmahal		138	Pali	
66	Patan		139	Pratapgarh	
67	Porbandar		140	Rajsamand	
68	Rajkot		141	Sawai Madhopur	
69	Sabarkantha		142	Sikar	
70	Surat		143	Sirohi	
71	Surendranagar		144	Tonk	
72	Tapi		145	Udaipur	
73	Vadodara		146	Reengus	

	Zone Name	Region
147	DA_TP1_10KM	Toll Plaza1
148	DA_TP1_20KM	
149	DA_TP2_10KM	Toll Plaza 2
150	DA_TP2_20KM	
151	DA_TP3_10KM	Toll Plaza3
152	DA_TP3_20KM	
153	DA_TP4_10KM	Toll Plaza 4
154	DA_TP4_20KM	
155	Central Delhi	Delhi
156	East Delhi	
157	New Delhi	
158	North Delhi	
159	North East Delhi	
160	North West Delhi	
161	South Delhi	
162	South West Delhi	
163	West Delhi	
164	Agra	Uttar Pradesh
165	Allahabad	
166	Aligarh	
167	Ambedkar Nagar	
168	Auraiya	
169	Azamgarh	
170	Barabanki	
171	Budaun	
172	Bagpat	
173	Bahraich	
174	Bijnor	
175	Ballia	
176	Banda	
177	Balrampur	
178	Bareilly	
179	Basti	
180	Bulandshahr	
181	Chandauli	
182	Nagar	
183	Chitrakoot	
184	Deoria	
185	Etah	
186	Kanshi Ram Nagar	
187	Etawah	
188	Firozabad	
189	Farrukhabad	
190	Fatehpur	
191	Faizabad	
192	Gautam Buddh Nagar	
193	Gonda	
194	Ghazipur	
195	Gorakhpur	
196	Ghaziabad	
197	Hamirpur	
198	Hardoi	
199	Mahamaya Nagar	
200	Jhansi	
201	Jalaun	
202	Jyotiba Phule Nagar	
203	Jaunpur district	
204	Dehat)	
205	Kannauj	
206	Kanpur	
207	Kaushambi	
208	Kushinagar	
209	Lalitpur	
210	Lakhimpur Kheri	
211	Lucknow	
212	Mau	
213	Meerut	
214	Maharajganj	
215	Mahoba	
216	Mirzapur	
217	Moradabad	
218	Mainpuri	
219	Mathura	

Zone	Zone Name	Region
220	Muzaffarnagar	Uttar Pradesh
221	Panchsheel Nagar district (Hapur)	
222	Pilibhit	
223	Shamli	
224	Pratapgarh	
225	Rampur	
226	Raebareli	
227	Saharanpur	
228	Sitapur	
229	Shahjahanpur	
230	Sant Kabir Nagar	
231	Siddharthnagar	
232	Sonbhadra	
233	Sant Ravidas Nagar	
234	Sultanpur	
235	Shravasti	
236	Unnao	
237	Varanasi	
238	Andhra Pradesh (AP)	Rest of India
239	Vijayawada	
240	Bihar (BR)	
241	Patna	
242	Chhattisgarh (CG)	
243	Raipur	
244	Goa (GA)	
245	Himachal Pradesh (HP)	
246	Simla	
247	Jammu and Kashmir (JK)	
248	Kashmir	
249	Jammu	
250	Jharkhand (JH)	
251	Ranchi	
252	Kerala (KL)	
253	Trivendrum	
254	Karnataka (KA)	
255	Bengaluru	
256	Madhya Pradesh (MP)	
257	Bhopal	
258	Gwalior	
259	Odisha (OR)	
260	Bhubaneshwar	
261	Punjab (PB)	
262	Amritsir	
263	Tamil Nadu (TN)	
264	Chennai	
265	Telangana	
266	Hyderabad	
267	Uttarakhand (UK)	
268	Dehradun	
269	West Bengal (WB)	
270	Kolkata	
271	North East States	

HOSUR TO KRISHNAGIRI (KM 33.130 TO KM 93.000) SECTION OF NH-7 IN THE STATE OF TAMIL NADU



TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

DEC 2016

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HOSUR TO KRISHNAGIRI (KM 33.130 TO KM 93.000) SECTION OF NH-7 IN THE STATE OF TAMIL NADU

TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

DEC 2016

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ABBREVIATIONS

AADT	-	Annual Average Daily Traffic	**NHAI**	-	National Highway Authority of India
BOT	-	Build Operate Transfer	**NHDP**	-	National Highways Development Project
CAGR	-	Compound Annual Growth Rate	**NSDP**	-	Net State Domestic Product
CTV	-	Classified traffic volume	**O&M**	-	Operation & Maintenance
DBFOT	-	Design, Build, Finance, Operate & Transfer	**PCDP**	-	Per Capita Domestic Product
EME	-	Earth Moving Equipment	**PCI**	-	Per Capita Income
GDP	-	Gross Domestic Product	**PCU**	-	Passenger Car Unit
GSDP	-	Gross State Domestic Product	**PSC**	-	Pre-stressed Concrete
HCM	-	Heavy Construction Machinery	**RCC**	-	Reinforced cement concrete
HCV	-	Heavy Commercial Vehicle	**RHS**	-	Right Hand Side
HTMS	-	Highway Traffic Management System	**SH**	-	State Highway
IRC	-	Indian Road Congress	**TP**	-	Toll Plaza
IRR	-	Internal Rate of Return	**WPI**	-	Wholesale Price Index
LCV	-	Light Commercial Vehicle	**SIR**	-	Special Investment Region
LHS	-	Left Hand Side	**c.**	-	Circa
LGV	-	Light Goods Vehicle	**ROB**	-	Railway Over Bridge
MAV	-	Multi Axle Vehicle	**MDR**	-	Major District Road
MORTH	-	Ministry of Road Transport and Highways	**ODR**	-	Other District Road
NH	-	National Highway	**CA**	-	Concession Agreement
PCC	-	Plain Cement Concrete	**RMT**	-	Running Meter
CR	-	Coarse Rubble			

CHAPTER 1
INTRODUCTION

1.1 Background

The Government of India through National Highway Authority of India (NHAI) embarked upon a program to enhance the traffic capacity and safety for efficient transportation of goods as well as passenger traffic on National Highway Sections under NHDP Phase V. Under Phase V NHAI has planned to convert 6,500 km of existing 4-lane National Highways into 6-lane National Highway. Sections envisaged under 6-laning comprise the Golden Quadrilateral section (5,700 km) and some other sections which are 800 km in length.

The project under consideration, Hosur - Krishnagiri section of NH-7 from Km 33.130 to km 93.000 is one such road project NHAI intended to implement on a BOT basis in the DBFOT format. Project has concession period of 24 years. Project achieved COD on 7th June 2011. The Project has been commissioned and is currently in the operation / maintenance phase. A provisional certificate of completion was issued on 5th April 2016.

1.2 Objective of the Study

M/s Reliance Infrastructure InvIT Fund has engaged GMD Consultants to assess the future traffic and toll potential of project along with related operation & maintenance expenditure involved.

This report named as "***Toll Revenue and O&M Cost Projection Report***" mainly focuses on traffic and O&M aspects of the project. Other parameters like competing road, area developments etc. have been considered from a traffic development point of view.

1.2.1 Scope of Services

The broad scope of work covered in the assignment is as follows

a) Analysis of Traffic Growth
b) Toll Rate Growth
c) Revenue Forecasting
d) Operation and Maintenance Cost Projections

The Concessionaire has provided basic traffic data and other project details based on which the above analysis has been carried out.

CHAPTER 2
PROJECT DETAILS

2.1 Project Corridor

The project corridor is one of the busiest route (NH-7) connecting north of India to Deccan and to south. It forms the part of main connectivity network joining commercial hubs like Hyderabad, Bengaluru and down south up to Kanyakumari.

The project corridor section located in Tamil Nadu state starts from Karnataka-Tamil Nadu state border at km 33.130 near Hosur which is a town on outskirt of Bangalore, passes through Hosur industrial area, Shoolagiri and ends at outskirts of Krishnagiri (Km 93.000). The entire project corridor runs through one district viz., Krishnagiri of Tamil Nadu state. Hosur and Krishnagiri are the only two major urban centers in the entire length of project corridor.

The project corridor traverses through rolling terrain predominantly. In few sections viz., Km 49/0-52/0, 63/3-63/6, 68/2-69.25 and Km 72/3-76/2, it traverses through mountainous terrain. The project corridor also runs through reserve forest in five sections for a total length of around 7-Km approximately.

Figure 2.1 to 2.3 shows the location of the project corridor at country/state/district levels respectively.

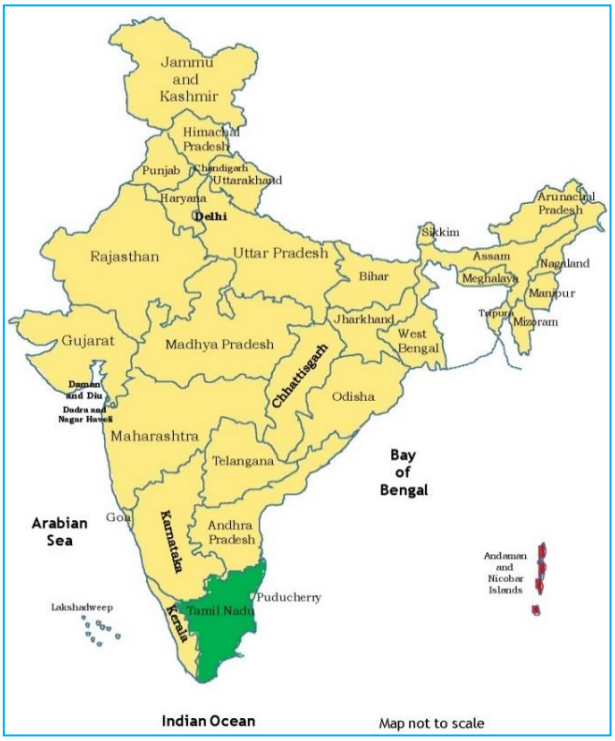


Figure 2-1 : Index Map of Project Highway - Country Level

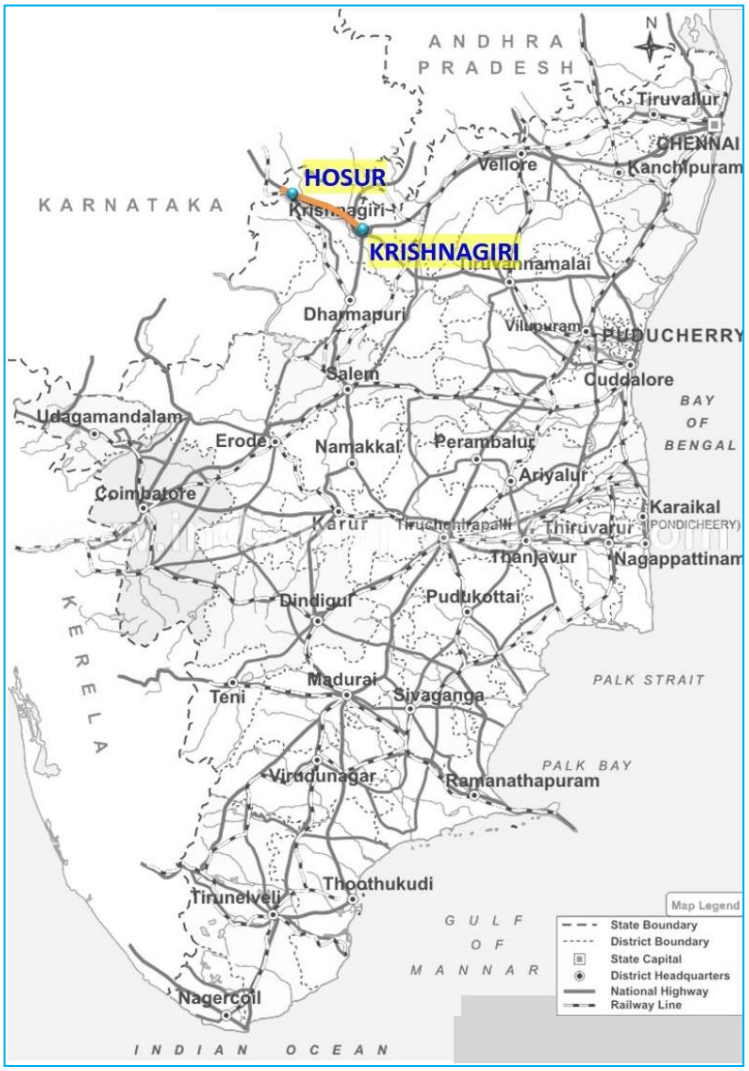


Figure 2-2 : Index Map of Project Highway - State Level

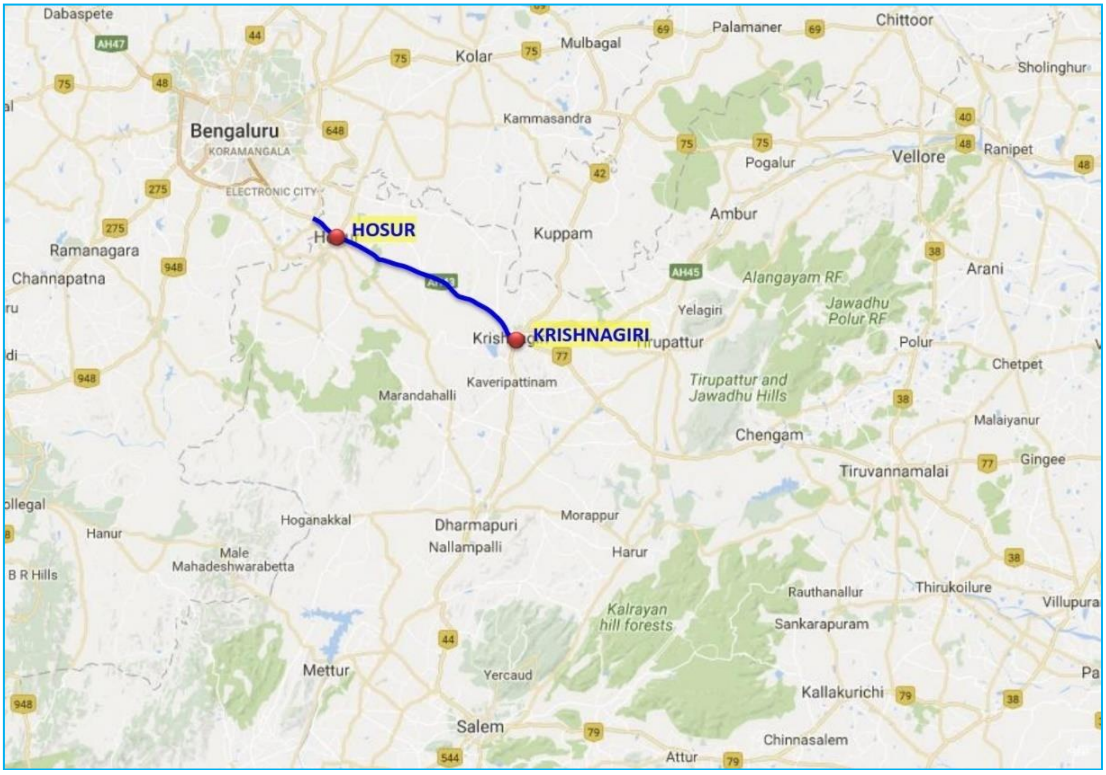


Figure 2-3 : Location Map of the Project Road

2.2 Corridor Description

NH-7 is a major North-South National Highway in India that runs through the states of Uttar Pradesh, Madhya Pradesh, Maharashtra, Telangana, Andhra Pradesh, Karnataka, and Tamil Nadu. The highway connects several important Indian cities such as Varanasi, Rewa, Jabalpur, Nagpur, Adilabad, Nirmal, and Armoor in (Nizamabad), Kamareddy, Hyderabad, Kurnool, Anantapur, Chikkaballapur, Bangalore, Krishnagiri, Salem, Madurai, Tirunelveli and Kanyakumari. A major part of NH 7 falls on the North-South Corridor of NHDP.

Abutting land along the project corridor from Hosur to Krishnagiri is a mix of agriculture, urban and semi-urban land use. Hosur being under influence of extension of Bangalore on south provides urban dominance.

The project area passes through following built up area:

- From Km 33.130 to Km 43.900 - Length 10.770 - Hosur
- From Km 88.800 to Km 93.000 - Length 4.200 - Krishnagiri

2.3 Salient Features

The salient features of the project corridor are as given below;

- Total Length of Project = 59.87 Kms
- Major Bridges = 01 Nos.
- Minor Bridges = 13 Nos.
- Flyovers = 05 Nos.
- Culverts = 143 Nos.
- Vehicular Underpass = 05 Nos.
- Pedestrian Under passes = 08 Nos.
- Major Intersections = 9 Nos.
- Service Road = 27.19 Kms.
- Bus Bays = 66 Nos.
- Truck Lay-byes = 05 Nos.
- Toll Plaza Complex = 1 Nos.

The details of the structures are given below.

2.3.1 Major Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-1 : List of Major Bridges

Sr. No.	Chainage (Km)	Sides	Span Arrangement (m)	Total width of structure (m)	Type of Superstructure	Type of Substructure and Foundation
1	77.950	RHS	6 x 20	13.50	PSC Pretension 5- Girder System	RCC Wall, RCC Open
		LHS	6 x 20	12.10	-	-

2.3.2 Flyovers & ROB's

The list of flyovers & ROB's along the project corridor is as given below

Table 2-2 : List of Flyovers along Project Corridor

Sr. No.	Chainage (Km)	Sides	Span Arrangement (m)	Total Width of Structure (m)	Remarks
1	39.000	Both	3 x 20	2 x 13.5 + Median	Hosur Urban Area
2	40.950	Both	3 x 20	2 x 13.5 + Median	Hosur Urban Area
3	40.200	Both	18 x 21 + 40 + 4 x 21	12.10	-
4	89.315	Both	6 x 20 + 40 + 12 x 20	12.10	-
5	92.350	Both	10 x 20 + 40 + 7 x 20	1 x 13.5 + Median + 12.1	Krishnagiri

2.3.3 Minor Bridges

The list of Minor Bridges along the project corridor is as given below

Table 2-3 : List of Minor Bridges along Project Corridor

Sr. No.	Chainage (Km)	Side	Span Arrangement (m)	Total width of structure (m)	Remarks
1	51.535	Both	6.8+6.6+6.56	12.10	On Main CW
2	54.283	Both	2 x 7	12.10	On Main CW
3	67.800	Both	1 x 8.6	12.10	On Main CW
4	71.995	Both	1 x 9.48	12.10	On Main CW
5	72.126	Both	3 x 5.7	12.10	On Main CW
6	83.880	Both	2 x 6.75	12.10	On Main CW
7	33.260	Both	1 x 10.5	13.50	On Main CW
8	38.500	Both	2 x 9.62	13.50	On Main CW
9	47.000	Both	3 x 14.95	13.50	On Main CW
10	68.309	LHS	2 x 20.65	13.50	On Main CW
11	33.260	Both	1 x 8.73	9.50	On SR
12	38.500	Both	2 x 9.62	9.50	On SR
13	47.000	Both	3 x 14.95	9.50	On SR
14	68.309	LHS	4 x 10.25	7.65	On SR

2.4 Project Corridor Illustration

Following photographs illustrate project section along the corridor

Figure 2-4 : Photographs showing Project Corridor

CHAPTER 3
TRAFFIC SURVEYS AND ANALYSIS

3.1 Traffic Surveys

During the course of our work we have collected required information for project corridor to understand the general traffic and travel characteristics on the corridor.

The following traffic data has been collected for project.

- Classified traffic volume counts at toll plaza location on Hosur - Krishnagiri section of NH-7 for base year 2015-16
- Local Component of traffic
- Component of Return Journey
- Component of Monthly Pass Journey

The main objective of the traffic data analysis is to:

- Determine the existing traffic movement characteristics of project
- Establish base year traffic
- Identification of travel patterns and modal split of project traffic
- Deriving growth factors for traffic forecasting
- Estimation of corridor traffic including traffic diversion if any
- Preparation of revenue model and projection of revenue as per toll policy for various scenarios

Project can be divided into following homogenous sections from traffic point of view.

These sections can be

- Hosur to Shoolagiri
- Shoolagiri to Krishnagiri

Table 3-1 below lists provides details of locations from where traffic details have been collected.

Table 3-1 : Traffic Data Details

Sr. No.	Location	CTV	Single Journey Traffic	Multiple Journey	Monthly Pass	Local Traffic
1	Km 87.500 Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016

The locations of each of the traffic survey are illustrated in Figure 3-1.

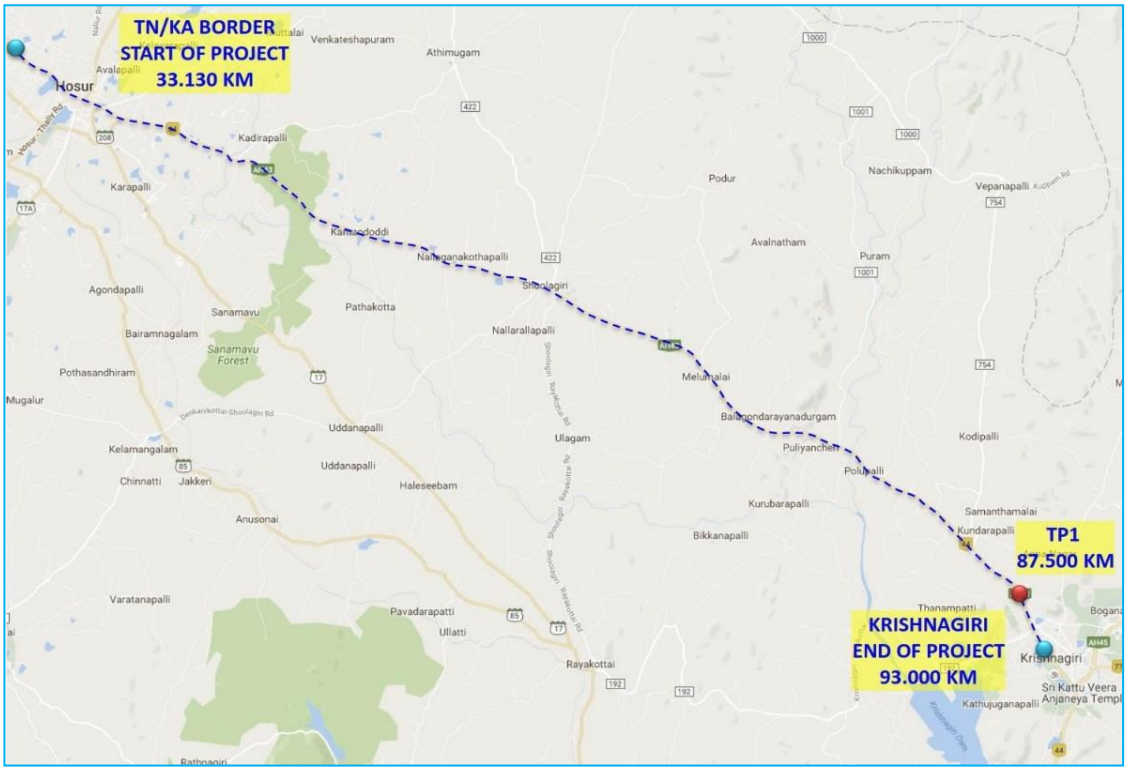


Figure 3-1 : Toll Plaza Locations

3.2 Classified Traffic Volume Count

The objective of conducting a Classified Traffic Volume Count is to understand the traffic flow pattern including modal split on a roadway. The Classified Traffic Volume Count survey has been provided by concessionaire of project highway from actual traffic data gathered at toll plaza locations based on monthly data shared with NHAI. These locations are indicated in ***Figure 3-1*** and listed in ***Table 3-1***.

The vehicles can broadly be classified into fast moving / motorized and slow moving / non-motorized vehicles, which can be further classified into specific categories of vehicles. The groupings of vehicles are further segregated to capture the tollable vehicle categories specifically and toll exempted vehicles are counted separately. The detailed vehicle classification system as per IRC: 64-1990 is given in ***Table 3-2***.

Table 3-2 : Vehicle Classification System

Vehicle Type	
Auto Rickshaw	
Passenger Car	Car, Jeep, Taxi & Van (Old / new technology)
Bus	Mini Bus
	Standard Bus
Truck	Light Goods Vehicle (LCV)
	2 – Axle Truck
	3 Axle Truck (HCV)
	Multi Axle Truck (4-6 Axle)
	Oversized Vehicles (7 or more axles)
Other Vehicles	Agriculture Tractor, Tractor & Trailer

Source - IRC: 64 – 1990

However, since project highway is currently under toll operation, the data collected is corresponding to category of tollable vehicles. Following are the type of vehicles as per concession agreement.

- Car / Jeep / Van
- LCV
- Truck / Bus
- Multi Axle (MAV)
- Oversize Vehicle

3.3 Traffic Characteristic

Toll revenue of project highway does not solely depend on traffic volume. There are certain characteristics of traffic which have substantial potential to affect toll collection. Component of local traffic, component of passenger and commercial traffic, portion of return journey traffic, % of monthly pass traffic are some of such characteristics of traffic. These will be discussed in subsequent sections of report.

3.3.1 Traffic Data

Project concessionaire has provided Traffic data for base year 2015-16 as under at the toll plaza -

Table 3-3 : Traffic Data at Toll Plaza at Km 87.500

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	14865
2	LCV	3232
3	Truck/Bus	3720
4	Multi Axle	5507
	Total	**27324**

Volume of oversize vehicle was negligible

This data was then bifurcated to various components like through local, monthly, return journey etc. category. Same is discussed in detail in following section.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-4 : Historical Tollable Traffic at Toll Plaza at Km 87.500

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	3,818,634	4,247,747	4,932,633	2,435,305	2,625,037	14%
LCV (2)	991,440	1,051,690	1,120, 137	564,419	576,325	6%
Bus/Truck (3)	1,297,224	1,413,598	1,314,589	664,205	677,550	1%
Multi-axle (4)	1,740,169	2,130,663	1,927,308	986,349	993,323	5%
Total	7,847,466	8,843,698	9,294,667	4,650,278	4,872, 235	9%

* Toll operations suspended for 16 days due to floods in Dec 2015

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project increased to 54,941 PCUs in 2016 from 46,653 PCUs in 2014, representing a CAGR of 9%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-5 : Historical AADT at Toll Plaza at Km 87.500

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	10,462	11,638	14, 093	13,308	14,344	16%
LCV (2)	2,716	2,881	3,200	3,084	3,149	9%
Bus/Truck (3)	3,554	3,873	3,756	3,630	3,702	3%
Multi-axle (4)	4,768	5,837	5,507	5,390	5,428	7%
Total	21,500	24,229	26,556	25,411	26,624	11%
Total PCUs	46,653	53,847	54,941	53,077	54,602	9%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the HK Project's total traffic mix, 50%, 12%, 16% and 22% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 53%, 12%, 15%, and 21% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of HK's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the HK Project's by category of vehicles for the financial year 2014, 2015 and 2016 and six months ended September 30, 2015 and 2016:

Table 3-6 : Historical Toll Revenue at Toll Plaza at Km 87.500

Category	(in Rs. Millions) For the FY ended March 31			(in Rs. Millions) For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	188.5	225.9	263.2	129.1	138.6	18%
LCV (2)	81.1	90.3	97.3	49.0	52.4	10%
Bus/Truck (3)	198.8	233.5	220.2	111.5	116.0	5%
Multi-axle (4)	490.1	618.5	592.3	302.9	316.0	10%
Total	958.5	1,168.2	1,173.0	592.5	623.0	11%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

Table 3-7 : Gross Monthly Toll Revenue at Toll Plaza at Km 87.500

Month	2016 (Rs. in millions)
April	107.4
May	112.0
June	107.4
July	108.2
August	110.5
September	80.1

3.4 Data Analysis

3.4.1 Analysis of Traffic Volume Count

Understanding the character of existing traffic forms the basis of traffic forecast. The various vehicle types having different sizes and characteristics can be converted into a

single unit called Passenger Car Unit (PCU). Passenger Car equivalents for various vehicles are adopted based on recommendations of Indian Road Congress prescribed in "IRC-64-1990: Guidelines for Capacity of Roads in Rural areas". The adopted passenger car unit values (PCU) are presented in table below

Table 3-8 : PCU Factors Adopted for Study

Vehicle Type	PCUs
Car	1.0
Mini Bus	1.5
Standard Bus	3.0
LCV/LGV	1.5
2 Axle Truck	3.0
3 – 6 Axle Truck	4.5
MAV	4.5
Auto Rickshaw	1.0
Van/Tempo	1.0
Agriculture Tractor with Trailer	4.5
Agriculture Tractor without Trailer	1.5

Source: IRC: 64-1990

Traffic volume at each toll plaza was converted to PCU and same is presented as under

Table 3-9 : Traffic in PCU at Project Stretch

Toll Plaza Location	Traffic No	PCU	PCU Index
87.500	27324	55653	**2.04**

It can be observed from above that project traffic has PCU index above 2 which is a fair indicator of good mix being split between commercial and urban traffic.

3.4.2 Components of Traffic

As discussed previously, components of traffic volume play an important role in determining project revenue. A larger component of commercial traffic with higher axle configuration adds to project revenue positively. Similarly, a larger component of local traffic affects the project revenue potential negatively.

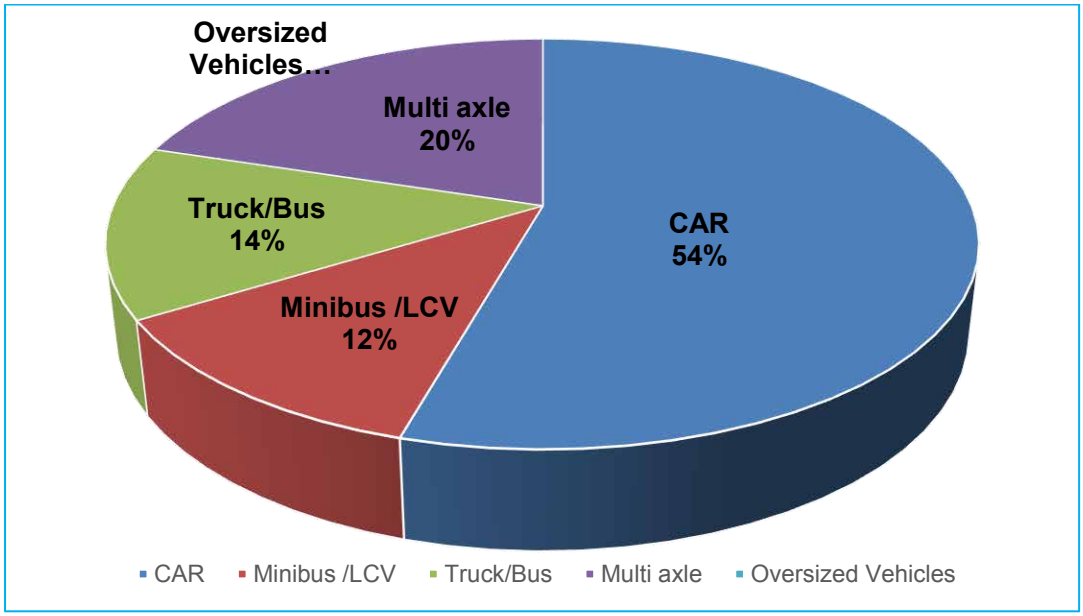


Figure 3-2 : Modal Split of Traffic at Toll Plaza 87.500

It is observed that car traffic forms 54% of total traffic at toll plaza location Km 87.500. Share of LCV and bus / truck was 12% and 14% respectively. Multi axle consists of 20% of total traffic. Over all about 45% of traffic is commercial in nature. Higher percentage of urban traffic is due to the project corridor being under influence zone of Bangalore urban expansion.

Another important bifurcation of traffic is components of traffic with respect to various type of toll ticketing like

1. Single Journey
2. Multi Journey
3. Monthly Pass (Local and General)

Following table provides numbers of vehicle falling in each of above category on base year 2015-16

Table 3-10 : Journey Type Bifurcation of Traffic at KM 87.500

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	54.3%	43.8%	0.5%	1.4%	100.0%
Minibus /LCV	64.2%	34.9%	0.0%	0.9%	100.0%
Truck/Bus	42.4%	27.3%	0.0%	30.4%	100.0%
Multi axle	84.4%	15.2%	0.0%	0.4%	100.0%

Following figure illustrate component of each type of journey in graphics for better understanding.

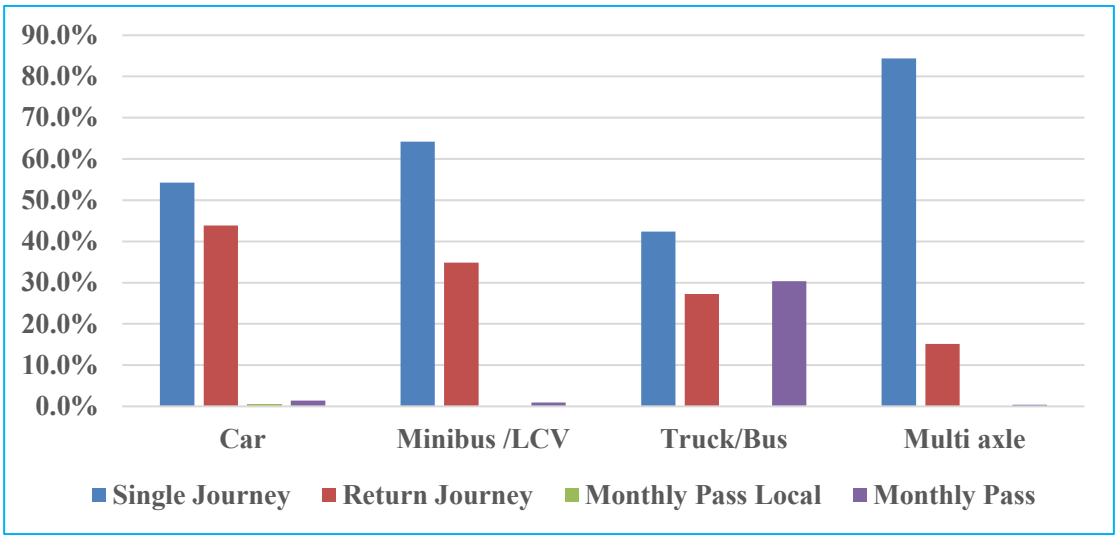


Figure 3-3 : Journey Type Bifurcation at Toll Plaza 87.500

Cars and buses have good component of return journey. It is due to proximity of stretch to urban areas. Over all return journeys share about 30% of the total traffic. This reflects presence of strong commercial and urban centers on either end of project road. Multi axle have predominant share of single journey as expected on rural highways.

3.4.3 Seasonal Variation in Traffic

Traffic on highway does not remain uniform throughout the year. Festivals, rains etc. are factors for such variation. Seasonal variation of traffic was worked out from the data available. Following figure depict monthly variation of AADT.

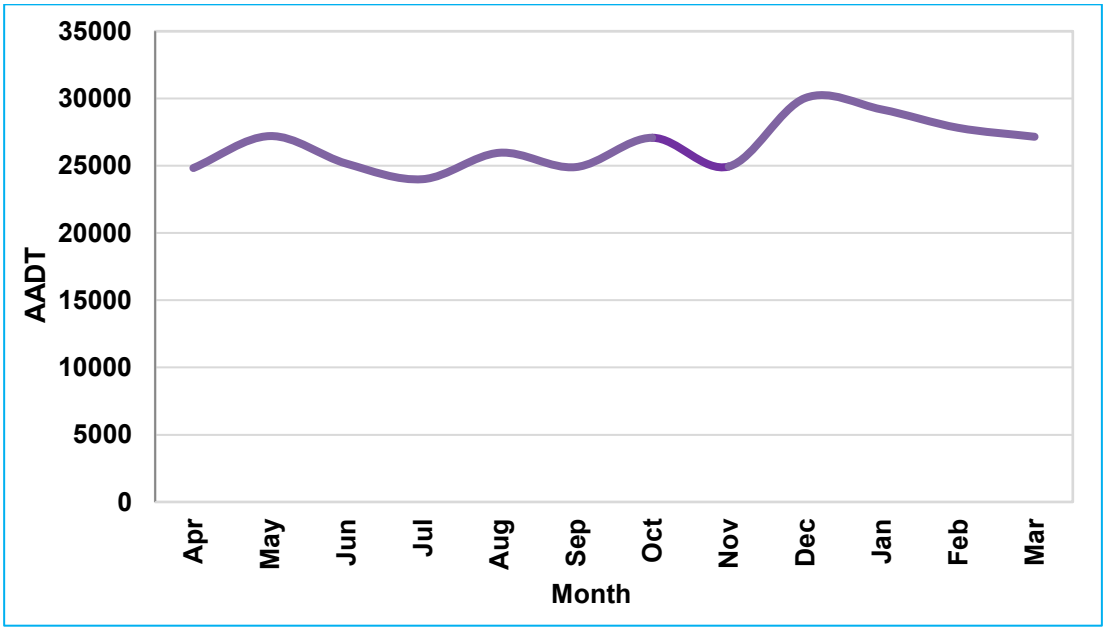


Figure 3-4 : Seasonal Variation of Traffic at Project Highway

It is observed that traffic volume reduces in the rainy season from August to November and then picks up after November during the harvest season. Maximum Season correction factor varies between 0.95 to 1.07.

3.5 Secondary Data Collection

There are several other factors which have substantial impact on traffic pattern and growth on any project corridor. Following are some of such important factors

- Industrial development around project corridor and its catchment
- Educational infrastructure along project corridor
- Demographic pattern
- Urban area development
- Tourism potential
- Upcoming major infrastructural or industrial projects
- Special industry in project corridor
- Overall trends of economic growth local as well as national / regional

Hence in addition to traffic details on project site, secondary data was also collected from the various sources. Typical secondary data includes the following:

1. Vehicle registration data of regional and national level.
2. Economic Data
    a) GDP
    b) NSDP
    c) Population Growth
    d) Per Capita Income growth
    e) Industrial Growth
    f) Special Industry Potential
    g) Regional and National development vision / plan
    h) Any other relevant data
3. Competing road network.

We have collected and utilized such underlying data in the study to estimate the growth and risk factors for traffic along the project corridor.

CHAPTER 4
INFLUENCE ZONE TRANSPORT NETWORK ANALYSIS

4.1 Introduction

Highway corridors behave like integrated circuit network and more often than not every road is connected to various networks having different origin and destinations. Traffic running on these networks behave like fluid and flows on network on alignment of least friction.

Following Factors can be considered as major contributors to friction on transportation network

- Travel Speed / Travel Time,
- Geometric deficiencies,
- Configuration of road,
- Riding comfort,
- Traffic delays,
- Length of road,
- Built up passing through,
- Terrain,
- Facilities

Following set of urban origin and destination have been selected for this analysis

- Hosur to Shoolagiri
- Shoolagiri to Krishnagiri

Following figures depict competing road network of above pair of origin & destinations.

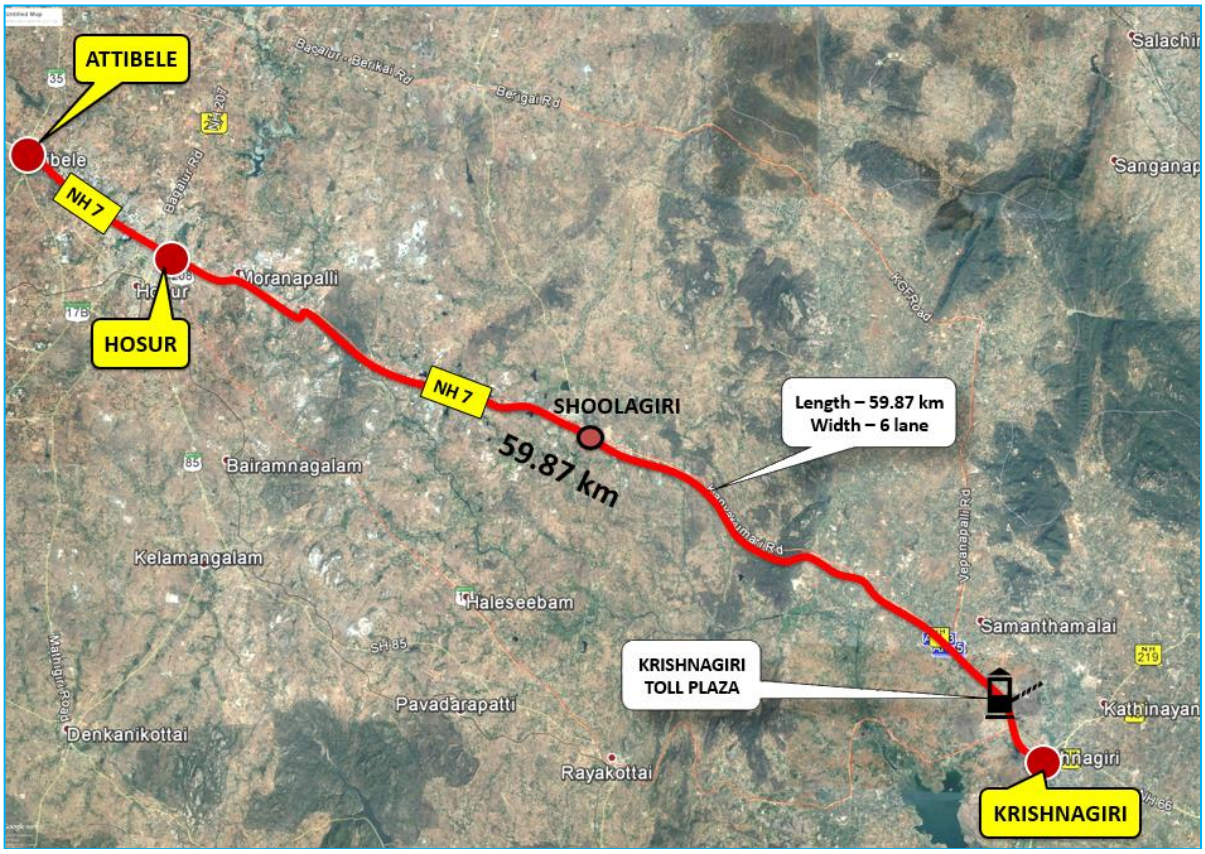


Figure 4-1 : Project Alignment Hosur to Krishnagiri

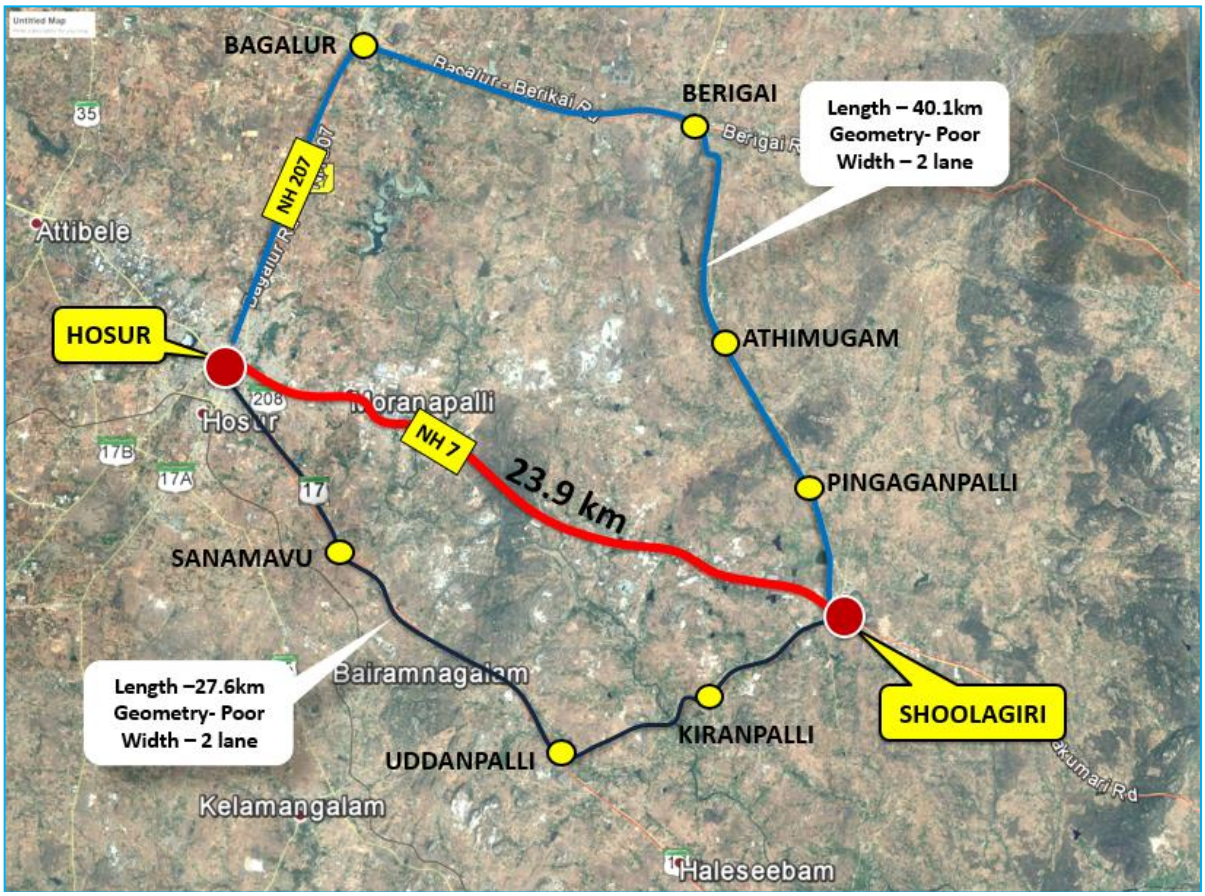


Figure 4-2 : Competing Roads Hosur to Shoolagiri

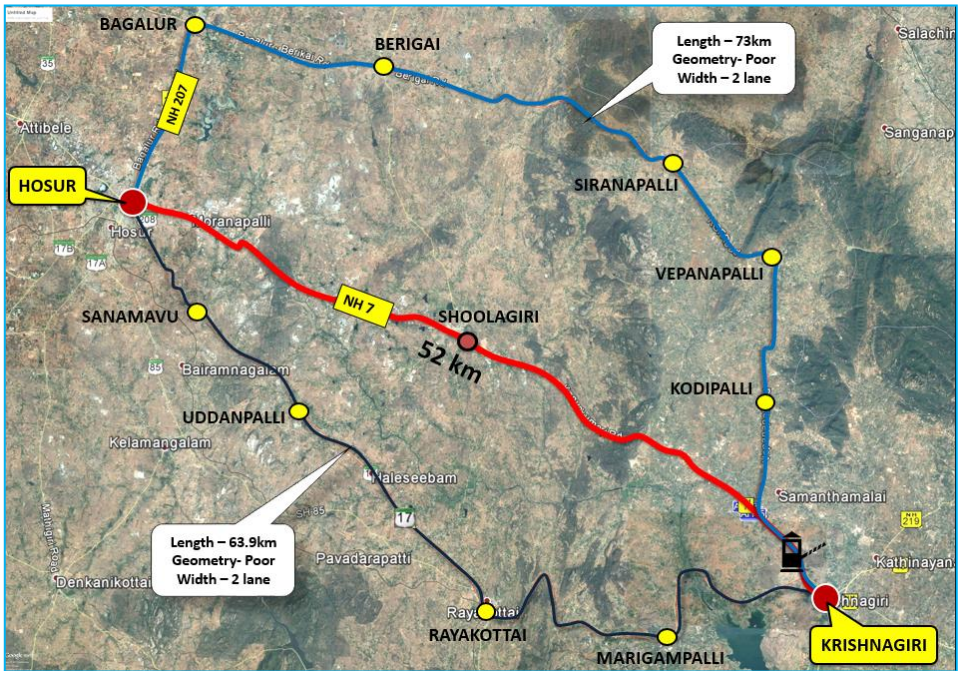


Figure 4-3 : Competing Roads Hosur to Krishnagiri

It can be observed that the project highway is the spine of the corridor between Hosur to Krishnagiri. There are several local roads and state highways which if integrated can form a competing road network. However most of these roads run across project corridor covering much longer distances for the same pairs of origin and destination as compared to project highway. Moreover, the geometry and quality of road is inferior as compared to project section of NH-7, adding to travel time and consequently the costs. These have sharp turns, bottlenecks and patches of damaged pavement. The following table provides quantity cum quality analysis of competing roads.

Table 4-1 : Competing Roads Details

Sr. No	Route Details	Designation	Length (Km)	Avg. Speed (KMPH)	Time Taken (Min)	Observations
1	Hosur to Shoolagiri via competing road (NH-207- Bagalur- Berigai- Athimugam Road) on East side	Competing Road	40.1	40	60	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-7 not expected
	Hosur to Shoolagiri via Project Road NH-7	**Project Road**	**23.9**	**70**	**20**	
	Hosur to Shoolagiri via competing road (NH-17 -Uddanpalli- Kiranpalli Road) on West side	Competing Road	27.6	40	41	

Sr. No	Route Details	Designation	Length (Km)	Avg. Speed (KMPH)	Time Taken (Min)	Observations
2	Hosur to Krishnagiri via competing road (Bagalur- Berigai- Siranapalli- Vepanapalli- Kodipalli Road) on East side	Competing Road	73	40	110	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-7 not expected
	Hosur to Krishnagiri via Project Road NH-7	**Project Road**	**52**	**70**	**45**	
	Hosur to Krishnagiri via competing road (NH-17 - Rayakottai- Marigampalli) on West side	Competing Road	63.9	40	96	

As can be observed from table above, the point regarding significant time saving and consequently cost savings for traffic which align to the project highway is reaffirmed. Time and fuel saving is a major criterion for selection of routes. Under these circumstances, it is not envisaged that commercial or passenger traffic would switch to competing roads from the project road. Further, it may be noted that since the project highway has already been commissioned and has a tolling history, the current traffic traversing the project corridor already factors in traffic diversion (if any) that may have taken place.

CHAPTER 5
GROWTH OF TRAFFIC ON PROJECT HIGHWAY

5.1 Introduction

Traffic growth is a function of the interplay of a number of contributory factors such as National economy, Government policy, socio-economic conditions of the people, and changes in land uses along the project corridor precincts etc. As these factors have several uncertainties associated with them, forecasts of traffic are dependent on the forecasts of factors such as population, gross domestic product (GDP), vehicle ownership, per capita income (PCI), agricultural output, fuel consumption etc. Future pattern of change in these factors can be estimated with only a reasonable degree of accuracy and hence the resultant traffic forecast levels may not be precise.

Traffic growth forecast for project corridor Hosur - Krishnagiri section of NH-7 has been carried out taking above factors in to consideration. "**IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**" is established best practice and has been used for traffic growth forecast.

5.2 Trend Analysis

One of the methods of estimation of future rate of traffic growth is to assume the same rate of growth as experienced in the past. However, it may be noted that major influencing factors which reflect Economic conditions such as GDP, agricultural output, industrial output, national policies etc. are susceptible to change over a longer period of time and necessary adjustments need to be made to past trends to account for these changes.

Thus, we have considered the Elasticity model of growth projection which is one of the most widely acceptable methods for traffic forecast and is recommended in **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**.

In this method, past trends of any vehicular data are paired with an economic indicator and a regression analysis is done to yield the economic model of growth. Growth of vehicular traffic varies for different type of vehicle. It is a proven fact that growth patterns for passenger and goods vehicles are different. Traffic growth on any highway typically depends on several economic parameters. The most important and direct parameters are given as under

- Per Capita Income
- Net State Domestic Product (NSDP)
- Population

It is observed that the ownership of a car is more closely related to affordability hence per capita is the index which closely fits with growth of car traffic among other criteria. In similar fashion, following pairs of vehicle type and independent variable can be established for elasticity modeling of growth.

- Car / Jeep – Par Capita Income
- Bus / Minibus – Population
- Trucks / Heavy / Goods Vehicle – NSDP
- Time series data of vehicle (both passenger and goods) Registered in the state of Tamil Nadu is used as the base data for analysis of growth

5.3 Estimation of Traffic Demand Elasticity

Elasticity of traffic demand is defined as the rate at which traffic intensity varies due to change in the corresponding indicator selected. Hence, in order to estimate the elasticity of traffic demand, it is necessary to establish the relationship between the growth in number of given category of vehicle with one of the economic variables considered, such as NSDP, per capita income and population growth. Latest available data for vehicle registration, per capita income, NSDP and population is used in analysis.

As per IRC: 108-1996 the model for estimating elasticity index for the project corridor is of the following form and is as given below:

$$Log\ (P) = k \times Log\ (EI) + A$$

Where,

P = *Number of Vehicles (Mode wise)*

EI = *Economic Indicator*

A = *Regression constant*

k = *Elasticity coefficient (Regression coefficient)*

The elasticity for car and bus (passenger vehicles) is calculated based on Population and Per Capita Domestic Product (PCDP) and the elasticity for trucks is calculated based on the Net State Domestic Product (NSDP).

Following tables and graphs depict regression and elasticity of growth model.

Table 5-1 : Per Capita Income Vs Car

Year	PCI	Car	Log PCI	Log Car	PCI Growth	Average Growth
2004	30062	657339	4.48	5.82		
2005	34126	714978	4.53	5.85	14%	
2006	39166	787085	4.59	5.90	15%	
2007	41314	871917	4.62	5.94	5%	
2008	43193	967310	4.64	5.99	5%	
2009	47394	1080445	4.68	6.03	10%	
2010	53507	1230492	4.73	6.09	13%	
2011	57093	1385143	4.76	6.14	7%	
2012	58360	1549950	4.77	6.19	2%	
2013	62361	1709528	4.79	6.23	7%	8.5%

Regression analysis of same is given in figure below

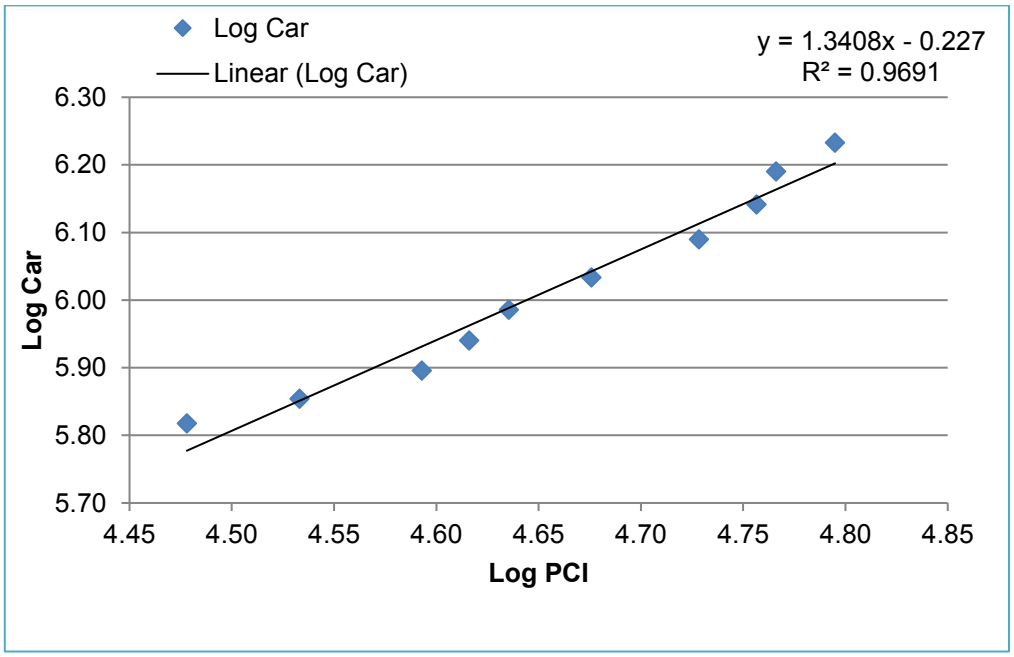


Figure 5-1 : Regression and Elasticity PCI vs. Car – Extrapolation

Table 5-2 : Population Vs Bus

Year	Population	Buses	Log Pop	Log Bus	Pop Growth	Average Growth
2004	64096000	37937	7.81	4.58		
2005	64623000	42109	7.81	4.62	0.8%	
2006	65135000	42999	7.81	4.63	0.8%	
2007	65629000	47765	7.82	4.68	0.8%	
2008	66106000	52617	7.82	4.72	0.7%	
2009	66566000	56338	7.82	4.75	0.7%	
2010	67012000	59240	7.83	4.77	0.7%	
2011	67444000	62725	7.83	4.80	0.6%	
2012	67862000	68096	7.83	4.83	0.6%	
2013	68265000	84488	7.83	4.93	0.6%	0.70%

Regression analysis of same is given in figure below

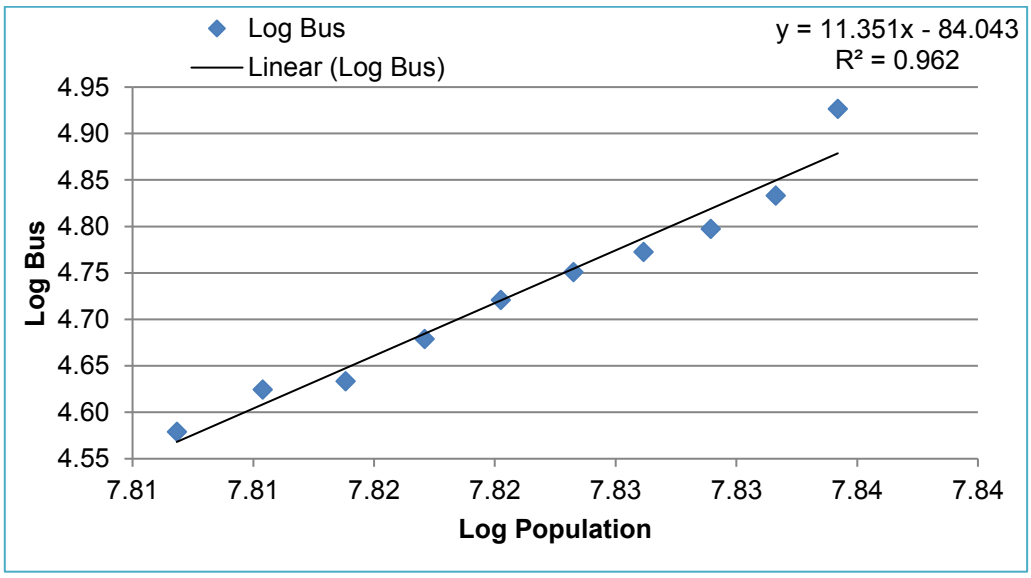


Figure 5-2 : Regression and Elasticity Population vs. Bus – Extrapolation

Elasticity of goods traffic has been worked out by regression analysis with NSDP. Following table represents the data and details.

Table 5-3 : Goods Traffic Vs NSDP

Year	NSDP	Trucks	Log NDSP	Log Truck	NSDP Growth	Average Growth (5 Year)
2004	19364500	220016	7.29	5.34		
2005	22158800	272756	7.35	5.44	14%	
2006	25628600	279984	7.41	5.45	16%	
2007	27234000	340542	7.44	5.53	6%	
2008	28674400	385948	7.46	5.59	5%	
2009	31676000	404326	7.50	5.61	10%	
2010	35996100	433814	7.56	5.64	14%	
2011	38650800	474226	7.59	5.68	7%	
2012	39747100	493564	7.60	5.69	3%	
2013	42718200	544201	7.63	5.74	7%	7.62%

Following figure depict regression analysis and extrapolation.

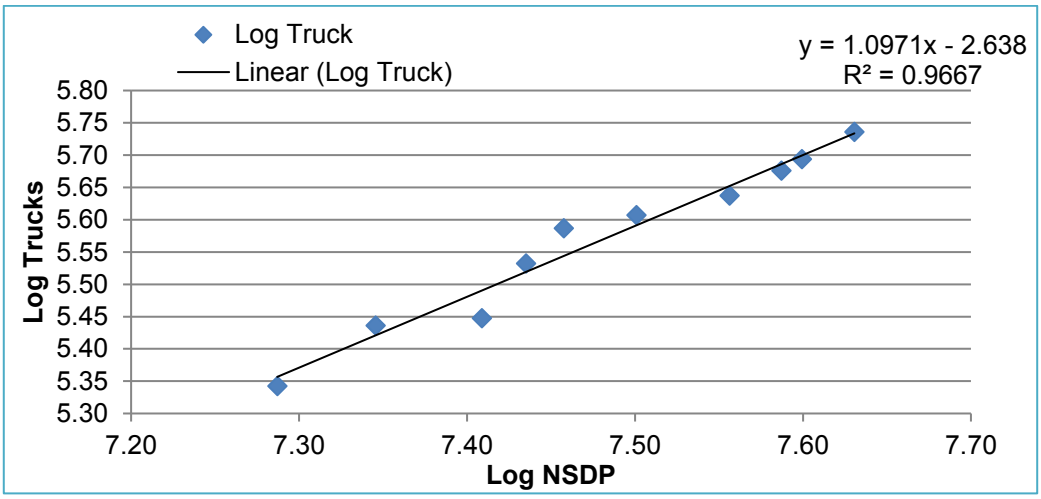


Figure 5-3 : Regression and Elasticity NSDP vs. Goods Traffic – extrapolation

Using the regression analysis above, we have arrived at the elasticity of traffic demand for each class of vehicle to a given change in relevant economic indicators. Average traffic growth of a vehicle class is multiplied by the corresponding elasticity coefficient to arrive at traffic growth. R^2 is statistical measure of how close the data are to the fitted regression line. It varies from 0 to 1. Higher the value of R^2 more representative is the regression model of data.

The results of these analyses for the good fit as reflected by R^2 values are presented in the Table below

Table 5-4 : Summary Regression Analysis - Tamil Nadu

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient (y)	Average Growth	Growth Elastic Model
Tamil Nadu	Car/Jeep	PCI	y = 1.3408x - -0.227	R^2 = 0.9691	1.3408	8.52%	11.43%
	Bus	Population	y = 11.3505x - -84.0434	R^2 = 0.962	11.3505	0.70%	7.98%
	Truck	NSDP	y = 1.0971x - -2.638	R^2 = 0.9667	1.0971	7.62%	8.36%

While the economic model for predicting growth is a good tool, other local, regional, national factors such as proposed developments etc. should also be considered before finalizing growth factors. These factors are discussed in subsequent sections.

Project stretch from Hosur to Krishnagiri is quite close to Karnataka border. A sample study was done by concessionaire in 2011. It was done at toll plaza taking sample from both side traffic. Approximate sample size was 30%. The survey shows that about 30 % of traffic on project stretch has Karnataka link.

Table 5-5 : Other State Traffic Component

State	Car	Mini Bus	Bus	LCV	2A	3A	MAV
Rest of India	1%	3%	0%	1%	2%	5%	2%
Maharashtra	0%	0%	0%	3%	5%	7%	5%
Gujarat	0%	0%	0%	0%	2%	2%	1%
Andhra Pradesh	0%	0%	0%	1%	1%	1%	0%
Karnataka	31%	35%	28%	18%	22%	17%	21%
Tamil Nadu	67%	62%	70%	68%	63%	69%	66%
Pondicherry	1%	0%	1%	2%	2%	2%	1%
Kerala	1%	0%	0%	1%	2%	3%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

In such case, it would be necessary to consider the growth perspective of Karnataka also.

A regression model for Karnataka traffic growth was prepared for period from 2005-6 to 2014-15. Summary of same is given in following table.

Table 5-6 : Summary Regression Analysis- Karnataka

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient (y)	Average Growth	Growth Elastic Model	Remarks
Karnataka	Car/Jeep	PCI	y = 1.1164x - 2.7365	R^2 = 0.9969	0.853	14.30%	12.20%	Excellent Regression
	Bus	Population	y = 1.8755x - 10.293	R^2 = 0.956	7.197	1.05%	7.54%	Excellent Regression
	Truck	NSDP	y = 1.1164x - 2.7365	R^2 = 0.8539	1.420	6.53%	9.27%	Good Regression

Impact of other state traffic is suitably taken in to recommended growth rates for project traffic.

5.4 Analysis of Historic Traffic Data

Historic traffic data forms useful information for any highway project. It provides useful information for establishing past trend of growth. Project stretch of Hosur to Krishnagiri has been commissioned and it under tolled operation June 2011.

The historical data available for corridor from 2012 to 2016 was analyzed. It exhibits steady growth in terms of passenger traffic. While as growth of commercial traffic is lesser as compared to passenger traffic. It may be due to ban on mining in state which has recently been lifted in 2015. Following table presents overall growth of traffic on project corridor from year 2012 to year 2016.

Table 5-7 : Past Traffic Trends

Type of Vehicle	Year 2012-13	Year 2015-16	Overall Growth % (CAGR)
Car	9814	14093	12.82%
LCV	2713	3200	5.66%
Bus/Truck	3517	3720	1.89%
MAV	4876	5507	4.14%

As recommended by **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways** "*This (historic growth) for short term projects but for long term projections*

it would be erroneous for assume that the past rate of growth would prevail for long time in future. Economic conditions are bound to change over long period and it would be necessary to modify the rate of growth accordingly".

It is thus clear that while developing a futuristic growth projections for highway projects, long terms factors like growth of economy and upcoming developments in area have greater impact than past trends. Considering above, both historic trend and economic factors (elasticity) have been considered suitably to work out recommended growth rate of traffic on project corridor.

5.5 Other Factors Influencing Growth

There are many factors which have impact on traffic growth. As discussed previously these factors can be economic, social, educational, and industrial.

Potentiality of such factors for project highway is discussed as under.

ECONOMY

After witnessing a slowdown during 2008-09, the economy recovered in 2009-10, and a very high growth rate of GDP was recorded in 2010. Following figure depicts growth of GDP in India during the period.

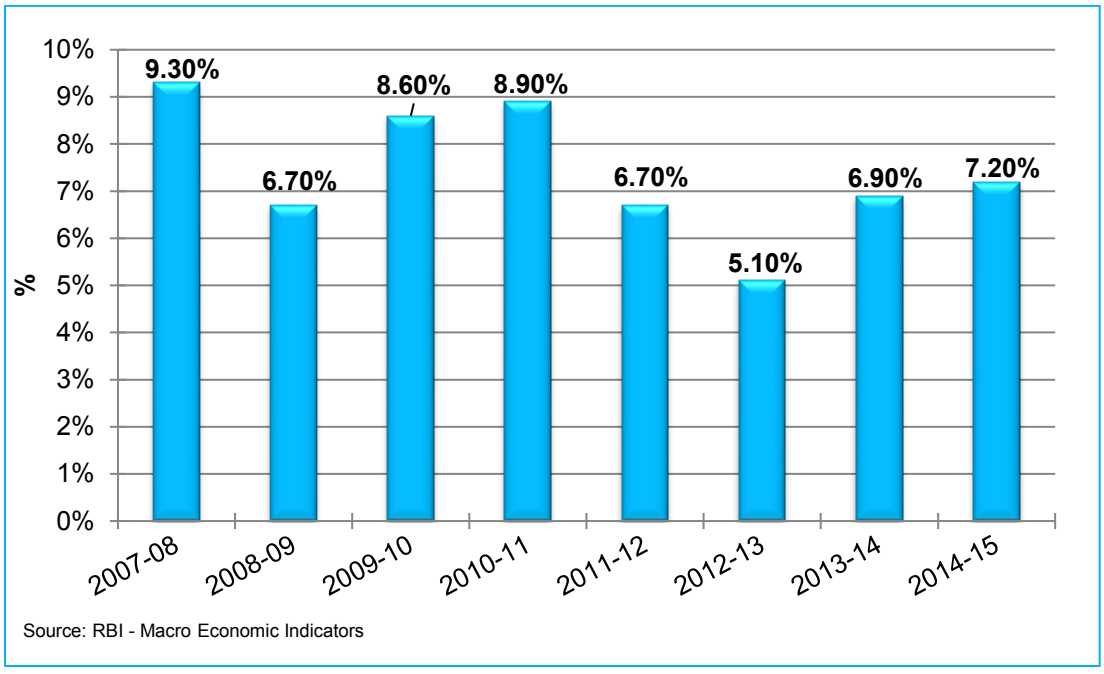


Figure 5-4 : Growth of GDP in India

After recording an all impressive growth of 8.9% in 2011, GDP declined between FY11 and FY14. GDP growth in 2014-2015 was pegged at 7.2% and is expected to be in the range of 7-8% going forward.

5.6 Developments Along and Around the Project Corridor & State

5.6.1 Developments around Hosur Area

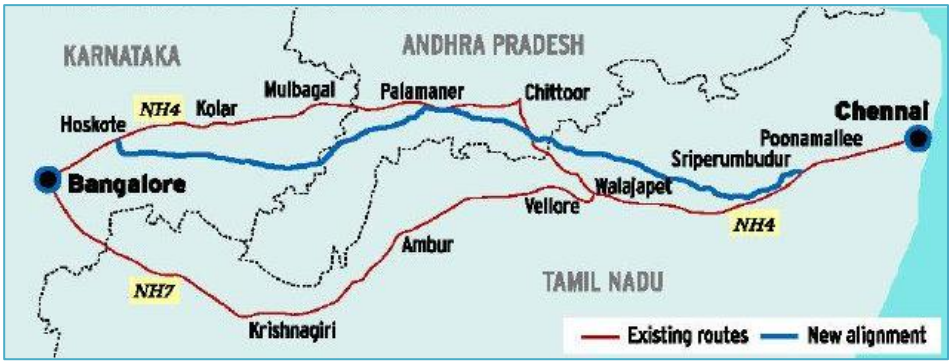
Hosur is an Industrial town and a municipality in Krishnagiri district in the Indian state of Tamil Nadu. It is the largest town in the Krishnagiri District of Tamil Nadu and headquarters of the Hosur taluka. It is located about 35 kilometers from Bangalore, 48 kilometers from Krishnagiri, 82 kilometers from Dharmapuri and 306 kilometers west of Chennai, the state capital. Hosur is starting as gateway to Karnataka from Tamil Nadu and has become a satellite town of Bangalore.

- The State Industrial Promotion Corporation of Tamil Nadu, (SIPCOT) has developed one of the largest industrial complexes in the country in Hosur in over an area of 1370 acres and to develop Large/Medium/Small industries with SIDCO offering comprehensive services for more than 500 industries. It has become a key industrial hub for the abrasives, automobiles, chemicals, bakeries, welding and wire mesh industries.
- Hosur is an industrial hub and houses several automobile and manufacturing industries. The major companies include TVS Motors, Ashok Leyland, Titan, Hindustan Motors, Kamaz Vectra Motors, Alstom, Faiveley Transport, Caterpillar Inc., Carborundum Universal, Exide Industries Ltd, Hindustan Motors, Hindustan Unilever, Schaeffler, TTK Prestige, Bata Shoes and Del Monte Foods.
- SIPCOT has proposed to expand its existing Industrial Complex at Hosur in Krishnagiri District with two more expansions, viz., Expansion III and IV over an extent of 2306 acres in total covering Addagurukki, Nallaganakothapalli, Doripalli and Marudandapalli villages in Hosur Taluka and action has been taken to acquire the lands.
- Chennai-Bangalore Industrial Corridor (CBIC)

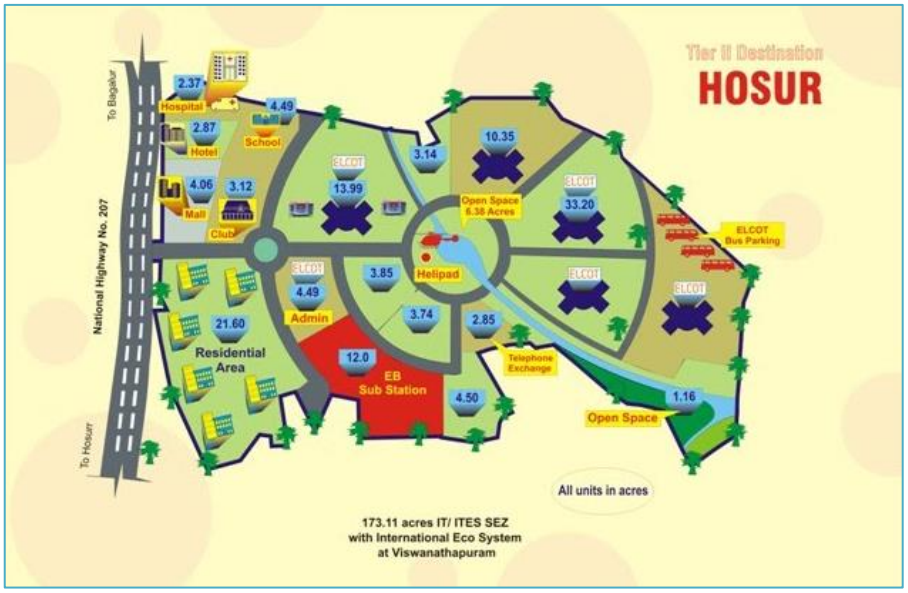
  The Chennai-Bangalore Industrial Corridor Project is an upcoming mega infrastructure project of Government of India. It is expected to boost commerce between South India and East Asia by enabling quicker movement of goods from these places to the Chennai and Ennore ports.

  The industrial corridor is being developed in two phases. The first phase will run from Chennai to Sriperumbudur and then to Ranipet. The second

phase starts at Ranipet to reach Bangalore through Hosur. Industrial parks, Special Economic Zones, information technology parks and integrated townships are expected to come along the corridor.



- Houser SEZ Project is an Information Technology Special Economic Zone near Hosur developed by ELCOT. It is spread over 174 acres and is located at Vishwanathapuram in Bagalur Main Road. The project has a built-up area of 50,000 square feet as is the norm in all ELCOT SEZs in the State. Proximity to Bangalore is seen as its advantage.
- Chennai port expansion and the development of the Chennai – Ranipet – Hosur industrial hub will also have positive impact on traffic growth on project stretch.



- A variety of fruits and vegetables are cultivated around Hosur. The land is very fertile and there is significant access to fresh water as well as labor. Crops consist of tomatoes, cabbages, onions, mangoes, capsicum, carrot, cucumber, beans, coriander leaves, turnip and radish. Roses are also grown in large numbers. District Livestock Farm was started in 1824.

- Central Sericultural Germplasm Resources Centre (CSGRC), Hosur is the premier centre established in 1991 under Central Silk Board for conservation and utilization of Seri-biodiversity in the country. The centre is also recognized as a National Active Germplasm Site (NAGS) for mulberry by National Bureau of Plant Genetic Resources (NBPGR), New Delhi and for silkworm by National Bureau of Agricultural Insect Resources (NBAIR), Bangalore.

5.6.2 Developments around Krishnagiri Area

Krishnagiri is an Urbanized Town well connected between three States of South India (AP, Karnataka and Tamil Nadu) by NH7.

Krishnagiri is one among the districts of Tamil Nadu, which with natural resources having 2,024 Sq. Kms of forest cover is its unique feature. The hill ranges of this district are called by the name 'Melagiri'. The major type of forest seen here are Tropical, Deciduous forests, thorny shrubs and bamboo forest. Dense forest cover Denkanikottai region. The other region contains shrubs, hills and hillocks with bushes.

- The Vast forest resources contains Sandal, Teak, Rose Wood and Bamboo. The timber from these trees has great demand for structural works, House construction, Ship buildings, Paper and pulp manufacture, Pencil and Plywood Industry. Growing nursery for herbs and medicinal plants, extraction sandal wood oil for perfumery is the major contribution for the industrial growth in Krishnagiri District.
- The major crop of Krishnagiri district with around 300 km² area of cultivation is mango. It is the national fruit of India and of the state of Tamil Nadu. The district produces 300,000 tonnes annually and in Tamil Nadu Krishnagiri District is the First Place in The Production of Mango. Almost 20% of the mango varieties like ‘Thothapuri’ and ‘Alphonso’ that are produced in this district, are processed into pulp. In addition to mango pulp processing, tonnes of mangoes are processed into juice every year in this district. A large-scale mango export zone has been approved for the Krishnagiri district. This will allow growing as well as processing of mangoes thus yielding higher profits for the farmers. Approximately 25 industries located in this district process mangoes. Much of the population in this district is employed through mango cultivation directly and other

labour class benefit through employment in mango processing units. There are about 150 mango nurseries which produce mango saplings in and around 'Santhur Village'. The district exports mango based products worth over ₹8 billion. Under the horticulture development program, government owned horticulture farms are functioning here. Through these units, about 300,000 fruit saplings are produced and distributed under different schemes. Apart from production and export, Krishnagiri also hosts Mango exhibition every year which is the unique in its kind in line with the annual exhibition held at New Delhi.

- "Paradise" is the most popular multi coloured granite available in Krishnagiri. Black granite is available in Hosur and Denkanikottai. Granite processing units, which make slabs of granite, finished and decorated beautifully is located mainly in Hosur surroundings. The multi coloured paradise slabs are being exported to America, England, Australia and some other European countries in large quantities. This industry is flourishing with the uninterrupted supply of electricity and availability of raw material and land at cheaper rates.
- Tourist Traffic -

  Thousands of visitors visit Krishnagiri each year. The Krishnagiri Dam and Hogenakkal falls are the major tourist attraction of Krishnagiri.

  Nearby, Sayed Basha hills have a fort that was the fortress of the ruler, Fort of Tippu Sultan on Sayed Basha hills and a 500 year old Rama Temple draws many visitors each year.

5.7 Recommended Growth Rates of Traffic

Based on the above analysis and after giving due consideration to the entire listed factors, overall growth rates are recommended for each category of vehicle.. It is also expected that as the economy moves from developing to developed, rate of growth diminishes. Same growth rate is not sustainable for long. It is established practice to stepdown future growth rates at interval of 5 years.

Impact of other important factors affecting growth is taken as under.

- A weightage of 20% and 80% is assigned to past trends and growth by elastic model respectively for all categories of vehicle.

- A weightage of 30% is assigned for Karnataka elastic model growth, balance 70% is assigned to growth rate of Tamil Nadu model of elasticity all across the categories of vehicles as per traffic share distribution.
- Due to technological advances in logistic industry greater preference is now given to Multi Axle (MAV) over conventional 2/3 Axle truck. To accommodate this in growth projection growth rate of MAV is stepped down in future year by lesser offset as compared to that of Car, LCV and Bus truck. Additionally, final growth of MAV is boosted by 0.5% for presence of huge industrial area around project including Automobile hubs.

Taking all above factors into consideration growth rates are recommended for three scenarios for sensitivity analysis namely **Optimistic, Pessimistic** and **Most Likely** with a positive and negative variation 0.5% from Most Likely case.

Table 5-8 : Recommended Growth Rates Optimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	12.40%	11.40%	10.15%	8.65%	7.15%
Mini Bus /LCV	8.60%	7.60%	6.10%	4.60%	3.10%
Truck / Bus	7.20%	6.20%	4.70%	3.20%	1.70%
Multi Axle	8.80%	8.30%	7.30%	6.30%	5.30%

Table 5-9 : Recommended Growth Rates Pessimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.40%	10.40%	9.15%	7.65%	6.15%
Mini Bus /LCV	7.60%	6.60%	5.10%	3.60%	2.10%
Truck / Bus	6.20%	5.20%	3.70%	2.20%	0.70%
Multi Axle	7.80%	7.30%	6.30%	5.30%	4.30%

Table 5-10 : Recommended Growth Rates Most Likely

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.90%	10.90%	9.65%	8.15%	6.65%
Mini Bus /LCV	8.10%	7.10%	5.60%	4.10%	2.60%
Truck / Bus	6.70%	5.70%	4.20%	2.70%	1.20%
Multi Axle	8.30%	7.80%	6.80%	5.80%	4.80%

CHAPTER 6

TRAFFIC FORECAST

6.1 Traffic Projections

Growth rates recommended in previous section of report are used to arrive at traffic projections for future years. Toll plaza wise futuristic traffic projection is given in tables below.

These projections have been done for following three cases of growth

1. Optimistic Scenario
2. Pessimistic Scenario
3. Most Likely Scenario

Table 6-1 : Total Tollable Traffic @ Toll Plaza 1- 87.500 KM

(Optimistic Growth Scenario)

Year	CAR	Minibus /LCV	Truck/ Bus	Multi Axle	Total No.	Total PCU
2016-17	15911	3476	3987	5992	**29366**	**60898**
2017-18	17881	3775	4274	6519	**32449**	**66652**
2018-19	20096	4099	4581	7092	**35868**	**72968**
2019-20	22585	4451	4911	7717	**39664**	**79917**
2020-21	25156	4789	5215	8358	**43518**	**86925**
2021-22	28020	5153	5538	9052	**47763**	**94576**
2022-23	31211	5545	5882	9803	**52441**	**102932**
2023-24	34765	5967	6248	10616	**57596**	**112059**
2024-25	38724	6420	6635	11498	**63277**	**122033**
2025-26	42652	6812	6947	12338	**68749**	**131467**
2026-27	46976	7228	7273	13239	**74716**	**141670**
2027-28	51740	7669	7615	14206	**81230**	**152718**
2028-29	56987	8136	7974	15242	**88339**	**164673**
2029-30	62766	8633	8349	16355	**96103**	**177628**
2030-31	68191	9031	8616	17385	**103223**	**189363**
2031-32	74085	9447	8892	18481	**110905**	**201942**
2032-33	80488	9882	9177	19646	**119193**	**215422**
2033-34	87444	10337	9470	20884	**128135**	**229865**
2034-35	95002	10812	9773	22201	**137788**	**245356**
2035-36	101790	11147	9938	23377	**146252**	**258778**

Table 6-2 : Total Tollable Traffic @ Toll Plaza 1- 87.500 KM
(Pessimistic Growth Scenario)

Year	CAR	Minibus /LCV	Truck/ Bus	Multi Axle	Total No.	Total PCU
2016-17	15770	3444	3951	5936	**29101**	**60341**
2017-18	17565	3705	4196	6399	**31865**	**65440**
2018-19	19565	3987	4456	6898	**34906**	**70993**
2019-20	21792	4291	4732	7436	**38251**	**77040**
2020-21	24056	4575	4978	7978	**41587**	**83025**
2021-22	26555	4877	5238	8560	**45230**	**89505**
2022-23	29313	5199	5510	9186	**49208**	**96522**
2023-24	32358	5542	5796	9857	**53553**	**104117**
2024-25	35719	5908	6098	10576	**58301**	**112342**
2025-26	38984	6209	6325	11242	**62760**	**119904**
2026-27	42547	6525	6559	11950	**67581**	**128012**
2027-28	46436	6858	6802	12703	**72799**	**136717**
2028-29	50680	7208	7054	13503	**78445**	**146060**
2029-30	55313	7575	7315	14354	**84557**	**156093**
2030-31	59540	7847	7476	15114	**89977**	**164846**
2031-32	64090	8129	7641	15914	**95774**	**174146**
2032-33	68989	8422	7809	16758	**101978**	**184036**
2033-34	74262	8726	7981	17647	**108616**	**194549**
2034-35	79938	9041	8156	18583	**115718**	**205724**
2035-36	84850	9231	8213	19382	**121676**	**214935**

Traffic projections for Most Likely scenario are given as under

Table 6-3 : Total Tollable Traffic @ Toll Plaza 1- 87.500 KM (Most Likely Growth Scenario)

Year	CAR	Minibus /LCV	Truck/ Bus	Multi Axle	Total No.	Total PCU
2016-17	15840	3460	3970	5964	**29234**	**60622**
2017-18	17722	3741	4237	6459	**32159**	**66052**
2018-19	19828	4045	4520	6995	**35388**	**71985**
2019-20	22185	4372	4823	7575	**38955**	**78474**
2020-21	24601	4682	5097	8166	**42546**	**84962**
2021-22	27279	5014	5387	8804	**46484**	**92018**
2022-23	30250	5370	5694	9491	**50805**	**99690**
2023-24	33545	5752	6018	10231	**55546**	**108030**
2024-25	37197	6160	6361	11029	**60747**	**117103**
2025-26	40783	6504	6628	11779	**65694**	**125565**
2026-27	44714	6868	6906	12579	**71067**	**134678**
2027-28	49025	7253	7196	13435	**76909**	**144510**
2028-29	53752	7660	7499	14349	**83260**	**155112**
2029-30	58934	8089	7814	15325	**90162**	**166540**
2030-31	63733	8421	8025	16214	**96393**	**176715**
2031-32	68923	8766	8242	17155	**103086**	**187573**
2032-33	74536	9125	8465	18150	**110276**	**199157**
2033-34	80606	9498	8693	19203	**118000**	**211518**
2034-35	87170	9888	8927	20317	**126302**	**224716**
2035-36	92963	10145	9034	21292	**133434**	**235897**

6.2 Modification in Concession Period

As per Article 29 of the concession agreement, if actual traffic on the project falls short or exceeds Target Traffic on project highway on defined date, concession period shall be modified subject to calculation stipulated therein. For Hosur - Krishnagiri project, the Target Date and Target Traffic are defined as under:

Target Date - 1st April 2020

Target Traffic - 60691 in PCU.

It is observed that in projected project traffic would exceed the target traffic in year 2020. This warrants for a reduction in concession period. Based on the above traffic estimate probable reduction of concession period is worked out as per article 29 of agreement. It is expected that concession period of project would be reduced by about 2.4 years due to project traffic exceeding target traffic.

As per clause 29.2.3 of Contract, if the average daily traffic of PCU in any accounting year shall exceed the design capacity of project highway, capacity highway shall be augmented and concession period would be increased to account for additional expenditure incurred by concessionaire for augmenting the capacity of project highway as per provisions of contract. Design capacity of six lane highway is taken as 1,20,000 PCU. It is observed that design capacity of project road is likely to be exceeded in year 2025-26. This may result in extension of concession period.

Taking both the fact into consideration concession period of project has been taken as original. Accordingly, traffic projection and revenue is worked out up to year 2035-36.

CHAPTER 7
FORECAST OF TOLL REVENUE

7.1 General

This chapter presents the tolling rate calculations, categories and toll revenue of the project.

7.2 Discount Categories

As per the Toll Notification (Schedule R) the following discounts have been considered:

1. Monthly Pass: For frequent users monthly pass is issued for 50 trips per month at 2/3 rate of single trip.
2. Daily Pass (for Return Trip): A 75% discount will be offered on the return trip.
3. Single Journey: Full single journey toll would be charged to this category of vehicles who are infrequent travelers or whose frequency does not yield any discount from the above categories.
4. Local Car / Jeep / Van to be charged at Rs. 150 per month (2007)
5. Additionally, Concessionaire has introduced monthly rates for local commercial vehicles also.

Building of inflation and escalation of rate on the basis of WPI are done as per toll notification (Schedule R) as given under

The formula for determining the applicable rate of fee shall be as follows:-

$$\text{Applicable rate of fee} = \text{base rate} + \text{base rate} \times \left\{ \frac{\text{WPI A-WPI B}}{\text{WPI B}} \right\} \times 0.4$$

7.3 Estimation of Toll Rates

As per the applicable MORTH notification and Schedule R of contract agreement, the following Base rate of fee for the categories mentioned in the table stands true in the National Highways Fee Rules applicable for contract.

Table 7-1 : Base Toll Rates 2007-08

Type of Vehicle	Base Rate of Fee / Km (in Rs.)
Car, Jeep, Van or Light Motor Vehicle	0.65
Light Commercial Vehicle, Light Goods Vehicle or Mini Bus	1.05
Bus or Truck (2 Axle)	2.2
Three Axle commercial vehicles	2.4
Heavy Construction Machinery (HCM) or Earth Moving Equipment (EME) or Multi Axle Vehicle (MAV) (4-6 axles)	3.45
Oversized Vehicle (seven or more axles)	4.2

Factor of inflation / growth has been incorporated as per Schedule R. WPI are available up to 2015-16. Following graph provides projection of rate of inflation (WPI) in India. Data has been taken from Office of Economic Advisor web site (www.eaindustry.nic.in)

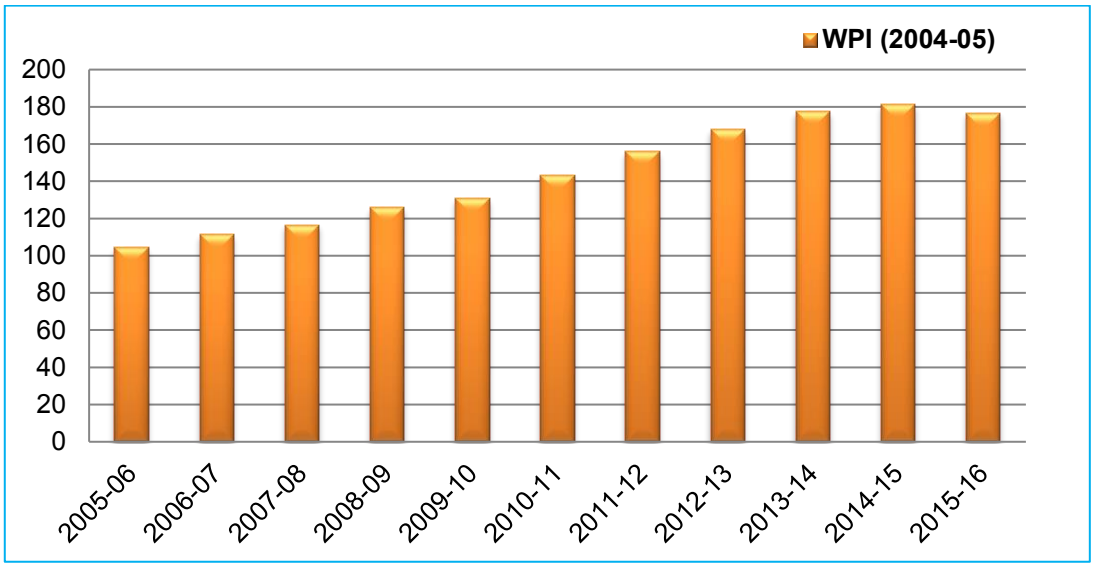


Figure 7-1 : Historical Rate of WPI Inflation in India

Average inflation in WPI in last 10 years is 5.5%. Considering future trends of economy following average WPI inflation is used for projections of toll rates

- Up to Year 2018 - 4.0%
- 2019-21 - 5.0%
- 2022-26 - 4.0%
- 2027-31 - 3.0%
- 2032-40 - 2.0%

Toll rates are calculated as per guidelines provided in schedule R (rounded to nearest Rs. five) for the concession period and are given below. Wherever applicable, cost of bridges / tunnel has also been considered in working toll rates as per Concession Agreement.

Thus, worked out rates for various categories of vehicle and discounts are given as under

Table 7-2 : Toll Rates for Single Journey @ Toll Plaza 1- 87.500 KM

Year	CAR	Minibus /LCV	Truck/ Bus	Multi axle	Oversized Vehicles
2016-17	60	100	205	325	395
2017-18	65	105	215	340	410
2018-19	65	110	225	355	430
2019-20	70	115	235	370	450
2020-21	75	120	250	390	475
2021-22	75	125	260	410	500
2022-23	80	130	270	425	520
2023-24	85	135	285	445	545
2024-25	90	140	295	465	565
2025-26	90	150	310	485	590
2026-27	95	155	325	510	620
2027-28	100	160	335	525	640
2028-29	105	165	350	545	665
2029-30	105	175	360	570	690
2030-31	110	180	375	590	715
2031-32	115	185	390	610	745
2032-33	120	190	400	630	765
2033-34	120	200	415	650	790
2034-35	125	205	425	670	815
2035-36	130	210	440	690	840

Table 7-3 : Toll Rates for Multiple Journeys @ Toll Plaza 1- 87.500 KM

Year	CAR	Minibus /LCV	Truck/ Bus	Multi axle	Oversized Vehicles
2016-17	90	150	310	485	590
2017-18	95	155	325	510	620
2018-19	100	160	340	530	645
2019-20	105	170	355	555	680
2020-21	110	180	375	585	710
2021-22	115	185	390	615	745
2022-23	120	195	410	640	780
2023-24	125	205	425	670	815
2024-25	130	215	445	700	850
2025-26	140	220	465	730	890
2026-27	145	230	485	760	930
2027-28	150	240	505	790	965
2028-29	155	250	525	820	1000
2029-30	160	260	545	850	1035
2030-31	165	270	565	885	1075
2031-32	175	280	585	915	1115
2032-33	180	290	605	945	1150
2033-34	185	295	620	975	1185
2034-35	190	305	640	1005	1220
2035-36	195	315	660	1035	1260

Table 7-4 : Toll Rates for Monthly Pass @ Toll Plaza 1- 87.500 KM

Year	Car - LP	Car	Mini Bus /LCV	Truck/ Bus	Multi Axle	Oversized Vehicle
2016-17	235	2035	3285	6885	10795	13145
2017-18	245	2125	3435	7190	11280	13730
2018-19	255	2220	3585	7510	11780	14340
2019-20	270	2330	3765	7885	12370	15055
2020-21	285	2445	3950	8280	12985	15810
2021-22	295	2570	4150	8695	13635	16600
2022-23	310	2685	4335	9080	14240	17335
2023-24	325	2800	4525	9485	14870	18105
2024-25	340	2925	4725	9905	15530	18910
2025-26	355	3055	4935	10345	16220	19745
2026-27	370	3190	5155	10800	16935	20620
2027-28	385	3310	5350	11210	17580	21400
2028-29	395	3435	5555	11635	18245	22210
2029-30	410	3565	5760	12075	18930	23050
2030-31	430	3700	5980	12525	19645	23915
2031-32	445	3840	6200	12995	20380	24810
2032-33	460	3955	6395	13395	21005	25570
2033-34	470	4080	6585	13800	21645	26350
2034-35	485	4200	6785	14220	22300	27150
2035-36	500	4330	6990	14650	22970	27965

7.4 Toll Revenue

As indicated earlier, toll revenue on the Project Road has been calculated under in all three scenarios. The estimates of toll revenue under ***Optimistic***, ***Pessimistic*** and ***Most Likely*** growth scenarios are presented in the following section.

7.5 Toll Revenue at all toll plazas under Scenarios

Toll Revenue estimates under most likely scenario at each of the toll plaza up to 2035-36 (End of Concession Period) starting from the year 2016-17 are shown in tables below.

Overloading of commercial vehicles is a known phenomenon on Indian roads. Current project witnessed instances of overloading. These vehicles can be charge at extra higher rate as per contract to discourage overloading. It is expected that with application of higher punitive charges (10 times the normal rate) overloading tendency of commercial vehicles would gradually be reduced and would be eliminated over a period.

A sample data was collected by concessionaire for month of September 2016. Following table provides summary of same.

Table 7-5 : Toll Revenue from Overloaded Vehicles

Sr. No	Description	Value for September-16
1	Total Commercial vehicles (CV)	221161
2	Total Revenue (Rs. Lakh) (both commercial & Passenger)	801.1
3	Overloaded Vehicles (OV) Nos.	2431
4	Net Revenue from overloaded vehicles (Rs. Lakh)	55.7
5	% of Revenue from Overloaded Vehicles	7%

From above it is expected from project traffic details that extra revenue from overloading at present would be about 7% of total revenue which would gradually reduce over a period. For next 2-3 years, this trend may continue at same % then it would gradually diminish over a period of say 8-10 years. Following table provides expected component of revenue from overloading

Table 7-6 : Expected Overloading Revenue

Year	Expected Revenue from Overloading
2016-17	7%
2017-18	7%
2018-19	7%
2019-20	5%
2020-21	5%
2021-22	4%
2022-23	4%
2023-24	3%
2024-25	3%
2025-26	2%
2026-27	2%
2027-28	1%
2028-29	1%

Toll revenue projections, excluding revenue from overloading, are given in following tables.

Table 7-7 : Toll Revenue Optimistic Scenario (Rs. Crores)

Year	Toll at Plaza 87.500 Km	Total
2016-17	135.27	135.27
2017-18	155.67	155.67
2018-19	176.70	176.70
2019-20	203.38	203.38
2020-21	232.84	232.84
2021-22	263.12	263.12
2022-23	298.62	298.62
2023-24	341.51	341.51
2024-25	387.47	387.47
2025-26	433.95	433.95
2026-27	489.47	489.47
2027-28	547.51	547.51
2028-29	611.72	611.72
2029-30	681.20	681.20
2030-31	752.84	752.84
2031-32	836.17	836.17
2032-33	918.78	918.78
2033-34	1004.23	1004.23
2034-35	1104.96	1104.96
2035-36	1204.64	1204.64

Table 7-8 : Toll Revenue Pessimistic Scenario (Rs. Crores)

Year	Toll at Plaza 87.500 Km	Total
2016-17	134.04	134.04
2017-18	152.84	152.84
2018-19	171.91	171.91
2019-20	196.08	196.08
2020-21	222.42	222.42
2021-22	249.04	249.04
2022-23	280.03	280.03
2023-24	317.29	317.29
2024-25	356.70	356.70
2025-26	395.78	395.78
2026-27	442.31	442.31
2027-28	490.20	490.20
2028-29	542.67	542.67
2029-30	598.72	598.72
2030-31	655.49	655.49
2031-32	721.21	721.21
2032-33	785.06	785.06
2033-34	850.01	850.01
2034-35	926.55	926.55
2035-36	1000.63	1000.63

Table 7-9 : Toll Revenue Most Likely Scenario (Rs. Crores)

Year	Toll at Plaza 87.500 Km	Total
2016-17	134.64	134.64
2017-18	154.24	154.24
2018-19	174.32	174.32
2019-20	199.72	199.72
2020-21	227.60	227.60
2021-22	256.01	256.01
2022-23	289.22	289.22
2023-24	329.21	329.21
2024-25	371.81	371.81
2025-26	414.45	414.45
2026-27	465.33	465.33
2027-28	518.12	518.12
2028-29	576.21	576.21
2029-30	638.67	638.67
2030-31	702.50	702.50
2031-32	776.58	776.58
2032-33	849.27	849.27
2033-34	923.91	923.91
2034-35	1011.82	1011.82
2035-36	1097.89	1097.89

CHAPTER 8
OPERATION & MAINTENANCE COST

8.1 General

While traffic and toll rates account income of project. Capital cost of construction and O & M cost form part of expenses. Health of any highway project considerably depends on pattern of its O&M cost. For these purpose, major O&M elements such as civil infrastructure, toll system and manpower's, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analyzed. Major maintenance and repair for periodic strengthening and improvement of riding quality would be taken up as per condition of road pavement. Modern roads are constructed with upgraded technology equipment /plants which have better quality control. These roads can be expected to last longer and perform better. Hence it is proposed to consider major maintenance requirement at an interval of 6-7 years.

8.2 Major Elements of maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

8.3 Project Details

Following are project parameters which would contribute towards cost of operation and maintenance.

Table 8-1 : Project Parameters for O & M

Item	Parameter	Quantity	Unit
Length of Road	KM	59.87	KM
Main Carriageway	Paved Area	1540155.75	SQM
Service Road	Paved Area	380660	SQM
Bus bays	Paved Area	47040	SQM
Truck Lay bye	Paved Area	7312.5	SQM
Structure		**44137**	SQM
Major Bridge	Area	3072	SQM
Minor Bridge	Area	6268.598	SQM
Flyover	Area	34796.4	SQM
RCC Crash Barrier	Length	6395.04	RMT
Metal Beam Crash Barrier	Length	11974	RMT
Guard Post	Nos	23948	No.
Kerb Detail	Length	119740	RMT

Operation and maintenance cost of project depends number of factors like quality of construction, response of maintenance team to early damage, local climate (rain etc.).

8.4 Operation & Maintenance Cost

Following are project parameters which would contribute towards cost of operation and maintenance.

Future cost of operation and maintenance is estimate on engineering judgment and experience basis. Keeping all above factors in view, following can be basis of working out cost of operation and maintenance for project corridor from Hosur to Krishnagiri on NH-7 in state of Tamil Nadu.

a) **Annual Regular Maintenance** - Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll plaza maintenance, Toll collection, other services like medical help and rescue operations etc.

b) **Periodic Maintenance** - As explained previously this will be done on periodic basis say every 7 years. It will consist of overlaying of wearing course and

painting and marking. Ministry in its Specifications for Road & Bridge Works (5th Revision) has included Micro Surfacing as surface sealing and renewal treatment. NHAI has also issued instruction to use Micro Surfacing for periodic renewal course vide letter dated 15th November 2016. In light of above, Micro Surfacing is considered as overlay course in 35% of the project stretch. For balance 60% normal asphalt course is considered as project stretch is used by heavy commercial traffic. Also, from practicality of construction and traffic operation on project road, Major Maintenance and Repair (MMR) work is spread over a period of 2 years without escalation. Toll operation on project road commenced in year 2011-12 along with commencement of concession period. Considering 6 years MMR cycle, next cycle of MMR is expected in year 2022-23. No overlay required for remaining 5%.

Cost for above operations is taken on prevailing rates.

Following tables provides year wise details of operation and maintenance cost.

Table 8-2 : Year wise Details of Regular Operation & Maintenance Cost

Year	Total Regular O & M Expenditure (Rs. Crores) Current Price	Escalation Factor	Total Regular O & M Expenditure (Rs. Crores) with Escalation
2016-17	8.76	1.04	9.11
2017-18	8.76	1.08	9.47
2018-19	8.76	1.14	9.95
2019-20	8.76	1.19	10.44
2020-21	8.76	1.25	10.97
2021-22	8.76	1.30	11.40
2022-23	8.76	1.35	11.86
2023-24	8.76	1.41	12.33
2024-25	8.76	1.46	12.83
2025-26	8.76	1.51	13.21
2026-27	8.76	1.55	13.61
2027-28	8.76	1.60	14.02
2028-29	8.76	1.65	14.44
2029-30	8.76	1.70	14.87
2030-31	8.76	1.73	15.17
2031-32	8.76	1.77	15.47
2032-33	8.76	1.80	15.78
2033-34	8.76	1.84	16.10
2034-35	8.76	1.87	16.42

Table 8-3 : Year wise Details of Major Maintenance & Repair (MMR) Cost

Year	Total Length of Project Road (Km)	No. of Lanes	Total Lane Km	Normal Overlay Lane Km Length (60% of the total)	Micro Surfacing Lane Km Length (35% of the total)	Rate of Normal Overlay Per Km Per Lane (Rs. Cr.)	Rate of Micro Surfacing Overlay Per Km Per Lane (Rs. Cr.)	Total Cost of Major Maintenance & Repair Current Price (Rs. Cr)	Escalation Factor	Total Cost of Major Maintenance & Repair at Escalated Price (Rs. Cr)
2016-17	60.00	6	360.00							
2017-18	60.00	6	360.00							
2018-19	60.00	6	360.00							
2019-20	60.00	6	360.00							
2020-21	60.00	6	360.00							
2021-22	60.00	6	360.00							
2022-23	60.00	6	360.00	108.00	63.00	0.16	0.05	20.43	1.30	26.60
2023-24	60.00	6	360.00	108.00	63.00	0.16	0.05	20.43	1.30	26.60
2024-25	60.00	6	360.00							
2025-26	60.00	6	360.00							
2026-27	60.00	6	360.00							
2027-28	60.00	6	360.00							
2028-29	60.00	6	360.00							
2029-30	60.00	6	360.00							
2030-31	60.00	6	360.00	108.00	63.00	0.16	0.05	20.43	1.70	34.69
2031-32	60.00	6	360.00	108.00	63.00	0.16	0.05	20.43	1.70	34.69
2032-33	60.00	6	360.00							
2033-34	60.00	6	360.00							
2034-35	60.00	6	360.00							

Following graph depicts Year wise operation and maintenance cost illustratively. Higher cost columns represent periodic & special Repair years.

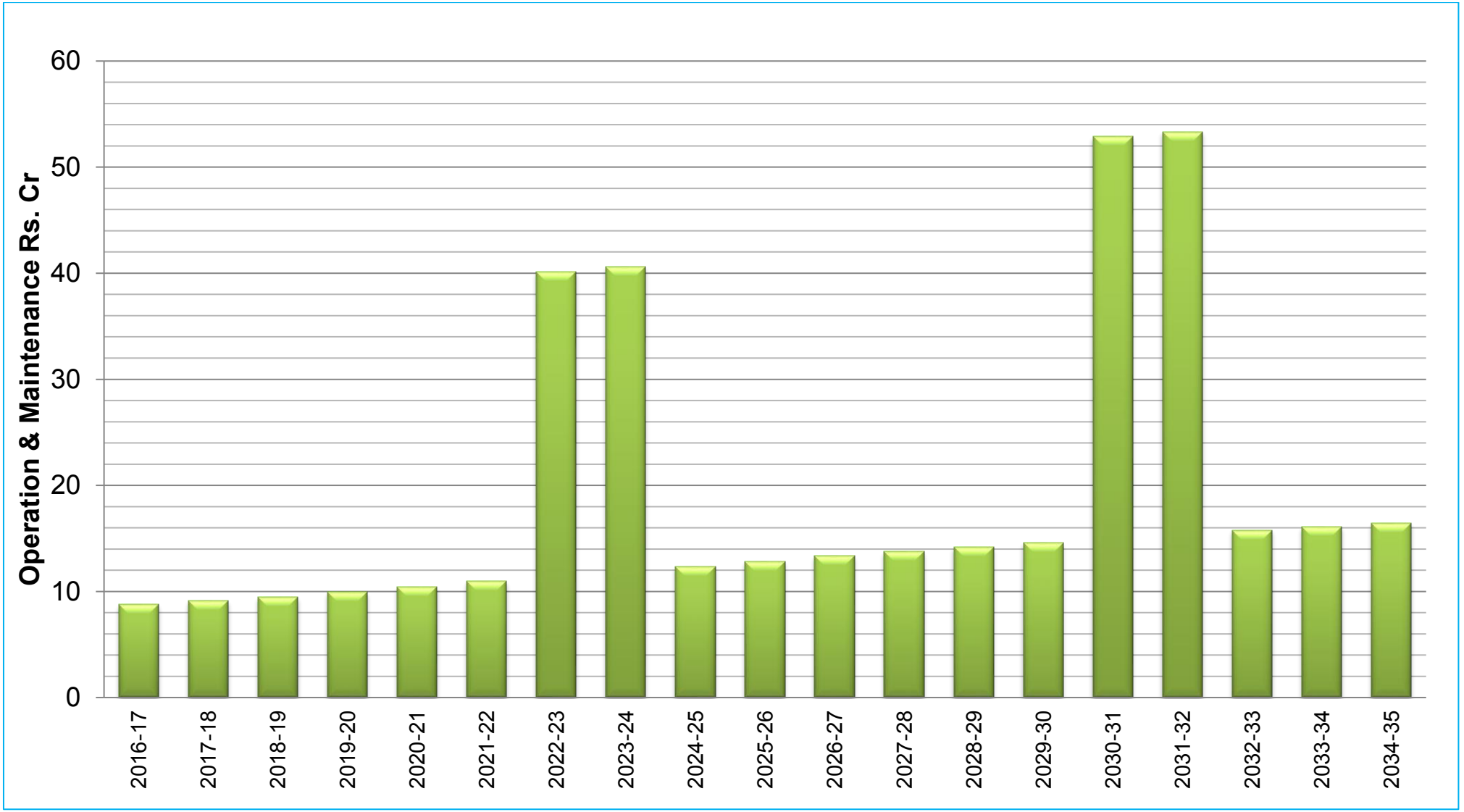


Figure 8-1 : Year wise Operation & Maintenance Cost

CHAPTER 9
CONCLUSION & RECOMMENDATIONS

9.1 Conclusion & Recommendations

Project stretch of Hosur to Krishnagiri section of NH-7 in state of Tamil Nadu from Km 33.130 to Km 93.000 is presently a four lane road. The road is in sound condition and serves healthy traffic volumes. The project corridor is a part of critical North – South connectivity via national highway NH-7. Bangalore has already emerged as IT capital of country and the project stretch falls in its catchment. There are many upcoming projects in area which are proposed to boost economic growth of area and add value to development of the region. All the developments considered in the Report have the potential to have a positive impact to traffic flow on project. Following can considered as major outcome of study

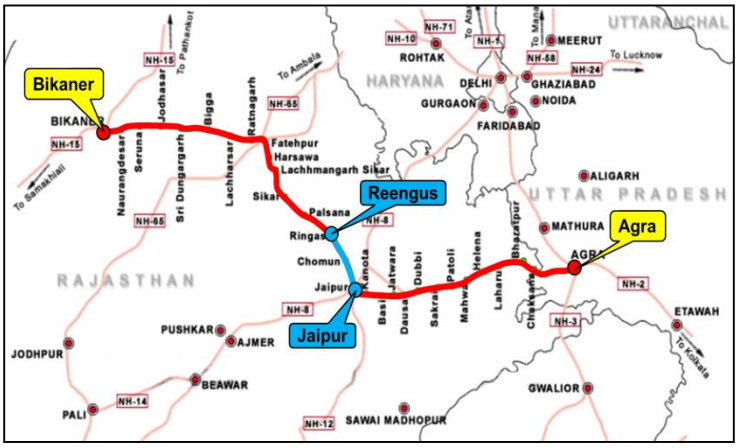
a) There is a healthy volume of tollable traffic running on project

b) Project corridor has the potential to witness traffic growth @ 7-8% annually in near future due to various development in area and overall development of economy

c) Project corridor does not have risk of traffic leakage due to lack of competing roads of comparable quality

d) Project infrastructure is in good condition and its maintenance costs are feasible for the successful operation of the toll road

Based on above it can be considered a stable healthy project from traffic and revenue point of view.



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RELIANCE

Reliance Infrastructure InvIT Fund

Traffic Study for Jaipur – Reengus Section of NH -11

Final Report

December 2016

SYSTRA

SYSTRA INDIA

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Chapter 1 Introduction

1.1 Preamble

On February 19, 2010, the NHAI and JR entered into a concession agreement for widening of the existing two lanes to four, on a DBFOT basis of Jaipur Reengus stretch of NH 11. The project was bid at a grant of Rs. 102.9 cr. The concession period commenced on August 14, 2010 and the collection of tolls commenced on July 15, 2013. A provisional certificate of completion was issued on July 15, 2013 and a second provisional completion certificate was issued on October 16, 2015. The NHAI granted JR a concession for a period of 18 years for this project. The concession period commenced on August 14, 2010 and is expected to expire on August 13, 2028. JR began collecting tolls with respect to this project on July 15, 2013. The NHAI owns the land that underlies the JR Project

The expansion and development of efficient road network is one of the prerequisites for country's economic progress. Over the years, roads have emerged as preferred mode of transport in India and figures suggest that highways carry 60% of freight and 80% of passenger traffic.

The National Highways Authority of India (NHAI) has been entrusted by Government of India with the development, maintenance and management of National Highways. Under Phase III of National Highways Development Program (NHDP), the Government has taken up Implementation of 4-laning of National Highways, including **Jaipur - Reengus Section** (Km 246.300 to Km 298.075) **of NH-11** (Project Road) in the State of Rajasthan. This project was executed by *Reliance Infrastructure Limited* (*JR Toll Road Private Limited*) on Design, Build, Finance, Operate and Transfer (DBFOT) basis.

Reliance Infrastructure InvIT Fund has engaged *M/s Systra MVA Consulting (India) Private Limited* as Consultants for carrying out necessary traffic studies and assess the future traffic and toll potential of project along with related Operation & Maintenance expenditure involved.

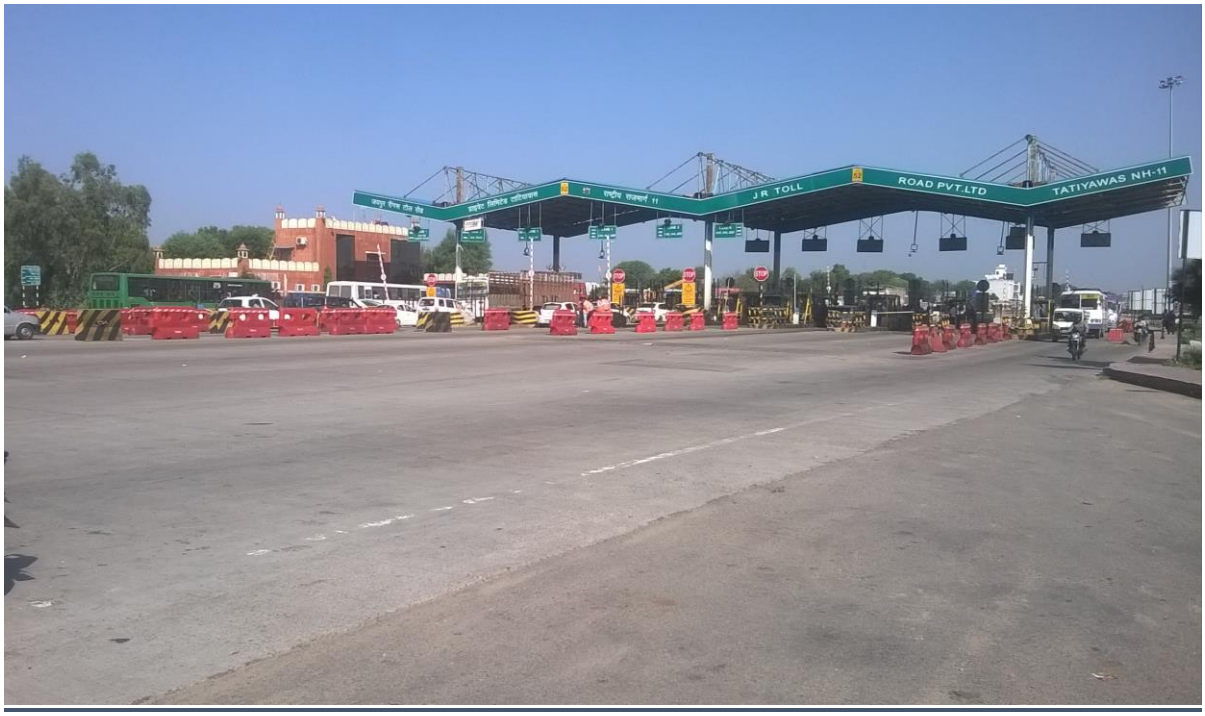


Figure 1:1 Tatiyawas Toll Plaza on Jaipur Reengus Section of NH-11

1.2 Project Corridor

National Highway 11 is an important National Highway of India; it starts at Agra, travels through Bharatpur, Jaipur, Sikar, Fatehpur and ends at Bikaner in the State of Rajasthan. The project road is the main highway connecting cities like Bikaner, Fatehpur and Sikar to Jaipur. Project road (**Figure 1:2**) starts at Junction of NH-8 Bypass at Jaipur (km 246.3 on NH-11) and ends at Reengus (km 298.075 on NH-11). This road connects State capital Jaipur with district headquarters, Sikar and carries predominant passenger and goods traffic. The project road is 52.65 km as per concession agreement long with one toll plaza (Km 257- Tatiyawas toll plaza). At Tatiyawas toll plaza (**Figure 1:3**), toll is collected for 52.65 km stretch of project corridor.

Project road traverses through two major districts of Rajasthan, viz. Jaipur and Sikar and connects major tourist destinations such as Khatushyamji Temple and Salasar Balaji and religious places, industrial zones and Jaipur International Airport. The project road carries mostly local and tourist passenger traffic and some goods traffic, generating from several industrial areas in Jaipur district and stone mines.

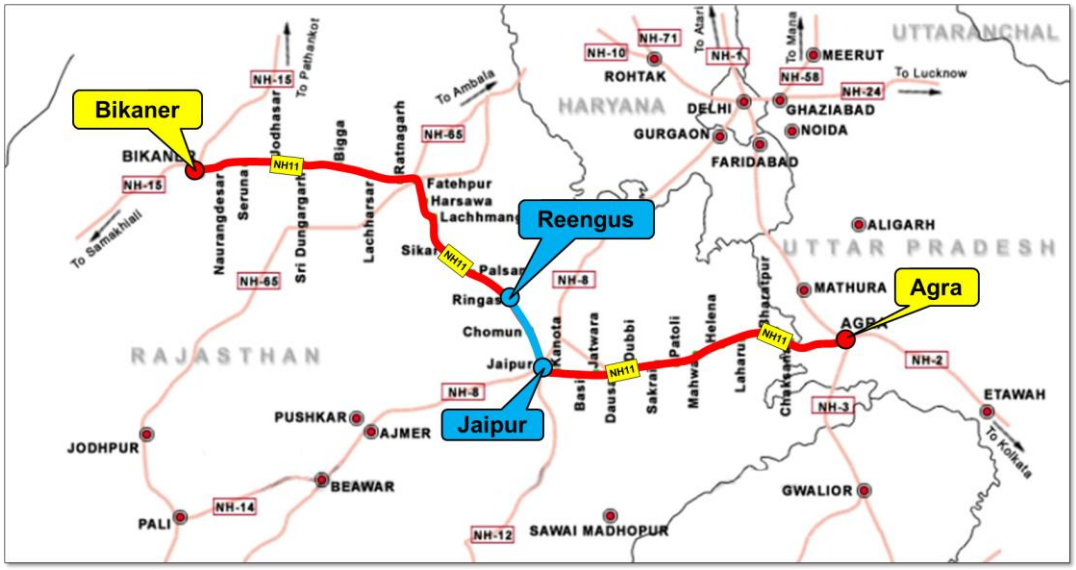


Figure 1:2: Project Corridor – Jaipur – Reengus Section of NH-11

Figure 1:3: Existing Toll Plaza on Jaipur- Reengus Section of NH-11

1.3 Salient Features of Project Corridor

1.3.1 Existing Major Bridges

The list of existing major bridges along the Jaipur Reengus section of NH-11 are given in **Table 1:1.**

Table 1:1 Existing Major Bridges

S No	Name of Bridge	Bridge No.	Chainage (Km)	Width (m)	Span Arrangement & Total Length	Type of Structure		
						Foundation	Sub Structure	Super Structure
1	Bandi River	257/1	256+125	8.30	18x5.5 /99.0	Raft	Stone wall type	RCC Slab
2	Govindgarh Bridge	282/1	281+250	8.40	23x4.8 / 110.40	Open Foundation	Stone wall type	RCC Slab
3	Reengus River	293/1	292+715	8.40	26x5.55 / 144.3	Open Foundation	Stone wall type	RCC Slab

1.3.2 Existing Minor Bridges

The list of existing minor bridges along the Jaipur Reengus section of NH-11 are given in **Table 1:2.**

Table 1:2 Existing Minor Bridges

S No	Name of Bridge	Bridge No.	Chainage (Km)	Width (m)	Span Arrangement & Total Length	Type of Structure		
						Foundation	Sub Structure	Super Structure
1	Harmara Bridge	248/1	247+950	11.00	2x5.8 / 11.6	Open Foundation	Stone wall type	RCC Slab
2	Motuka Nala	256/1	255+860	8.30	6x5.5 / 33.0	Raft	Stone wall type	RCC Slab
3	Minor Bridge	273/1	272+500	8.40	3x5.9 / 17.7	Open Foundation	Stone wall type	RCC Slab
4	Dhodhsar Bridge	285/1	284+770	8.40	8x4.8 / 38.4	Open Foundation	Stone wall type	RCC Slab

1.3.3 Details of ROBs/RUBs and High Embankments

The details of ROBs/RUBs along the project road is given in **Table 1:3.**

Table 1:3 Details of ROBs /RUBs

S No.	Chainage (km)	ROB/RUB	Width	Span Arrangement & Total Length	Type of Structure			Clear Height Available (m)
					Foundation	Sub Structure	Super Structure	
1	296+665	ROB	12.00	2 X 15.6 / 31.2	Open Foundation	RCC Wall Type	RCC T-Beam	6.5

Following **Table 1:4** gives the typical cross section of High Embankments (Approaches to Grade Separators/ Underpass/ Bridges/ ROBs.

Table 1:4 Details of High Embankments

S. No	Design Chainage From	Length (Km)	C/s Type
1	11.964 to 12.564	0.600	TCS - 9
2	18.978 to 19.578	0.600	TCS – 9
3	20.557 to 21.157	0.600	TCS – 9
4	48.105 to 49.105	1.000	TCS – 9
5	50.065 to 51.065	1.000	TCS - 10

1.3.4 Details of New Major and Minor Bridges

Details of new major bridges and rehabilitation/ repair/ widening scheme for existing major bridges are given in **Table 1:5** and **Table 1:6**.

Table 1:5 Details of New Major Bridges

S.No.	Name of Bridge	Bridge No.	Existing Chainage	Design Chainage	Type of Crossing	Proposed Structural Configuration	Proposed Structure Type	Proposed Span Arrangements	Total Width of the Structure
1	Bandi River	257/1	256+125	9+857	Bandi River	New 2 -Lane	RCC T Beam	6 x 16.5	1 x 11.5
2	Govind Sagar River	282/1	281+125	35+184	Govind Sagar River	New 2 -Lane	RCC T Beam	5 x 19.2 +1 14.4	1 x 11.5
3	Reengus River	293/1	292+770	46+607	Reengus River	New 2 -Lane	RCC T Beam	9 x 16.6 + 1x11.1	1 x 11.5

Table 1:6 Details of New Minor Bridges

S. No	Bridge No.	Existing Chainage	Design Chainage	Type of Crossing	Proposed Structural Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the Structure
1	256/1	255+860	9+567	Motuka Nalla	New 4-Lane	RCC T Beam	2 x 16.5	2 x 11.5
2	21/2	Chomu Bypass	20+467	River	New 4-Lane	RCC Girder	1 x 17.2	2 x 11.5
3	22/2	Chomu Bypass	21+749	River	New 4-Lane	RCC Slab Bridge	1 x 11	2 x 11.5
4	23/1	Chomu Bypass	22+681	River	New 4-Lane	RCC Girder	1 x 17.2	2 x 11.5
5	285/1	284+770	38+691	Dhoodhsagar River	New 2-Lane	RCC T Beam	2 x 19.2	1 x 11.5

1.3.5 Details of Proposed ROB/ RUB

Details of proposed ROB/ RUB along project corridor is given in **Table 1:7**.

Table 1:7 Details of Proposed ROB/RUB

S.No	ROB/RUB	Existing Chainage / Design Chainage	Existing Structure	Proposed Structural Configuration	Proposed Structural Type	Proposed Span Arrangement	Total width of the structure
1	ROB	296.665/ 50.565	Two Lane ROB	New 2 - Lane	RCC T-Beam	1 x 18+ 2x28+ 2x18*	1x13.8

- Span arrangement is tentative

1.4 Objectives and Scope of Work

The main objective of the study is to assess the future traffic and toll potential of project along with related Operation & Maintenance expenditure involved. The scope of consultancy services broadly covers the following:

- ✓ 7 days Video graphic traffic count at the existing toll plaza to derive the Average Daily Traffic (ADT).
- ✓ 24 hours Origin-Destination Survey at the toll plaza location to assess the existing travel pattern of vehicles plying on the project road including origin and destination.
- ✓ Analysis of past traffic data provided by the Concessionaire.
- ✓ Establish seasonality factors using toll traffic data.
- ✓ Estimation of Annual Average Daily Traffic (AADT).
- ✓ Estimation of traffic diversion/leakage, if any.
- ✓ Traffic projections for the remaining concession period.
- ✓ Estimation of toll revenue as per categories of traffic streams stipulated in the Concession Agreement for the remaining concession period.
- ✓ Prepare a Report on Revenue and Traffic Forecast.
- ✓ O&M cost analysis (O&M Cost per km) including projections based on the historical cost incurred/ booked by the toll operator.

1.5 Report Structure

For the above Scope of Work, Systra MVA has carried out a series of investigations. This report presents details on various surveys carried out for estimation of toll traffic and revenue on the Project Road, as well as findings from the analysis of survey data.

This Final Report is organized under five Chapters. **Chapter 1** deals with the Introduction and objectives of the study and the project corridor details. **Chapter 2** covers Study Approach & Methodology and a review of the secondary data collected is presented in **Chapter 3**. **Chapter 4** deals with the traffic surveys and their analysis. Estimation of traffic growth rates, traffic forecast, toll revenue estimation and O&M Cost is presented in **Chapter 5**.

Chapter 2 Study Approach & Methodology

2.1 General

The estimation of tollable traffic requires development of well-defined objectives and traffic database containing relevant information concerning traffic flow characteristics. The broad methodology followed for the present study is presented in **Figure 2:1**.

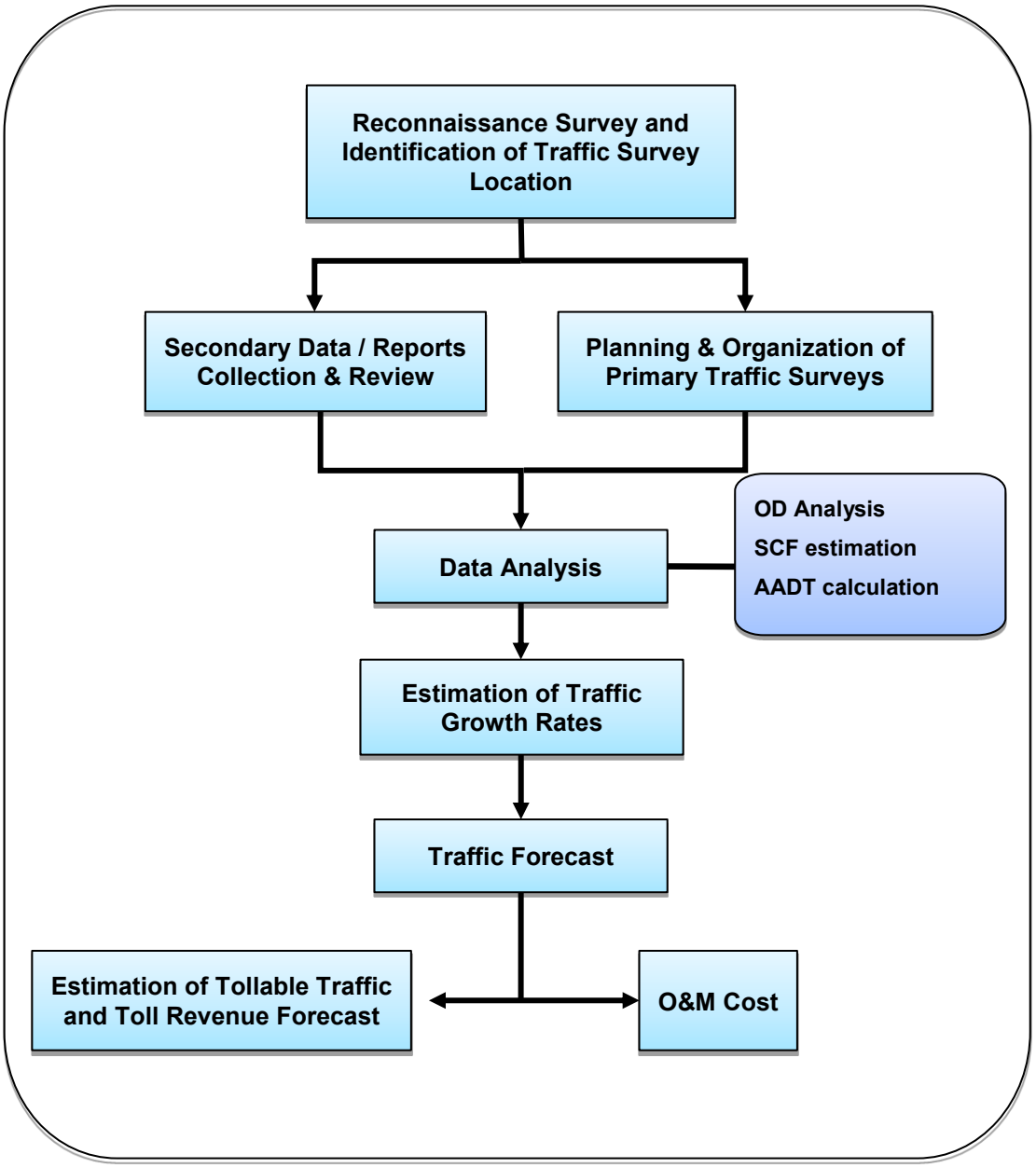


Figure 2:1: Broad Study Methodology

2.2 Primary Traffic Surveys

For traffic projections and toll revenue estimation, base year traffic volume on the project corridor and traffic characteristics like *local, through* traffic, proportion of frequent vehicles opting for return pass, monthly pass, etc. are required. To obtain these details, various surveys and studies were organized. The various traffic surveys carried out as part of the present study, the survey methodology and the survey schedule are presented in detail in the following sections. The review of secondary data collected is presented in **Chapter 3.** The following primary surveys, in addition to the secondary data from various sources, are identified to establish the traffic & travel characteristics on the project corridor:

1. Detailed Inventory within project corridor and adjoining roads in Project Influencing Area
2. Video graphic Traffic Volume Count
3. Origin and Destination Survey

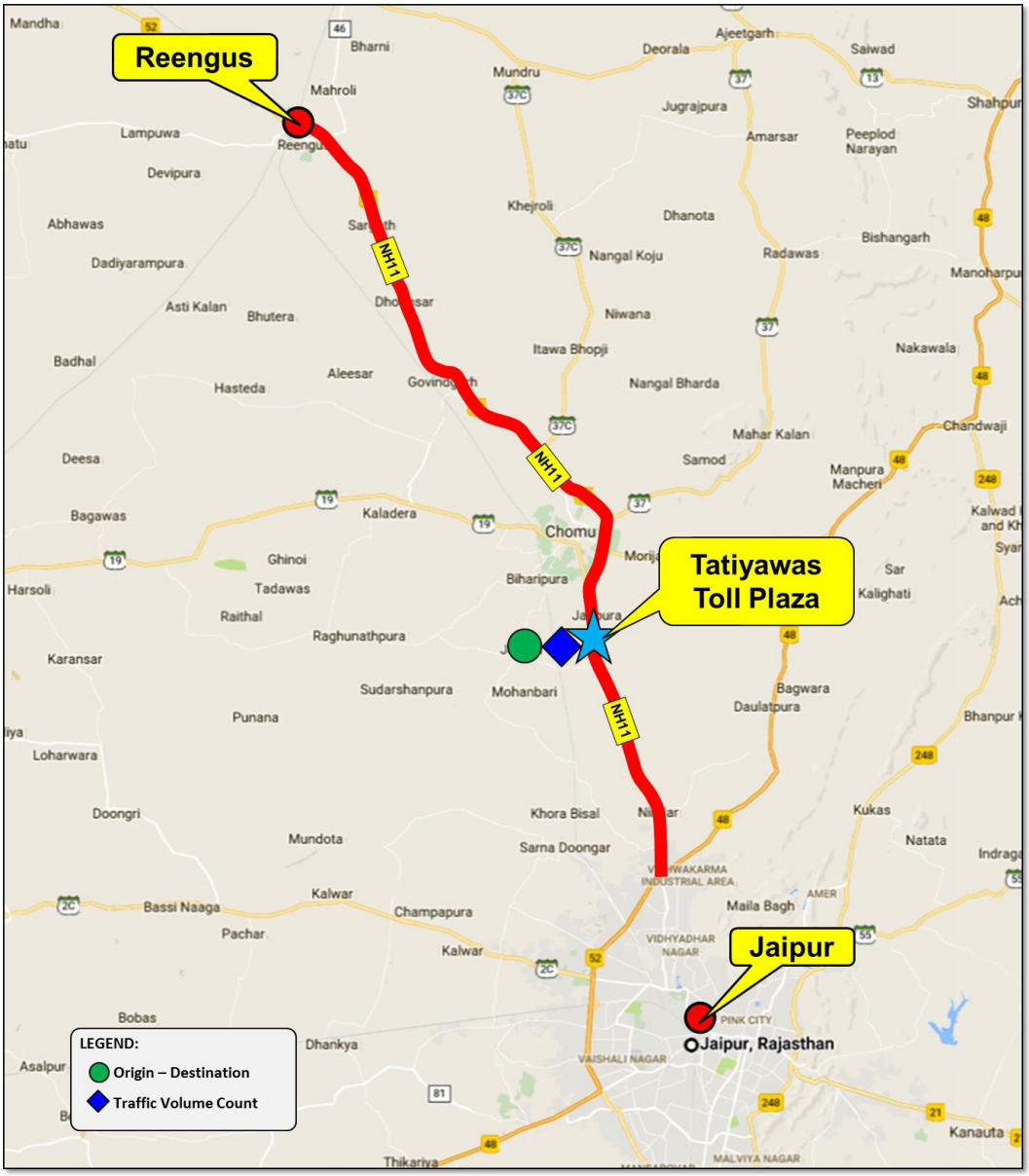


Figure 2:2 : Traffic Survey Locations

The project corridor and the survey location are schematically shown in **Figure 2:2**. It can be observed that the entire project stretch is covered extensively and appropriately in terms of capturing the traffic flows and characteristic of the project road. The survey methodology and the schedule is discussed in the following sections.

2.3 Classified Traffic Volume Count Survey

The 7-day (24 hours, both directions) Video graphic traffic volume count survey was carried out near the Tatiyawas toll plaza (km 257.000). Traffic was recorded using video cameras and data was extracted. Sufficient lighting arrangement was ensured for the video recording during night time. The traffic volume count data was processed using the commonly used spread sheet package. The processed hourly traffic volume data was compiled direction-wise.

Data collected from site was analyzed to study daily variation and hourly variation of traffic, traffic composition and Average Daily Traffic (ADT) at the survey location. The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress as per **IRC: 64-1990** were adopted.

Average Daily Traffic (ADT)

Daily traffic volume by vehicle type and direction were added separately and averaged to determine the Average Daily Traffic.

Annual Average Daily Traffic (AADT)

To account for the seasonal variation in the traffic, seasonal correction factors were worked out using past toll traffic data from the toll operator. Seasonal variation factors were estimated for each category of vehicle.

2.4 Origin and Destination Survey

The origin and destination (OD) survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic along the study corridor. The OD survey was carried out for one day (24 hours) on a typical weekday near Tatiyawas toll plaza (Refer **Figure 2:3**).

Figure 2:3: Origin Destination Survey

Roadside Interview Method was adopted for conducting the survey. The vehicles were

stopped on random sample basis and the drivers/ users were interviewed by trained enumerators to collect the needed information/data. The survey format is finalized keeping in view the existing concessions as per Concession Agreement. The pertinent information in respect of travel characteristics including the following were collected during the OD Surveys;

- Origin zone & Destination zone of the vehicles
- Trip Purpose
- Frequency of travel
- Trip Length
- Type of Commodity (Commercial Vehicles)

2.5 Secondary Data collection

In addition to the data collected through primary surveys, the following data/ information was collected from various authorities. Review of the secondary data collected is presented in **Chapter 3.**

- Registered motor vehicles data from the Road Transport Authority (RTA) for the project influencing States.
- Past toll traffic data
- Net State Domestic Product for the major influencings states of project corridor traffic.
- Competing facilities that could affect the traffic on project road in future.

2.6 Survey Schedule

The traffic surveys were carried out near Tatiyawas toll plaza and survey schedule is presented in the **Table 2:1**.

Table 2:1: Survey Schedule

S. No	Type of Surveys	Schedule
1	7 Day Video graphic Volume Count	28th September to 4th October 2016 (7 Days)
2	Origin Destination Survey	24 Hours (8 am on 28th September to 8 am on 29th September 2016)

2.7 Traffic Data Analysis

Detailed analysis of the primary survey data and secondary data was undertaken to assess the traffic and travel characteristics of the project corridor. Daily traffic volume by vehicle type and direction at the survey location was used in determining Average Daily Traffic (ADT). The Annual Average Daily Traffic (AADT) was determined after applying seasonal correction factors to ADT. The tollable traffic was assessed after taking into account the toll exempted vehicles.

2.8 Traffic Forecast

The accuracy of traffic forecast depends upon the accuracy of the growth factors. To establish the future traffic growth rates, following approaches are explored.

- Growth rates based on past toll traffic data

- Growth rates based on registered motor vehicles
- Transport Demand Elasticity Approach

The growth rates are assessed for three scenarios viz. optimistic, realistic and pessimistic. Based on these growth rates, traffic was projected for the reaming concession period. The diversion of traffic due to competing facilities, if any, as well as the generated traffic due to proposed new developments is also taken into consideration while estimating the future traffic.

2.9 Toll Revenue Estimation

The project is a toll road project. Tollable traffic on section of the project corridor was derived from the analysis of primary surveys. The base year tollable traffic was projected to future years using the adopted growth rates and toll revenue is estimated for each horizon year using the specified toll rates as per the Concession Agreement. While estimating the toll revenue, toll exempted vehicles and various applicable concessions were taken into consideration.

2.9.1 Toll Exempted Vehicles

The toll exempted vehicles and the exempted dignitaries as per NHAI are presented in **Table 2:2**.

Table 2:2 Toll Exempted Vehicles

Exempted Vehicles	Exempted Dignitaries
i) Defence Vehicles ii) Police vehicles	i) President of India ii) Vice- President of India
iii) Vehicles with VIP symbol	iii) Central and State Minister while in vehicles
iv) Fire Fighting vehicles	iv) Leader of Opposition in Lok Sabha or Rajya Sabha or State Legislatures having the status of Cabinet Minister, while in vehicles
v) Ambulances	v) Governors of States
vi) Funeral vans	vi) Lieutenant Governors of Union Territories
vii) Post and Telegraphs Department's vehicles	vii) Speakers or Chairman of Central and State Legislatures while in vehicles
viii) Central and State Govt. vehicles on duty	viii) Executive councillors
	ix) Foreign dignitaries on State visit to India x) Foreign Diplomats Stationed in India using cars with CD or CC Number Plate

Chapter 3 Review of Secondary Data

3.1 General

As indicated in earlier Chapters, the project corridor connects two most important districts (Jaipur and Sikar) of Rajasthan. This project corridor is having higher influence of

passenger vehicles due to attraction of tourist spots. Presence of some industries in Jaipur district generates commercial vehicles traffic movement along the project corridor. The traffic intensity on any highway is a function of Population, Net State Domestic Product (NSDP) / Net District Domestic Product (NDDP) and number of registered motor vehicles in the project influence area. The growth in each parameter will have significant impact on the traffic intensity on the project corridor. For the estimation of future traffic on the corridor and toll revenues, Consultants have collected extensive secondary information/ data including the following:

- Population of Rajasthan State and other influencing districts of Rajasthan
- Net State Domestic Product (NSDP) of Rajasthan
- Registered Motor Vehicles in Rajasthan
- Past traffic data at the toll plaza located on project road

3.2 Population of Rajasthan

Growth in population in project road influence area will have significant impact on the passenger traffic on the project corridor. **Table 3*:1*** shows the population in each district of Rajasthan.

Table 3:1 Population Details

District	2001	2011	Percentage Increase
Ajmer	2182000	2584913	18%
Alwar	2992000	3671999	23%
Banswara	1502000	1798194	20%
Baran	1022000	1223921	20%
Barmer	1965000	2604453	33%
Bharatpur	2101000	2549121	21%
Bhilwara	2014000	2410459	20%
Bikaner	1674000	2367745	41%
Bundi	963000	1113725	16%
Chittaurgarh.	1803000	1544392	-14%
Churu	1924000	2041172	6%
Dausa	1317000	1637226	24%
Dholpur	983000	1207293	23%
Dungarpur	1108000	1388906	25%
Ganganagar	1789000	1969520	10%
Hanumangarh	1518000	1779650	17%
Jaipur	5251000	6663971	27%
Jaisalmer	508000	672008	32%
Jalore	1449000	1830151	26%
Jhalawar	1180000	1411327	20%
Jhunjhun	1914000	2139658	12%
Jodhpur	2887000	3685681	28%
Karauli	1210000	1458459	21%
Kota	1568000	1950491	24%

District	2001	2011	Percentage Increase
Nagaur	2775000	3309234	19%
Pali	1820000	2038533	12%
Rajsamand	987000	1158283	17%
Sawai Madhopur	1117000	1338114	20%
Sikar	2288000	2677737	17%
Sirohi	851000	1037185	22%
Tonk	1212000	1421711	17%
Udaipur	2633000	3067549	17%
Pratapgarh	--	868231	--

**Source: Census of India*

It can be observed from the above Table, the increase in Population in Jaipur and Sikar districts is 27% and 17% respectively. Highest growth is observed in Bikaner district.

3.3 Net State Domestic Product (NSDP) of Influencing States

In estimating travel demand elasticity, it is logical to relate growth in passenger and freight traffic with Net State Domestic Product (NSDP) and population. The compiled data of NSDP at constant prices (2004-2005) for influencing states is presented in **Table 3*:2***.

Table 3:2 NSDP of Influencing States at Constant Prices (2004-2005)

Year	Rajasthan		Gujarat		Delhi		Haryana	
	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change
2004-05	112636	--	172265	--	94716	--	86222	--
2005-06	120202	7%	197270	15%	104473	10%	94011	9%
2006-07	134350	12%	213954	8%	117444	12%	104700	11%
2007-08	140471	5%	239253	12%	130683	11%	112896	8%
2008-09	152284	8%	249480	4%	146961	12%	121588	8%
2009-10	161160	6%	284732	14%	159044	8%	136780	12%
2010-11	190130	18%	315892	11%	172235	8%	146053	7%
2011-12	202683	7%	336887	7%	187672	9%	158524	9%
2012-13	203298	0%	356478	6%	205396	9%	167389	6%
2013-14	212524	5%	385472	8%	224655	9%	178458	7%
2014-15	237529	12%	411179	7%	225629	0.5%	189837	6%

**Source: Economic Survey of Indian States*

3.4 Registered Motor Vehicles

Registered motor vehicles growth in the project corridor influence area is considered as an alternative approach in estimating the traffic growth in the absence of any additional information or usable past traffic data on the project road. Also this can be used in determining the travel demand elasticity. Consultants have collected the data related to registered motor vehicles in Rajasthan and the same is presented in **Table 3:3**. The percentage variation is presented in **Table 3:4.**

Table 3:3 Registered Motor Vehicles in Rajasthan

Year	Car	Bus	LCV	Truck &MAV
2005-06	460380	60979	61908	206361
2006-07	515376	63320	87345	232007
2007-08	577625	65605	92993	252109
2008-09	644683	69298	98692	266048
2009-10	727158	73257	106045	289925
2010-11	825612	77980	116678	323273
2011-12	934962	83345	126012	362028
2012-13	1051288	88616	138613	401983
2013-14	1168021	93892	152475	434379
2014-15	1294542	97650	167722	472365
Avg Annual Growth (2005-06 to 2014-15)	12.17%	5.37%	11.71%	9.64%

** Source: Motor Transport Statistics of Rajasthan*

Table 3:4 Growth Rate of Registered Motor Vehicles

Year	Car	Bus	LCV	Trucks & MAV
2005-06	--	--	--	--
2006-07	12%	3.8%	41%	12%
2007-08	12%	4%	6%	9%
2008-09	12%	6%	6%	6%
2009-10	13%	6%	7%	9%
2010-11	14%	6%	10%	12%
2011-12	13%	7%	8%	12%
2012-13	12%	6%	10%	11%
2013-14	11%	6%	10%	8%
2014-15	11%	4%	10%	9%

The growth rate in total registered motor vehicles in Rajasthan during 2014-2015 is 11%, 4%, 10% and 9% for Car, Bus, LCV and Truck/MAV respectively.

3.5 Traffic Data from Existing Toll Plaza

The toll traffic data for the last 3 years (July 2013 to June 2016) is collected from Tatiyawas Toll Plaza operator. The summary of the data collected is presented in **Table 3:5**. This data is used for assessing the seasonality factors and trend of traffic growth on the project corridor.

Table 3:5 Traffic Data from Toll Plaza

Month	Car	LCV	Truck	Bus	MAV
Jul-13	9292	1066	1142	864	1224
Aug-13	9072	868	1154	767	1094
Sep-13	9431	1029	1205	999	1212
Oct-13	9473	1040	1251	1027	1193
Nov-13	10976	987	1237	754	1043
Dec-13	11412	1059	1243	856	1185
Jan-14	11444	1049	1228	1028	1261
Feb-14	12949	1114	1066	1269	1332
Mar-14	12120	1110	1065	1306	1401

Month	Car	LCV	Truck	Bus	MAV
Apr-14	13037	1204	1124	1312	1361
May-14	13466	1241	1142	1292	1297
Jun-14	13158	1197	1104	1326	1420
Jul-14	12097	1070	919	1266	1164
Aug-14	12620	1010	692	1332	1024
Sep-14	12090	1088	839	1295	1119
Oct-14	12604	1108	870	1292	1138
Nov-14	12738	1171	1011	1308	1202
Dec-14	13262	1164	988	1309	1236
Jan-15	13151	1085	887	1233	1150
Feb-15	15232	1236	1030	1327	1246
Mar-15	13321	1111	841	1269	1179
Apr-15	15000	1284	908	1306	1224
May-15	14435	1234	947	1316	1275
Jun-15	13436	1164	952	1298	1328
Jul-15	12119	1054	818	1275	1152
Aug-15	12051	994	714	1277	1128
Sep-15	12149	1084	799	1280	1229
Oct-15	12125	1175	862	1287	1330
Nov-15	13317	1080	809	1305	1232
Dec-15	12802	1102	895	1283	1380
Jan-16	12508	1061	807	1302	1348
Feb-16	14030	1140	848	1387	1415
Mar-16	12753	972	776	1354	1310
Apr-16	13677	1014	720	1388	1266
May-16	11570	907	713	1387	1212
Jun-16	11460	935	690	1401	1207
Jul-16	12065	909	583	1316	997
Aug-16	11720	930	524	1387	834
Sep-16	11473	991	623	1404	944

Table 3:6 Tollable Traffic Count by Category of Vehicles

Modes	For FY ended March 31,			For the six months ended September 30,		CAGR FY15 –FY16 (%)
	2014*	2015	2016	2015	2016	
Car(1)	2,778, 217	4,768,603	4,780, 097	2,415,258	2,194,922	0.20%
LCV(2)	269,270	416,275	406, 970	207, 816	173,424	-2%
Bus/Truck(3)	562,198	821,467	787,140	393,187	370,144	-4%
Multi-axle(4)	316,214	442,138	468, 246	223,787	197,033	6%
Total	3,925,902	6,448,484	6,442,455	3,240,050	2,935, 524	0%

Source: TMS Data

Note:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

3.6 Historical Annual Average Daily Tollable Traffic

The annual average daily tollable traffic for the project increased to 26, 937 PCUs in 2016 from 26,978 PCUs in 2015, representing a CAGR of 0%. The **Table 3:7** below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3:7 Tollable Annual Average Daily Traffic Historical

Modes	For the FY ended March 31			For the six months ended September 30,		CAGR FY15 –FY16 (%)
	2014	2015	2016	2015	2016	
Car(1)	10, 685	13,065	13,060	13 198	11,994	0%
LCV(2)	1,036	1,140	1,112	1,136	948	-2%
Bus/Truck(3)	2,162	2,251	2,151	2,149	2,023	-4%
Multi-axle(4)	1,216	1,211	1,279	1,223	1,077	6%
Total	15,100	17,667	17,602	17,705	16,041	0%
Total PCUs	24,199	26,978	26, 937	26,850	24,329	0%

Source: TMS Data

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

On an average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the JR Project's total traffic mix, 73%,7*%,*13% and 7% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 74%, 6%, 12%, and 7% of tollable traffic, respectively. Any growth in the macroeconomic factors can lead to an increase in the traffic growth in this area.

3.7 Toll Structure at Existing Toll Plaza

Existing toll structure including toll concessions at the Tatiyawas toll plaza on the project corridor is summarized in **Table 3:8**.

Table 3:8 Toll Structure at Existing Toll Plaza (2016-2017)

Toll Plaza	Vehicle Type	Toll (Rs)		
		Single Trip	Return Trip Within a day	Monthly Pass (50 Journey)
Tatiyawas	Car/ Jeep/ Van	55	80	1760
	LCV	85	130	2845
	Bus / Truck	180	270	5960
	3 to 6 Axle Trucks	280	420	9350
	Oversized vehicles (7 or more axle)	340	510	11380

The rates for monthly pass applicable for local non-commercial vehicles residing within a distance 20 km from the plaza for the financial year 2016-2017 shall be Rs. 235.

Chapter 4 Traffic Surveys and Analysis

4.1 General

This Chapter presents details about the various traffic surveys carried out as part of the present study and the survey data analysis. The results of analysis will form input for estimation of tollable traffic and toll revenue.

4.2 Classified Traffic Volume Count Survey

Classified traffic volume count survey was carried out at Tatiyawas Toll Plaza (km 257.000) for 7 consecutive days, from 28th September to 4th October 2016. The video graphic data was extracted for all the 7 days. During the data extraction, toll exempted vehicles were counted separately. The extracted video graphic data was analyzed to study the hourly variation and daily variation of traffic, peak hour share, traffic composition and Average Daily Traffic (ADT) at the survey location. Seasonality factors were applied for obtaining the Annual Average Daily Traffic (AADT).

4.3 Passenger Car Units

The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress in *Guidelines for Capacity of Roads in Rural Areas* (IRC: 64-1990) were used (**Table 4*:1***).

Table 4:1 PCU Factors

Vehicle Type	PCU Factor	Vehicle Type	PCU Factor
Car/Jeep	1.00	LCV	1.50
Van/Tempo (passenger)	1.00	2-Axle Truck	3.00
Mini Bus	1.50	3-Axle Rigid Truck	3.00
Standard Bus	3.00	MAV	4.50

**Source: Guidelines for Capacity of Roads in Rural Areas (IRC 64-1990)*

4.4 Average Daily Traffic (ADT)

Daily traffic volume by vehicle type and direction is added separately and averaged to determine the Average Daily Traffic. ADT (tollable traffic), observed at the survey location, in vehicles and in PCUs, are presented in **Table 4:2** and shown in **Figure 4:1**.

Table 4:2 Average Daily Traffic (ADT) on the Project Corridor

Mode		ADT	
		Vehicles	PCUs
Passenger Vehicles	Car/Jeep/Van	11793	11793
	BUS	1390	4170
Commercial Vehicles	LCV	1089	1634
	2-Axle Truck	653	1959
	3-6 Axles	1013	4557
	>6 Axles	1	5

Mode	ADT	
	Vehicles	PCUs
Tollable Traffic	**15939**	**24119**
Car Exempted	915	915
LCV Exempted	27	41
Bus Exempted	11	34
Truck Exempted	4	12
MAV Exempted	6	29
OSV Exempted	0	0
Auto Exempted	0	0
Toll Exempted Vehicles	**965**	**1032**
Total	**16904**	**25151**

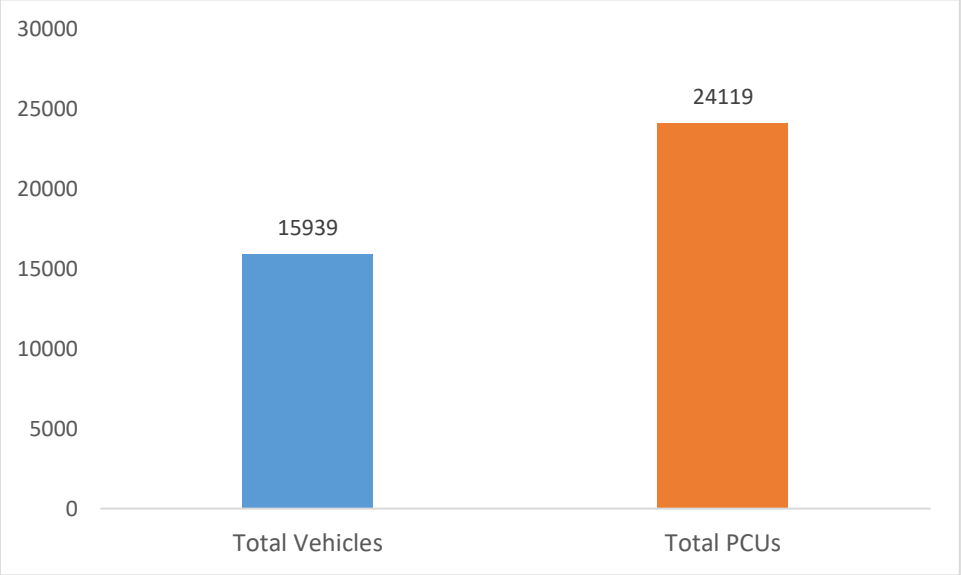


Figure 4:1 Average Daily Tollable Traffic

4.5 Daily Variation of Traffic

Daily traffic variation in terms of vehicles as well as in PCUs at Tatiyawas toll plaza is presented in **Table 4*:3*** and graphically shown in **Figure 4:2**.

Table 4:3 Daily Variation of Traffic

Date	Day	Tatiyawas Toll Plaza	
		Total Vehicles	Total PCUs
28-Sep-16	Wednesday	17140	25715
29-Sep-16	Thursday	15833	24343
30-Sep-16	Friday	16130	24653
01-Oct-16	Saturday	16050	24536
02-Oct-16	Sunday	17728	26284
03-Oct-16	Monday	18678	25806
04-Oct-16	Tuesday	16767	24710

Date	Day	Tatiyawas Toll Plaza	
		Total Vehicles	Total PCUs
Average Daily Traffic		16904	25151

The salient observations at the survey location are as follows.

- At Tatiyawas toll plaza, maximum traffic was observed on Sunday (in terms of vehicles with 18678 vehicles) and Saturday (in terms of PCUs with 26284 PCUs). Sunday and Tuesday can be considered as average traffic days.

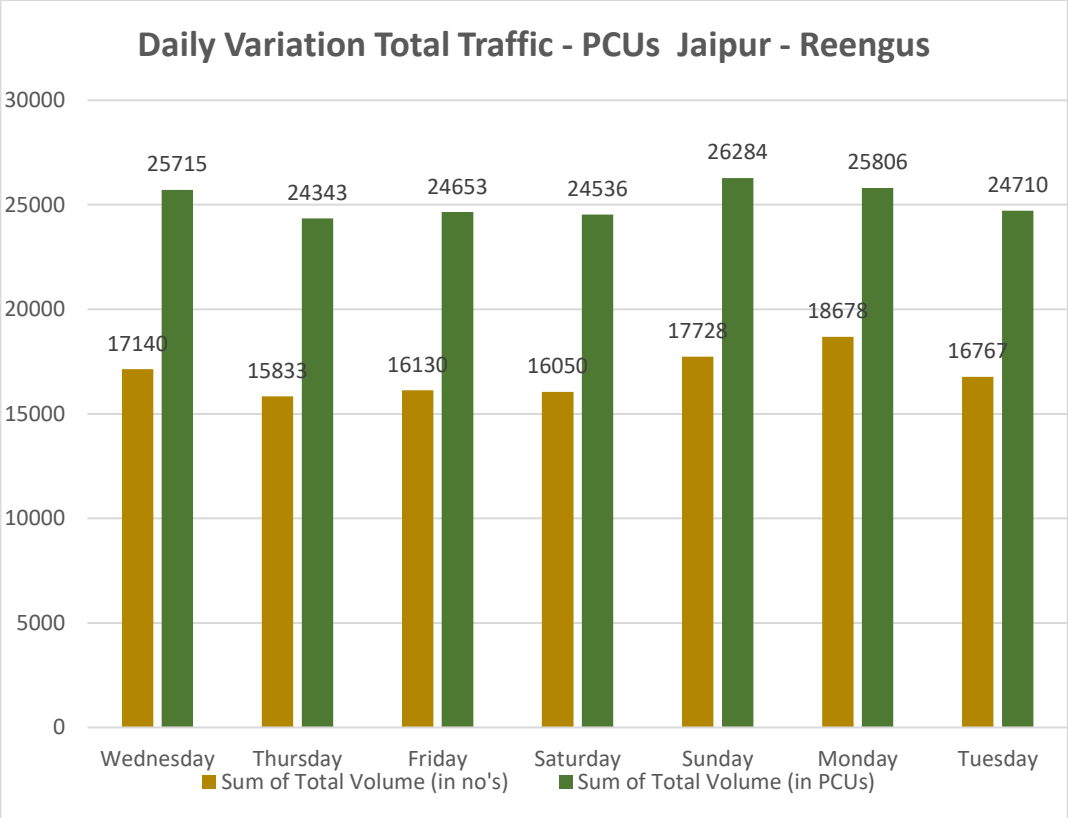


Figure 4:2 Daily Variation of Traffic – Tatiyawas Toll Plaza

The mode-wise traffic breakup for the 7 days of traffic count survey and the ADT at the survey location is presented in **Table 4:4**

Table 4:4 Mode-wise Traffic

Mode	Tatiyawas Toll Plaza						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Car	11504	11805	11793	13385	14955	12704	12812
LCV	1142	1156	1118	1176	974	1089	1163
Bus	1374	1369	1345	1388	1498	1421	1415
Truck	770	729	695	690	489	586	641
MAV	1043	1070	1097	1089	762	966	1107
OSV	0	1	2	0	0	1	2
Total	**15833**	**16130**	**16050**	**17728**	**18678**	**16767**	**17140**

4.6 Maximum, Minimum and Average Daily Traffic

The variation of traffic with respect to average in terms of vehicles and PCUs observed at the survey location is presented in **Table 4:5.** It has been observed that at Tatiyawas toll plaza, the minimum traffic variation in terms of PCUs is 3% and maximum traffic variation in terms of PCUs is 4% with respect to ADT.

Table 4:5 Minimum, Maximum and Average Daily Traffic

Location	Tatiyawas Toll Plaza	
	Total Vehicles	Total PCUs
ADT	16904	25151
Maximum Traffic	18678	26284
Minimum Traffic	15833	24343
% Variation of Max Traffic w.r.t. ADT	**9%**	**4%**
% Variation of Min Traffic w.r.t. ADT	**-7%**	**-3%**

4.7 Hourly Variation of Traffic

Average hourly variation of traffic observed at the survey location is presented in **Figure 4:3**. Important inferences drawn from analysis are presented below:

- At Tatiyawas Toll Plaza location, it is observed that peak period was observed between 16.00 and 17.00 hours with maximum peak hour traffic of 1485 PCUs

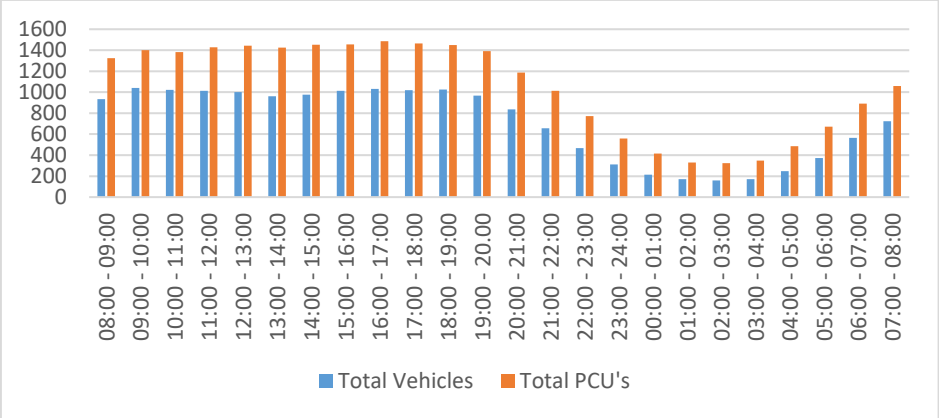


Figure 4:3 Hourly Variation of Traffic – Tatiyawas Toll Plaza

4.8 Traffic Composition

Average composition of tollable traffic observed at the volume count survey location is presented in **Table 4:*6*** and graphically shown in **Figure 4:4**. The major composition of vehicles is of Car (75%) followed by MAV (6%).

Table 4:6 Average Traffic Composition at Survey Location

Mode	Percentage Composition
Car	75%
LCV	7%
Bus	8%
Truck	4%
MAV	6%

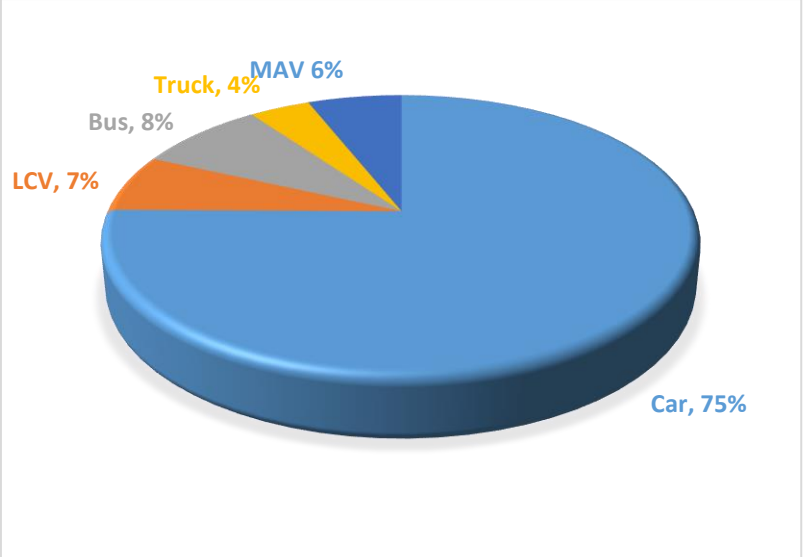


Figure 4:4 Traffic Composition – Tatiyawas Toll Plaza

4.9 Estimation of Seasonal Variation Factors

To account for the seasonal variation in the traffic, seasonal variation factors have been worked out using past toll traffic data collected from toll operator. The data used for estimating the seasonality factors is presented in **Chapter 3**. The factors have been estimated separately for passenger vehicles and freight vehicles by taking the ratio of monthly average to actual counting month. It may be noted that, surveys have been carried out for 3 days in the month of September and 4 days in October. Therefore, weighted average of September and October with respect to number of survey days in each month has been estimated. These factors are presented in **Table 4*:7***.

Table 4:7 Seasonal Correction Factors

Mode	SCF
Car	1.12
LCV	1.00
Truck (2 Axle)	1.01
Bus	1.00
MAV	1.03

4.10 Annual Average Daily Traffic (AADT)

Considering the above Seasonal Correction Factors, Annual Average Daily Traffic at the survey location on the project corridor is estimated. The mode wise Annual Average Daily tollable Traffic (AADT) on the project road is presented in **Table 4*:8***.

Table 4:8 Annual Average Daily Traffic (AADT)

Mode		Tatiyawas Toll Plaza	
		ADT	AADT
Passenger Vehicles	Car/Jeep/Van	11793	13158
	BUS	1390	1390
Commercial Vehicles	LCV	1089	1090
	2-Axle	653	659
	3-6 Axles	1013	1042

Mode		Tatiyawas Toll Plaza	
		ADT	AADT
	>6 Axles	1	1
Tollable Traffic		**15939**	**17341**
Car Exempted		915	1021
LCV Exempted		27	27
Bus Exempted		11	11
Truck Exempted		4	4
MAV Exempted		6	7
Toll Exempted Vehicles		**965**	**1071**
Total		**16904**	**18412**

4.11 Origin – Destination Survey

4.11.1 General

The origin-destination survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic on the project corridor. The results of these surveys are useful in estimating the traffic split / segmentation and in assessing the traffic characteristics of vehicles. The O-D survey was carried out for 24 hours near Tatiyawas Toll Plaza on the 28th September 2016 simultaneously along with traffic volume count survey.

4.11.2 Sample Size

Sample size achieved during the OD survey as percentage to the total traffic is presented in **Table 4*:9*.**

Table 4:9 Sample Size of OD Survey

Mode	Sample Size
Car	17%
LCV	75%
BUS	22%
Truck	59%
MAV	62%

4.11.3 Zoning System

It is required to code the origin and destination of trip. Broad zoning system was developed to analyse the O-D data collected from the field. The zoning system was evolved mainly considering the toll notification issued by *Ministry of Shipping, Road Transport and Highways* (Department of Road Transport & Highways). Local travellers (resident within 20 km from toll plaza) would get concession on the toll rates. This has been considered while finalizing the zoning system. In all, total 271 Traffic Analysis Zones (TAZ) were considered. The details of traffic zones and codes adopted for the study are presented in **Annexure**. The pictorial representation of zoning is given in the **Figure 4:5**. The OD matrix for various modes is separately provided in soft copy (.xls)

The proportion of vehicles with origin or destination within Rajasthan State are presented in **Table 4*:10***. It has been observed that except MAV, maximum proportion of vehicles is having either Origin or destination within Rajasthan. Generally, traffic growth rate is heavily

reliant on Rajasthan state as around 99% of passenger traffic and around 86 % of freight traffic originated from or were destined for Rajasthan.

Table 4:10 %Trips with Origin or destination in Rajasthan

Mode	Percentage Contribution
Car	97%
Bus	96%
LCV	96%
2-Axle Truck	97%
MAV	87%

The following **Table 4*:11*** shows the major traffic generators on the project road. It can be inferred that the major contribution is from Rajasthan.

Table 4:11 Major Traffic Generators – Tatiyawas

Cities		Passengers	Goods
Rajasthan	Jaipur	71%	70%
	Jhunjhunun	5%	4%
	Sikar	10%	7%
	Reengus	5%	5%
	Other Districts of Rajasthan	5%	7%
Other Districts of India		4%	8%

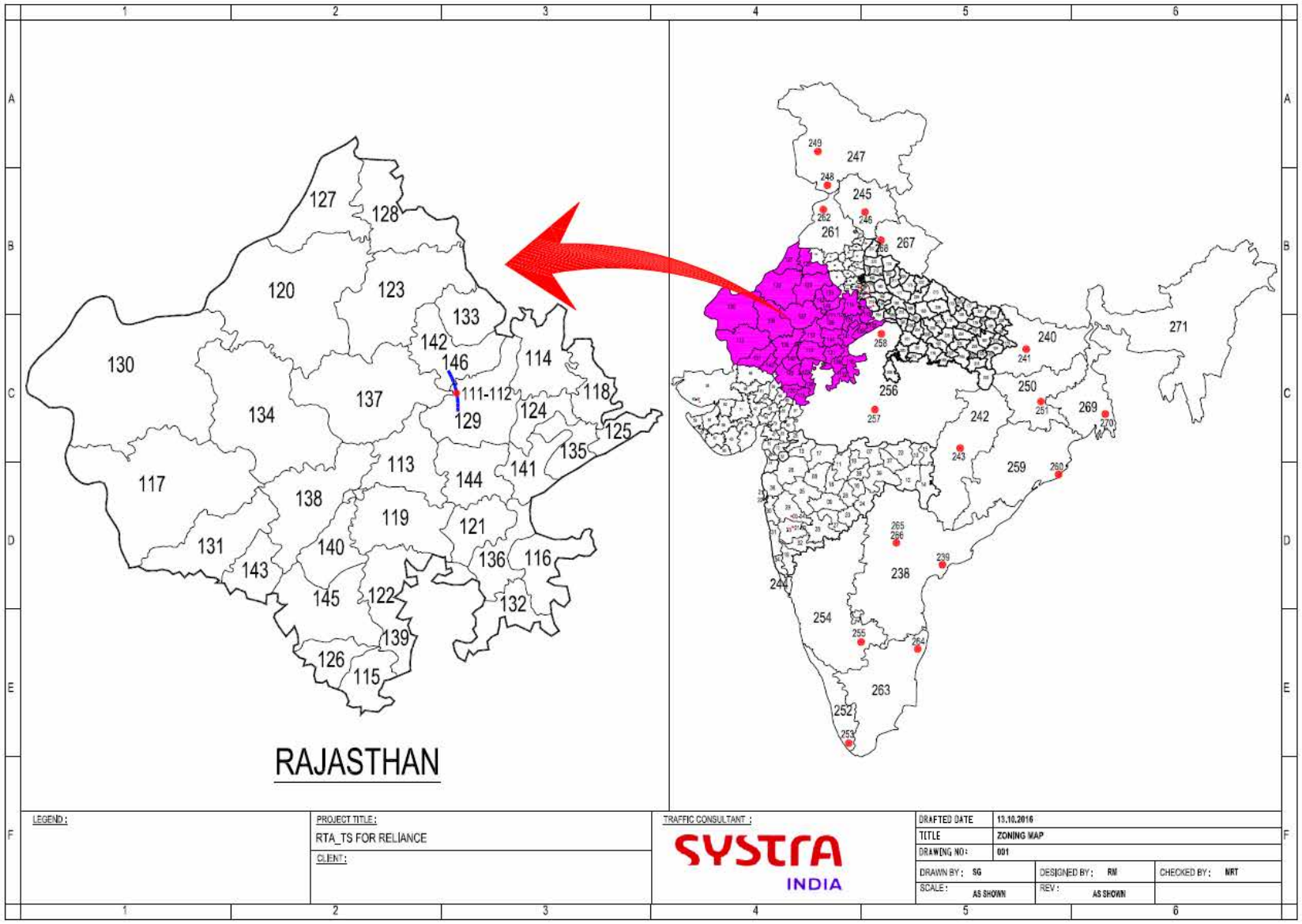


Figure 4:5 Zoning System

4.11.4 Commodity

During OD Survey, the commodity which is carried by the goods vehicles was also noted. It is observed that at Tatiyawas toll plaza, Construction Material and Agricultural Products are the major commodity being carried. **Table 4*:12*** and **Figure 4:6** show the commodity distribution observed at Tatiyawas toll plaza location.

Table 4:12 Commodity Share

Commodity	Location
Empty	27%
Agricultural Products	11%
Forest Products	1%
Fuel, Oil & Gas	4%
Construction Materials	5%
Fruits and Vegetables	9%
Powder	3%
Iron & Steel	5%
Machinery	7%
Consumer Goods	5%
Timber & furniture	1%
Poultry, Cattles & feed	2%
Construction Material	19%

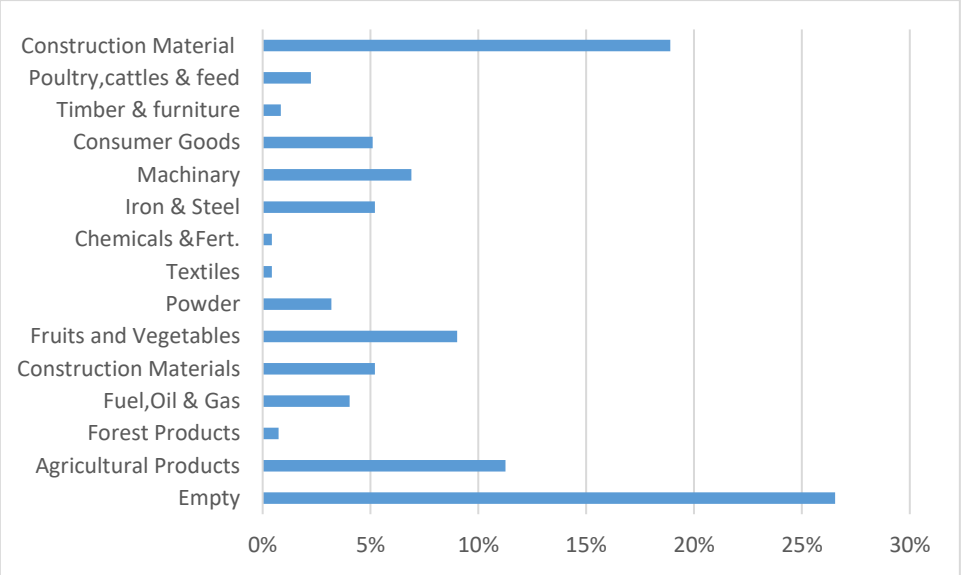


Figure 4:6 Commodity Share– Tatiyawas Toll Plaza

4.11.5 Trip Length

The trip length of the journey was enquired during OD survey and the analysis of the same is carried out. **Table 4*:13*** and **Table 4*:14*** present mode-wise trip length distribution observed at the survey location (Tatiyawas). It can be observed that maximum proportion of trips are within 300 km range and 1500 range for passenger and goods vehicles

respectively. Graphical representation of trip length frequency distribution is presented in **Figure 4:7** and **Figure 4:8**.

Table 4:13 Trip Length Frequency Distribution - Passenger Vehicles

Distance	Passenger Vehicles			
	Car	Mini Bus	Private Bus	Govt. Bus
0-25	6%	3%	0%	0%
25-50	33%	58%	33%	10%
50-75	9%	9%	10%	5%
75-100	8%	9%	4%	12%
100-125	12%	9%	12%	14%
125-150	5%	0%	6%	5%
150-175	6%	0%	10%	9%
175-200	6%	9%	12%	16%
200-300	8%	3%	15%	19%
300-400	5%	0%	0%	9%
400-500	2%	0%	0%	2%
>700	1%	0%	0%	0%

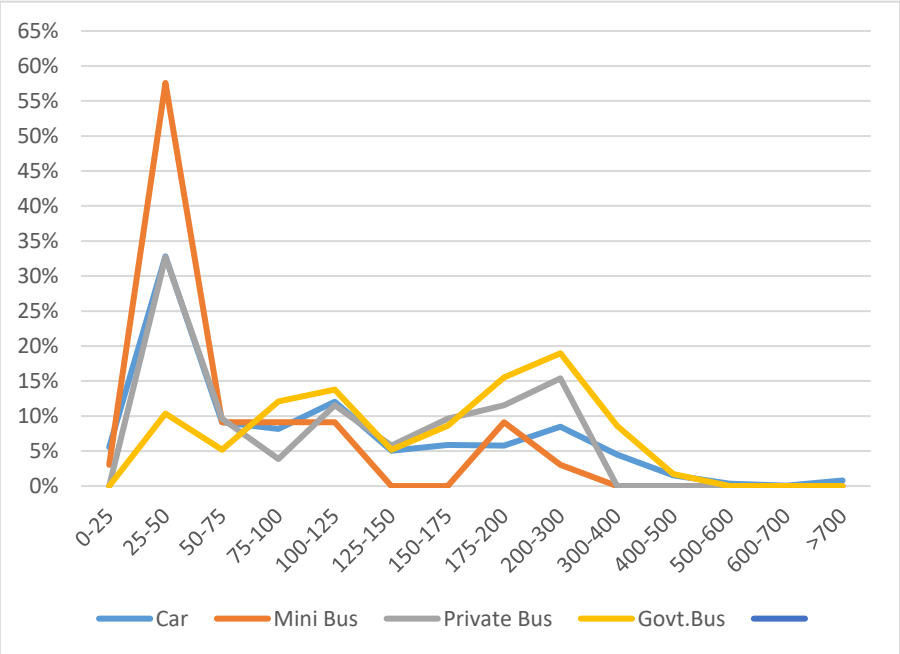


Figure 4:7 Trip Length Frequency Distribution - Passenger Vehicles

Table 4:14 Trip Length Frequency Distribution - Goods Vehicles

Distance	Goods Vehicles					
	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV	OSV
0-25	13%	7%	7%	4%	5%	0%
25-50	55%	33%	27%	22%	12%	17%
50-75	9%	16%	11%	9%	9%	0%
75-100	3%	11%	13%	14%	10%	0%
100-125	6%	7%	10%	6%	7%	0%
125-150	3%	5%	3%	5%	2%	0%
150-175	2%	1%	2%	4%	3%	0%

Distance	Goods Vehicles					
	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV	OSV
175-200	5%	5%	10%	12%	11%	17%
200-300	1%	7%	4%	4%	6%	0%
300-400	2%	2%	6%	10%	11%	0%
400-500	0%	1%	1%	1%	5%	0%
500-600	0%	1%	0%	0%	4%	17%
600-700	0%	2%	3%	1%	1%	17%
700-800	0%	1%	0%	0%	0%	0%
800-1000	0%	1%	1%	1%	5%	0%
1000-1500	0%	1%	1%	7%	7%	33%
>1500	0%	0%	0%	0%	2%	0%

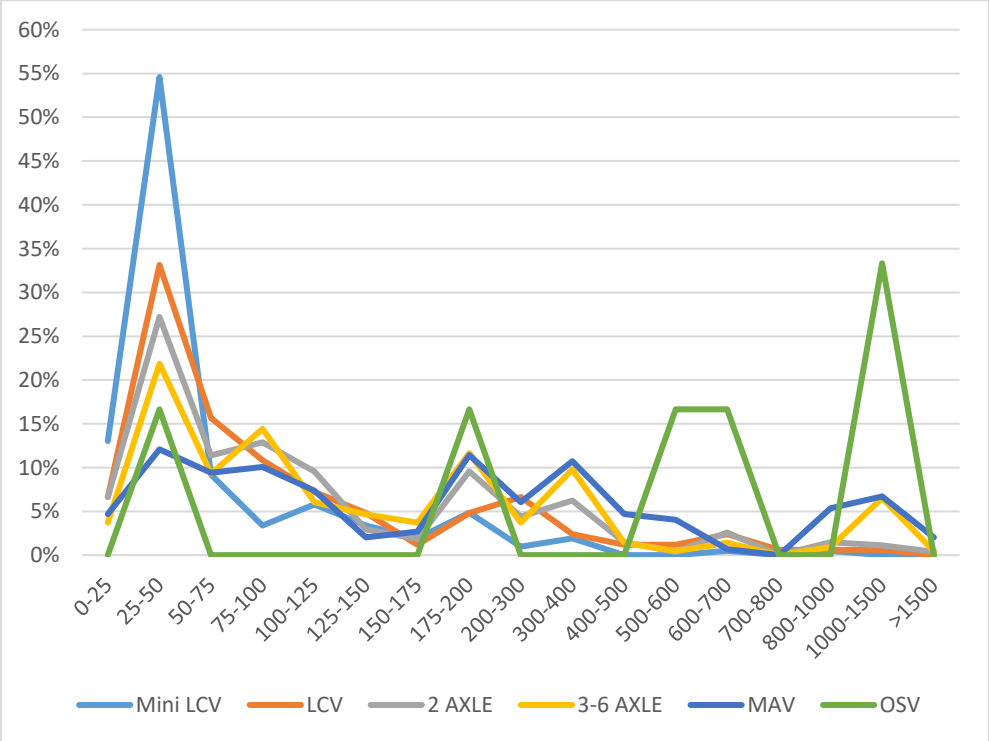


Figure 4:8 Trip Length Frequency Distribution – Goods Vehicles

4.11.6 Trip Frequency

Traffic data from Toll Plaza was used for assessing the proportion of users using single journey, return journey and monthly pass. The observed traffic segmentation at Tatiyawas Toll Plaza is given in **Table 4:15** and the same is shown graphically in **Figure 4:9**. It can be observed that return journey ticket is highly preferred by Car, LCV, Bus and Truck. Most of the MAVs use single ticket. Unlike other locations 70% of Truck trip length of truck is less than 150 Km most users prefer return pass

Table 4:15 Traffic Segmentation

Mode	Tatiyawas		
	Single	Return	Monthly Pass
Car	24%	67%	9%
LCV	29%	62%	9%
Bus	20%	77%	4%
Truck	23%	73%	4%
MAV	64%	36%	0%

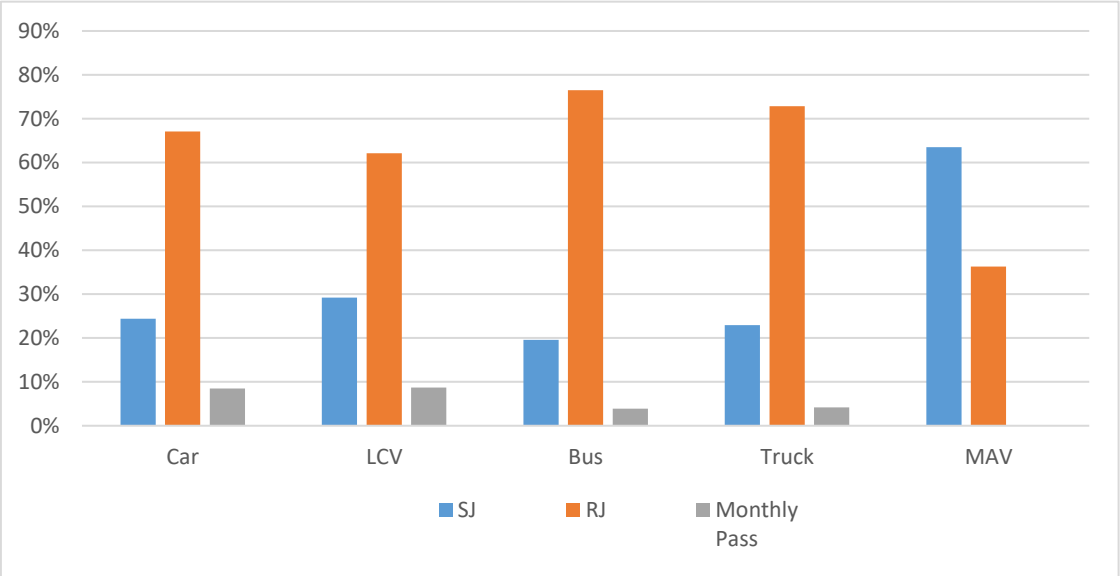


Figure 4:9 Traffic Segmentation – Tatiyawas Toll Plaza

4.11.7 Local Vehicles

As per the existing toll concession, local travellers (excluding commercial) residing within 20 km from the toll plaza can avail the monthly pass at Rs.235. The proportion of local travellers (Car/ Jeep/ Van) within 20 km from toll plaza is about 5% at Tatiyawas toll plaza. This data was estimated based on the OD survey analysis.

Chapter 5 Traffic Forecast and Toll Revenue Analysis

5.1 General

Assessment of traffic growth rates by various methods and traffic forecast for horizon years up to 2029 are presented in this Chapter. Based on the traffic projections and proposed toll rates, tollable traffic and toll revenue has been estimated and presented in this Chapter.

5.1.1 Assessment of Traffic Growth Rates

Long term forecasting of traffic on the project road during the time horizon of the study is required for assessing the financial viability of the project. To establish the future traffic growth rates, various approaches, including Transport Demand Elasticity Approach, were attempted.

5.1.2 Growth Rates Based on Past Traffic Data

Consultants had carried out detailed analysis of the past toll traffic data of Tatiyawas Toll Plaza on the project corridor. For assessing the traffic growth rates, based on historical traffic data, at least 10 years' time series data are required. However, only three years' toll traffic data is available and it is not logical to conclude the growth in traffic based on three years' traffic data. It is worth mentioning the latest IRC 108-2015 (*Guidelines for Traffic Forecast on Highways*) recommended that the past growth rates cannot be used directly for estimating future traffic on the project corridor.

5.1.3 Growth Rates based on Registered Motor Vehicles

If the area of influence is well defined and the general development pattern of influence area remains the same, then it can be assumed that traffic growth rate is approximately equal to the average growth rate of vehicle registration. It may be emphasized that the project corridor indicates a strong influence of Rajasthan State in the traffic generation/ attraction. From the OD survey analysis, it is found that about 97% of passenger traffic and 82% of freight traffic are originating from or destined to Rajasthan State. Therefore, there is a strong influence of number of registered vehicles in Rajasthan on project road traffic.

Table 5:1 presents the growth rates of the registered motor vehicles in Rajasthan. The vehicle registration data was obtained from the D*epartment of Port and Transport, Government of Rajasthan.*

Table 5:1 Registered Motor Vehicles in the State of Rajasthan

Year	Car	Bus	LCV	Trucks & MAV
2005-06	460380	60979	61908	206361
2006-07	515376	63320	87345	232007
2007-08	577625	65605	92993	252109
2008-09	644683	69298	98692	266048
2009-10	727158	73257	106045	289925
2010-11	825612	77980	116678	323273
2011-12	934962	83345	126012	362028
2012-13	1051288	88616	138613	401983

Year	Car	Bus	LCV	Trucks & MAV
2013-14	1168021	93892	152475	434379
2014-15	1294542	97650	167722	472365
Growth during 2006-2015	**12.17%**	**5.37%**	**11.71%**	**9.64%**

The growth rates in registered motor vehicles during 2006-2015 is 12.17%, 5.37% 11.71% and 9.64% for Car, Bus, LCV and Trucks & MAV respectively. However, assuming that the traffic growth rate equal to the average growth of vehicle registration may not be correct, unless the area of influence is well defined and the general development pattern of influence area remains same. However, this would be an alternative approach in the absence of any additional information or usable past traffic data on the project road. As transport demand elasticity approach is more proven approach, Consultants propose to adopt the growth rates derived from this approach.

5.1.4 Transport Demand Elasticity Approach

Long term forecasting of the project road traffic, during the time horizon of the study, is required for designing the highway and assessing the financial viability of the proposed investment for improving the facility.

As the growth of vehicle population can also be related to other influences, it is logical to relate vehicle population with one or more logically derived independent variables for deriving elasticity of transport demand. Elasticity of transport (traffic) demand, in the present context, is defined as the ratio of percentage change in traffic to the percentage change in socio-economic parameters. The concept of developing regression equation to relate the dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes.

The process involves establishing a relationship between the traffic levels on the project corridor and Net State Domestic Product (NSDP) of the State contributing traffic on to the project corridor. This approach is even recommended by the recent Indian Roads Congress (IRC) *Guidelines for Traffic Forecast on Highways IRC: 108-2015*

Elasticity in the present context is defined as the ratio of percentage change in traffic to the percentage change in socio-economic parameters. The concept of developing regression equation to express dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes. In the present case, the dependent variable is the registered motor vehicles in the zone of influence (District/ State). The preferred dependent variable would have been past traffic on the project corridors. Number of registered motor vehicles growth in Gujarat, Rajasthan, Delhi, Haryana and Rest of India is taken as dependent variable. The independent variables are socio-economic parameters. The choice of independent variable depends upon vehicle type under consideration. It is logical to relate growth in traffic with NSDP/ NDDP, PCI and population. The vehicles types have been clubbed into two categories; passenger vehicles & freight vehicles. The independent variable used in case of passenger vehicles is Population and PCI and in case of freight vehicles NSDP/ NDDP is used.

It is possible to predict independently the socio-economic variables like population, per capita income (PCI), NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach. Based on the above considerations, the growth rates based on elasticity approach have been adopted for projecting future traffic.

The traffic growth rates, by vehicle type, are obtained by running simple regression and fitting the regression equation with prospective values of independent variables. The separate equations using PCI and registered motor vehicles have been developed for influencing states and districts for passenger vehicles. Similarly, equations by using NSDP and registered motor vehicles of influencing states are developed for freight vehicles. Traffic growth rate projections are done using the below formula;

$$T = \left[\left(1 + \frac{P}{100}\right) * \left(1 + \frac{R}{100}\right) - 1\right] * 100 * E$$

Where:

T - Traffic growth rate (in %)

P - Growth rate of population

R - Growth rate of per capita NSDP /per capita income

E - Elasticity

The growth rates for the horizon years are arrived by taking the average of the Net State Domestic Product at constant price. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down. India GDP has been considered for future estimation of future NSDP of influencing states. India's current GDP growth is 7.6% and world economic outlook has projected India's GDP growth as 7.6% for 2017.

Elasticity values for different sections of the project corridor have been arrived based on the *Weightage Factors*. These weightage factors are assessed considering the contribution of the traffic on the project corridor based on primary traffic surveys (OD Survey) and the average weightage factors are presented from **Table 5:2** to **Table 5:3** for passenger vehicles and commercial vehicles respectively.

Table 5:2: Weightage Factors (CH: Km 257.000) - Passenger Vehicles (%)

Location	Passenger Vehicles		
	Haryana	Rajasthan	ROI
Km 257.000	1%	97%	2%

Table 5:3: Weightage Factors (CH: Km 257.000) – Goods Vehicles (%)

Location	Goods Vehicles				
	Gujarat	Haryana	Rajasthan	Delhi	ROI
Km 257.000	6%	6%	82%	5%	1%

** ROI – Rest of India*

Majority of passenger (97%) and freight (82%) traffic is generated from Rajasthan as shown in Table 5:2 and Table 5:3. Other contributors for the Freight traffic are Gujarat, Delhi and Haryana.

5.1.5 Economic Growth of Project influencing Areas

Growth of traffic on the project road depends on the existing development and future growth prospects of the PIA. A number of econometric indicators for the PIA states, as published by Central Statistical Organisation/ Economic Survey Reports, have been studied to assess their past performance. Some of the salient features are presented below;

- **Gujarat**

  Gujarat's economy expanded at a CAGR of 13.1% during FY2005 to FY2015, exceeding the national average of 12.6%. After recording a healthy growth of 18.5% in FY2013, industrial growth declined sharply to 2.9% in FY2014, before recovering to 8.0% in FY2015. In contrast, after contracting by 13.8% in FY2013, the agricultural sector recorded a considerable growth of 25.9% in FY2014. Subsequently in FY2015, the agriculture sector contracted by a mild 0.7%. Services sector growth ranged between 8% - 12% during FY2013 to FY2015. The motor vehicles registered in Gujarat expanded at a CAGR of 9.0%, from FY2006 to FY2013, lower than the 10.7% growth at the all-India level.

- **Rajasthan**

  Rajasthan's economy expanded at a CAGR of 14.3% during FY2005 to FY2015, exceeding the national average of 12.6%. After averaging 8.5% during FY2013 and FY2014, the growth in Rajasthan's services sector improved to a robust 10.7% in FY2015. Moreover, industrial growth rose from a mild 0.3% in FY2013 to 2.7% in FY2014, and further to 5.9% in FY2015. Agricultural growth in Rajasthan doubled from 3.0% in FY2013 to 6.0% in FY2014, subsequent to which the sector recorded a contraction of 0.9% in FY2015. The motor vehicles registered in Rajasthan expanded at a CAGR of 11.3% during FY2006 to FY2013, higher than 10.7% growth at the all-India level.

- **Haryana**

  Haryana's economy expanded at a CAGR of 13.4% during FY2005 to FY20015, higher than the national average of 12.6%. After expanding at a good pace of 9.4% in FY2013, industrial growth declined sharply to 2.8% in FY2014, before recovering to 5.9% in FY2015. Similarly, the pace of growth of the services sector moderated from a healthy 10.0% in FY2013 to 8.5% in FY2015, before rising to a robust 11.5% in FY2015. In contrast, after contracting by 2.0% in FY2013, agricultural output rose by 3.1% in FY2014, before reverting to a mild 0.7% contraction in FY2015. The motor vehicles registered in Haryana expanded at a CAGR of 11.5%, during FY2006 to FY2013, higher than the 10.7% all-India growth.

- **Delhi**

  Delhi is one of the fastest growing states of the country. At current prices, the Gross State Domestic Product (GSDP) of Delhi was US$ 85.4 billion in 2015-16. Between 2004-05 and 2015-16, the GSDP of the state grew at a compound annual growth rate (CAGR) of 12.9

per cent. The state government expects to register growth of 11 per cent to 11.5 per cent by the end of 2017. At current prices, the Net State Domestic Product (NSDP) of Delhi was US$ 78.38 billion in 2015-16.

Table 5:4 presents the average annual economic growth rate (2005 to 2015) indicators for different influencing states of the project corridor. Highest growth rate of 8.9% in NSDP is observed for Delhi followed by Gujarat with 8.50%.

Table 5:4: Growth in Economic Indicators during 2004-2014

State	NSDP	Population	PCI
Gujarat	8.50%	1.59%	6.80%
Rajasthan	7.86%	1.82%	5.94%
Delhi	8.9%	1.56%	7.26%

5.1.6 PIA Outlook

For determining the perspective growth of the PIA States their long and short term past growth were considered, along with their performances relative to India's and the opportunities for growth for each of them. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down.

5.1.7 Estimated Traffic Growth Rates

Based on the derived elasticity values and the projected growth in economy of PIA, traffic growth rates have been estimated and presented in **Table 5:5**.

Table 5:5: **Estimated Traffic Growth Rates (%)**

Year period	Car	Bus	LCV	2 Axle	3-6 Axle	>6 Axle
Up to 2019	9.5%	6.0%	7.5%	5.5%	5.5%	5.5%
2019-2026	8.0%	5.0%	6.5%	4.5%	4.5%	4.5%
2026-2029	6.5%	4.0%	5.0%	3.5%	3.5%	3.5%

5.1.8 Key Growth Points

5.1.8.1 Jaipur Growth

According to the report published by the UN-HABITAT, Jaipur will be the 10th populated city by 2025, with average population increase of Jaipur urban agglomeration from 1990-95 to 2020-25, a 26.3% rise. Jaipur has 19 industrial areas with product base including gems & jewellery, marble, granite and engineering items. With the decision of GE Capital Corporation to establish its latest contact centre in Jaipur is set to emerge as the latest destination for IT and ITES industries.

The project road connects State capital Jaipur with district headquarters, Sikar and carries predominant passenger and goods traffic. This corridor lies on one of the prominent manufacturing area in Jaipur district and the traffic pressure is again very high on this stretch as well. Chomu town which is in the midway of the corridor a favourite hub for the purchase of agriculture equipment and machines. Chomu and the surrounding areas of the project road are likely to experience very high growth. This is because, Chomu is one of

the satellite towns for Jaipur and work on some of the approved layouts between Jaipur and Chomu has already started. Industrial park is proposed in Sikar for different industries like IT, Hardware, Footwear, Handloom, Automobiles, Electronics, Paper, etc. So more traffic is expected from Jaipur to Sikar. The construction related traffic initially and traffic from developed area later would add to normal growth of traffic on the Project Road.

Jaipur popularly known as the Pink City, attracts is tourist traffic. Reengus is mainly famous due to its proximity to Khatushyamji temple. This temple attracts lot of devotees throughout the year. The main access to this temple is from Jaipur only via this project corridor. Smooth travel on 4 lane road has created more number of car trips to Khatushyamji Temple.

5.1.8.2 Delhi Mumbai Industrial Corridor

The alignment of Dedicated Freight Corridor passes through Phulera-Ajmer-Marwar and over 58% area of the Rajasthan state falls within the influence area of DMIC. Based on the strengths of specific regions across the state, five development nodes are identified in the influence area of DMIC. It includes two investment regions and three industrial areas. Jaipur-Dausa region is connected by NH-11. Jaipur-Dausa Industrial Area would be located within 50 km-100 km from Phulera, an important junction on DFC. There would be significant positive impact on the project road traffic due to DMIC.

5.1.9 Variable Elasticity Value

Elasticity value is the factor by which the socio-economic growth rate is multiplied to get the growth rate of traffic. Traffic is directly linked to the economic growth such as per capita income, population and NSDP/GDP. According to IRC-108, elasticity based econometric model for highway projects could be derived in the following form:

$$\text{Log e (P)} = A0 + A1 \text{ Log e (EI)}$$

Where:

P = Traffic volume (of any vehicle type)

EI = Economic Indicator (GDP/NSDP/Population/PCI)

A0 = Regression constant;

A1 = Regression co-efficient (Elasticity Index)

In coming years, the Economic indicators will be reducing. Hence the regression coefficient will taper down. This tapering in elasticity is considered while deriving the traffic growth rates.

5.1.10 Suggested Elasticity Values

Derived elasticity values obtained for some vehicle types are low/high, which could be attributed mainly to the inconsistency in the data due to variety of reasons. Therefore, in order to make a realistic estimate of the traffic growth rates, necessary updation in the elasticity values is done considering the current scenario and the recommended standard elasticity values.

The shift from public transport to personalized modes is one of the major change occurred over the past few years. This has led in elasticity of bus lower than unity. The growth in per capita income won't assure an increasing trend in car, as the society may reach saturation and a decline may take place.

- **Car**

  Car's elasticity has been considered at 1.05 for the period up to 2018-19. It is likely that this growth would slow down over time as the market becomes more mature and saturated, therefore elasticity to NSDP can be expected to decline over time.

- **Trucks**

  There are has been a rapid shift in freight transport in last decade. With enhance carrying capacity of LCV and better operational efficiencies of MAV over 2 Axle and 3 Axle for longer distance travel, there is a huge fluctuation in trend of truck traffic. This has been duly considered while finalising the growth rates for good vehicles and higher elasticity values for MAV have been considered as compared to 2 Axle and 3 Axle trucks. **Table 5:6** shows the recommended elasticity values for all the vehicles.

Table 5:6: **Recommended Elasticity Values**

Financial Year	Vehicle Type				
	Car	Bus	LCV	2 Axle	MAV
Up to 2019	1.05	0.62	0.78	0.30	1.02
2019-2020	0.96	0.60	0.68	0.23	0.80
2020-2026	0.73	0.48	0.66	0.18	0.72
2026-2029	0.78	0.61	0.58	0.14	0.72

5.1.11 Suggested Traffic Growth Rates

The estimated growth rates based on past traffic data have no definite trend. Therefore, registered motor vehicles growth in Gujarat, Rajasthan and Delhi are explored. It showed a growth rate of more than 7% to 11%. These past growth rates cannot be used for estimating future traffic on the project road. The future traffic may not follow these growth rates due to several reasons, like changes in price of new vehicles, fuel and taxes on several commodities. Any substantial change in policy (e.g., fare, travel time, loading and unloading of goods, etc.) and infrastructure (e.g. Improvement of existing rail services, new railway line, etc.) may also affect the traffic volume on the project road.

It is possible to predict independently the socio-economic variables like population, per capita income, NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach. Based on the above discussions, the growth rates based on elasticity approach have been adopted for projecting future traffic.

Based on the suggested elasticity values**,** the traffic growth rates have been estimated for three scenarios: (1) Realistic Scenario, (2) Optimistic Scenario and (3) Pessimistic Scenario. There would be significant positive impact on the project road traffic due to DMIC.

Also, Chomu and the area around the project road are likely to experience very high growth. This is because, Chomu is one of the satellite towns for Jaipur and work on some of the approved layouts between Jaipur and Chomu has already started. The construction related traffic initially and traffic from developed area later would add to normal growth of traffic on the Project Road. All these factors are duly considered while finalising the traffic growth rates. While estimating the growth rates for freight vehicles, the decreasing trend in growth of 2 axle and 3 axle Trucks is taken into consideration and the same is counter balanced in the growth of LCV & MAV. The suggested traffic growth rates are presented **Table 5:7**.

Table 5:7: Suggested Traffic Growth Rates (%)

Financial Year	Realistic					Optimistic					Pessimistic				
	Vehicle Type														
	Car	Bus	LCV	2 Axle	MAV	Car	Bus	LCV	2 Axle	MAV	Car	Bus	LCV	2 Axle	MAV
Up to 2019	8.50	5.00	6.50	2.50	8.50	9.5	6.0	7.5	3.5	9.5	6.50	3.00	4.50	0.50	6.50
2019-2020	8.00	5.00	6.00	2.00	7.00	9.0	6.0	7.0	3.0	8.0	6.00	3.00	4.00	0.00	5.00
2020-2026	6.00	4.00	5.50	1.50	6.00	7.0	5.0	6.5	2.5	7.0	4.00	2.00	3.50	-0.50	4.00
2026-2029	4.50	3.50	4.00	1.00	5.00	5.5	4.5	5.0	2.0	6.0	2.50	1.50	2.00	-1.00	3.00

5.2 Escape Route

Though there is no competing route for the project road, there is a village road in the vicinity of toll plaza which traffic is using to bypass the toll plaza. This Escape Route has a 4-lane section starting just in front of toll plaza (about 450m long) and a village road (about 750m long), which takes off from this 4-lane road, passes through a small village and joins the project road just after the toll plaza. This alternative road is about 700 m longer than the project road section. The Concessionaire will be providing barricades to avoid any leakage traffic

Figure 5:1 Escape Route in the Vicinity of Toll Plaza

The vehicles escaping through this route are counted and shown in **Table 5:8**.

Table 5:8: Escape Route Traffic

Modes	Car	LCV	Bus	Truck (2A)	MAV (3-6 Axles)	Total
Traffic	3223	150	27	70	124	3596
Tollable Traffic	2611	137	26	65	124	2964

* Source: Reliance Infrastructure

5.3 Traffic Forecast

Daily traffic volume of 7 days traffic count, by vehicle type, at the toll plaza location, is added separately and averaged to determine the Average Daily Traffic (ADT). Seasonal variation factors (given in Chapter 4) have been applied to get Annual Average Daily Traffic (AADT). The AADT for the base year (2017) is presented in **Table 5:9**.

Table 5:9: Annual Average Daily Traffic

Mode		AADT
Passenger Vehicles	Car	13158
	Bus	1390
Commercial Vehicles	LCV	1090
	Truck	659
	3-6 Axles Truck	1042
	>6 Axles	1
Tollable Traffic		**17341**

5.3.1 Tollable Traffic Forecast

Considering that the Concessionaire would provide barricades to avoid any leakage of traffic through the alternate road, we have included the traffic, which is presently using the escape route, to the project road traffic in the year FY 2018. Using the growth rates presented in Table 5:7, the tollable traffic has been projected up to the horizon year 2029. Traffic forecast in terms of vehicles and PCUs, for the period 2017 to 2029, at Tatiyawas Toll Plaza location is presented in **Table 5:10** for Realistic, Optimistic and Pessimistic scenarios respectively.

Table 5:10: Tollable Traffic Forecast –Realistic

Year	Car/Jeep/Van	Bus	LCV	2-Axle Trucks	MAV (3-6 Axles)	Total	Total (PCUs)
2017	13158	1390	1090	659	1042	17341	25637
2018	16888	1486	1298	741	1255	21668	31166
2019	18239	1560	1376	756	1343	23274	33297
2020	19333	1623	1451	767	1423	24598	35089
2021	20493	1688	1531	778	1508	26000	36983
2022	21723	1755	1615	790	1599	27483	38984
2023	23026	1825	1704	802	1695	29054	41099
2024	24408	1898	1798	814	1797	30716	43334
2025	25872	1974	1897	826	1904	32475	45697
2026	27424	2053	2001	839	2019	34337	48194
2027	28659	2125	2081	847	2120	35833	50244
2028	29948	2199	2164	855	2226	37395	52384

Year	Car/Jeep/Van	Bus	LCV	2-Axle Trucks	MAV (3-6 Axles)	Total	Total (PCUs)
2029	31296	2276	2251	864	2337	39026	54620

5.4 Target Traffic

For this project, the target date set forth in the concession agreement is October 1, 2020, and the target traffic volume set forth in the concession agreement 35,663 passenger car units ("**PCUs**"), the passenger car equivalent for various types of vehicles based on industry guidelines. Based on the terms of the concession agreement, in the event that the actual traffic volume on the target date falls short of or exceeds the target traffic volume by more than 2.5%, the concession period will be deemed to be modified and may be increased by 1.5% for every 1% of shortfall in traffic, provided that the aggregate increase in the concession period does not exceed 20% of the original concession period. Any extension, however, is subject to NHAI approval and may differ from the Traffic Consultant's estimate depending on actual traffic volumes on the target date. Extension of the concession period is limited to four years.

5.5 Toll Revenue Estimation

5.5.1 Adopted Toll Rates

Consultants have compiled the unit toll rates suggested by NHAI for 4/6 laning projects. The NHAI unit toll rates are of 2007-08 price levels and they are updated to current level using WPI. Toll fee is calculated for the project road considering the length of NH 11 section (Jaipur to Reengus). For convenience of the toll collection, in line with the NHAI toll notification, toll rates are rounded to the nearest Rs. 5.00. The unit toll rates and base year toll rates (single journey) for the project corridor are presented in **Table 5:11** and **Table 5:12.**

Table 5:11 Unit Toll Rates

(Rs per km)

S. No	Type of Vehicle	Unit Toll Rates 2007-08	Unit Toll Rates 2016-17
1	Car	0.65	1.02
2	LCV	1.05	1.646
3	Bus\Truck	2.20	3.45
4	MAV	3.45	5.41
5	Oversized Vehicles	4.20	6.586

Table 5:12 Base Year Toll Rates

(in Rs per single journey)

S. No	Type of Vehicle	Tatiyawas
1	Car, Jeep, Van Or Light Motor Vehicle	55
2	Light Commercial Vehicle, Light Good Vehicle Or Mini Bus	85
3	Bus\Truck (Two Axle)	180

S. No	Type of Vehicle	Tatiyawas
4	Heavy Construction Machinery (HCM) or Earth Moving Equipment (EME) or Multi Axle Or Multi Axle Vehicle (3 to 6 Axle)	280
5	Oversized Vehicles (7 or more axle)	340

5.5.2 Wholesale Price Index (WPI)

The annual rate of inflation, based on monthly WPI, stood at 3.57% (provisional) for the month of September, 2016 (over September, 2015) as compared to 3.74% (provisional) for the previous month and -4.59% during the corresponding month of the previous year. Build-up inflation rate in the financial year so far was 4.28% compared to a build-up rate of 0.23% in the corresponding period of the previous year. The adopted WPI for the horizon years are given in **Table 5:13**.

Table 5:13 Wholesale Price Index for the Entire Concession Period

Up to FY 2018	Up to FY 2021	Up to FY 2026	Up to FY 2031	Beyond
4.00%	5.00%	4.00%	3.00%	2.00%

5.5.3 Toll Concessions

As per the NHAI toll notification:

- The concessionaire shall not collect any fee from local non-commercial traffic (residence within 20 km from toll plaza) and shall issue passes in respect thereof for commuting on the Project Highway. The concessionaire shall be entitled to charge a monthly fee equal to Rs. 235.
- No concession for local transporters
- The return pass cost is 150% of the single journey trip.
- Discounted rate for 50 coupons is two thirds of the single one-way trip, and they must be used in a period of one month.

5.5.4 Adopted Toll Concessions

Considering all the above factors and based on the results of OD Survey, Consultants adopted the following toll concessions for different categories of tollable vehicles as shown in **Table 5:14**.

Table 5:14 Adopted Toll Concessions

Mode	Single Entry	Return	Monthly Pass
Car	24%	67%	9%
Bus	20%	77%	3%
LCV	29%	62%	9%
2 Axle Truck	23%	73%	4%
MAV	64%	36%	0%
MAV (7 and more Axles)	100%	-	-

Table 5:15 Toll Rates (*Rs*)

Financial Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Single													
Car	55	55	60	60	65	65	70	75	75	80	80	85	90
LCV	85	90	95	100	105	110	115	120	125	125	130	135	145
Bus	180	185	195	205	215	225	235	245	255	265	275	290	300
Truck (<2 axle)	180	185	195	205	215	225	235	245	255	265	275	290	300
MAV (>2 Axle)	280	295	310	325	340	355	370	385	405	420	435	450	470
HCM	340	355	375	395	415	430	450	470	490	510	530	550	570
Daily													
Car	80	85	85	90	95	100	105	110	115	120	125	130	130
LCV	130	135	140	145	155	160	170	175	185	190	200	205	215
Bus	270	280	295	310	325	340	355	370	385	400	415	430	450
Truck (<2 axle)	270	280	295	310	325	340	355	370	385	400	415	430	450
MAV (>2 Axle)	420	440	460	485	510	530	555	580	605	630	650	675	700
HCM	510	535	560	590	620	645	675	705	735	765	795	825	855
Monthly													
Car	1760	1840	1930	2030	2130	2225	2325	2425	2535	2630	2730	2835	2940
LCV	2845	2970	3120	3275	3440	3595	3755	3920	4095	4250	4410	4580	4750
Bus	5960	6230	6540	6865	7210	7530	7865	8210	8575	8905	9240	9590	9955
Truck (<2 axle)	5960	6230	6540	6865	7210	7530	7865	8210	8575	8905	9240	9590	9955
MAV (>2 Axle)	9350	9765	10255	10765	11305	11805	12330	12880	13450	13960	14495	15040	15610
HCM	11380	11890	12480	13105	13760	14375	15010	15680	16370	16995	17645	18310	19000

5.5.5 Toll Revenue

An assessment of likely toll revenue has been made by applying the estimated toll rates to the projected tollable traffic. Traffic forecast given in Section 5.3 includes the non-compliance vehicles. Also, though AADT is estimated based on the traffic count surveys and the seasonal correction factors, it is felt that the observed Annual Average Daily Traffic would be more appropriate for the traffic forecast, as it takes account of non-compliance traffic. Therefore, actual historical toll traffic data provided by the Client is used to forecast the Toll revenue. The tollable traffic for the FY 2016 is taken as base to project the toll revenue. Toll revenue on the project road is estimated using *growth rates* and presented in **Table 5:16**. The estimated annual toll revenue for the base year is about 500 million. The total revenue is about Rs.559 million and Rs. 1449 million for the year 2018 and 2028 respectively.

Table 5:16 Total Toll Revenue - (Realistic)

Rs Million

FY	Realistic	Optimistic	Pessimistic
2017	500	504	490
2018	559	569	538
2019	624	642	590
2020	695	721	645
2021	772	809	703
2022	845	894	755
2023	935	999	819
2024	1032	1112	886
2025	1129	1229	952
2026	1241	1363	1026
2027	1335	1481	1083
2028	1449	1403	1153
2029*	432	489	337

*the revenue for 2029 is for the 4 months

5.5.6 Revenue due to Overloading

As per the notification of National Highway Authority of India (NHAI), Concessioners are eligible to levy penalties on overloading vehicles. As per the notification;

- A Mechanical vehicle loaded in excess of permissible maximum Gross Vehicle Weight (GVW) shall not be permitted to use the National Highway or cross the toll plaza until the excess load is removed.
- The overloaded vehicle shall be liable to pay fee equal to ten times of the applicable fee;
- Maximum GVW is as indicated in vehicle RC under MV Act.

The data related to over loading as provided by the Concessioner, it is estimated that the toll revenue at each toll plaza would increase by about 4% to 6% due to overloading as shown **Table 5:17**. In the long run OV trend is expected to taper down to 0%.

Table 5:17 Toll Revenue due to Overloading

(Revenue in Lakhs)

Particulars	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
Total Commercial vehicles (CV)	3043	3130	2947	2904	2555	2375	2620	2841
Overloaded Vehicles (OV)	299	327	259	236	201	173	201	206
% Vehicle (OV/CV)	10%	10%	9%	8%	8%	7%	8%	7%
Revenue								
CV-Revenue (CVR)	4.9	5.0	4.9	4.9	4.1	3.6	4.0	4
OV-Revenue (OVR)	0.75	0.87	0.67	0.66	0.56	0.49	0.61	0.59
% Revenue (OVR/CVR)	15%	18%	14%	14%	14%	14%	15%	14%
% of overloading revenue (OVR/R)	6%	6%	5%	5%	5%	4%	5%	5%

5.6 Operation and Maintenance Cost

5.6.1 General

The toll revenue account for the returns of the project. While the Operation and Maintenance cost apart from the Capital Cost account for expenditure towards the project cost. For this purpose, major O&M elements such as civil infrastructure, toll system and manpower, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analysed based on the data provided by Client.

5.6.2 Major Element of Maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

5.6.3 Project Parameters for Major Maintenance O & M

Operation and Maintenance cost of the project depends on a number of factors like quality of construction, response of maintenance team to early damage, climate.

Future cost of operation and maintenance is the estimate made on engineering judgement and experience basis. Keeping all above factors in view, following can be basis of working out cast operation and maintenance for project corridor from Jaipur to Reengus on NH 11 in state of Rajasthan.

a. Annual Regular Maintenance – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll Collection, toll plaza maintenance, other services mile medical help and rescue operation etc.

b. Periodic Maintenance this will be done on periodic basis say. It usually consists of overlaying of wearing course, Road Marking. Some pavement strengthening is also anticipated in few sections. As project stretch is long periodic maintenance items have also been spread on annual basis from execution point of view. Since the project is commissioned and traffic is running for 2 years, periodic maintenance shall be as per condition of pavement and other infrastructure. Inputs of the concessionaire have been taken in this regard.

Cost for above operations is taken on prevailing rates. Following **Table 5:18** provides year wise details of operation and maintenance cost.

Table 5:18 Major Maintenance Cost

Year	Base Year Expenditure	Renewal Cost of BC	Micro Surfacing Cost	Escalation Factor	Total Expenditure	Remarks
FY 2021	25.37	21.54	3.83	1.20	15.1	**Major Maintenance**
FY 2022	25.37	21.54	3.83		15.1	**Major Maintenance**
FY 2029	25.37	21.54	3.83	1.60	41.00	**Major Maintenance**

Based on the NHAI circular dated Nov 15, 2016 on use of Micro surfacing on 30% continuous stretch of the project road, the overall cost of MMR are reduces by 15-20%. It has been assumed that this provision will be used on alternate major maintenance activities of the SPV. It is assumed that micro surfacing will be used on 35% of the project stretch, which will cost 12.2 lakhs per lane km (approx.) based on current raw material price.

Table 5:19 Operation and Maintenance Cost

Year	Base Cost	Toll Operations	Highway Maintenance	Admin and General	Salaries and Overheads	Escalation Factor	Total Expenditure
FY 2017	7.4	3.9	1.3	1.0	1.2	1.00	7.4
FY 2018	7.4	3.9	1.3	1.0	1.2	1.04	7.7
FY 2019	7.4	3.9	1.3	1.0	1.2	1.09	8.1
FY 2020	7.4	3.9	1.3	1.0	1.2	1.15	8.5
FY 2021	7.4	3.9	1.3	1.0	1.2	1.20	8.9
FY 2022	7.4	3.9	1.3	1.0	1.2	1.25	9.3
FY 2023	7.4	3.9	1.3	1.0	1.2	1.30	9.6
FY 2024	7.4	3.9	1.3	1.0	1.2	1.35	10.0
FY 2025	7.4	3.9	1.3	1.0	1.2	1.41	10.4
FY 2026	7.4	3.9	1.3	1.0	1.2	1.46	10.8
FY 2027	7.4	3.9	1.3	1.0	1.2	1.51	11.2
FY 2028	7.4	3.9	1.3	1.0	1.2	1.55	11.5
FY 2029	7.4	3.9	1.3	1.0	1.2	1.60	11.8

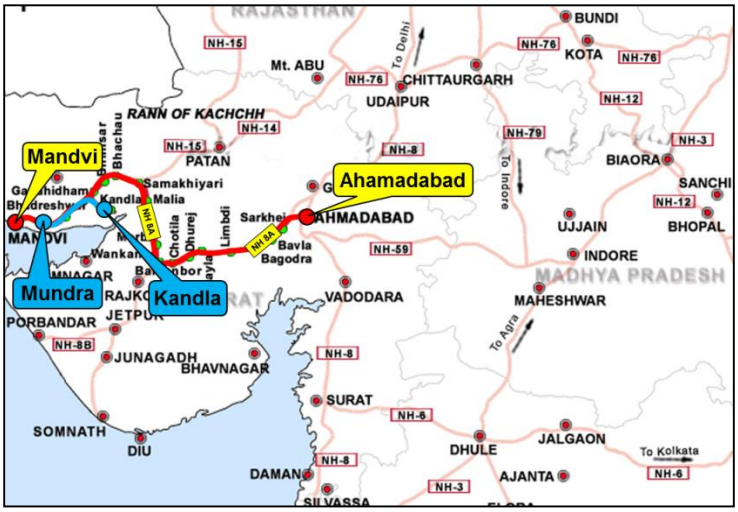
The SPV had certain onetime accounting expenses in the FY 2016 and hence there is an upward bias in the operations and maintenance expenses of FY 2016. Based on the actual historical operations and maintenance expenses, the figure for FY 2017 has been normalized.

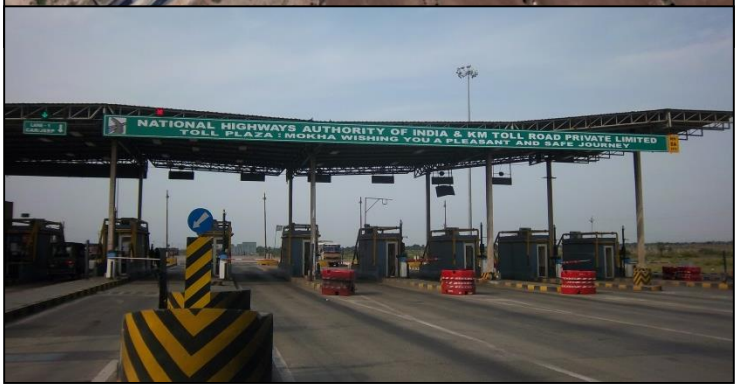
Annexure

	Zone Name	Region		Zone Name	Region
1	PS_Anewadi TP1_10KM	Toll Plaza1	74	Valsa	
2	PS_Anewadi TP1_20KM		75	Kandla Port	
3	PS_Khedshivpur_TP2_10KM	Toll Plaza 2	76	Mundra Port	
4	PS_Khedshivpur_TP2_20KM		77	Mandivi Port	
5	Ahmadnagar		78	Hazira Port	
6	Akola		79	GF_TP1_10KM	Toll Plaza1
7	Amravati		80	GF_TP1_20KM	
8	Aurangabad		81	GF_TP2_10KM	Toll Plaza 2
9	Beed		82	GF_TP2_20KM	
10	Bhandara		83	GF_TP3_10KM	Toll Plaza3
11	Buldhana		84	GF_TP3_20KM	
12	Chandrapur		85	GF_TP4_10KM	Toll Plaza 4
13	Dhule		86	GF_TP4_20KM	
14	Gadchiroli		87	Ambala	
15	Gondia		88	Bhiwani	
16	Hingoli		89	Chandigarh	
17	Jalgaon		90	Faridabad	
18	Jalna		91	Fatehabad	
19	Kolhapur		92	Gurgaon	
20	Latur		93	Hisar	
21	Mumbai Suburban		94	Jhajjar	
22	Mumbai	Maharashtra	95	Jind	
23	Nagpur		96	Kaithal	
24	Nanded		97	Karnal	
25	Nandurbar		98	Kurukshetra	Haryana
26	Nashik		99	Mahendragarh	
27	Osmanabad		100	Mewat	
28	Parbhani		101	Palwal	
29	Pune		102	Panchkula	
30	Raigad		103	Panipat	
31	Ratnagiri		104	Rewari	
32	Sangli		105	Rohtak	
33	Satara		106	Sirsa	
34	Sindhudurg		107	Sonipat	
35	Solapur		108	Yamunanagar	
36	Thane		109	Ballabhgarh	
37	Wardha		110	Sohna	
38	Washim		111	JR_TP1_10KM	Toll Plaza
39	Yavatmal		112	JR_TP1_20KM	
40	KM_Mokha_TP1_10KM	Toll Plaza	113	Ajmer	
41	KM_Mokha_TP1_20KM		114	Alwar	
42	Ahmedabad		115	Banswara	
43	Amreli		116	Baran	
44	Anand		117	Barmer	
45	Aravalli		118	Bharatpur	
46	Banaskantha		119	Bhilwara	
47	Bharuch		120	Bikaner	
48	Bhavnagar		121	Bundi	
49	Botad		122	Chittaurgarh	
50	Chhota Udaipur		123	Churu	
51	Dahod		124	Dausa	
52	Dang		125	Dhaulpur	
53	Devbhoomi Dwarka		126	Dungarpur	
54	Gandhinagar		127	Ganganagar	
55	Gir Somnath		128	Hanumangarh	
56	Jamnagar		129	Jaipur	Rajasthan
57	Junagadh	Gujarat	130	Jaisalmer	
58	Kheda		131	Jalor	
59	Kutch		132	Jhalawar	
60	Mahisagar		133	Jhunjhunun	
61	Mehsana		134	Jodhpur	
62	Morbi		135	Karauli	
63	Narmada		136	Kota	
64	Navsari		137	Nagaur	
65	Panchmahal		138	Pali	
66	Patan		139	Pratapgarh	
67	Porbandar		140	Rajsamand	
68	Rajkot		141	Sawai Madhopur	
69	Sabarkantha		142	Sikar	
70	Surat		143	Sirohi	
71	Surendranagar		144	Tonk	
72	Tapi		145	Udaipur	
73	Vadodara		146	Reengus	

	Zone Name	Region
147	DA_TP1_10KM	Toll Plaza1
148	DA_TP1_20KM	
149	DA_TP2_10KM	Toll Plaza 2
150	DA_TP2_20KM	
151	DA_TP3_10KM	Toll Plaza3
152	DA_TP3_20KM	
153	DA_TP4_10KM	Toll Plaza 4
154	DA_TP4_20KM	
155	Central Delhi	Delhi
156	East Delhi	
157	New Delhi	
158	North Delhi	
159	North East Delhi	
160	North West Delhi	
161	South Delhi	
162	South West Delhi	
163	West Delhi	
164	Agra	Uttar Pradesh
165	Allahabad	
166	Aligarh	
167	Ambedkar Nagar	
168	Auraiya	
169	Azamgarh	
170	Barabanki	
171	Budaun	
172	Bagpat	
173	Bahraich	
174	Bijnor	
175	Ballia	
176	Banda	
177	Balrampur	
178	Bareilly	
179	Basti	
180	Bulandshahr	
181	Chandauli	
182	Nagar	
183	Chitrakoot	
184	Deoria	
185	Etah	
186	Kanshi Ram Nagar	
187	Etawah	
188	Firozabad	
189	Farrukhabad	
190	Fatehpur	
191	Faizabad	
192	Gautam Buddh Nagar	
193	Gonda	
194	Ghazipur	
195	Gorakhpur	
196	Ghaziabad	
197	Hamirpur	
198	Hardoi	
199	Mahamaya Nagar	
200	Jhansi	
201	Jalaun	
202	Jyotiba Phule Nagar	
203	Jaunpur district	
204	Dehat)	
205	Kannauj	
206	Kanpur	
207	Kaushambi	
208	Kushinagar	
209	Lalitpur	
210	Lakhimpur Kheri	
211	Lucknow	
212	Mau	
213	Meerut	
214	Maharajganj	
215	Mahoba	
216	Mirzapur	
217	Moradabad	
218	Mainpuri	
219	Mathura	

Zone	Zone Name	Region
220	Muzaffarnagar	Uttar Pradesh
221	Panchsheel Nagar district (Hapur)	
222	Pilibhit	
223	Shamli	
224	Pratapgarh	
225	Rampur	
226	Raebareli	
227	Saharanpur	
228	Sitapur	
229	Shahjahanpur	
230	Sant Kabir Nagar	
231	Siddharthnagar	
232	Sonbhadra	
233	Sant Ravidas Nagar	
234	Sultanpur	
235	Shravasti	
236	Unnao	
237	Varanasi	
238	Andhra Pradesh (AP)	Rest of India
239	Vijayawada	
240	Bihar (BR)	
241	Patna	
242	Chhattisgarh (CG)	
243	Raipur	
244	Goa (GA)	
245	Himachal Pradesh (HP)	
246	Simla	
247	Jammu and Kashmir (JK)	
248	Kashmir	
249	Jammu	
250	Jharkhand (JH)	
251	Ranchi	
252	Kerala (KL)	
253	Trivendrum	
254	Karnataka (KA)	
255	Bengaluru	
256	Madhya Pradesh (MP)	
257	Bhopal	
258	Gwalior	
259	Odisha (OR)	
260	Bhubaneshwar	
261	Punjab (PB)	
262	Amritsir	
263	Tamil Nadu (TN)	
264	Chennai	
265	Telangana	
266	Hyderabad	
267	Uttarakhand (UK)	
268	Dehradun	
269	West Bengal (WB)	
270	Kolkata	
271	North East States	





Reliance Infrastructure InvIT Fund

Traffic Study for Kandla-Mundra Section of NH – 8A

Final Report

December 2016

SYSTRA

SYSTRA INDIA

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Chapter 1
Introduction

1.1 Preamble

The expansion and development of efficient road network is one of the prerequisites for country's economic progress. Over the years, roads have emerged as preferred mode of transport in India and figures suggest that highways carry 60% of freight and 80% of passenger traffic. However, along the this project corridor 70% of traffic is MAV in nature which is significantly higher than most of other NH stretches

The Central Government has entrusted the section of National Highway from Km 0.00 to Km 71.40 (Gandhidham (Kandla) – Mundra Port Section) of National Highway No. 8A Extension in the state of Gujarat. NHAI under the NHDP Phase-III programme decided to improve the Kandla – Mundra Port Section of NH-8A (Extension) to the National Highway Authority of India. The project road connects two high commercial traffic ports of Kandla and Mundra. Mundra is one of the largest private ports in the Country and has a major container handling facility .This Project was executed by Reliance Infrastructure Limited (*K M Toll Road Private Limited*) as BOT on Design, Build, Finance, Operate and Transfer (DBFOT) pattern.

On March 10, 2010, the NHAI and KM Toll Road Private Limited entered into a concession agreement in respect of the Kandla Mundra Port Project for widening the road to four lanes and subsequently to six lanes. The concession period commenced on January 19, 2011 and the collection of tolls commenced on November 7, 2015. A provisional certificate of completion was issued on November 4, 2016. The NHAI granted KM Toll Road Private Limited a concession for a period of 12 years for this project. However, in the event the six-laning is undertaken in accordance with the provision of the concession agreement, the concession period will be extended to 25 years. The concession period commenced on January 19, 2011 and is expected to expire on January 18, 2036. KM Toll Road Private Limited began collecting tolls with respect to this project on November 7, 2016. The NHAI owns the land that underlies the KM Project.

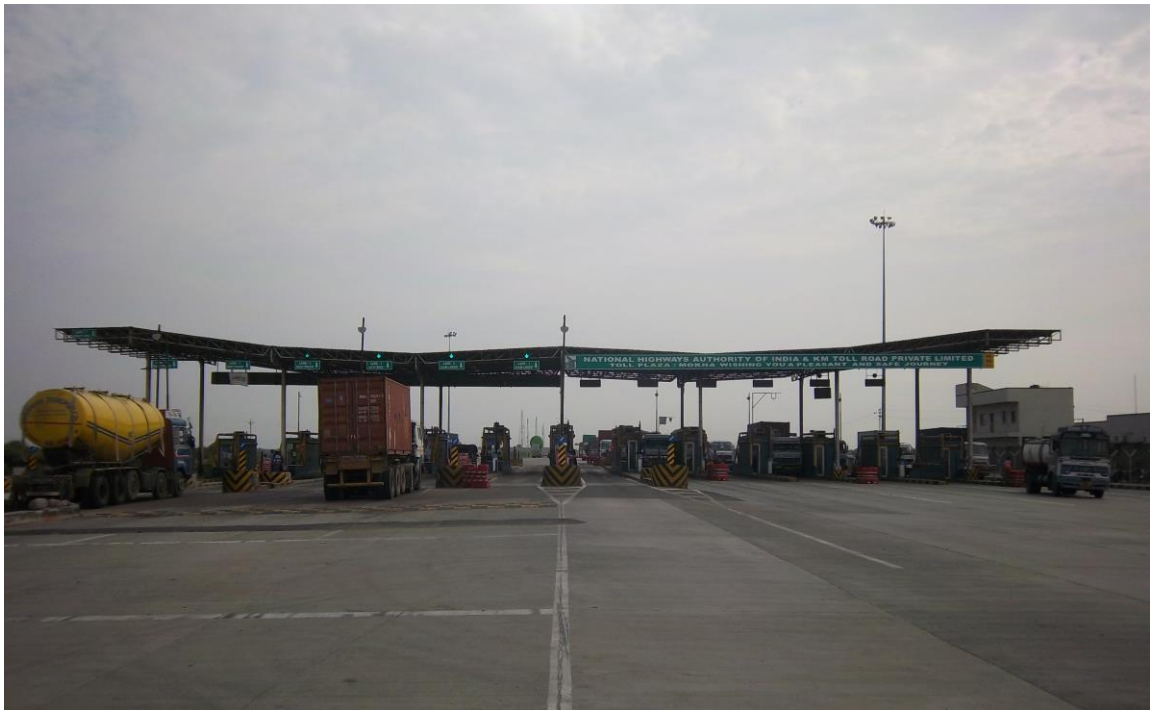

Figure 1:1: Mokha Toll Plaza on Kandla Mundra Section of NH 8A

Reliance Infrastructure InvIT Fund has engaged *M/s Systra MVA Consulting (India) Private Limited* as Consultants for carrying out necessary traffic studies and assess the future traffic and toll potential of project along with related Operation & Maintenance expenditure involved.

1.2 Project Corridor

The project scope includes development for a length of about 71.4 km. The project corridor carries high volume of goods and container traffic, originating/ destined to Kandla and Mundra Ports. As project corridor is between two major ports – Kandla and Mundra, the corridor is termed as Kandla Mundra Project. Mundra Port, operated by Adani Ports and Special Economic Zone Limited (APSEZ), has a higher contribution of traffic on the project corridor.

Mundra Port, a deep draft, all-weather port, is the largest commercial port of India with a high degree of mechanisation. In fact, it is the only port in the country with handling and storage facilities for crude oil, containers, dry bulk, break bulk, automobiles and liquid cargo. The KM project is located in the southern part of the Kutch district of Gujarat State. The project road starts at Gandhidham town (Km 0.00) and terminates at Siracha Junction (Km 73.40) on Mandvi Road (NH-8A, Extension).

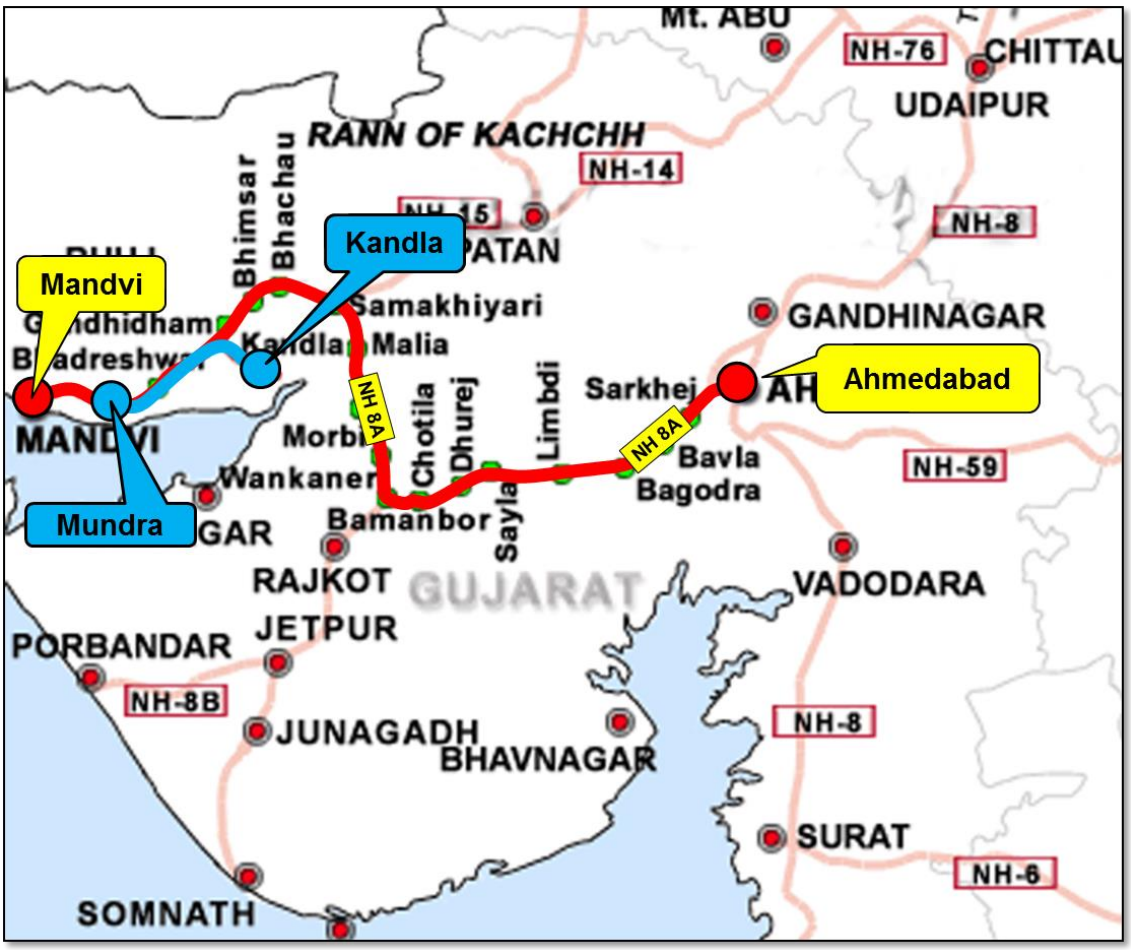

Figure 1:2: Project Corridor

The toll plaza that is in operation on the project corridor is Mokha Toll Plaza (km 46.50) as shown in **Figure 1:3**. At Mokha toll plaza, the toll is collected for 62.50 km length excluding 8.90 km length of Anjar Bypass.

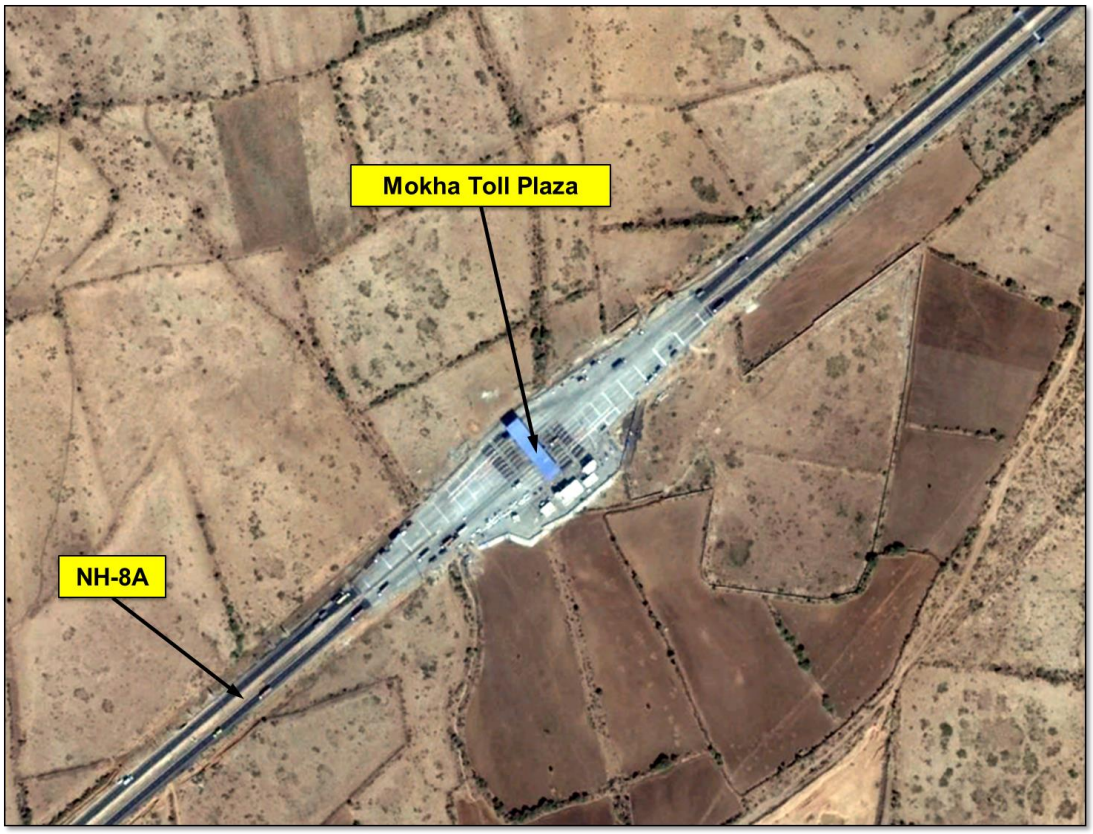

Figure 1:3: Existing Toll Plaza location at Mokha on NH- 8A

1.3 Salient Features

1.3.1 Major Bridges

The list of existing Major bridges along the Kandla Mundra section of NH-8A is given in **Table 1:*1***.

Table 1:1 Existing Major Bridges

S.No.	Chainage (In km)	Type of Structure	No. of Spans	Width (in m)	Remarks
1	29/500	RCC Slab	11 x 7.97	7.50	
2	36/946	RCC Slab	10 x 8.32	7.53	
3	44/625	RCC Slab	10 x 9.96	7.42	
4	61/000	RCC T Beam & Slab	7 x 18.56	10.90	
5	68/150	RCC T Beam & Slab	8 x 18.56	10.90	Existing vented Causeway at km 68/150 is being upgraded as Major Bridge and being executed by PWD, Govt. of Gujarat

1.3.2 Minor Bridges

The list of existing Minor bridges along the Kandla Mundra section of NH-8A is given in **Table 1:*2***.

Table 1:2 Existing Minor Bridges

S.No.	Chainage (in Km)	Type of Structure	No. of Spans	Width (in m)
1	30/479	RCC Slab	3x 5.95	7.64
2	32/450	RCC Slab	5 x 5.92	7.64
3	33/950	RCC Slab	3 x 6	7.50
4	40/100	RCC Slab	3 x 6.9	7.50
5	50/150	RCC Slab	4 x 7.15 + 1 x 5.4	7.40
6	51/500	RCC Slab	2 x 7	7.58
7	60/270	RCC Slab	2 x 5.3	7.00
8	61/865	RCC Slab	2 x 5.3	7.00
9	62/050	RCC Slab	1 x 6.9	7.00
10	63/595	RCC Slab	4 x 10.1	11.00
11	63/695	RCC Slab	3 x 10.4	11.15
12	64/559	RCC Slab	3x 10.5	10.90
13	66/338	RCC Slab	3 x 5.0	7.00
14	71/759	RCC Slab	3 x 10.4	11.00

1.3.3 Details of Proposed ROB/RUB

Details of proposed ROB/RUB along the project corridor are given in **Table 1:*3***.

Table 1:3 Details of Proposed ROB/RUB

S.No.	ROB/RUB	Existing Chainage	Design Chainage	Name of Crossing	Existing Structure	Proposed Structural Configuration	Proposed Structure Type	Proposed Span Arrangement	Total width of the structure
1	ROB	10/021	9938	New	Level Crossing	New 2x3 Lane	RCC T-Beam	20+30+20=70m *	2 x 14 m

** The proposed span arrangement of the ROB is tentative and subject to change as per availability of railway boundaries/ requirement of the Railways.*

1.3.4 Details of New Major and Minor Bridges

Table 1:4 Details of Construction of Major Bridges

S.No	Name of Bridge	Bridge No.	Existing Chainage	Design Chainage	Type of Crossing	Proposed structural configuration	Proposed structure Type	Proposed Span Arrangement	Total width of the structure
1	Bridge on River Chhasara	-	44/625	42.725	Right Angle Crossing	New 2x3 Lane Bridge	RCC T-Girder Superstructure & Well Foundation	5x 20 m	2 x 14 m
2	Bridge on Bhukhi/Toda River	-	56/995	54.720	Right Angle Crossing	New 2x3 Lane Bridge	RCC T-Girder Superstructure & Well Foundation	7 x 24 m	2 x 14 m

Table 1:5 Details of Construction of Minor Bridges

S.No	Existing Chainage	Design Chainage	Type of Crossing	Proposed structural configuration	Proposed structural configuration	Proposed Span Arrangement	Proposed Span Arrangement	Remarks
1	Anjar Bypass	15.400	Right	New 2 x 3 Lane	RCC Slab & Open Foundation	1 x 10	2 x 14 m	New
2	Anjar Bypass	15.740	Right	New 2 x 3 Lane	RCC T Beam Slab Sup.& Open Foundation	1 x 20	2 x 14 m	New
3	Anjar Bypass	17.200	Right	New 2 x 3 Lane	RCC Slab & Open Foundation	1 x 10	2 x 14 m	New
4	30+479	28.550	Right	New 2 x 3 Lane	RCC T Beam Slab Sup.& Open Foundation	1 x 18	2 x 14 m	Recon
5	32+450	30.500	Right	New 2 x 3 Lane	RCC Box Cell	3 x 10	2 x 14 m	Recon
6	40/100	38.090	Right	New 2 x 3 Lane	RCC T Beam Slab Sup.& Open Foundation	1 x 21	2 x 14 m	Recon
7	Gundala Realign	48.510	Right	New 2 x 3 Lane	RCC T Beam Slab Sup.& Open Foundation	2 x 17	2 x 14 m	New
8	Gundala Realign	49.510	Right	New 2 x 3 Lane	RCC T Beam Slab Sup.& Open Foundation	1 x 14	2 x 14 m	New

S.No	Existing Chainage	Design Chainage	Type of Crossing	Proposed structural configuration	Proposed structural configuration	Proposed Span Arrangement	Proposed Span Arrangement	Remarks
9	60/270	57.900	Right	New 2 x 3 Lane	RCC Box Cell	1 x 10	2 x 14 m	Recon
10	61/865	59.460	Right	New 2 x 3 Lane	RCC Box Cell	1 x 10	2 x 14 m	Recon
11	62/050	59.660	Right	New 2 x 3 Lane	RCC Box Cell	1 x 7	2 x 14 m	Recon
12	Bhujpur Realign	64.360	Right	New 2 x 3 Lane	RCC T Beam Slab Sup.& Open Foundation	1 x 14	2 x 14 m	New
13	Bhujpur Realign	64.560	Right	New 2 x 3 Lane	RCC T Beam Slab Sup.& Open Foundation	1 x 26.9	2 x 14 m	New

Recon = Reconstruction, Realign = Realignment

1.4 Objectives & Scope of Work

The main objective of the study is to assess the future traffic and toll potential of project along with related Operation & Maintenance expenditure involved. The scope of consultancy services broadly covers the following:

- ✓ 7 days Video graphic traffic count at the existing toll plaza to derive the Average Daily Traffic (ADT).
- ✓ 24 hours Origin-Destination Survey at all the toll plaza locations to assess the existing travel pattern of vehicles plying on the project road including origin and destination.
- ✓ Analysis of past traffic data provided by the Concessionaire.
- ✓ Establish seasonality factors using toll traffic data.
- ✓ Estimation of Annual Average Daily Traffic (AADT).
- ✓ Estimation of traffic diversion/leakage, if any.
- ✓ Traffic projections for the remaining concession period.
- ✓ Estimation of toll revenue as per categories of traffic streams stipulated in the Concession Agreement for the remaining concession period.
- ✓ Prepare a Report on Revenue and Traffic Forecast.
- ✓ O&M cost analysis (O&M Cost per km) including projections based on the historical cost incurred/ booked by the toll operator.

1.5 Report Structure

For the above Scope of Work, Systra MVA has carried out a series of investigations. This report presents details on various surveys carried out for estimation of toll traffic and revenue on the Project Road, as well as findings from the analysis of survey data.

This Final Report is organized under five Chapters. **Chapter 1** deals with the Introduction and objectives of the study and the project corridor details. **Chapter 2** covers Study Approach & Methodology and a review of the secondary data collected is presented in **Chapter 3. Chapter 4** deals with the traffic surveys and their analysis. Estimation of traffic growth rates, traffic forecast, toll revenue estimation and O&M Cost is presented in **Chapter 5**.

Chapter 2
Study Approach & Methodology

2.1 General

The estimation of tollable traffic requires development of well-defined objectives and traffic database containing relevant information concerning traffic flow characteristics. The broad methodology followed for the present study is presented in **Figure 2:1**.

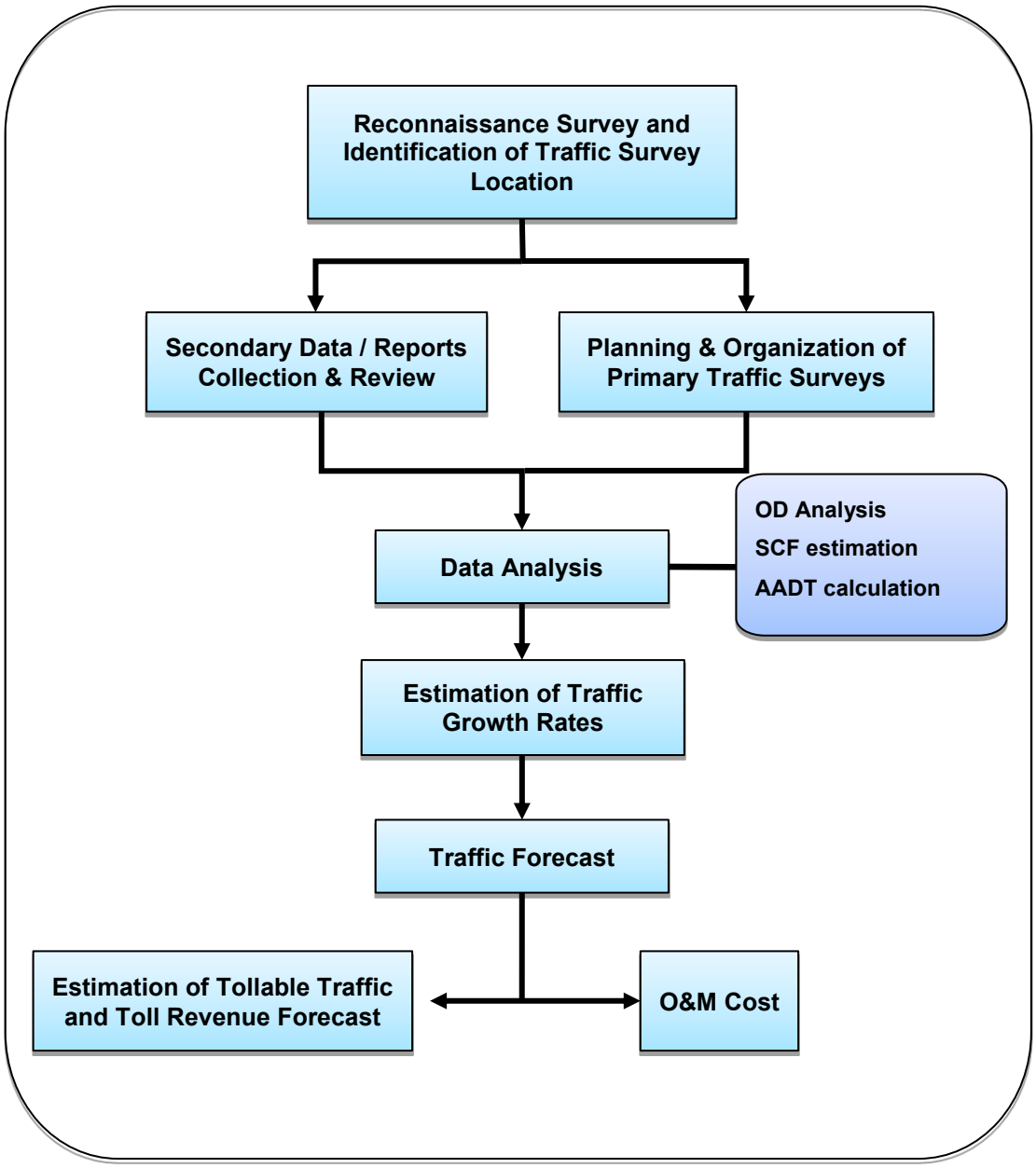

Figure 2:1: Broad Study Methodology

2.2 Primary Traffic Surveys

For traffic projections and toll revenue estimation, base year traffic volume on the project corridor and traffic characteristics like *local, through* traffic, proportion of frequent vehicles opting for return pass, monthly pass, etc. are required. To obtain these details, various surveys and studies were organized. The various traffic surveys carried out as part of the present study, the survey methodology and the survey schedule are presented in detail in the following sections. The review of secondary data collected is presented in **Chapter 3.** The following primary surveys, in addition to the secondary data from various sources, are identified to establish the traffic & travel characteristics on the project corridor:

1. Detailed Inventory within project corridor and adjoining roads in Project Influencing Area
2. Video graphic Traffic Volume Count
3. Origin and Destination Survey

Figure 2:2 : Traffic Survey Locations

The project corridor and the survey location are schematically shown in **Figure 2:2**. It can be observed that the entire project stretch is covered extensively and appropriately in terms of capturing the traffic flows and characteristic of the project road. The survey methodology and the schedule is discussed in the following sections.

2.3 Classified Traffic Volume Count Survey

The 7-day (24 hours, both directions) Video graphic traffic volume count survey was carried out at the Mokha toll plaza (km 46.500). Traffic was recorded using video cameras

and data was extracted. Sufficient lighting arrangement was ensured for the video recording during night time. The traffic volume count data was processed using the commonly used spread sheet package. The processed hourly traffic volume data was compiled direction-wise.

Data collected from site was analyzed to study daily variation and hourly variation of traffic, traffic composition and Average Daily Traffic (ADT) at the survey location. The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress as per IRC: 64-1990 were adopted.

Average Daily Traffic (ADT)

Daily traffic volume by vehicle type and direction were added separately and averaged to determine the Average Daily Traffic.

Annual Average Daily Traffic (AADT)

To account for the seasonal variation in the traffic, seasonal correction factors were worked out using fuel sale data along the project road. Seasonal variation factors were estimated for each category of vehicle.

2.4 Origin and Destination Survey

The origin and destination (OD) survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic along the study corridor. The OD survey was carried out for one day (24 hours) on a typical weekday at the Mokha toll plaza location (Refer **Figure 2:3**).

Figure 2:3: Origin Destination Survey (during Day and Night Time)

Roadside Interview Method was adopted for conducting the survey. The vehicles were stopped on random sample basis and the drivers/ users were interviewed by trained enumerators to collect the needed information/data. The survey format is finalized keeping in view the existing concessions as per Concession Agreement. The pertinent information in respect of travel characteristics including the following were collected during the OD Surveys;

- Origin zone & Destination zone of the vehicles
- Trip Purpose
- Frequency of travel
- Trip Length
- Type of Commodity (Commercial Vehicles)

2.5 Secondary Data collection

In addition to the data collected through primary surveys, the following data/ information was collected from various authorities. Review of the secondary data collected is presented in **Chapter 3.**

- Registered motor vehicles data from the Road Transport Authority (RTA) for the Project Influencing states.
- Net State Domestic Product for the major influencings states of project corridor traffic.
- Fuel sales data along the project corridor.
- Competing facilities that could affect the traffic on project road in future.

2.6 Survey Schedule

The traffic surveys were carried out in consultation with the Client and the survey schedule is presented in the **Table 2:1**.

Table 2:1: Survey Schedule

S. No	Type of Surveys	Duration
1	7 Day Video graphic Volume Count	29th September to 5th October 2016 (7 Days)
2	Origin Destination Survey	24 Hours (8 am on 3rd October to 8 am on 4th October 2016)

2.7 Traffic Data Analysis

Detailed analysis of the primary survey data and secondary data was undertaken to assess the traffic and travel characteristics of the project corridor. Daily traffic volume by vehicle type and direction at the survey location was used in determining Average Daily Traffic (ADT). The Annual Average Daily Traffic (AADT) was determined after applying seasonal correction factors to ADT. The tollable traffic was assessed after taking into account the toll exempted vehicles.

2.8 Traffic Forecasting

The accuracy of traffic forecast depends upon the accuracy of the growth factors. To establish the future traffic growth rates, following approaches are explored.

- Growth rates based on past toll traffic data
- Growth rates based on registered motor vehicles
- Transport Demand Elasticity Approach

The growth rates are assessed for three scenarios viz. optimistic, realistic and pessimistic. Based on these growth rates, traffic was projected for the reaming concession period. The diversion of traffic due to competing facilities, if any, as well as the generated traffic due to proposed new developments is also taken into consideration while estimating the future traffic.

2.9 Toll Revenue Estimation

The project is a toll road project. Tollable traffic on section of the project corridor was derived from the analysis of primary surveys. The base year tollable traffic was projected to future years using the adopted growth rates and toll revenue is estimated for each horizon year using the specified toll rates as per the Concession Agreement. While estimating the toll revenue, toll exempted vehicles and various applicable concessions, if any, was taken into consideration.

2.9.1 Toll Exempted Vehicles

The Toll Exempted Vehicles and the exempted dignitaries as per NHAI are presented in **Table 2:2**.

Table 2:2 Toll Exempted Vehicles

Exempted Vehicles	Exempted Dignitaries
i) Defence Vehicles	i) President of India
ii) Police vehicles	ii) Vice- President of India
iii) Vehicles with VIP symbol	iii) Central and State Minister while in vehicles
iv) Fire Fighting vehicles	iv) Leader of Opposition in Lok Sabha or Rajya Sabha or State Legislatures having the status of Cabinet Minister, while in vehicles
v) Ambulances	v) Governors of States
vi) Funeral vans	vi) Lieutenant Governors of Union Territories
vii) Post and Telegraphs Department's vehicles	vii) Speakers or Chairman of Central and State Legislatures while in vehicles
viii) Central and State Govt. vehicles on duty	viii) Executive councillors
	ix) Foreign dignitaries on State visit to India
	x) Foreign Diplomats Stationed in India using cars with CD or CC Number Plate

Chapter 3
Review of Secondary Data

3.1 General

The project corridor connects two most important cities called Kandla and Mundra in Kutch district of Gujarat. The traffic intensity on any highway is a function of population, Net State Domestic Product (NSDP) / Net District Domestic Product (NDDP) and number of registered motor vehicles in the influencing area. The growth in each parameter will have significant impact on the traffic intensity on the project corridor. For the estimation of future traffic on the corridor and toll revenues, Consultants have collected extensive secondary information/ data including the following:

- Population of Gujarat State and other influencing districts of Gujarat
- Net State Domestic Product (NSDP) of Gujarat, Uttar Pradesh and Rajasthan
- Registered Motor Vehicles in Gujarat

3.2 Population of Gujarat

Growth in population in project road influence area will have significant impact on the passenger traffic on the project corridor. **Table 3*:1*** shows the population in each district of Gujarat.

Table 3:1 Population Details

District	2001	2011	Percentage Increase
Ahmadabad	5816519	7208200	24%
Amreli	1393918	1513614	9%
Anand	1856872	2090276	13%
Banas Kantha	2504244	3116045	24%
Bharuch	1370656	1550822	13%
Bhavnagar	2469630	2877961	17%
Dohad	1636433	2126558	30%
Gandhinagar	1334455	1387478	4%
Jamnagar	1904278	2159130	13%
Junagadh	2448173	2742291	12%
Kutch	1583225	2090313	32%
Kheda	2024216	2298934	14%
Mahesana	1837892	2027727	10%
Narmada	514404	590379	15%
Navsari	1229463	1330711	8%
Panch Mahals	2025277	2388267	18%
Patan	1182709	1342746	14%
Porbandar	536835	586062	9%
Rajkot	3169881	3799770	20%
Sabar Kantha	2082531	2427346	17%
Surat	4995174	6079231	22%

District	2001	2011	Percentage Increase
Surendranagar	1515148	1755873	16%
Tapi		806489	--
The Dangs	186729	226769	21%
Vadodara	3641802	4157568	14%
Valsad	1410553	1703068	21%

Source: Census of India

The location of Mokha toll plaza falls under Kutch district of Gujarat, which is the largest district of India. The increase in population in Kutch district is about 32% during 2001-2011.

3.3 Net State Domestic Product (NSDP) of Influencing States

In estimating travel demand elasticity, it is logical to relate growth in passenger and freight traffic with Net State Domestic Product (NSDP) and population. The compiled data of NSDP at constant prices (2004-2005) for Influencing States are presented in **Table 3*:2***.

Table 3:2 NSDP of Influencing States at Constant Prices (2004-2005)

Year	Gujarat		Uttar Pradesh		Rajasthan	
	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change
2004-05	172265	--	231029	--	112636	--
2005-06	197270	15%	244514	6%	120202	7%
2006-07	213954	8%	263935	8%	134350	12%
2007-08	239253	12%	280851	6%	140471	5%
2008-09	249480	4%	302192	8%	152284	8%
2009-10	284732	14%	320989	6%	161160	6%
2010-11	315892	11%	346621	8%	190130	18%
2011-12	336887	7%	364684	5%	202683	7%
2012-13	356478	6%	383644	5%	203298	0%
2013-14	385472	8%	403523	5%	212524	5%
2014-15	411179	7%	427759	6%	237529	12%

Source: Economic Survey of Indian States

3.4 Registered Motor Vehicles

Registered motor vehicles growth in the project corridor influence area is considered as an alternative approach in estimating the traffic growth in the absence of any additional information or usable past traffic data on the project road. Also, this can be used in determining the travel demand elasticity. Consultants have collected the data related to registered motor vehicles in Gujarat and the same are presented in **Table 3*:3***. The percentage variation is presented in **Table 3*:4*.**

Table 3:3 Registered Motor Vehicles in Gujarat

Registered Motor Vehicles (Gujarat)				
Year	**Car**	**Bus**	**LCV**	**Trucks &MAV**
2005-06	874746	54446	253340	204362
2006-07	966170	54214	285858	223022
2007-08	1063234	56214	314388	239404
2008-09	1156880	58253	338826	247772
2009-10	1256468	71526	367113	259231
2010-11	1427954	77154	402514	276290
2011-12	1632715	84208	448958	301533
2012-13	1832103	91927	468729	349755
2013-14	2007923	97639	501154	373949
2014-15	2204699	97639	536235	400126
Avg Annual GR (2005-06 to 2014-15)	10.82%	6.70%	8.69%	7.75%

** Source: Motor Transport Statistics of Gujarat*

Table 3:4 Growth Rate in Registered Motor Vehicles - Gujarat

Year	Car	Bus	LCV	Trucks &MAV
2005-06	--	--	--	--
2006-07	10%	-0.4%	13%	9%
2007-08	10%	4%	10%	7%
2008-09	9%	4%	8%	3%
2009-10	9%	23%	8%	5%
2010-11	14%	8%	10%	7%
2011-12	14%	9%	12%	9%
2012-13	12%	9%	4%	16%
2013-14	10%	6%	7%	7%
2014-15	10%	6%	7%	7%

The growth rate in total registered motor vehicles in Gujarat during 2014-2015 is 10%, 6%, 7% and 7% for Car, Bus, LCV and Truck/MAV respectively.

3.5 Traffic Data from Existing Toll Plaza

As the levy of toll on the project road started recently, the toll data (Mokha Toll Plaza) is available only from November 2015 to June 2016. The summary of the data collected is presented in **Table 3*:5***. This data is used for assessing the seasonality factors and assessing trend of traffic growth on the project corridor.

Table 3:5 Tolled Traffic Data at Toll plaza

Month/Year	Mokha			
	Car	**LCV**	**Bus/Truck**	**MAV**
Nov-15	1159	93	166	5289
Dec-15	744	106	181	6069
Jan-16	656	105	176	5674
Feb-16	668	104	166	5797
Mar-16	623	103	158	5974
Apr-16	697	115	154	6173

Month/Year	Mokha			
	Car	LCV	Bus/Truck	MAV
May-16	794	130	158	6166
Jun-16	621	150	152	5881
Jul-16	658	173	141	5920
Aug-16	675	102	138	5493
Sep- 16	607	109	146	5948

The high density of MAVs reflect the fact that the project road links two major ports, in particular, the largest commercial port in India, Mundra.

The **Table 3:6** below sets forth the tollable traffic count by category of vehicles for the FY 2016 and the six months FY 2017

Table 3:6 Historical Tollable Traffic Count by Category of Vehicles

Modes	For the FY ended March 31, 2016	For the six months ended September 30, 2016
Car(1)	98,243	123597
LCV(2)	15,254	23739
Bus/Truck(3)	24,839	27105
Multi-axle(4)	906,200	1,085,240
Total	1,044, 536	1,259,680

Source: TMS Data

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

3.6 Annual Average Daily Tollable Traffic

The **Table 3:7** below sets forth the tollable annual average daily traffic by category of vehicles for the financial year 2016 and the six months ended September 2016

Table 3:7 Annual Average Daily Tollable Traffic by Category of Vehicles

Modes	For the FY ended March 31, 2016	For the six months ended September 30, 2016
Car(1)	673	675
LCV(2)	104	130
Bus/Truck(3)	170	148
Multi-axle(4)	6,207	5930
Total	7,154	6883
Total PCUs	29,271	28001

Source: TMS Data

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 9.9%, 1.5%, 2.5%, and 86.1% of tollable traffic for the project, respectively.

3.7 Toll Structure at Existing Toll Plaza

Existing toll structure including toll concessions at the Mokha toll plaza on the project corridor is summarized in **Table 3*:8***.

Table 3:8 Toll Structure at Existing Toll Plaza (2016-2017)

Toll Plaza	Vehicle Type	Toll (in Rs.)		
		Single Trip	Return Trip Within a day	Monthly Pass (50 Journey)
Mokha	Car/Jeep/Van	80	115	2590
	LCV	120	185	4075
	Bus/Truck	250	380	8390
	3 to 6 Axle	390	580	12930
	HCM/EME	390	580	12930
	7 or more Axle	490	735	16290

The rates for monthly pass applicable for local non-commercial vehicle resides within a distance 20 km from the plaza for the financial year 2016-2017 shall be Rs. 235.

Chapter 4
Traffic Surveys and Analysis

4.1 General

This Chapter presents details about the various traffic surveys carried out as part of the present study and the survey data analysis. The results of analysis will form input for estimation of tollable traffic and toll revenue.

4.2 Classified Traffic Volume Count Survey

Classified traffic volume count survey was carried out at Mokha Toll Plaza (km 46.580) for 7 consecutive days, from 29th September to 5th October 2016. The video graphic data was extracted for all the 7 days. During the data extraction, toll exempted vehicles were counted separately. The extracted video graphic data was analyzed to study the hourly variation and daily variation of traffic, peak hour share, traffic composition and Average Daily Traffic (ADT) at all the survey locations. Seasonal correction factors were applied for obtaining the Annual Average Daily Traffic (AADT).

4.3 Passenger Car Units

The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress in *Guidelines for Capacity of Roads in Rural Areas* (IRC: 64-1990) were used (**Table 4*:1***).

Table 4:1 PCU Factors

Vehicle Type	PCU Factor	Vehicle Type	PCU Factor
Car/Jeep	1.00	LCV	1.50
Van/Tempo (passenger)	1.00	2-Axle Truck	3.00
Mini Bus	1.50	3-Axle Rigid Truck	3.00
Standard Bus	3.00	MAV	4.50

Source: Guidelines for Capacity of Roads in Rural Areas (IRC 64-1990)

4.4 Average Daily Traffic (ADT)

Daily traffic volume by vehicle type and direction is added separately and averaged to determine the Average Daily Traffic. ADT, observed at the survey location, in vehicles and in PCUs, are presented in **Table 4*:2*** and shown in **Figure 4:1**.

Table 4:2 Average Daily Traffic (ADT) on the Project Corridor

Mode		ADT(Vehicles)	ADT(PCUs)
Passenger Vehicles	Car/Jeep/Van	1065	1065
	Bus	113	339
Commercial Vehicles	LCV	126	189
	2 Axle Truck	85	255
	3 Axle Truck	1024	3072
	MAV	4829	21729
	>6 Axles	0	2

Mode	ADT(Vehicles)	ADT(PCUs)
Tollable Traffic	**7242**	**26650**
Two Wheeler	1298	649
Auto Rickshaw	156	117
Tractor	3	4
Tractor Trailer	4	20
Non Tollable Traffic	**1461**	**790**
Toll Exempted Car	2	2
Toll Exempted Mini Bus	2	2
Toll Exempted Bus	0	0
Toll Exempted LCV	1	2
Toll Exempted 2 Axle	1	2
Toll Exempted 3Axle/MAV	0	1
Toll Exempted Vehicles	**6**	**10**
Total	**8709**	**27449**

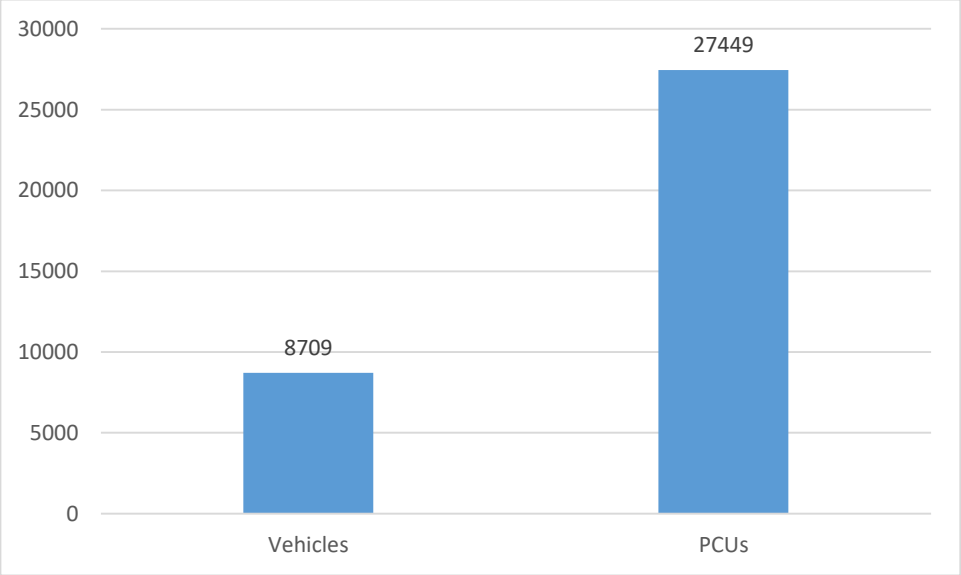

Figure 4:1 Average Daily Traffic

4.5 Daily Variation of Traffic

Daily variation of traffic in terms of vehicles as well as in PCUs at Mokha toll plaza is presented in **Table 4*:3*** and graphically shown in **Figure 4*:2***.

Table 4:3 Daily Variation of Traffic

Date	Day	Vehicles	PCUs
29-09-2016	Thursday	9400	30276
30-09-2016	Friday	9490	30480
01-10-2016	Saturday	7795	23136
02-10-2016	Sunday	7442	21753
03-10-2016	Monday	8727	27972
04-10-2016	Tuesday	8498	27421
05-10-2016	Wednesday	9609	31105

The salient observations at the survey location are as follows.

- Maximum traffic (vehicles) was observed on Wednesday with 9609 vehicles (31105 PCUs). Tuesday can be considered as average traffic day.
- Lowest traffic was observed on Sunday.

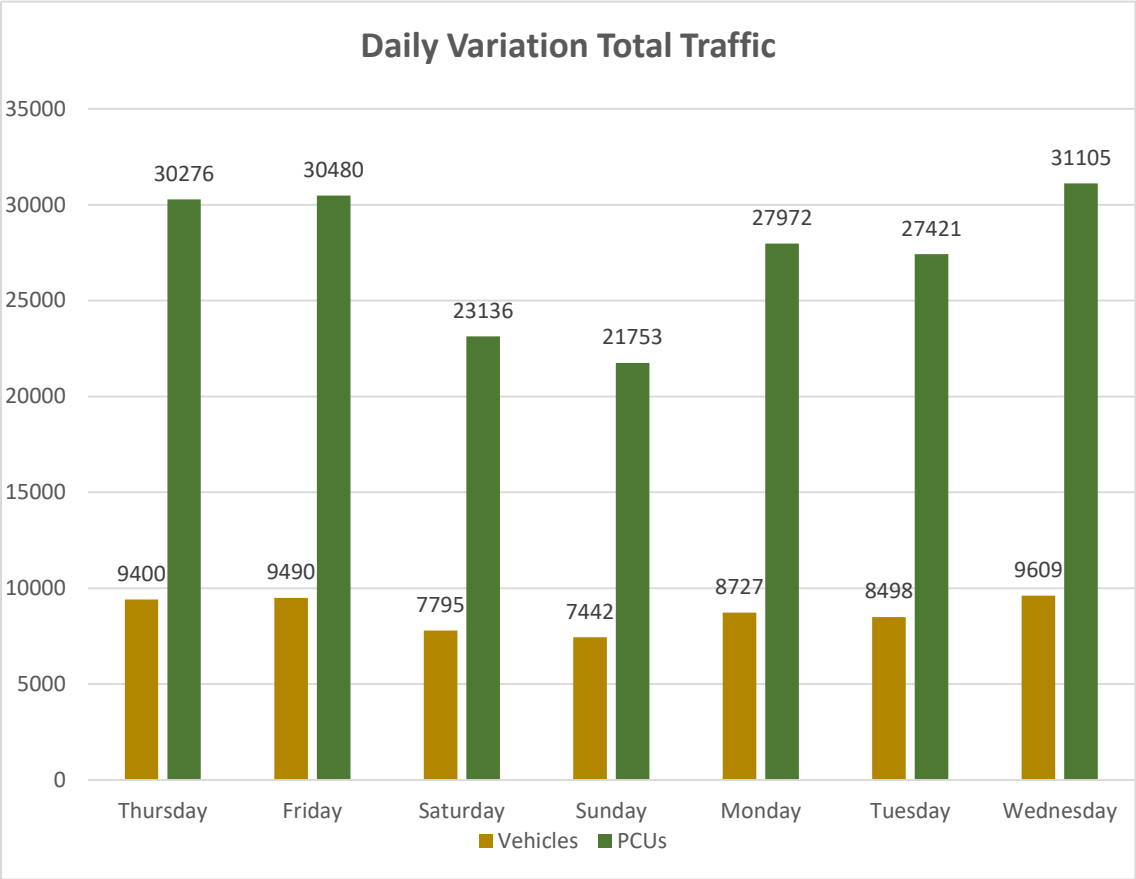

Figure 4:2 Daily Variation of Traffic – Mokha Toll Plaza

The mode-wise traffic breakup for the 7 days of traffic count survey and the ADT at the survey location is presented in **Table 4:4**.

Table 4:4 Mode-wise Traffic – Mokha Toll Plaza

Mode	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday
Two Wheeler	1366	1424	1328	1387	1189	1142	1247
Auto Rickshaw	113	160	168	172	138	153	190
Car	1043	1020	1196	1087	1034	1001	1092
LCV	146	157	104	133	117	123	121
Bus	117	104	128	112	117	99	114
Truck	93	87	80	81	80	70	108
3 Axle Truck	1150	1067	791	690	1170	1033	1268
Mav	5363	5464	3992	3768	4878	4872	5463
OSV	1	1	0	0	0	0	0
Tractor	3	1	1	5	2	1	5
Tractor Trailer	5	5	7	7	2	4	1
Total Vehicles	**9400**	**9490**	**7795**	**7442**	**8727**	**8498**	**9609**

4.6 Average ADT

The variation of traffic with respect to average daily traffic, in terms of vehicles and PCUs observed at the survey location is presented in **Table 4*:5*.**

Table 4:5 Minimum, Maximum and Average Daily Traffic

Location	Mokha Toll Plaza	
	Total Vehicles.	Total PCUs
ADT	8709	27449
Maximum Daily Traffic	9609	31105
Minimum Daily Traffic	7442	21753
% Variation of Max Traffic w.r.t. ADT	9%	12%
% Variation of Min Traffic w.r.t. ADT	17%	26%

The salient observations are as follows:

- ❖ It has been observed that Mokha toll plaza has minimum variation in terms of vehicles (9% with respect to ADT) and maximum variation in terms of PCU's (26% with respect to ADT).
- ❖ The maximum variation was observed on 2nd October, which was a Sunday as well as National holiday.

4.7 Hourly Variation of Traffic

Average hourly variation of traffic observed at the survey location is presented in **Figure 4:3**. It is observed that peak period occurs between 08.00 hours to 09.00 hours with maximum peak hour traffic of 1858 PCUs.

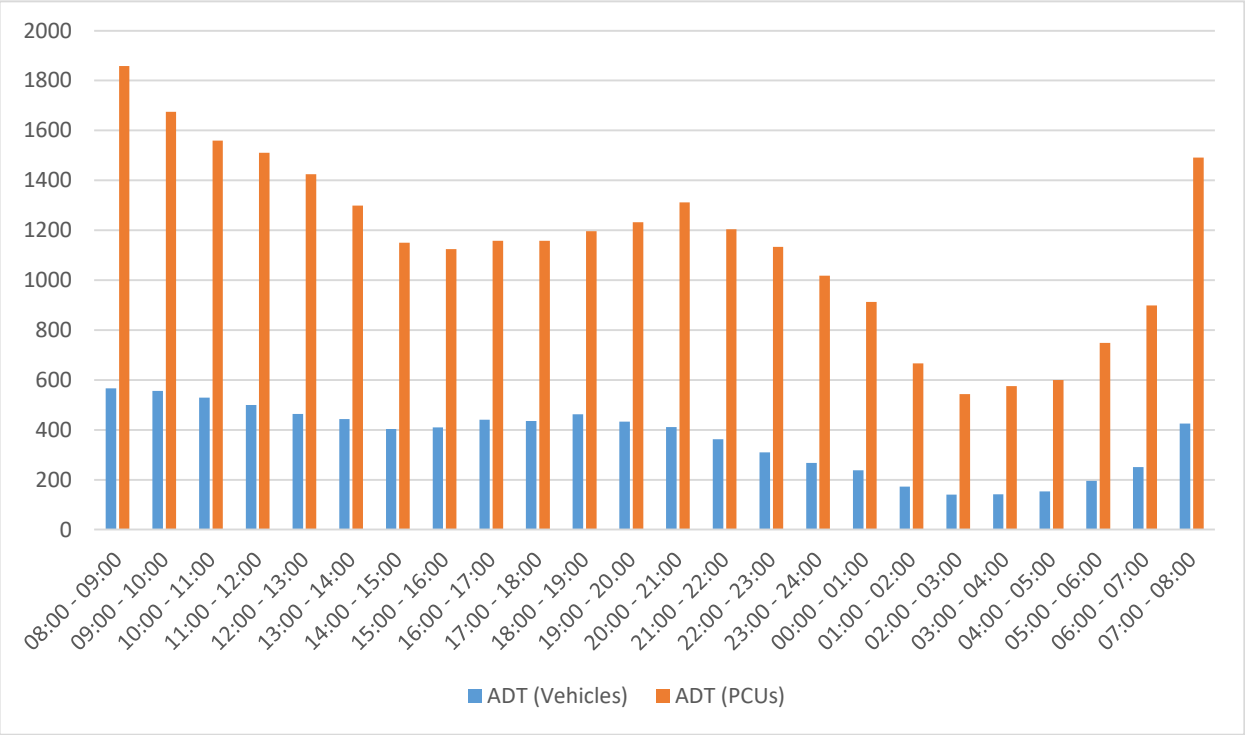

Figure 4:3 Hourly Variation of Traffic – Mokha Toll Plaza

4.8 Traffic Composition

Average composition of tollable traffic observed at the Mokha toll plaza location is presented in **Table 4*:6*** and graphically shown in **Figure 4:4**. The major composition is of MAV (67%), followed by Cars with a share of 15%.

Table 4:6 Average Traffic Composition (Tollable)

Mode	% Share
Car	15%
LCV	2%
Bus	2%
2 Axle Truck	1%
3 Axle Truck	14%
MAV	67%

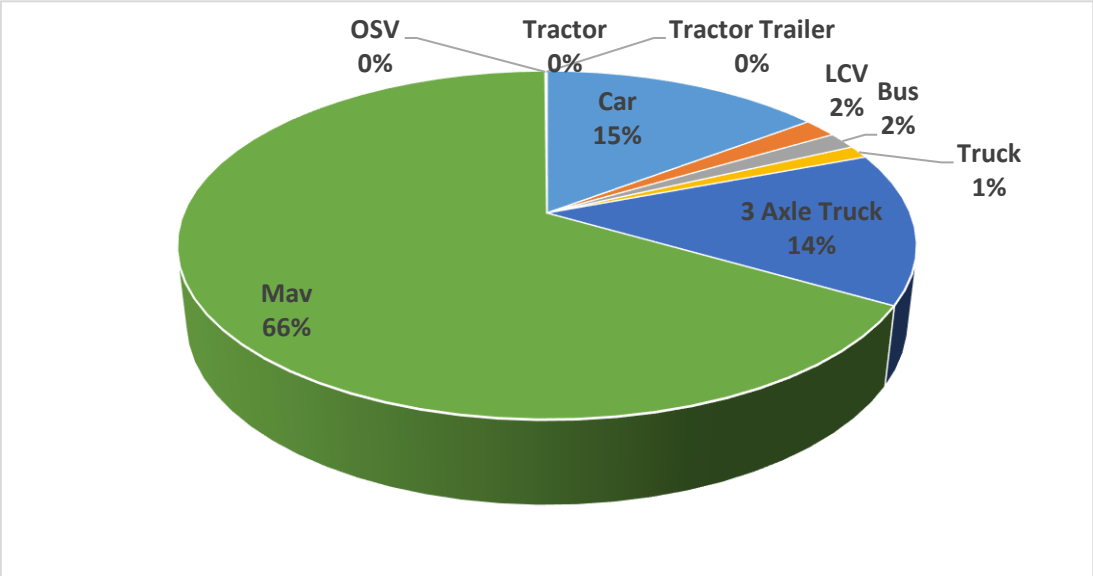

Figure 4:4 Traffic Composition – Mokha Toll Plaza

4.9 Estimation of Seasonal Correction Factors

In the absence of time series traffic data from Toll Plaza, to account for the seasonal variation in the traffic, seasonal variation factors have been worked out using previous study reports and fuel sales data. The seasonal correction factors have been estimated separately for passenger vehicles (by considering that 50/50 share of cars for petrol and diesel) and freight vehicles. These factors are presented in **Table 4*:7***.

Table 4:7 Seasonal Correction Factors

Mode	SCF
Car	0.98
LCV	0.97
Bus	0.97
Truck & MAV	0.97

4.2.9 Annual Average Daily Traffic (AADT)

Considering the above seasonal correction factors, Annual Average Daily Traffic at the survey location on the project corridor is estimated. The mode wise Annual Average Daily Traffic (AADT) at the toll plaza location is presented in **Table 4-8.**

Table 4:8 Annual Average Daily Traffic (AADT)

Mode		ADT(Vehicles)	AADT
Passenger Vehicles	Car/Jeep/Van	1065	1044
	Bus	113	110
Commercial Vehicles	LCV	126	122
	2 Axle Truck	85	82
	3 Axle Truck	1024	993
	MAV	4829	4684
	>6 Axles	0	0
Tollable Traffic		**7242**	**7035**
Two Wheeler		1298	1272
Auto Rickshaw		156	153
Tractor		3	2
Tractor Trailer		4	4
Non Tollable Traffic		**1461**	**1432**
Toll Exempted Car		2	2
Toll Exempted Mini Bus/Ambulance		2	2
Toll Exempted Bus		0	0
Toll Exempted LCV		1	1
Toll Exempted 2 Axle		1	1
Toll Exempted 3Axle/MAV		0	0
Toll Exempted Vehicles		**6**	**6**
Total		**8709**	**8473**

4.10 Origin – Destination Survey

4.10.1 General

The origin-destination survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic on the project corridor. The results of these surveys are useful in estimating the traffic split / segmentation and in assessing the traffic characteristics on the project corridor. The O-D survey was carried out for 24 hours at Mokha Toll Plaza on 3rd October 2016 simultaneously along with classified volume count survey.

4.10.2 Sample Size

Sample size achieved during the OD survey as percentage to the total traffic is presented in **Table 4*:9*.**

Table 4:9 Sample Size of OD Survey

Mode	Sample Size (%)
Car	34%

Mode	Sample Size (%)
Bus	82%
LCV	55%
Truck	52%
MAV	48%

4.10.3 Zoning System

It is required to code the origin and destination of trip. Broad zoning system was developed to analyse the O-D data collected from the field. The zoning system was evolved mainly considering the toll notification issued by *Ministry of Shipping, Road Transport and Highways* (Department of Road Transport & Highways). Local travellers (resident within 20 km from toll plaza) would get concession on the toll rates. This has been considered while finalizing the zoning system. In all, total 271 Traffic Analysis Zones (TAZ) were considered. The details of traffic zones and codes adopted for the study are presented in **Annexure**. The pictorial representation of zoning is given in the **Figure 4:5**.The mode-wise OD matrix is provided in the form of soft copy (xls).

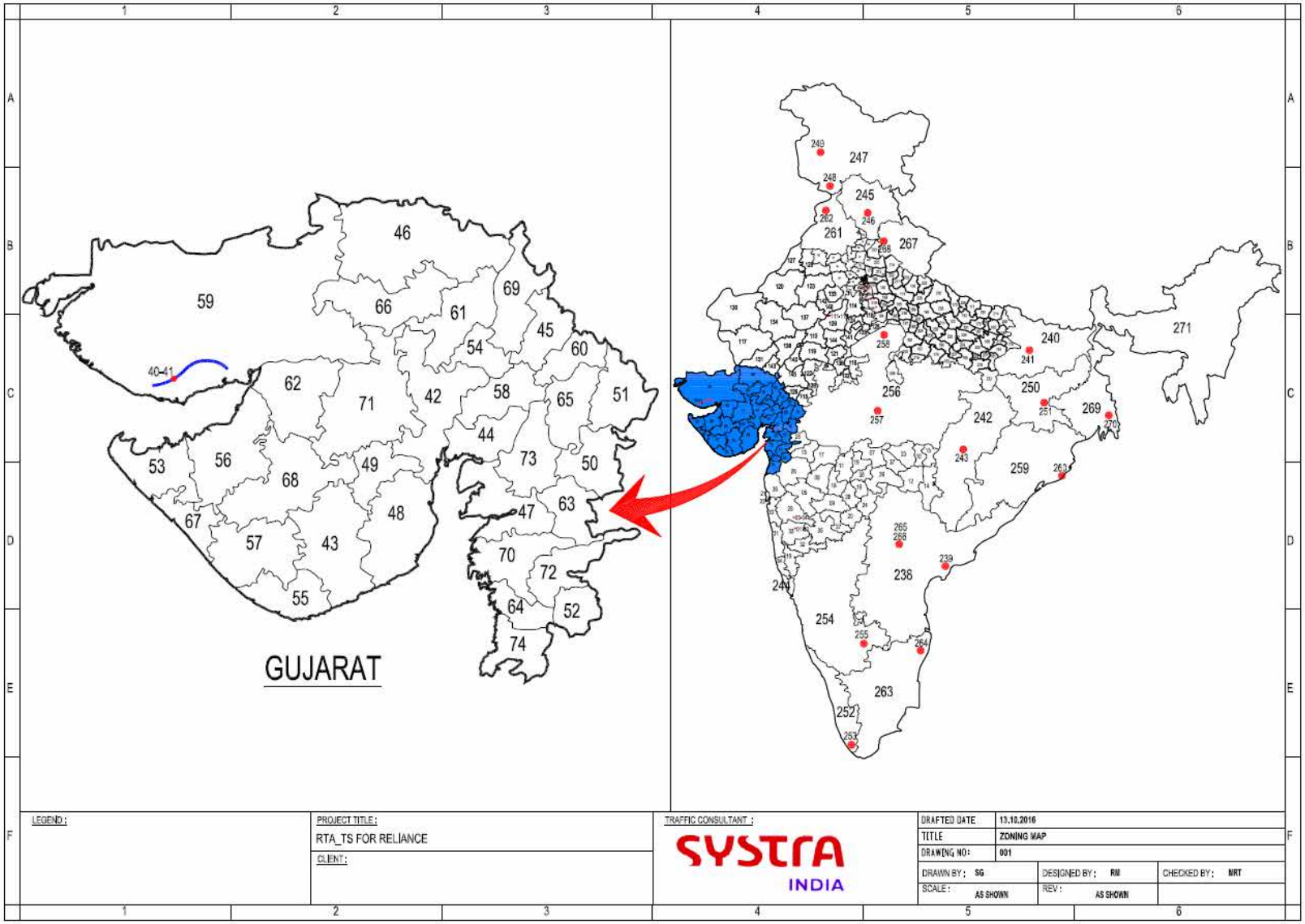

Figure 4:5 Zoning System

The proportion of vehicles with origin or destination within Gujarat State are presented in **Table *4:10***. It can be observed that maximum proportion of passenger and freight vehicles have either Origin or destination within Gujarat.

Table 4:10 Trips with Origin or Destination within Gujarat

Mode	Proportion
Car	97%
Bus	96%
LCV	92%
2-Axle Truck	96%
MAV	90%

The following **Table *4:11*** shows the major traffic generators. It can be inferred that maximum proportion of traffic is from Gujarat.

Table 4:11 Major Traffic Generators

Zone		Passengers	Goods
Gujarat	Ahmedabad	3%	2%
	Kutch	59%	27%
	Mundra Port	28%	47%
	Rest of Gujarat	7%	6%
Jaipur		--	3%
Other Places		3%	7%

4.10.4 Commodity

During OD Survey, the commodity which is carried by the goods vehicle was also noted. It is observed that “others” (*Parchuran*) commodity is having higher percentage followed by construction materials. **Table *4:12*** and **Figure 4:6** show the commodity distribution observed at Mokha toll plaza location.

Table 4:12 Commodity Share

Commodity	% Share
Empty	43%
Agricultural Products	4%
Forest Products	1%
Fuel, Oil & Gas	6%
Construction Materials	9%
Powder	3%
Textiles	4%
Chemicals & Fertilizers	1%
Iron & Steel	1%
Consumer Goods	2%
Others	25%

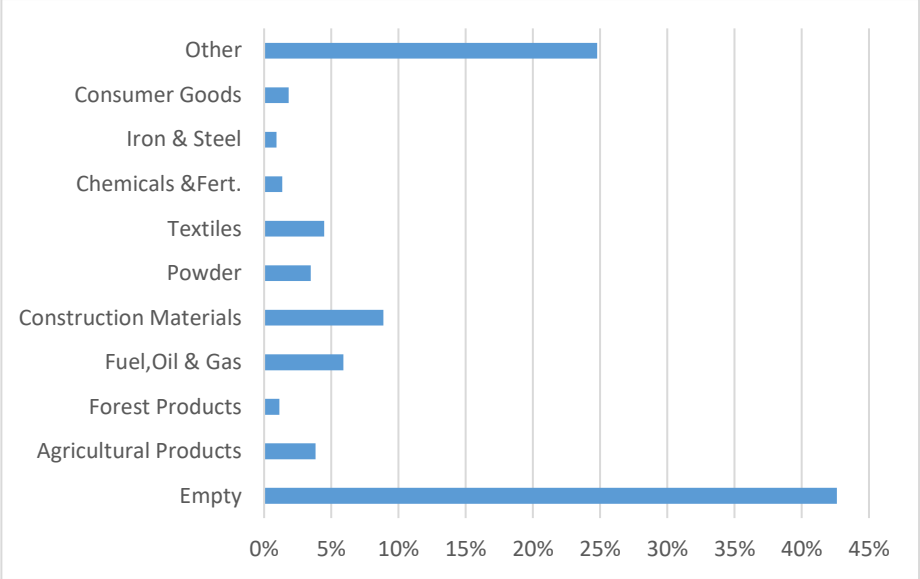

Figure 4:6 Commodity Share

4.10.5 Trip Length

The trip length covered during journey is enquired during OD survey and the analysis of the same is given **Table 4*:13***. **Table 4*:14*** present mode-wise trip length distribution at the survey location (Mokha Toll Plaza). It can be observed that maximum proportion of trips is observed within 500 km range for both passenger and goods vehicles. Graphical representation of trip length frequency distribution is presented in **Figure 4:7** and **Figure 4:8**.

Table 4:13 Trip Length Frequency Distribution - Passenger vehicles

Distance	Passenger Vehicles (Nos)			
	Car	Mini Bus	Private Bus	Govt. Bus
0-50	63%	90%	20%	27%
50-150	24%	10%	0%	9%
150-300	6%	0%	13%	27%
300-500	6%	0%	67%	36%
500-750	1%	0%	0%	0%
>1000	0%	0%	0%	0%

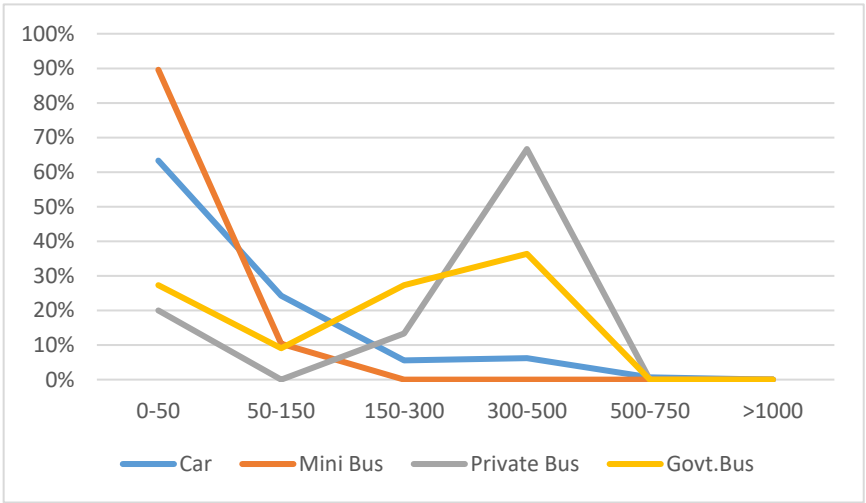

Figure 4:7 Trip Length Frequency Distribution – Passenger Vehicles

Table 4:14 Trip Length Frequency Distribution – Goods Vehicles

Distance	Goods Vehicles (Nos)				
	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV
0-250	88%	83%	70%	86%	67%
250-500	7%	5%	19%	9%	13%
500-750	2%	2%	5%	2%	6%
750-1000	0%	0%	3%	2%	6%
1000-1500	2%	7%	2%	1%	7%
1500-2000	0%	2%	1%	0%	1%
>2000	0%	0%	0%	0%	0%

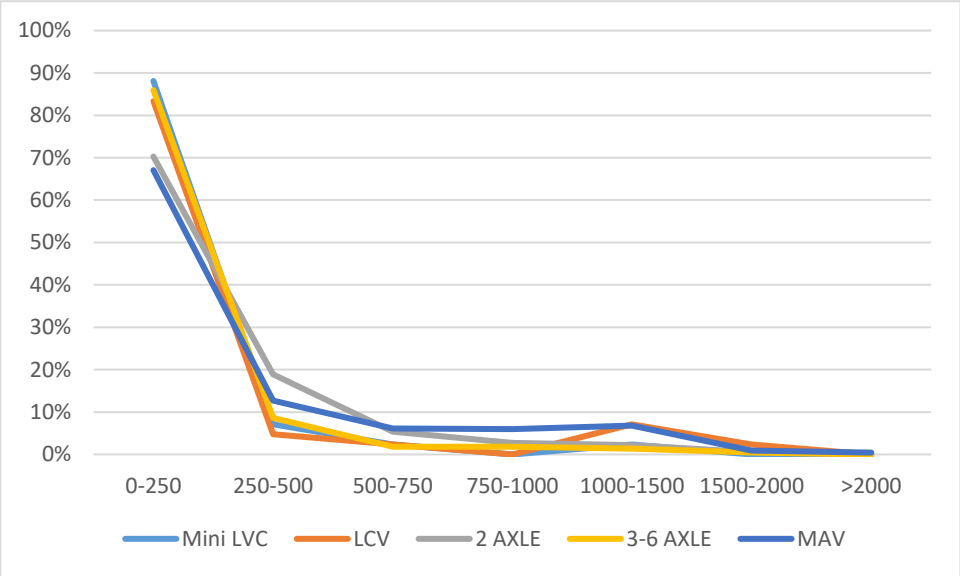

Figure 4:8 Trip Length Frequency Distribution – Goods Vehicles

4.11 Trip Frequency

OD survey data has been analysed for assessing the proportion of users using single journey, return journey and monthly pass. The observed traffic segmentation at Mokha Toll Plaza location is given in **Table 4*:15*** and the same is shown graphically in **Figure 4:9**. It has been seen that single journey ticket is highly preferred by Truck and MAV mode and LCV and Bus use return ticket.

Table 4:15 Traffic Segmentation

Mode	Single Journey	Return Journey	Monthly Pass
Car	48%	49%	3%
LCV	36%	64%	0%
Bus	35%	65%	0%
Truck	54%	46%	0%
MAV	52%	47%	1%

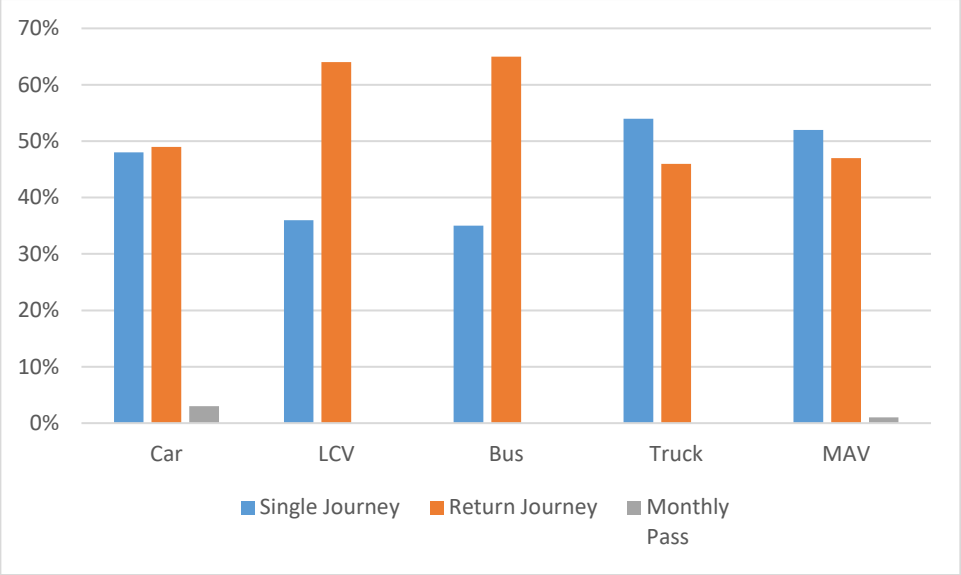

Figure 4:9 Traffic Segmentation

4.11.1 Local Vehicles

As per the existing toll concession, local travellers (excluding commercial) residing within 20 km from the toll plaza can avail the monthly pass at Rs. 235. From the OD survey analysis, it is estimated that the proportion of local travellers (Car/ Jeep/ Van) within 20 km from toll plaza is about 5%.

Chapter 5
Traffic Forecast and Toll Revenue Analysis

5.1 General

Assessment of traffic growth rates by various methods and traffic forecast for horizon years upto 2037 are presented in this Chapter. Based on the traffic projections and proposed toll rates, tollable traffic and toll revenue has been estimated and presented in this Chapter.

5.1.1 Assessment of Traffic Growth Rates

Long term forecasting of traffic on the project road during the time horizon of the study is required for assessing the financial viability of the project. To establish the future traffic growth rates, various approaches, including Transport Demand Elasticity Approach, were attempted.

5.1.2 Growth Rates Based on Past Traffic Data

Consultants had carried out detailed analysis of the past traffic reports made available by the Client. There is only one toll plaza (Mokha Toll Plaza) on the project corridor. Unfortunately, as the levy of toll on the project road started very recently (November 2015), there is not enough traffic data available for assessing traffic growth trend. It is not logical to conclude the traffic growth with the available traffic data (less than a year).

5.1.3 Growth Rates based on Registered Motor Vehicles

If the area of influence is well defined and the general development pattern of influence area remains the same, then it can be assumed that traffic growth rate is approximately equal to the average growth rate of vehicle registration. It may be emphasized that the project corridor indicates a strong influence of Gujarat State in the traffic generation/ attraction. From the OD survey analysis, it is found that about 87% of passenger traffic & 74% of freight traffic are originating from or destined to Mundra port and Kutch region. Therefore, there is a strong influence of number of registered vehicles in Kutch district/ Gujarat on project road traffic.

Table 5:1 presents the growth rates in registered motor vehicles in Kutch district. The vehicle registration data was obtained from the D*epartment of Port and Transport, Government of Gujarat.*

Table 5:1 Registered Motor Vehicles in Kutch District of Gujarat

Sr. No	Year	Transport Vehicles	Non-Transport Vehicles	Total
1	2000-2001	826046	4749994	5576040
2	2001-2002	858113	5149856	6007969
3	2002-2003	899284	5609086	6508370
4	2003-2004	951943	6135597	7087540
5	2004-2005	1016149	6801123	7817272
6	2005-2006	1112590	7509700	8622290

Sr. No	Year	Transport Vehicles	Non-Transport Vehicles	Total
7	2006-2007	1220632	8276705	9497337
8	2007-2008	1313997	8975059	10289056
9	2008-2009	1398189	9600462	10998651
10	2009-2010	1497890	10374683	11872573
11	2010-2011	1621857	11371278	12993135
12	2011-2012	1777974	12635743	14413717

The growth rate in total registered motor vehicles during 2011-2012 is 7.2%, 9.3% and 9.0% for Transport Vehicles, Non-Transport Vehicles and Total Vehicles respectively. However, assuming that the traffic growth rate equal to the average growth of vehicle registration may not be correct, unless the area of influence is well defined and the general development pattern of influence area remains same. However, this would be an alternative approach in the absence of any additional information or usable past traffic data on the project road. As transport demand elasticity approach is more proven approach, Consultants propose to adopt the growth rates derived from this approach.

5.1.4 Transport Demand Elasticity Approach

Long term forecasting of the project road traffic, during the time horizon of the study, is required for designing the highway and assessing the financial viability of the proposed investment for improving the facility.

As the growth of vehicle population can also be related to other influences, it is logical to relate vehicle population with one or more logically derived independent variables for deriving elasticity of transport demand. Elasticity of transport (traffic) demand, in the present context, is defined as the ratio of percentage change in traffic to the percentage change in socio-economic parameters. The concept of developing regression equation to relate the dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes. This approach is even recommended by the recent Indian Roads Congress (IRC) *Guidelines for Traffic Forecast on Highways IRC: 108-2015*.

It has been established that the overall growth of the traffic is closely correlated with the economic growth of the Nation. This is mainly from the fact that growth of the economy, expressed in the gross production of various sectors, is one parameter that captures or is comprised of, either directly or indirectly, most of the other factors that influence traffic levels. The process involves establishing a relationship between the traffic levels on the project corridor and Net State Domestic Product (NSDP) of the State contributing traffic on to the project corridor.

The concept of developing regression equation to express dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes. In the present case, the dependent variable is the registered motor vehicles in the zone of influence (District/ State). The preferred dependent variable would have been past traffic on the project corridors. Number of registered motor vehicles growth in Gujarat, Rajasthan and Rest of India is taken as dependent variable. The independent

variables are socio-economic parameters. The choice of independent variable depends upon vehicle type under consideration. It is logical to relate growth in traffic with NSDP/ NDDP, PCI and population. The vehicles types have been clubbed into two categories; passenger vehicles & freight vehicles. The independent variable used in case of passenger vehicles is Population and PCI and in case of freight vehicles NSDP/ NDDP is used.

It is possible to predict independently the socio-economic variables like population, per capita income (PCI), NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach. Based on the above considerations, the growth rates based on elasticity approach have been adopted for projecting future traffic.

The traffic growth rates, by vehicle type, are obtained by running simple regression and fitting the regression equation with prospective values of independent variables. The separate equations using PCI and registered motor vehicles have been developed for influencing states and districts for passenger vehicles. Similarly, equations by using NSDP and registered motor vehicles of influencing states are developed for freight vehicles. Traffic growth rate projections are done using the below formula;

$$T = \left[\left(1 + \frac{P}{100}\right) * \left(1 + \frac{R}{100}\right) - 1\right] * 100 * E$$

Where:

T - Traffic growth rate (in %)

P - Growth rate of population

R - Growth rate of per capita NSDP /per capita income

E - Elasticity

The growth rates for the horizon years are arrived by taking the average of the Net State Domestic Product at constant price. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down. India GDP has been considered for future estimation of future NSDP of influencing states. India's current GDP growth is 7.1% and world economic outlook has projected India's GDP growth as 7.2% for FY2018.

Elasticity values for different sections of the project corridor have been arrived based on the *Weightage Factors*. These weightage factors are assessed considering the contribution of the traffic on the project corridor based on primary traffic surveys (OD Survey) and the average weightage factors are presented in **Table 5:2** and **Table 5:3** for passenger vehicles and commercial vehicles respectively.

Table 5:2: Weightage Factors (CH: 46 +500) - Passenger Vehicles (%)

Location	Passenger Vehicles			
	Gujarat	Rajasthan	UP	ROI
CH: 46+500	97%	0%	1%	2%

Table 5:3: Weightage Factors (CH: 46+500) – Goods Vehicles (%)

Location	Goods Vehicles			
	Gujarat	Rajasthan	UP	ROI
CH: 46+500	90%	4%	1%	5%

** ROI – Rest of India*

Majority of passenger and freight traffic is generated from Gujarat state as shown in **Table 5:2**. Other contributors are Rajasthan and Uttar Pradesh.

5.1.5 Economic Growth of Project influencing Areas

Growth of traffic on the project road depends on the existing development and future growth prospects of the PIA. A number of econometric indicators for the PIA states, as published by Central Statistical Organisation/ Economic Survey Reports have been studied to assess their past performance. Some of the salient features are presented below;

- **Gujarat**

  Gujarat's economy expanded at a CAGR of 13.1% during FY2005 to FY2015, exceeding the national average of 12.6%. After recording a good growth of 18.5% in FY2013, industrial growth declined to 2.9% in FY2014, before recovering to 8.0% in FY2015. In contrast, the agricultural sector recorded a considerable growth of 25.9% in FY2014. Services sector growth ranged between 8%-12% during FY2013 to FY2015. The motor vehicles registered in Gujarat expanded at a CAGR of 9.0%, from FY2006 to FY2013, lower than the 10.7% growth at the all-India level.

- **Rajasthan**

  Rajasthan's economy expanded at a CAGR of 14.3% during FY2005 to FY2015, exceeding the national average of 12.6%. After averaging 8.5% during FY2013 and FY2014, the growth in Rajasthan's services sector improved to a healthy 10.7% in FY2015. Moreover, industrial growth rose from a mild 0.3% in FY2013 to 2.7% in FY2014, and further to 5.9% in FY2015. Agricultural growth in Rajasthan doubled from 3.0% in FY2013 to 6.0% in FY2014. The motor vehicles registered in Rajasthan expanded at a CAGR of 11.3% during FY2006 to FY2013, higher than 10.7% growth at the all-India level.

- **Uttar Pradesh**

  It is the largest producer of food grains among all states in India and accounted for about 19% share in the country's total food grain output in 2014-15. Between 2004-05 and 2014-15, Gross State Domestic Product (GSDP) expanded at a Compound Annual Growth Rate (CAGR) of 10.72% whereas the Net State Domestic Product

(NSDP) expanded at a CAGR of 10.66%. The motor vehicles registered in Uttar Pradesh expanded at a CAGR of 12.84% during FY2005 to FY2014, higher than 10.7% growth at the all-India level.

Table 5:4 presents the average annual economic growth rate (2005 to 2015) indicators for different influencing states of the project corridor. Highest growth rate of 8.5% in NSDP is observed for Gujarat state followed by Rajasthan with 7.86%.

Table 5:4: Growth in Economic Indicators during 2005-2015

State	NSDP	Population	PCI
Gujarat	8.50%	1.59%	6.80%
Rajasthan	7.86%	1.82%	5.94%
Uttar Pradesh	6.41	1.76	4.62%

5.1.6 PIA Outlook

For determining the perspective growth of the PIA States their long and short term past growth were considered, along with their performances relative to India's and the opportunities for growth for each of them. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down.

5.1.7 Estimated Traffic Growth Rates

Based on the derived elasticity values and the projected growth in economy of PIA, traffic growth rates have been estimated and presented in **Table 5:5**

Table 5:5: **Estimated Traffic Growth Rates (%)**

Financial Year	Car	Bus	LCV	2 Axle Truck	3-6 Axle Truck	>6 Axle Truck
Up to FY 2019	9.5	7.0	6.0	7.5	7.5	7.5
2019-2020	8.0	5.5	5.0	6.5	6.5	6.5
2020-2026	6.0	4.5	4.0	4.5	4.5	4.5
2026-2031	3.5	2.5	2.5	3.0	3.0	3.0
2031-2037	2.0	1.5	1.5	2.0	2.0	2.0

5.1.8 Suggested Elasticity Values

Derived elasticity values obtained for some vehicle types are low/high, which could be attributed mainly to the inconsistency in the data due to variety of reasons. Therefore, in order to make a realistic estimate of the traffic growth rates, necessary updation in the elasticity values is done considering the current scenario and the recommended standard elasticity values. The shift from public transport to personalized modes is one of the major change occurred over the past few years. This has led in elasticity of bus lower than unity. The growth in per capita income won't assure an increasing trend in car, as the society may reach saturation and a decline may take place.

- **Car**

  Car's elasticity has been considered at 1.08 for the 2017-18. It is likely that this growth would slow down over time as the market becomes more mature and saturated, therefore elasticity to NSDP can be expected to decline over time.

- **Trucks**

  There are has been a rapid shift in freight transport in last decade. With enhance carrying capacity of LCV and better operational efficiencies of MAV over 2 Axle and 3 Axle for longer distance travel, there is a huge fluctuation in trend of truck traffic. This has been duly considered while finalising the growth rates for good vehicles and higher elasticity values for MAV have been considered as compared to 2 Axle and 3 Axle trucks. **Table 5:6** shows the recommended elasticity values for all the vehicles.

Table 5:6: **Recommended Elasticity Values**

Financial Year	Vehicle Type				
	Car	Bus	LCV	2 Axle	MAV
Up to FY 2019	1.08	0.84	1.02	0.48	0.96
2019-2020	0.88	0.76	0.88	0.35	0.70
2020-2026	0.69	0.69	0.80	0.29	0.52
2026-2031	0.61	0.61	0.73	0.24	0.37
2031-2037	0.57	0.57	0.71	0.21	0.28

5.1.9 Variable Elasticity Value

Elasticity value is the factor by which the socio-economic growth rate is multiplied to get the growth rate of traffic. Traffic is directly linked to the economic growth such as per capita income, population and NSDP/GDP. According to IRC-108, elasticity based econometric model for highway projects could be derived in the following form:

$$\text{Log e (P)} = A0 + A1 \text{ Log e (EI)}$$

where:

P = Traffic volume (of any vehicle type)

EI = Economic Indicator (GDP/NSDP/Population/PCI)

A0 = Regression constant;

A1 = Regression co-efficient (Elasticity Index)

In coming years the Economic indicators will be reducing. Hence the regression coefficient will taper down. This tapering in elasticity is considered while deriving the traffic growth rates.

5.1.10 Key Growth Drivers

5.1.10.1 Mundra Port

Mundra Port has deep drafts, all weather and direct berthing facilities. The berths at the port are capable of handling;

- largest crude carriers (VLCC) in the World
- largest cape size bulk carrier in the World
- largest container vessel in the World
- largest car carrier in the World
- largest LNG vessel in the World

Besides, the port being an all-weather port with no loss of operational days, makes it a port of choice for trade. Mundra port also boasts of superior support infrastructure and assets which includes a large fleet of Tugs, Dredgers, and Railway Locomotives. These ensure uninterrupted and smooth operations 24x7 in all environments at the port.

Port connectivity

Mundra Port is well connected to the project road and National Highway No. 8 A (Delhi-Kandla).

Mundra Port Development Plan

Mundra's development plan includes integrated infrastructure facilities, with emphasis on augmenting core infrastructure to attract industrial investments. Mundra offers investment options in multi-product Special Economic Zone, Free Trade Warehousing Zone and Domestic Industrial Zone. Leveraging the advantage of the robust port infrastructure, Mundra Manufacturing Zone offers the best investment opportunity for diversified industries. The zone can offer developed industrial clusters for small/medium projects as well as facilitate the mega projects with the desired land parcel, along with an excellent logistic connectivity, power reliability and other utilities.

5.1.10.2 Kandla Port

Kandla port is strategically located to handle import and export cargo for the industrial belt stretching across Jammu & Kashmir, Punjab, Himachal Pradesh, Rajasthan and Gujarat. It is a protected natural harbour and is the most economical major port in terms of tariff as well as operational expenditure. Some of the future major developments of Kandla port are given below. The growth of port traffic will lead to natural growth of traffic on project road.

- Development of container Terminal on BOT basis.
- Deepening the channel to handle vessels up to 14 mtrs draft.
- Installation of Eight ELL cranes of 20/25 tons capacity.
- Deep draft multi-purpose berths at Vadinar.
- Commissioning of 13th cargo berth.

5.1.10.3 Mundra SEZ

India's largest port-led multi-product SEZ, located on the western coast of India, in the vibrant state of Gujarat. Mundra Port serves as the gateway Port to the North-Western hinterland of India. Mundra SEZ provides a convenient international trade gateway to the Middle East, Africa, Europe and America. Leveraging the advantage of the multi-purpose Port, Mundra SEZ is the largest notified multi-product SEZ with state of art infrastructure,

spread over an area exceeding 135 sq kms offering attractive investment opportunities for diversified large format industries.

5.1.11 Suggested Traffic Growth Rates

In absence of past toll traffic data, no growth rates could be established based on past traffic data. Therefore, registered motor vehicles growth in Gujarat, Rajasthan and Uttar Pradesh are explored. It showed a growth rate of more than 9% to 12%. These past growth rates cannot be used for estimating future traffic on the project road. The future traffic may not follow these growth rates due to several reasons, like changes in price of new vehicles, fuel and taxes on several commodities. Any substantial change in policy (e.g., fare, travel time, loading and unloading of goods, etc.) and infrastructure (e.g. Improvement of existing rail services, new railway line, etc.) may also affect the traffic volume on the project road.

It is possible to predict independently the socio-economic variables like population, per capita income, NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach and it is worth mentioning the latest IRC 108-2015 (*Guidelines for Traffic Forecast on Highways*) recommended this approach. Based on the above discussions, the growth rates based on transport demand elasticity approach have been adopted for projecting future traffic. However, along the this project corridor 70% of traffic is MAV in nature which is significantly higher than most of other NH stretches

In addition to the growth in economic indicators of the influencing states, the expansion plans of Kandla Port, Mundra Port and Mundra SEZ have been duly considered while finalising the traffic growth rates. The port related development will lead to economic development and increase in traffic. Considering all the above factors, the traffic growth rates have been estimated for three scenarios: (1) Realistic Scenario, (2) Optimistic Scenario and (3) Pessimistic Scenario. While estimating the growth rates for freight vehicles, the decreasing trend in growth of 2 axle and 3 axle Trucks is taken into consideration and the same is counter balanced in the growth of LCV & MAV. The suggested traffic growth rates are presented **Table 5:7**.

Table 5:7: Suggested Traffic Growth Rates (%)

Financial Year	Realistic					Optimistic					Pessimistic				
	Vehicle Type														
	Car	Bus	LCV	2 Axle	MAV	Car	Bus	LCV	2 Axle	MAV	Car	Bus	LCV	2 Axle	MAV
Up to FY 2019	9.0	7.0	8.5	4.0	8.0	11.0	9.0	10.5	6.0	10.0	7.0	5.0	6.5	2.0	6.0
2019-2020	7.5	6.5	7.5	3.0	6.0	9.5	8.5	9.5	5.0	8.0	5.5	4.5	5.5	1.0	4.0
2020-2026	6.0	6.0	7.0	2.5	4.5	8.0	8.0	9.0	4.5	6.5	4.0	4.0	5.0	0.5	2.5
2026-2031	5.0	5.0	6.0	2.0	3.0	7.0	7.0	8.0	4.0	5.0	3.0	3.0	4.0	0.0	1.0
2031-2037	4.0	4.0	5.0	1.5	2.0	6.0	6.0	7.0	3.5	4.0	2.0	2.0	3.0	-0.5	0.0

5.2 Alternate Route/ Traffic Leakage

There is no competing route for the project road to bypass the toll plaza. Traffic from Mundra destined either to Kandla or to Gandhidham via NH8A, has to pass through the toll plaza.

5.3 Traffic Forecast

Daily traffic volume of 7 days traffic count, by vehicle type, at each of the two locations, is added separately and averaged to determine the Average Daily Traffic (ADT). Seasonal correction factors (given in Chapter 4) have been applied to get Annual Average Daily Traffic (AADT). The Annual Average Daily Tollable Traffic for the base year (FY 2017) is presented in **Table 5:8**.

Table 5:8: Annual Average Daily Tollable Traffic

Mode		AADT
Passenger Vehicles	Car	1044
	BUS/Truck	110
Commercial Vehicles	LCV	122
	Truck	82
	3 Axle Truck	993
	MAV	4684
Tollable Traffic		7035

5.3.1 Tollable Traffic Forecast

Using the growth rates presented in **Table 5:7**, the tollable traffic has been projected up to the horizon year 2037. Traffic forecast for the Realistic scenario, in terms of vehicles and PCUs, for the period 2017 to 2037 is presented in **Table 5:9**.

Table 5:9: Tollable Traffic Forecast

Financial Year	Car/Jeep/Van	Bus	LCV	Truck	3-Axle Trucks	MAV	Total Vehicles	Total (PCUs)
2017	1044	110	122	82	993	4684	7035	25860
2018	1138	118	132	85	1072	5059	7604	27927
2019	1240	126	144	89	1158	5463	8220	30160
2020	1333	134	154	91	1228	5791	8732	31985
2021	1413	142	165	94	1283	6052	9149	33451
2022	1498	151	177	96	1341	6324	9587	34984
2023	1588	160	189	98	1401	6609	10045	36589
2024	1683	169	202	101	1464	6906	10526	38267
2025	1784	179	217	103	1530	7217	11031	40024
2026	1891	190	232	106	1599	7542	11560	41862
2027	1986	200	246	108	1647	7768	11954	43174
2028	2085	210	260	110	1696	8001	12363	44529
2029	2190	220	276	112	1747	8241	12786	45927
2030	2299	231	293	115	1799	8488	13225	47371
2031	2414	243	310	117	1853	8743	13680	48862
2032	2511	253	326	119	1891	8918	14016	49914
2033	2611	263	342	121	1928	9096	14360	50991
2034	2715	273	359	122	1967	9278	14715	52092
2035	2824	284	377	124	2006	9464	15079	53219
2036	2937	295	396	126	2046	9653	15453	54372
2037	3055	307	416	128	2087	9846	15838	55552

5.4 Target Traffic

For this project, the target date set forth in the concession agreement is January 1, 2020, and the target traffic volume set forth in the concession agreement 60,384 passenger car

units ("PCUs"), the passenger car equivalent for various types of vehicles based on industry guidelines. Based on the terms of the concession agreement, in the event that the actual traffic volume on the target date falls short of or exceeds the target traffic volume by more than 2.5%, the concession period will be deemed to be modified and may be increased by 1.5% for every 1% of shortfall in traffic. As per the current traffic growth, the concession period would be extended by 5 years.

5.5 Toll Revenue Estimation

5.5.1 Adopted Toll Rates

Consultants have compiled the unit toll rates suggested by NHAI for 4/6 laning projects. The NHAI unit toll rates are of 2007-08 price levels and they are updated to current level using WPI. Toll fee is calculated for the project road section of NH 8A section (Kandla to Mundra). For convenience of the toll collection, in line with the NHAI toll notification, toll rates are rounded to the nearest Rs. 5.00. The base year toll rates (single journey) for the two sections of project corridor are presented in **Table 5:10.**

Table 5:10 Unit Toll Rates

(Rs per km)

S. No	Type of Vehicle	Unit Toll Rates 2007-08	Unit Toll Rates 2016-17
1	Car	0.65	1.056
2	LCV	1.05	1.584
3	Bus/Truck	2.20	3.300
4	MAV	3.45	5.147
5	Oversized Vehicles	4.20	6.467

The rates for monthly pass applicable for local non-commercial vehicle resides within a distance 20 km from the plaza for the financial year 2016-2017 shall be Rs. 235.

Table 5:11 Base Year Toll Rates

(in Rs per single journey)

S. No	Type of Vehicle	Mokha
1	Car, Jeep, Van or Light Motor Vehicle	80
2	Light Commercial Vehicle, Light Good Vehicle or Mini Bus	120
3	Bus/ Truck (Two Axle)	250
4	Heavy Construction Machinery (HCM) or Earth Moving Equipment (EME) or Multi Axle or Multi Axle Vehicle (3 to 6 Axle)	390
5	Oversized Vehicles (7 or more axle)	490

Table 5:12 Toll Rates for Future Years *(in Rs)*

Financial Year	Single					
	Car	LCV	Bus	Truck (<2 axle)	MAV (>2 Axle)	HCM
2017	80	120	250	250	390	490
2018	95	155	320	320	490	615
2019	100	160	335	335	515	645
2020	105	170	350	350	540	680
2021	115	180	370	370	570	710
2022	120	185	385	385	595	745
2023	125	195	400	400	620	775
2024	130	205	420	420	650	810
2025	135	210	440	440	675	845
2026	140	220	455	455	700	880
2027	145	230	470	470	730	915
2028	150	235	490	490	755	945
2029	155	245	510	510	785	985
2030	160	255	525	525	815	1020
2031	165	265	545	545	840	1050
2032	170	270	560	560	865	1085
2033	175	280	575	575	890	1115
2034	180	290	595	595	920	1150
2035	190	295	610	610	945	1185
2036	195	305	630	630	975	1220
2037	200	315	650	650	1005	1255
2038	205	325	670	670	1035	1295
2039	210	335	690	690	1065	1330
2040	215	345	710	710	1095	1370
2041	225	355	730	730	1125	1410
	Return					
2017	115	185	380	380	580	735
2018	145	230	475	475	735	920
2019	155	240	500	500	775	970
2020	160	255	525	525	810	1015
2021	170	265	550	550	855	1070
2022	175	280	575	575	890	1115
2023	185	290	600	600	930	1165
2024	195	305	630	630	970	1215
2025	200	320	655	655	1015	1270
2026	210	330	680	680	1055	1320
2027	215	340	705	705	1095	1370
2028	225	355	735	735	1135	1420
2029	235	370	760	760	1175	1475
2030	240	380	790	790	1220	1530
2031	250	395	815	815	1260	1575
2032	255	405	840	840	1300	1625
2033	265	420	865	865	1340	1675
2034	275	430	890	890	1380	1725
2035	280	445	920	920	1420	1780
2036	290	460	945	945	1460	1830
2037	300	470	975	975	1505	1885
2038	305	485	1005	1005	1550	1940
2039	315	500	1030	1030	1595	2000
2040	325	515	1060	1060	1640	2055

2041	335	530	1095	1095	1690	2115
	Monthly					
2017	2590	4075	8335	8335	12930	16290
2018	3245	5125	10590	10590	16370	20500
2019	3410	5380	11120	11120	17185	21520
2020	3580	5650	11675	11675	18045	22595
2021	3755	5930	12260	12260	18950	23725
2022	3925	6195	12805	12805	19790	24780
2023	4100	6470	13370	13370	20670	25885
2024	4280	6760	13965	13965	21585	27030
2025	4470	7055	14585	14585	22545	28230
2026	4640	7325	15140	15140	23405	29305
2027	4815	7605	15715	15715	24295	30420
2028	5000	7895	16310	16310	25210	31570
2029	5185	8190	16925	16925	26160	32760
2030	5380	8495	17560	17560	27145	33990
2031	5550	8760	18105	18105	27985	35040
2032	5720	9030	18660	18660	28845	36120
2033	5895	9305	19230	19230	29725	37220
2034	6070	9585	19815	19815	30625	38350
2035	6255	9875	20410	20410	31550	39505
2036	6440	10170	21020	21020	32490	40685
2037	6635	10475	21645	21645	33460	41895
2038	6830	10785	22285	22285	34445	43135
2039	7030	11100	22940	22940	35460	44400
2040	7235	11425	23610	23610	36495	45700
2041	7445	11755	24295	24295	37555	47025

** FY 2017 Toll Rates are based on NHAI approved rates 78% of the stretch*

5.5.2 Wholesale Price Index (WPI)

The annual rate of inflation, based on monthly WPI, stood at 3.57% (provisional) for the month of September, 2016 (over September, 2015) as compared to 3.74% (provisional) for the previous month and -4.59% during the corresponding month of the previous year. Build-up inflation rate in the financial year so far was 4.28% compared to a build-up rate of 0.23% in the corresponding period of the previous year. The adopted WPI for the horizon years are given in **Table 5:13**

Table 5:13: Wholesale Price Index for the entire Concession Period

Up to FY -18	Up to FY 21	Up to FY -26	Up to FY 31	And Beyond
4.00%	5.00%	4.00%	3.00%	2.00%

5.5.3 Toll Concessions

As per the NHAI toll notification:

- The concessionaire shall not collect any fee from local non-commercial traffic (residence within 20 km from toll plaza) and shall issue passes in respect thereof for commuting on the Project Highway. The concessionaire shall be entitled to charge a monthly fee equal to Rs. 235.
- No concession for local transporters
- The return pass cost is 150% of the single journey trip.

- Discounted rate for 50 or more coupons is two thirds of the single one-way trip, and they must be used in a period of one month.

The details of Toll Plaza locations, the bypass lengths and permanent bridges and /or structures lengths along the project section of NH 8A, based on Schedule R are presented in **Table 5:14.**

Table 5:14 – Effective Tollable Length

Location of Toll Plaza (Chainage)	Name of Bypass with Chainage	Length of Bypass (in Km) for which addition fee is payable	Length (km) for which toll is payable	Effective Length (Km) incl. all Structures and Bypasses (Km)
Km 44.500 (design chainage) (existing chainage km 46.500) near Mokha village in Kutch district)	Anjar Bypass taking off at 11.270 (design chainage) (existing chainage km 11.300 and joining at km 20.00 (design chainage) (existing chainage km 21.800) of NH 8A	8.730	62.67	71.4

5.5.4 Adopted Toll Concessions

Considering all the above factors and based on the results of OD Survey, Consultants adopted the following toll concessions for different categories of tollable vehicles as shown in **Table 5:15**.

Table 5:15 Adopted Toll Concessions

Mode	Single Entry	Return	Monthly Pass
Car	48%	49%	3%
Bus	35%	65%	0%
LCV	36%	64%	0%
2 Axle Truck	54%	46%	0%
MAV	52%	47%	1%
MAV (7 and more Axles)	52%	47%	1%

5.5.5 Toll Revenue

An assessment of likely toll revenue has been made by applying the estimated toll rates to the projected tollable traffic. Traffic forecast given in Section 5.3 includes the non-compliance vehicles. Also, though AADT is estimated based on the traffic count surveys and the seasonal correction factors, it is felt that the observed Annual Average Daily Traffic would be more appropriate for the traffic forecast, as it takes account of non-compliance traffic. Therefore, actual historical toll traffic data provided by the Client is used to forecast the Toll revenue. The tollable traffic for the FY 2016 is taken as base to project the toll revenue. Mode wise toll revenue for the project road is estimated using *Suggested growth rates.* Total toll revenue is presented in **Table 5:16**. The estimated annual toll revenue for realistic scenario, in year 2017 is about Rs.825 Million and Rs.4687 Million for the year 2041.

Table 5:16 Total Toll Revenue

Kandla – Mundra (Millions)			
FY	**Realistic**	**Optimistic**	**Pessimistic**
2017	825	840	809
2018	1193	1238	1149
2019	1351	1428	1278
2020	1504	1619	1395
2021	1655	1816	1506
2022	1804	2017	1610
2023	1967	2241	1722
2024	2155	2503	1850
2025	2351	2783	1980
2026	2551	3077	2107
2027	2724	3349	2207
2028	2917	3656	2317
2029	3114	3979	2425
2030	3331	4339	2544
2031	3535	4694	2648
2032	3718	5034	2730
2033	3920	5411	2822
2034	4118	5796	2907
2035	4339	6227	3003
2036	4549	6656	3086
2037	4786	7140	3183
2038	5031	7652	3281
2039	5283	8193	3378
2040	5547	8770	3477
2041*	4687	7556	2880

*the revenue for 2041 is for 80% of the year

5.5.6 Revenue due to Overloading

As per the notification of National Highway Authority of India (NHAI), Concessioners are eligible to levy penalties on overloading vehicles. As per the notification;

- A mechanical vehicle loaded in excess of permissible maximum Gross Vehicle Weight (GVW) shall not be permitted to use the National Highway or cross the toll plaza until the excess load is removed.
- The overloaded vehicle shall be liable to pay fee equal to ten times of the applicable fee;
- Maximum GVW is as indicated in vehicle RC under MV Act.

The data related to over loading as provided by the Concessioner is given in **Table 5.16**. It is estimated that the toll revenue would increase by about 3% to 5% due to overloading. In the long run OV trend is expected to taper down to 0%.

Table 5:17 Toll Revenue Due to Overloading

Particulars	**Jun-16**	**Jul-16**	**Aug-16**	**Sep-16**	**Oct-16**
Traffic					
Total Commercial vehicles (CV)	6175	6210	5532	6081	6167

Overloaded Vehicles (OV)	276	475	441	499	519
% Vehicle (OV/CV)	4%	8%	8%	8%	8%
Revenue					
CV-Revenue (CVr)	19.2	20.4	18.5	19.9	20
OV-Revenue (Ovr)	0.57	0.97	0.91	1.04	1.07
% Revenue (OVr/CVr)	3%	5%	5%	5%	5%
% of overloading revenue (Ovr/R)	3%	5%	5%	5%	5%

5.6 Operation and Maintenance Cost

5.6.1 General

The toll revenue account for the returns of the project, while the Operation and Maintenance cost apart from the Capital Cost account for expenditure towards the project cost. For this purpose, major O&M elements such as civil infrastructure, toll system and manpower, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analysed based on the data provided by Reliance Infrastructure.

5.6.2 Major Element of Maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

5.6.3 Project Parameters for O & M

Operation and Maintenance cost of the project depends on a number of factors like quality of construction, response of maintenance team to early damage, climate. Future cost of operation and maintenance is the estimate made on engineering judgement and experience basis. Keeping all above factors in view, following can be basis of working out cast operation and maintenance for project corridor of National Highway 8A.

a. Annual Regular Maintenance – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll Collection, toll plaza maintenance, other services mile medical help and rescue operation etc.

b. Periodic Maintenance this will be done on periodic basis say. It usually consists of overlaying of wearing course, Road Marking. Some pavement strengthening is also anticipated in few sections. As project stretch is long periodic maintenance items have also been spread on annual basis from execution point of view. Since the project is commissioned and traffic is running for 1 years, periodic maintenance shall

be as per condition of pavement and other infrastructure. Inputs of the concessionaire have been taken in this regard.

The SPV had certain one-time accounting expenses in the FY 2016 and hence there is an upward bias in the operations and maintenance expenses of FY 2016. Based on the actual historical operations and maintenance expenses, the figure for FY 2017 has been normalized. Based on the NHAI circular dated November 15, 2016 on use of Micro surfacing on 30% continuous stretch of the project road, the overall cost of MMR reduced by 15-20%. It has been assumed that this provision will be used on alternate major maintenance activities of the SPV.

Cost for above operations is taken on prevailing rates. Following **Table 5:18** provides year wise details of operation and maintenance cost.

Table 5:18 Major Maintenance Cost (in Rs Crores)

Year	Base Year Expenditure	Escalation Factor	Total Expenditure	Remarks
FY 2029	68.5	1.60	54.3	Major Maintenance
FY 2030	68.5		54.3	Major Maintenance
FY 2037	68.5	1.91	65.54	Major Maintenance
FY 2038	68.5		65.54	Major Maintenance

Based on the NHAI circular dated Nov 15, 2016 on use of Micro surfacing on 30% continuous stretch of the project road, the overall cost of MMR will reduces by 15-20%. It has been assumed that this provision will be used on alternate major maintenance activities of the SPV**.** However, no Micro surfacing has been assumed in the above estimates, considering the fact that the project is heavy MAV led traffic.

Table 5:19 Operation and Maintenance Cost (in Rs Crores)

Financial Year	Base Year Expenditure	Escalation Factor	Total Expenditure
FY 2017	7.9	1	7.9
FY 2018	7.9	1.04	8.2
FY 2019	7.9	1.09	8.6
FY 2020	7.9	1.15	9.1
FY 2021	7.9	1.20	9.5
FY 2022	7.9	1.25	9.9
FY 2023	7.9	1.3	10.3
FY 2024	10.8	1.35	16.3
FY 2025	10.8	1.41	16.9
FY 2026	10.8	1.46	17.6
FY 2027	10.8	1.52	18.1
FY 2028	10.8	1.55	18.6
FY 2029	10.8	1.60	19.2
FY 2030	10.8	1.65	19.7
FY 2031	10.8	1.70	20.3

Financial Year	Base Year Expenditure	Escalation Factor	Total Expenditure
FY 2032	10.8	1.73	20.7
FY 2033	10.8	1.77	21.1
FY 2034	10.8	1.80	21.5
FY 2035	10.8	1.84	21.9
FY 2036	10.8	1.87	22.4
FY 2037	10.8	1.91	22.8
FY 2038	10.8	1.95	23.3
FY 2039	10.8	1.99	23.7
FY 2040	10.8	2.03	24.2
FY 2041	10.8	2.07	24.7

The SPV had certain onetime accounting expenses in the FY 2016 and hence there is an upward bias in the operations and maintenance expenses of FY 2016. Based on the actual historical operations and maintenance expenses, the figure for FY 2017 has been normalized

Annexure

	Zone Name	Region		Zone Name	Region
1	PS_Anewadi TP1_10KM	Toll Plaza1	74	Valsa	
2	PS_Anewadi TP1_20KM		75	Kandla Port	
3	PS_Khedshivpur_TP2_10KM	Toll Plaza 2	76	Mundra Port	
4	PS_Khedshivpur_TP2_20KM		77	Mandivi Port	
5	Ahmadnagar		78	Hazira Port	
6	Akola		79	GF_TP1_10KM	Toll Plaza1
7	Amravati		80	GF_TP1_20KM	
8	Aurangabad		81	GF_TP2_10KM	Toll Plaza 2
9	Beed		82	GF_TP2_20KM	
10	Bhandara		83	GF_TP3_10KM	Toll Plaza3
11	Buldhana		84	GF_TP3_20KM	
12	Chandrapur		85	GF_TP4_10KM	Toll Plaza 4
13	Dhule		86	GF_TP4_20KM	
14	Gadchiroli		87	Ambala	
15	Gondia		88	Bhiwani	
16	Hingoli		89	Chandigarh	
17	Jalgaon		90	Faridabad	
18	Jalna		91	Fatehabad	
19	Kolhapur		92	Gurgaon	
20	Latur		93	Hisar	
21	Mumbai Suburban		94	Jhajjar	
22	Mumbai	Maharashtra	95	Jind	
23	Nagpur		96	Kaithal	
24	Nanded		97	Karnal	
25	Nandurbar		98	Kurukshetra	Haryana
26	Nashik		99	Mahendragarh	
27	Osmanabad		100	Mewat	
28	Parbhani		101	Palwal	
29	Pune		102	Panchkula	
30	Raigad		103	Panipat	
31	Ratnagiri		104	Rewari	
32	Sangli		105	Rohtak	
33	Satara		106	Sirsa	
34	Sindhudurg		107	Sonipat	
35	Solapur		108	Yamunanagar	
36	Thane		109	Ballabhgarh	
37	Wardha		110	Sohna	
38	Washim		111	JR_TP1_10KM	Toll Plaza
39	Yavatmal		112	JR_TP1_20KM	
40	KM_Mokha_TP1_10KM	Toll Plaza	113	Ajmer	
41	KM_Mokha_TP1_20KM		114	Alwar	
42	Ahmedabad		115	Banswara	
43	Amreli		116	Baran	
44	Anand		117	Barmer	
45	Aravalli		118	Bharatpur	
46	Banaskantha		119	Bhilwara	
47	Bharuch		120	Bikaner	
48	Bhavnagar		121	Bundi	
49	Botad		122	Chittaurgarh	
50	Chhota Udaipur		123	Churu	
51	Dahod		124	Dausa	
52	Dang		125	Dhaulpur	
53	Devbhoomi Dwarka		126	Dungarpur	
54	Gandhinagar		127	Ganganagar	
55	Gir Somnath		128	Hanumangarh	
56	Jamnagar		129	Jaipur	Rajasthan
57	Junagadh	Gujarat	130	Jaisalmer	
58	Kheda		131	Jalor	
59	Kutch		132	Jhalawar	
60	Mahisagar		133	Jhunjhunun	
61	Mehsana		134	Jodhpur	
62	Morbi		135	Karauli	
63	Narmada		136	Kota	
64	Navsari		137	Nagaur	
65	Panchmahal		138	Pali	
66	Patan		139	Pratapgarh	
67	Porbandar		140	Rajsamand	
68	Rajkot		141	Sawai Madhopur	
69	Sabarkantha		142	Sikar	
70	Surat		143	Sirohi	
71	Surendranagar		144	Tonk	
72	Tapi		145	Udaipur	
73	Vadodara		146	Reengus	

	Zone Name	Region	Zone	Zone Name	Region
147	DA_TP1_10KM	Toll Plaza1	220	Muzaffarnagar	Uttar Pradesh
148	DA_TP1_20KM		221	Panchsheel Nagar district (Hapur)	
149	DA_TP2_10KM	Toll Plaza 2	222	Pilibhit	
150	DA_TP2_20KM		223	Shamli	
151	DA_TP3_10KM	Toll Plaza3	224	Pratapgarh	
152	DA_TP3_20KM		225	Rampur	
153	DA_TP4_10KM	Toll Plaza 4	226	Raebareli	
154	DA_TP4_20KM		227	Saharanpur	
155	Central Delhi	Delhi	228	Sitapur	
156	East Delhi		229	Shahjahanpur	
157	New Delhi		230	Sant Kabir Nagar	
158	North Delhi		231	Siddharthnagar	
159	North East Delhi		232	Sonbhadra	
160	North West Delhi		233	Sant Ravidas Nagar	
161	South Delhi		234	Sultanpur	
162	South West Delhi		235	Shravasti	
163	West Delhi		236	Unnao	
164	Agra	Uttar Pradesh	237	Varanasi	
165	Allahabad		238	Andhra Pradesh (AP)	Rest of India
166	Aligarh		239	Vijayawada	
167	Ambedkar Nagar		240	Bihar (BR)	
168	Auraiya		241	Patna	
169	Azamgarh		242	Chhattisgarh (CG)	
170	Barabanki		243	Raipur	
171	Budaun		244	Goa (GA)	
172	Bagpat		245	Himachal Pradesh (HP)	
173	Bahraich		246	Simla	
174	Bijnor		247	Jammu and Kashmir (JK)	
175	Ballia		248	Kashmir	
176	Banda		249	Jammu	
177	Balrampur		250	Jharkhand (JH)	
178	Bareilly		251	Ranchi	
179	Basti		252	Kerala (KL)	
180	Bulandshahr		253	Trivendrum	
181	Chandauli		254	Karnataka (KA)	
182	Nagar		255	Bengaluru	
183	Chitrakoot		256	Madhya Pradesh (MP)	
184	Deoria		257	Bhopal	
185	Etah		258	Gwalior	
186	Kanshi Ram Nagar		259	Odisha (OR)	
187	Etawah		260	Bhubaneshwar	
188	Firozabad		261	Punjab (PB)	
189	Farrukhabad		262	Amritsir	
190	Fatehpur		263	Tamil Nadu (TN)	
191	Faizabad		264	Chennai	
192	Gautam Buddh Nagar		265	Telangana	
193	Gonda		266	Hyderabad	
194	Ghazipur		267	Uttarakhand (UK)	
195	Gorakhpur		268	Dehradun	
196	Ghaziabad		269	West Bengal (WB)	
197	Hamirpur		270	Kolkata	
198	Hardoi		271	North East States	
199	Mahamaya Nagar				
200	Jhansi				
201	Jalaun				
202	Jyotiba Phule Nagar				
203	Jaunpur district				
204	Dehat)				
205	Kannauj				
206	Kanpur				
207	Kaushambi				
208	Kushinagar				
209	Lalitpur				
210	Lakhimpur Kheri				
211	Lucknow				
212	Mau				
213	Meerut				
214	Maharajganj				
215	Mahoba				
216	Mirzapur				
217	Moradabad				
218	Mainpuri				
219	Mathura				

NAMAKKAL TO KARUR (KM 248.625 TO KM 292.600) SECTION OF NH-7 IN THE STATE OF TAMIL NADU

TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

DEC 2016

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DEC 2016

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ABBREVIATIONS

AADT	-	Annual Average Daily Traffic	**NHAI**	-	National Highway Authority of India
BOT	-	Build Operate Transfer	**NHDP**	-	National Highways Development Project
CAGR	-	Compound Annual Growth Rate	**NSDP**	-	Net State Domestic Product
CTV	-	Classified traffic volume	**O&M**	-	Operation & Maintenance
DBFOT	-	Design, Build, Finance, Operate & Transfer	**PCDP**	-	Per Capita Domestic Product
EME	-	Earth Moving Equipment	**PCI**	-	Per Capita Income
GDP	-	Gross Domestic Product	**PCU**	-	Passenger Car Unit
GSDP	-	Gross State Domestic Product	**PSC**	-	Pre-stressed Concrete
HCM	-	Heavy Construction Machinery	**RCC**	-	Reinforced cement concrete
HCV	-	Heavy Commercial Vehicle	**RHS**	-	Right Hand Side
HTMS	-	Highway Traffic Management System	**SH**	-	State Highway
IRC	-	Indian Road Congress	**TP**	-	Toll Plaza
IRR	-	Internal Rate of Return	**WPI**	-	Wholesale Price Index
LCV	-	Light Commercial Vehicle	**SIR**	-	Special Investment Region
LHS	-	Left Hand Side	**c.**	-	Circa
LGV	-	Light Goods Vehicle	**ROB**	-	Railway Over Bridge
MAV	-	Multi Axle Vehicle	**MDR**	-	Major District Road
MORTH	-	Ministry of Road Transport and Highways	**ODR**	-	Other District Road
NH	-	National Highway	**CA**	-	Concession Agreement
PCC	-	Plain Cement Concrete	**RMT**	-	Running Meter
CR	-	Coarse Rubble			

CHAPTER 1
INTRODUCTION

1.1 Background

The Government of India through National Highway Authority of India (NHAI) embarked upon a program to enhance the traffic capacity and safety for efficient transportation of goods as well as passenger traffic on National Highway Sections under NHDP Phase V. Under Phase V NHAI has planned to convert 6,500 km of existing 4-lane National Highways into 6-lane National Highway. Sections envisaged under 6-laning comprise the Golden Quadrilateral section (5,700 km) and some other sections which are 800 km in length.

The project under consideration, Namakkal - Karur section of NH-7 from Km 248.625 to Km 292.600 is one such road project NHAI intended to implement on a BOT basis in the DBFOT format. Project has concession period of 20 years. Project achieved COD on 22th August 2009. A capex grant of Rs. 240 million was provided for the project. The Project has been commissioned and is currently in the operation / maintenance phase.

1.2 Objective of the Study

M/s Reliance Infrastructure InvIT Fund has engaged GMD Consultants to assess the future traffic and toll potential of project along with related operation & maintenance expenditure involved.

This report named as "***Toll Revenue and O&M Cost Projection Report***" mainly focuses on traffic and O&M aspects of the project. Other parameters like competing road, area developments etc. have been considered from a traffic development point of view.

1.2.1 Scope of Services

The broad scope of work covered in the assignment is as follows

a) Analysis of Traffic Growth
b) Toll Rate Growth
c) Revenue Forecasting
d) Operation and Maintenance Cost Projections

The Concessionaire has provided basic traffic data and other project details on the basis of which the above analysis has been carried out.

CHAPTER 2
PROJECT DETAILS

2.1 Project Corridor

The project corridor is one of the busiest route (NH-7) connecting north of India to Deccan and to south. It forms the part of main connectivity network joining commercial hubs like Hyderabad, Bengaluru and down south up to Kanyakumari.

Project corridor section starts from Km 248.625 from Namakkal Bypass to Km 292.600 up to Karur Bypass.

The project corridor generally traverses through plain terrain for most of its length except for few locations where terrain conditions are litter undulating. Exposed rock has been observed at several places along the project corridor.

The project corridor bypasses major settlements of Paramatty and Pugaloor / Veleyudampalayam.

Figure 2.1 to 2.3 shows the location of the project corridor at country/state/district levels respectively.

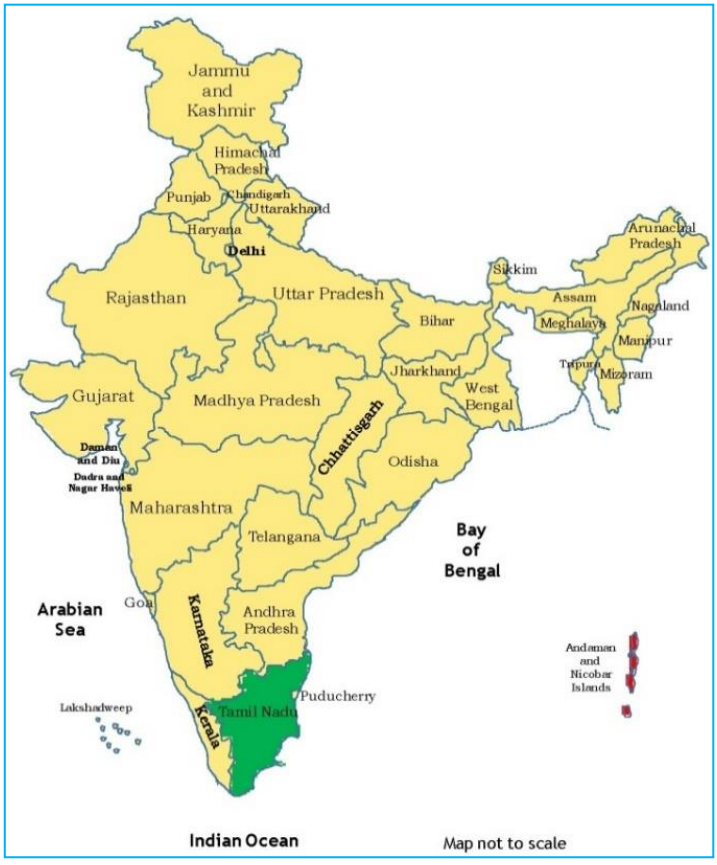


Figure 2-1 : Index Map of Project Highway - Country Level

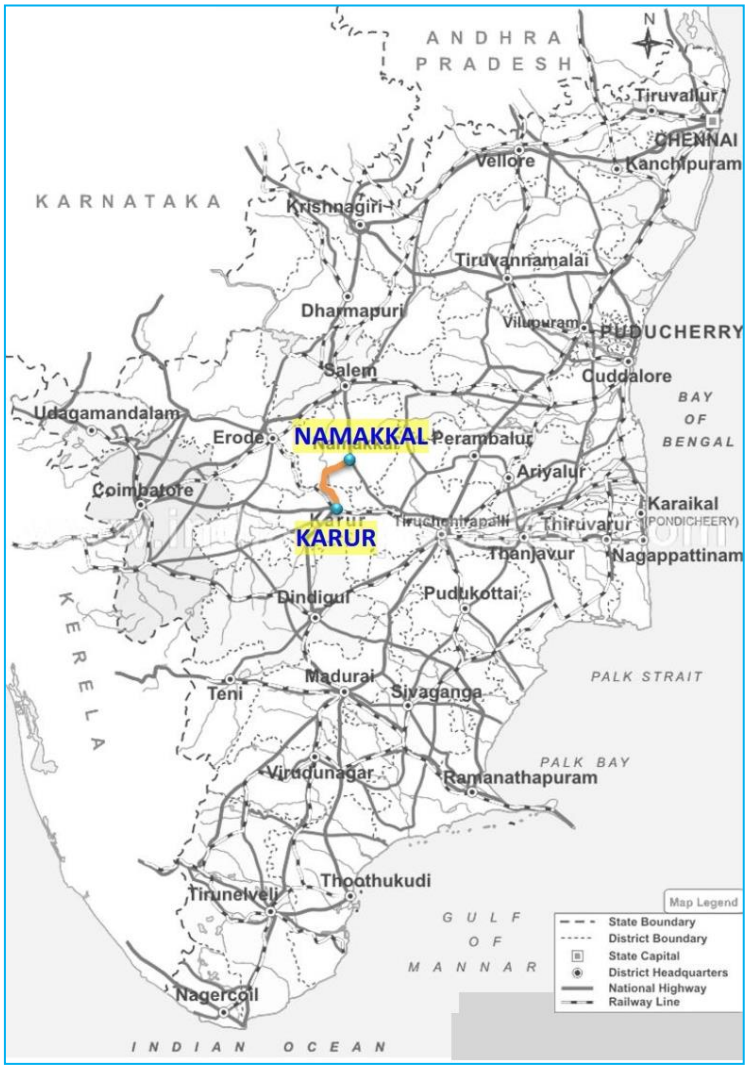


Figure 2-2 : Index Map of Project Highway - State Level

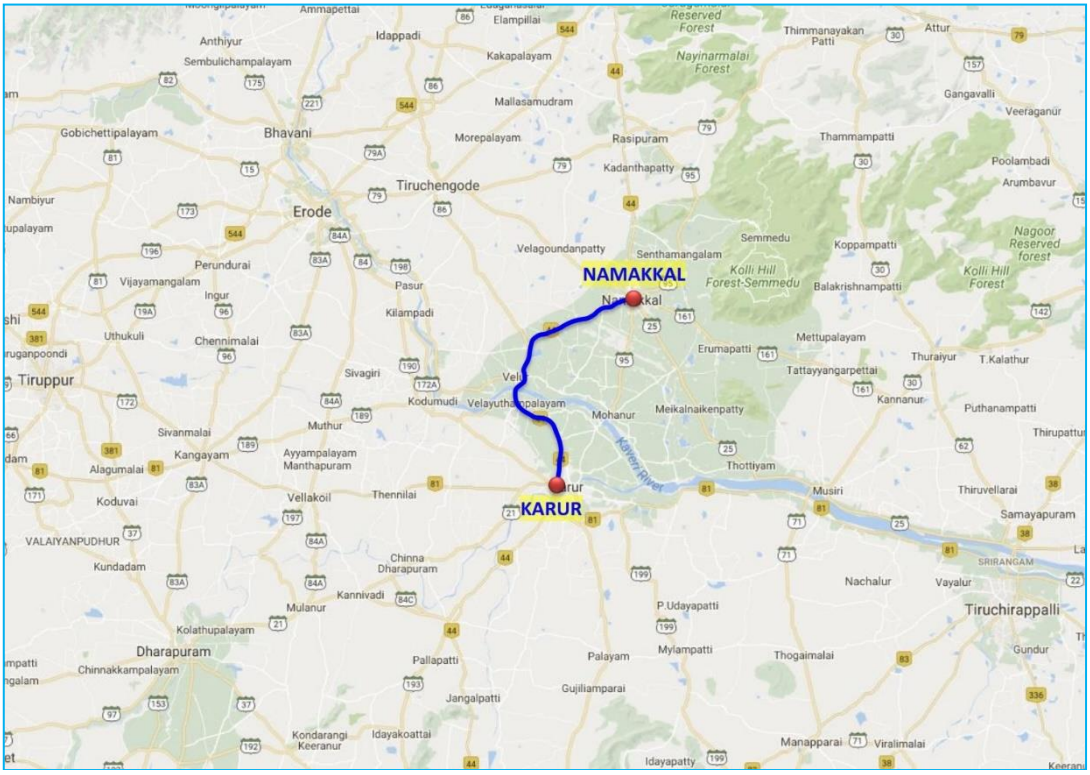


Figure 2-3 : Location Map of the Project Road

2.2 Corridor Description

NH-7 is a major North-South National Highway in India that runs through the states of Uttar Pradesh, Madhya Pradesh, Maharashtra, Telangana, Andhra Pradesh, Karnataka, and Tamil Nadu. The highway connects several important Indian cities such as Varanasi, Rewa, Jabalpur, Nagpur, Adilabad, Nirmal, and Armoor in (Nizamabad), Kamareddy, Hyderabad, Kurnool, Anantapur, Chikkaballapur, Bangalore, Krishnagiri, Salem, Madurai, Tirunelveli and Kanyakumari. A major part of NH 7 falls on the North-South Corridor of NHDP.

Abutting land along the project corridor from Namakkal to Karur is a mix of agriculture, urban and semi-urban land use. Both end of project fall in urban areas of Namakkal and Karur respectively.

Project stretch is combination of widening and strengthening of existing two lane to four lane and improvement and maintenance of existing four lane. Details of both stretches are given as under

- Improvement Package - From Km 248.625 to Km 258.645. This section was already four lanes.
- Construction Package - From Km 258.645 to Km 292.600. This part of stretch is widened from 2 lane to four lane configuration.

2.3 Salient Features

The salient features of the project corridor are as given below;

- Total Length of Project = 41.375 Kms
- Major Bridges = 02 Nos.
- Minor Bridges = 04 Nos.
- Flyovers = 04 Nos.
- Culverts = 65 Nos.
- Vehicular Underpass = 02 Nos.
- Pedestrian Under passes = 04 Nos.
- Major Intersections = 11 Nos.
- Service Road = 11.522 Kms.
- Bus Bays = 20 Nos.
- Toll Plaza Complex = 01 Nos.

The details of the structures are given below.

2.3.1 Major Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-1 : List of Major Bridges

Sr. No.	Chainage (km)	Span Arrangement (m)	Total Width of Super Structure (m)	Type of Super Structure	Type of Sub Structure and Foundation
1	271.200	5 x 15.1	20.5	RCC T-Girder	RCC Circular Columns (3 Nos) with Open Foundation
2	278.630	40 x 20.1	20.5	RCC Voided slab	RCC Wall type Pier/ Abutment with Open Well Foundation

2.3.2 Flyovers & ROB's

The list of flyovers & ROB's along the project corridor is as given below

Table 2-2 : List of Flyovers & ROB's along Project Corridor

Sr. No.	Chainage (km)	Type	Span Arrangement (m)	Total width of Super Structure (m)	Type of Super Structure	Type of Sub Structure and foundation
1	249.000	ROB	3 x 25	20 m total width for two carriageways with 8.75 m with clear carriageway	PSC Post Tensioned T-Girder	RCC Circular Pier, Abutment, Open Foundation & Reinforced Earth Wall
2	259.600	ROB	3 x 25	20.5 m total width for two carriageways with 8.75 m with clear carriageway	PSC Post Tensioned T-Girder	RCC Circular Pier, Abutment, Open Foundation & Reinforced Earth Wall
3	276.300	ROB	1 x 30	20 m total width for two carriageways with 8.75 m with clear carriageway	PSC Post Tensioned T-Girder	RCC Circular Pier, Abutment, Open Foundation & Reinforced Earth Wall
4	281.600	Flyover	1 x 30	20 m total width for two carriageways with 8.75 m with clear carriageway	PSC Post Tensioned T-Girder	RCC Circular Pier, Abutment, Open Foundation & Reinforced Earth Wall

2.3.3 Minor Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-3 : List of Minor Bridges

Sr. No.	CD No	Chainage (km)	Span Arrangement (m)	Total width of Super Structure (m)	Type of Super Structure	Type of Sub Structure and foundation
1	249/2	248.840	2 x 3.6	39.4	RCC Box	-
2	279/1	276.750	1 x 10	24	RCC Solid Slab	PCC Abutment and Foundation
3	281/1	280.659	2 x 3.5	24	RCC Solid Slab	PCC Abutment and Foundation
4	3/4	283.946	1 x 10.5 (Skew 45 degrees)	24	RCC Solid Slab	PCC Abutment and Foundation

2.4 Project Corridor Illustration

Following photographs illustrate project section along the corridor

Figure 2-4 : Photographs showing Project Corridor

CHAPTER 3
TRAFFIC SURVEYS AND ANALYSIS

3.1 Traffic Surveys

During the course of our work we have collected required information for project corridor to understand the general traffic and travel characteristics on the corridor.

The following traffic data has been collected for project.

- Classified traffic volume counts at toll plaza location on Namakkal - Karur section of NH-7 for base year 2015-16
- Local Component of traffic
- Component of Return Journey
- Component of Monthly Pass Journey

The main objective of the traffic data analysis is to:

- Determine the existing traffic movement characteristics of project
- Establish base year traffic
- Identification of travel patterns and modal split of project traffic
- Deriving growth factors for traffic forecasting
- Estimation of corridor traffic including traffic diversion if any
- Preparation of revenue model and projection of revenue as per toll policy for various scenarios

From traffic point of view project can be considered as one homogenous sections from Namakkal to Karur. *Table 3-1* below lists provides details of locations from where traffic details have been collected.

Table 3-1 : Traffic Data Details

Sr. No.	Location	CTV	Single Journey Traffic	Multiple Journey	Monthly Pass	Local Traffic
1	Km 259.500 Toll Plaza-Rasampalayam	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016

The locations of each of the traffic survey are illustrated in Figure 3-1.

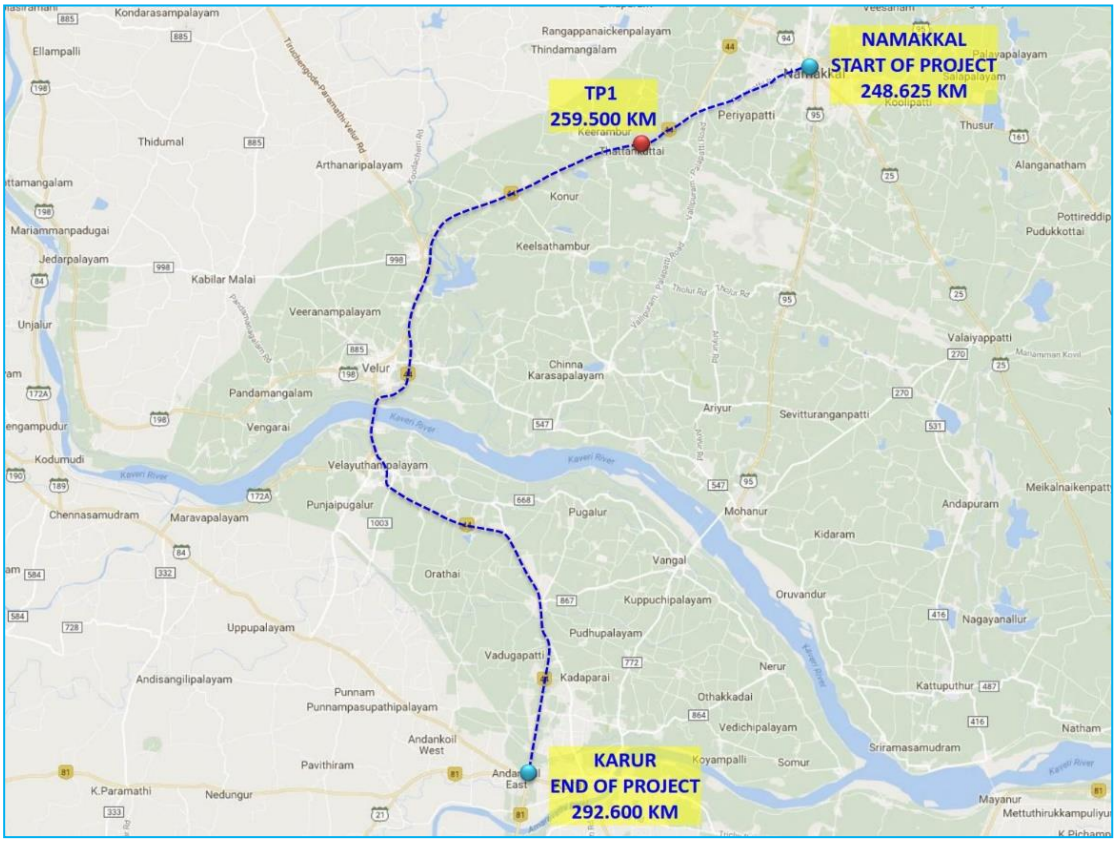


Figure 3-1 : Toll Plaza Locations

3.2 Classified Traffic Volume Count

The objective of conducting a Classified Traffic Volume Count is to understand the traffic flow pattern including modal split on a roadway. The Classified Traffic Volume Count survey has been provided by concessionaire of project highway from actual traffic data gathered at toll plaza locations based on monthly data shared with NHAI. These locations are indicated in ***Figure 3-1*** and listed in ***Table 3-1***.

The vehicles can broadly be classified into fast moving / motorized and slow moving / non-motorized vehicles, which can be further classified into specific categories of vehicles. The groupings of vehicles are further segregated to capture the tollable vehicle categories specifically and toll exempted vehicles are counted separately. The detailed vehicle classification system as per IRC: 64-1990 is given in ***Table 3-2***.

Table 3-2 : Vehicle Classification System

Vehicle Type	
Auto Rickshaw	
Passenger Car	Car, Jeep, Taxi & Van (Old / New Technology)
Bus	Mini Bus
	Standard Bus
Truck	Light Goods Vehicle (LCV)
	2 – Axle Truck
	3 Axle Truck (HCV)
	Multi Axle Truck (4-6 Axle)
	Oversized Vehicles (7 or more axles)
Other Vehicles	Agriculture Tractor, Tractor & Trailer

Source - IRC: 64 – 1990

However, since project highway is currently under toll operation, the data collected is corresponding to category of tollable vehicles. Following are the type of vehicles as per concession agreement.

- Car / Jeep / Van
- LCV
- Truck / Bus
- Multi Axle (MAV)
- Oversize Vehicle

3.3 Traffic Characteristic

Toll revenue of project highway does not solely depend on traffic volume. There are certain characteristics of traffic which have substantial potential to affect toll collection. Component of local traffic, component of passenger and commercial traffic, portion of return journey traffic, % of monthly pass traffic are some of such characteristics of traffic. These will be discussed in subsequent sections of report.

3.3.1 Traffic Data

Project concessionaire has provided Traffic data for base year 2015-16 as under at the toll plaza -

Table 3-3 : Traffic Data at Toll Plaza at Km 259.500

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	5169
2	LCV	1718
3	Truck/Bus	1773
4	Multi Axle	1934
	Total	**10594**

Volume of oversize vehicle was negligible

This data was then bifurcated to various components like through local, monthly, return journey etc. category. Same is discussed in detail in following section.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-4 : Historical Tollable Traffic at Toll Plaza at Km 259.500

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	1,524,625	1,614,709	1,747, 484	880,849	939,760	7%
LCV (2)	592,751	592,429	594,005	302,162	308,615	0%
Bus/Truck (3)	643,334	635,292	616,189	319,739	312,666	-2%
Multi-axle (4)	599,339	741,324	675,428	342,799	349,117	6%
Total	3,360,051	3,583,755	3,633,108	1845,551	1910,159	4%

* Toll operations suspended for 16 days due to floods in Dec 2015

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project increased to 21,504 PCUs in 2016 from 19,290 PCUs in 2014, representing a CAGR of 6%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-5 : Historical AADT at Toll Plaza at Km 259.500

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	4,177	4,424	4,993	4,813	5,135	9%
LCV (2)	1,624	1,623	1,697	1,651	1,686	2%
Bus/Truck (3)	1,763	1,741	1,761	1,747	1,709	0%
Multi-axle (4)	1,642	2,031	1,930	1,873	1,908	8%
Total	9,206	9,819	10,380	10,085	10,438	6%
Total PCUs	19,290	21,220	21,504	20,961	21,375	6%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the NK Project's total traffic mix, 46%, 17%, 18% and 19% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 48%, 16%, 17%, and 19% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of NK's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the NK Project by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-6 : Historical Toll Revenue at Toll Plaza at Km 259.500

Category	(in Rs. Millions) For the FY ended March 31			(in Rs. Millions) For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	49.3	56.0	61.6	31.4	32.8	12%
LCV (2)	35.3	36.2	36.6	18.8	18.9	2%
Bus/Truck (3)	70.6	75.3	72.9	37.9	36.4	2%
Multi-axle (4)	124.3	156.9	148.3	75.7	76.6	9%
Total	279.5	324.4	319.6	163.8	164.6	7%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

Table 3-7 : Gross Monthly Toll Revenue at Toll Plaza at Km 259.500

Month	2016 (Rs. in millions)
April	27.9
May	27.8
June	27.2
July	28.1
August	27.7
September	25.2

3.4 Data Analysis

3.4.1 Analysis of Traffic Volume Count

Understanding the character of existing traffic forms the basis of traffic forecast. The various vehicle types having different sizes and characteristics can be converted into a single unit called Passenger Car Unit (PCU). Passenger Car equivalents for various vehicles are adopted based on recommendations of Indian Road Congress prescribed in "IRC-64-1990: Guidelines for Capacity of Roads in Rural areas". The adopted passenger car unit values (PCU) are presented in table below

Table 3-8 : PCU Factors Adopted for Study

Vehicle Type	PCUs
Car	1.0
Mini Bus	1.5
Standard Bus	3.0
LCV/LGV	1.5
2 Axle Truck	3.0
3 – 6 Axle Truck	4.5
MAV	4.5
Auto Rickshaw	1.0
Van/Tempo	1.0
Agriculture Tractor with Trailer	4.5
Agriculture Tractor without Trailer	1.5

Source: IRC: 64-1990

Traffic volume at each toll plaza was converted to PCU and same is presented as under

Table 3-9 : Traffic in PCU at Project Stretch

Toll Plaza Location	Traffic No	PCU	PCU Index
259.500	10594	21767	**2.05**

It can be observed from above that project traffic has PCU index above 2 which is a fair indicator of good mix being split between commercial and urban traffic.

3.4.2 Components of Traffic

As discussed previously, components of traffic volume play an important role in determining project revenue. A larger component of commercial traffic with higher axle configuration adds to project revenue positively. Similarly, a larger component of local traffic affects the project revenue potential negatively.

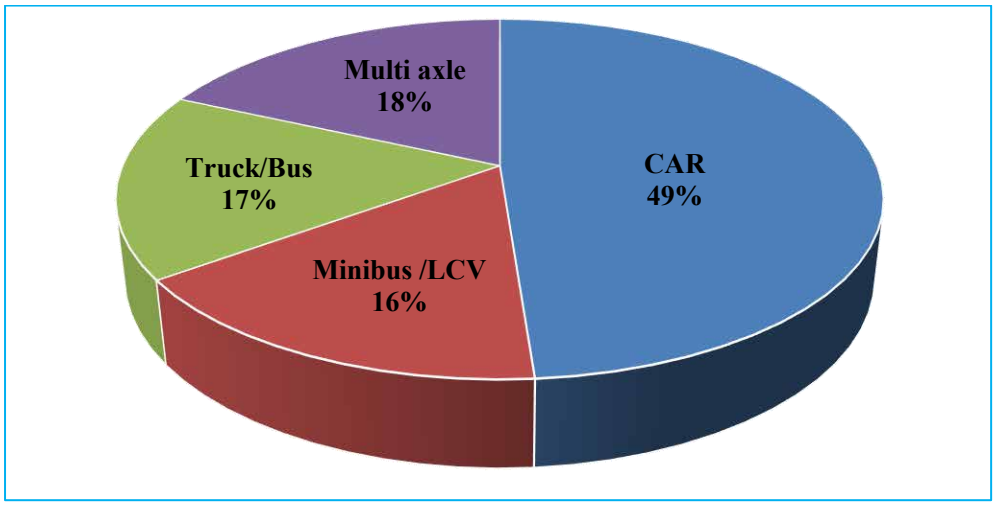


Figure 3-2 : Modal Split of Traffic at Toll Plaza 259.500

It is observed that car traffic forms 49% of total traffic at toll plaza location Km 259.500. Share of LCV and bus / truck was 16% and 176% respectively. Multi axle consists of 19% of total traffic. Over all about 45% of traffic is commercial in nature. Higher percentage of urban traffic is due to the fact that on both end of stretch there are developing urban centers of Namakkal and Karur.

Another important bifurcation of traffic is components of traffic with respect to various type of toll ticketing like

1. Single Journey
2. Multi Journey
3. Monthly Pass (Local and General)

Following table provides numbers of vehicle falling in each of above category on base year 2015-16

Table 3-10 : Journey Type Bifurcation of Traffic at KM 259.500

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	40.9%	53.1%	0.8%	5.2%	100.0%

Minibus /LCV	40.8%	55.8%	0.0%	3.4%	100.0%
Truck/Bus	43.6%	34.8%	0.0%	21.6%	100.0%
Multi axle	72.3%	26.5%	0.0%	1.2%	100.0%

Following figure illustrate component of each type of journey in graphics for better understanding.

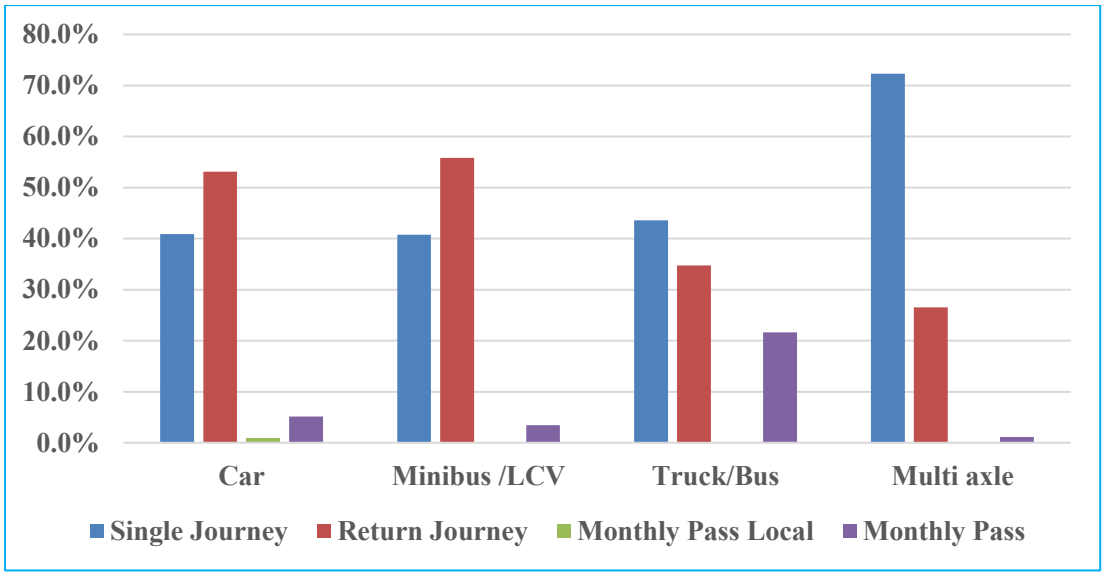


Figure 3-3 : Journey Type Bifurcation at Toll Plaza 259.500

Cars and buses have good component of return journey. In case of Car, mini bus and bus return journey component is higher that single journey or almost equal. Over all return journeys represent about 44% of the total traffic volume. High component of return journeys indicates presence of two commercial centers at either end of project road. Multi axle have predominant share of single journey as expected on rural highways.

3.4.3 Seasonal Variation in Traffic

Traffic on highway does not remain uniform throughout the year. Festivals, rains etc. are factors for such variation. Seasonal variation of traffic was worked out from the data available. Following figure depict monthly variation of AADT.

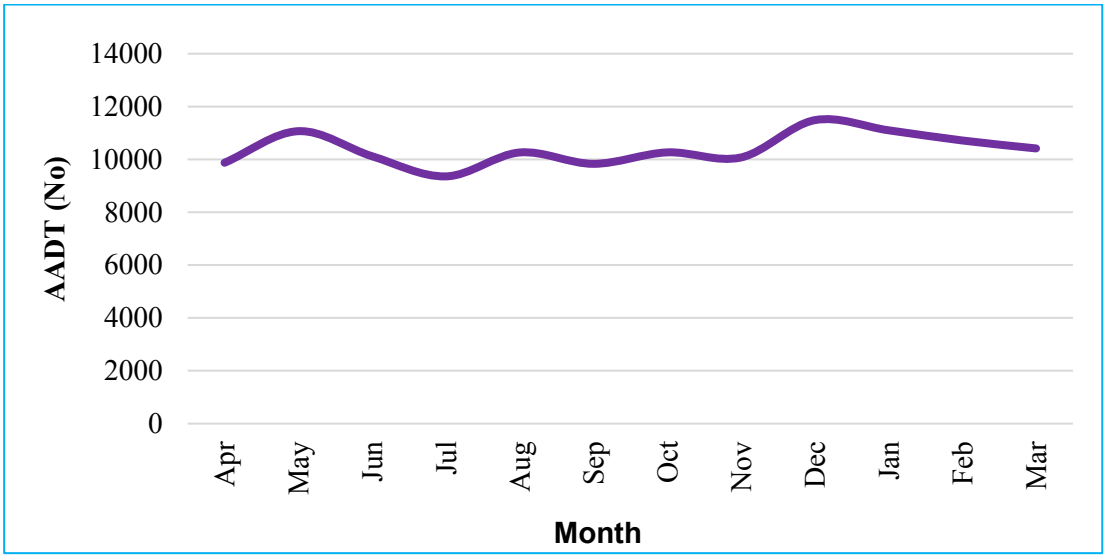


Figure 3-4 : Seasonal Variation of Traffic at Project Highway

It is observed that traffic volume reduces in the rainy season from August to November and then picks up after November during the harvest season. Maximum Season correction factor varies between 0.90 to 1.11.

3.5 Secondary Data Collection

There are several other factors which have substantial impact on traffic pattern and growth on any project corridor. Following are some of such important factors

- Industrial development around project corridor and its catchment
- Educational infrastructure along project corridor
- Demographic pattern
- Urban area development
- Tourism potential
- Upcoming major infrastructural or industrial projects
- Special industry in project corridor
- Overall trends of economic growth local as well as national / regional

Hence in addition to traffic details on project site, secondary data was also collected from the various sources. Typical secondary data includes the following:

1. Vehicle registration data of regional and national level.
2. Economic Data
   a) GDP
   b) NSDP
   c) Population Growth

d) Per Capita Income growth

e) Industrial Growth

f) Special Industry Potential

g) Regional and National development vision / plan

h) Any other relevant data

3. Competing road network.

We have collected and utilized such underlying data in the study to estimate the growth and risk factors for traffic along the project corridor.

CHAPTER 4
INFLUENCE ZONE TRANSPORT NETWORK ANALYSIS

4.1 Introduction

Highway corridors behave like integrated circuit network and more often than not every road is connected to various networks having different origin and destinations. Traffic running on these networks behave like fluid and flows on network on alignment of least friction.

Following Factors can be considered as major contributors to friction on transportation network

- Travel Speed / Travel Time,
- Geometric deficiencies,
- Configuration of road,
- Riding comfort,
- Traffic delays,
- Length of road,

- Built up passing through,
- Terrain,
- Facilities

Following set of urban origin and destination have been selected for this analysis

- Namakkal to Karur

Following figures depict competing road network of above pair of origin & destinations

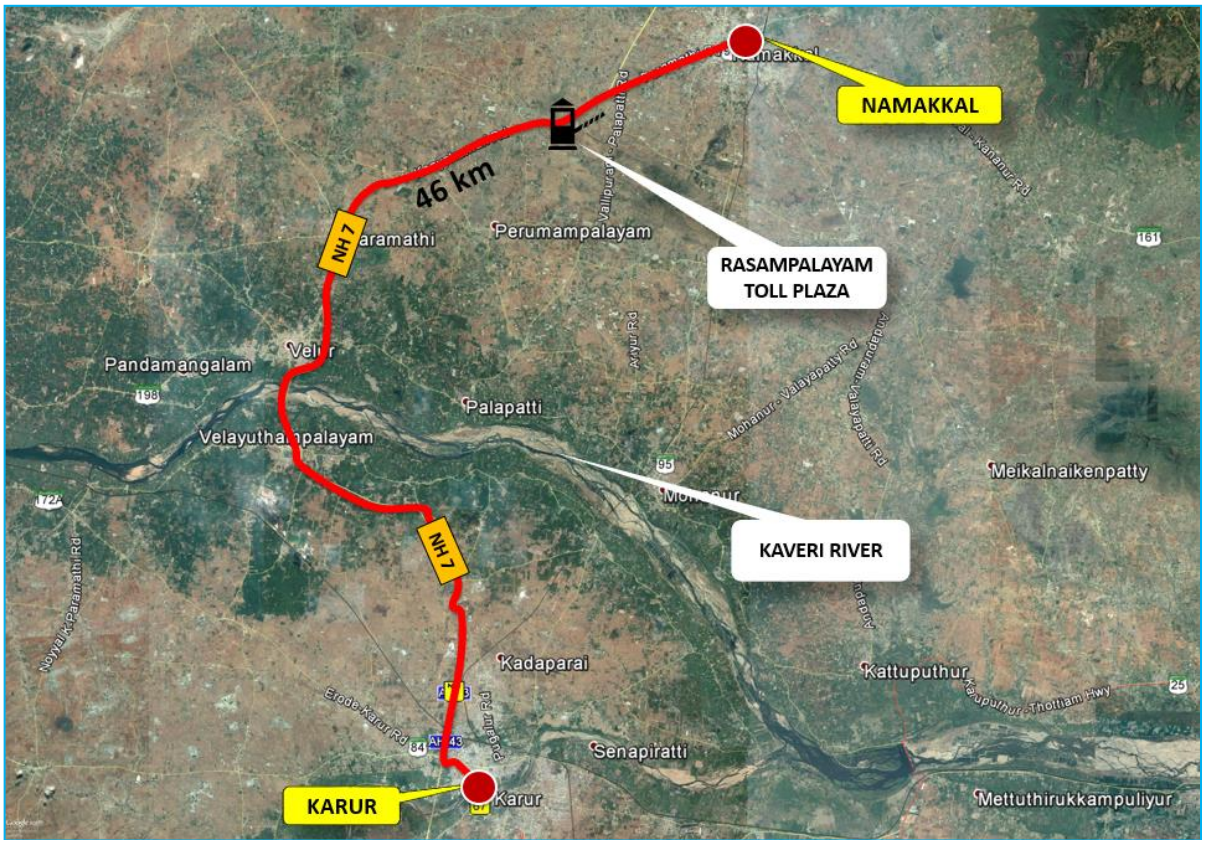


Figure 4-1 : Project Alignment Namakkal to Karur

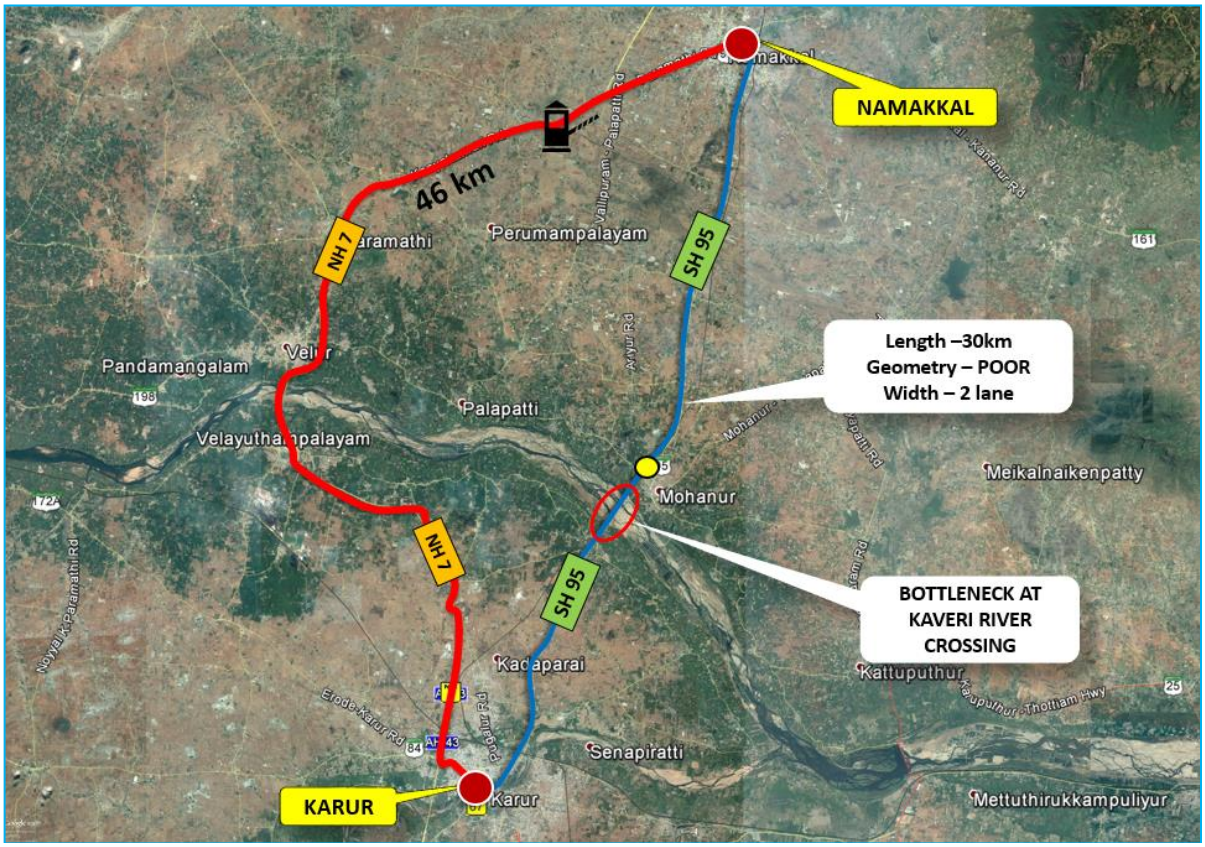


Figure 4-2 : Competing Roads Namakkal to Karur

It can be observed that the project highway is the spine of the corridor between Namakkal to Karur. There are local roads and state highways which if integrated can form a competing road network. State Highway SH-95 can be one such competing road. It is a mix of intermediate and two lane configuration. It passes through several villages which can be bottleneck to truck and MAV movement specially. With construction of 1.5 km two lane bridge on river Cauvery at Mohanur in 2015, a direct alternate connectivity is established between Karur and Namakkal. The geometry and quality of road is inferior as compared to project section of NH-7, adding to travel time and consequently the costs. These have sharp turns, bottlenecks and patches where road passes through dense built up sections. In light of above discussion, it is not expected that much of long distance commercial traffic would be diverted to this alternate route. Mohanur bridge being only two lane has its own capacity limitations.

Concessionaire has put a claim for extension of concession period under clause 8.2 for post tender development of alternative connectivity. It is expected that on this account concession period may get extended by 5-6 years.

The following table provides quantity cum quality analysis of competing roads.

Table 4-1 : Competing Roads Details

Sr. No	Route Details	Designation	Length (Km)	Avg. Speed (KMPH)	Time Taken (Min)	Observations
1	Namakkal to Karur competing road (SH-95- Mohanur - Cauvery Bridge Crossing) on East side	Competing Road	30	40	45	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of commercial traffic from NH-7 not expected
	Namakkal to Karur via Project Road NH-7	**Project Road**	**46**	**70**	**39**	

As can be observed from table above, the point regarding significant time saving and consequently cost savings for traffic which align to the project highway is reaffirmed. Time and fuel saving is a major criterion for selection of routes. Under these circumstances, it is not envisaged that there would be a significant switch of commercial traffic to competing roads from the project road. Further, it may be noted that since the project highway has already been commissioned and has a tolling history post development of this alternate connectivity, the current traffic traversing the project corridor already factors in traffic diversion (if any) that may have taken place.

CHAPTER 5
GROWTH OF TRAFFIC ON PROJECT HIGHWAY

5.1 Introduction

Traffic growth is a function of the interplay of a number of contributory factors such as National economy, Government policy, socio-economic conditions of the people, and changes in land uses along the project corridor precincts etc. As these factors have several uncertainties associated with them, forecasts of traffic are dependent on the forecasts of factors such as population, gross domestic product (GDP), vehicle ownership, per capita income (PCI), agricultural output, fuel consumption etc. Future pattern of change in these factors can be estimated with only a reasonable degree of accuracy and hence the resultant traffic forecast levels may not be precise.

Traffic growth forecast for project corridor Namakkal - Karur section of NH-7 has been carried out taking above factors in to consideration. "**IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**" is established best practice and has been used for traffic growth forecast.

5.2 Trend Analysis

One of the methods of estimation of future rate of traffic growth is to assume the same rate of growth as experienced in the past. However, it may be noted that major influencing factors which reflect Economic conditions such as GDP, agricultural output, industrial output, national policies etc. are susceptible to change over a longer period of time and necessary adjustments need to be made to past trends to account for these changes.

Thus, we have considered the Elasticity model of growth projection which is one of the most widely acceptable methods for traffic forecast and is recommended in **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**.

In this method, past trends of any vehicular data are paired with an economic indicator and a regression analysis is done to yield the economic model of growth. Growth of vehicular traffic varies for different type of vehicle. It is a proven fact that growth patterns for passenger and goods vehicles are different. Traffic growth on any highway typically depends on several economic parameters. The most important and direct parameters are given as under

- Per Capita Income
- Net State Domestic Product (NSDP)
- Population

It is observed that the ownership of a car is more closely related to affordability hence per capita is the index which closely fits with growth of car traffic among other criteria. In similar fashion, following pairs of vehicle type and independent variable can be established for elasticity modeling of growth.

- Car / Jeep - Par Capita Income
- Bus / Minibus - Population
- Trucks / Heavy / Goods Vehicle - NSDP
- Time series data of vehicle (both passenger and goods) Registered in the state of Tamil Nadu is used as the base data for analysis of growth

5.3 Estimation of Traffic Demand Elasticity

Elasticity of traffic demand is defined as the rate at which traffic intensity varies due to change in the corresponding indicator selected. Hence, in order to estimate the elasticity of traffic demand, it is necessary to establish the relationship between the growth in number of given category of vehicle with one of the economic variables considered, such as NSDP, per capita income and population growth. Latest available data for vehicle registration, per capita income, NSDP and population is used in analysis.

As per IRC: 108-1996 the model for estimating elasticity index for the project corridor is of the following form and is as given below:

$$Log\ (P) = k \times Log\ (EI) + A$$

Where,

P = *Number of Vehicles (Mode wise)*

EI = *Economic Indicator*

A = *Regression constant*

k = *Elasticity coefficient (Regression coefficient)*

The elasticity for car and bus (passenger vehicles) is calculated based on Population and Per Capita Domestic Product (PCDP) and the elasticity for trucks is calculated based on the Net State Domestic Product (NSDP).

Following tables and graphs depict regression and elasticity of growth model.

Table 5-1 : Per Capita Income Vs Car

Year	PCI	Car	Log PCI	Log Car	PCI Growth	Average Growth
2004	30062	657339	4.48	5.82		
2005	34126	714978	4.53	5.85	14%	
2006	39166	787085	4.59	5.90	15%	
2007	41314	871917	4.62	5.94	5%	
2008	43193	967310	4.64	5.99	5%	
2009	47394	1080445	4.68	6.03	10%	
2010	53507	1230492	4.73	6.09	13%	

2011	57093	1385143	4.76	6.14	7%	
2012	58360	1549950	4.77	6.19	2%	
2013	62361	1709528	4.79	6.23	7%	8.5%

Regression analysis of same is given in figure below

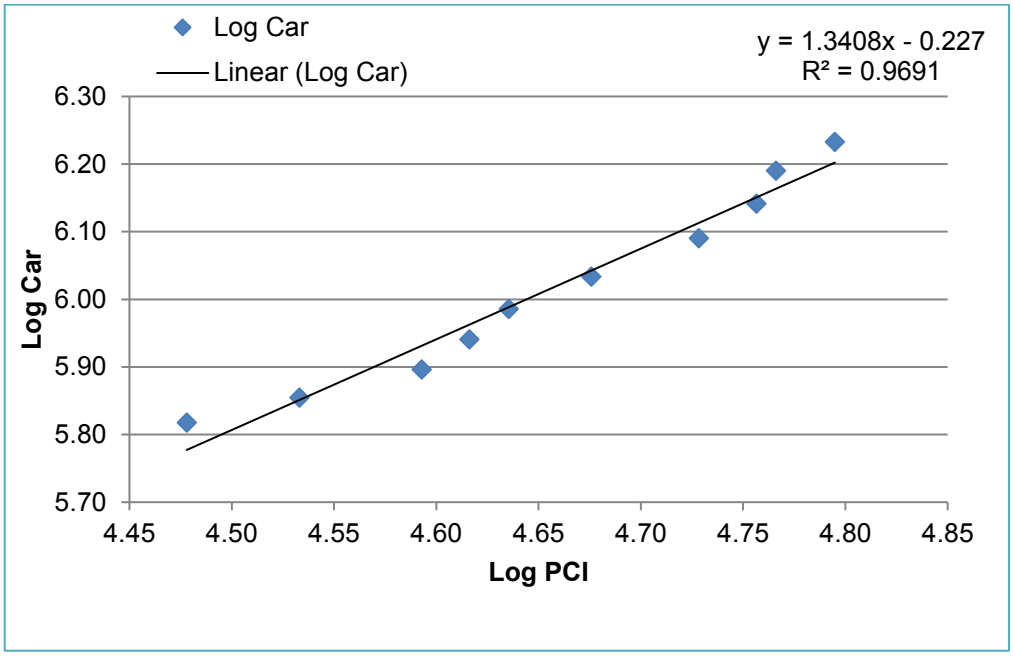


Figure 5-1 : Regression and Elasticity PCI vs. Car – Extrapolation

Table 5-2 : Population Vs Bus

Year	Population	Buses	Log Pop	Log Bus	Pop Growth	Average Growth
2004	64096000	37937	7.81	4.58		
2005	64623000	42109	7.81	4.62	0.8%	
2006	65135000	42999	7.81	4.63	0.8%	
2007	65629000	47765	7.82	4.68	0.8%	
2008	66106000	52617	7.82	4.72	0.7%	
2009	66566000	56338	7.82	4.75	0.7%	
2010	67012000	59240	7.83	4.77	0.7%	

2011	67444000	62725	7.83	4.80	0.6%	
2012	67862000	68096	7.83	4.83	0.6%	
2013	68265000	84488	7.83	4.93	0.6%	0.70%

Regression analysis of same is given in figure below

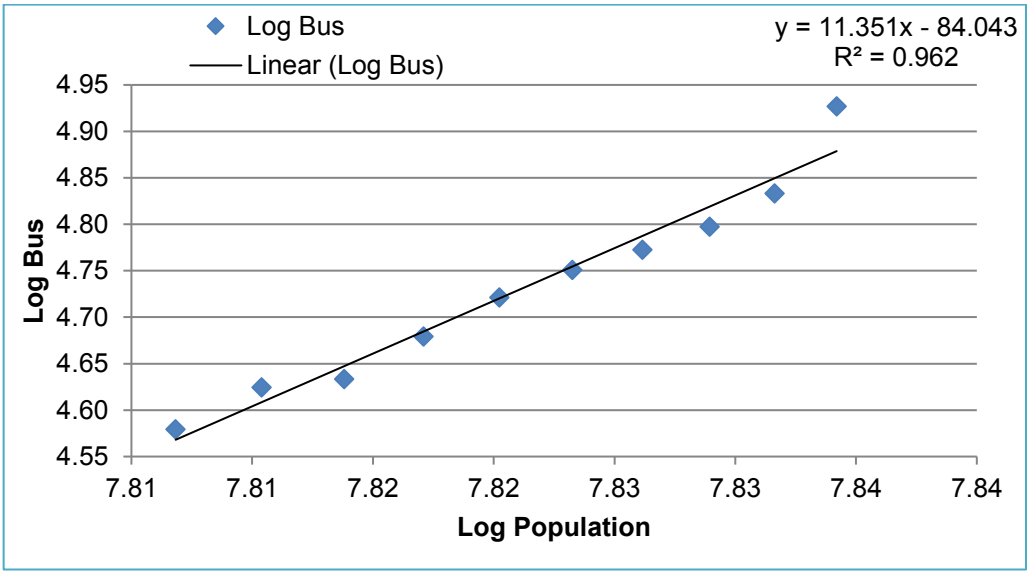


Figure 5-2 : Regression and Elasticity Population vs. Bus – Extrapolation

Elasticity of goods traffic has been worked out by regression analysis with NSDP. Following table represents the data and details.

Table 5-3 : Goods Traffic Vs NSDP

Year	NSDP	Trucks	Log NDSP	Log Truck	NSDP Growth	Average Growth (5 Year)
2004	19364500	220016	7.29	5.34		
2005	22158800	272756	7.35	5.44	14%	
2006	25628600	279984	7.41	5.45	16%	
2007	27234000	340542	7.44	5.53	6%	
2008	28674400	385948	7.46	5.59	5%	
2009	31676000	404326	7.50	5.61	10%	
2010	35996100	433814	7.56	5.64	14%	

2011	38650800	474226	7.59	5.68	7%	
2012	39747100	493564	7.60	5.69	3%	
2013	42718200	544201	7.63	5.74	7%	7.62%

Following figure depict regression analysis and extrapolation.

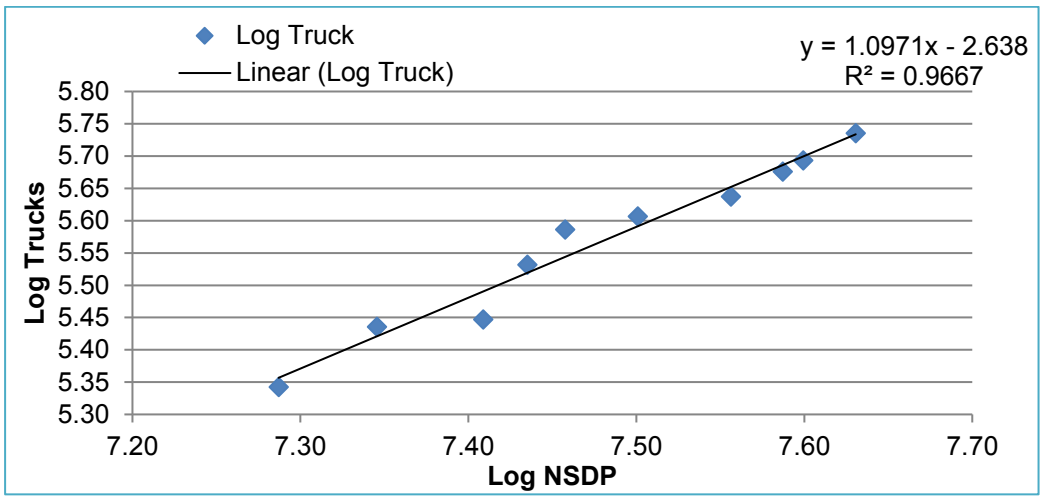


Figure 5-3 : Regression and Elasticity NSDP vs. Goods Traffic – extrapolation

Using the regression analysis above, we have arrived at the elasticity of traffic demand for each class of vehicle to a given change in relevant economic indicators. Average traffic growth of a vehicle class is multiplied by the corresponding elasticity coefficient to arrive at traffic growth. R^2 is statistical measure of how close the data are to the fitted regression line. It varies from 0 to 1. Higher the value of R^2 more representative is the regression model of data.

The results of these analyses for the good fit as reflected by R^2 values are presented in the Table below

Table 5-4 : Summary Regression Analysis

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient (y)	Average Growth	Growth Elastic Model
Tamil Nadu	Car/Jeep	PCI	y = 1.3408x - -0.227	R² = 0.9691	1.3408	8.52%	11.43%
	Bus	Population	y = 11.3505x - -84.0434	R² = 0.962	11.3505	0.70%	7.98%
	Truck	NSDP	y = 1.0971x - -2.638	R² = 0.9667	1.0971	7.62%	8.36%

While the economic model for predicting growth is a good tool, other local, regional, national factors such as proposed developments etc. should also be considered before finalizing growth factors. These factors are discussed in subsequent sections.

Project stretch from Namakkal to Karur is extension of NH-7 towards south. It is expected that this section would have some fraction of Karnataka traffic. Concessionaire has carried out a sample survey of traffic to analyze share of vehicles from various states in traffic on project road. Survey was done in year 2012 on both directions of traffic and sample size was approximately 25%. Following table provides summary of the same

Table 5-5 : Component Share of Various States in Project Traffic

State / Vehicle	Tamil Nadu	Karnataka	Kerala	ROI	Total
Car	95.00%	3.50%	1.20%	0.3%	**100.00%**
LCV	96.90%	2.10%	0.20%	0.80%	**100.00%**
2AT	91.90%	5.20%	0.40%	2.50%	**100.00%**
3AT	87.40%	7.30%	3.20%	2.10%	**100.00%**
MAV	80.50%	15.00%	1.80%	2.70%	**100.00%**

In such case, it would be necessary to consider and factor in the growth perspective of Karnataka additionally.

A regression model for Karnataka traffic growth was prepared for period from 2005-6 to 2014-15. Summary of same is given in following table

Table 5-6 : Summary Regression Analysis- Karnataka

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient	Average IV Growth (5yrs)	Growth Elastic Model	Remarks
Karnataka	Car/Jeep	PCI	y = 1.1164x - 2.7365	R^2 = 0.9969	0.8535	14.30%	12.20%	Excellent Regression
	Bus	Population	y = 1.8755x - 10.293	R^2 = 0.956	7.197	1.05%	7.54%	Excellent Regression
	Truck	NSDP	y = 1.1164x - 2.7365	R^2 = 0.8539	1.42	6.53%	9.27%	Good Regression

Impact of other state traffic is suitably taken in to recommended growth rates for project traffic

5.4 Analysis of Historic Traffic Data

Historic traffic data forms useful information for any highway project. It provides useful information for establishing past trend of growth. Project stretch of Namakkal to Karur has been commissioned and it under tolled operation since September 2009.

The historical data available for corridor from 2011 to 2016 was analyzed. It exhibits steady growth in terms of passenger traffic. Following table presents overall growth of tollable traffic on project corridor from year 2012 to year 2016.

Table 5-7 : Past Traffic Trends

Type of Vehicle	Year 2010-11	Year 2015-16	Overall Growth %
Car	2765	4993	12.55%
LCV	1186	1697	7.43%
LCV / Bus/ Truck	1651	1761	1.29%
MAV	1345	1930	7.48%

As recommended by **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways** "*This (historic growth) for short term projects but for long term projections it would be erroneous for assume that the past rate of growth would prevail for long time in future. Economic conditions are bound to change over long period and it would be necessary to modify the rate of growth accordingly*".

It is thus clear that while developing a futuristic growth projections for highway projects, long terms factors like growth of economy and upcoming developments in area have greater impact than past trends. Considering above, both historic trend and economic factors (elasticity) have been considered suitably to work out recommended growth rate of traffic on project corridor.

5.5 Other Factors Influencing Growth

There are many factors which have impact on traffic growth. As discussed previously these factors can be economic, social, educational, and industrial.

Potentiality of such factors for project highway is discussed as under.

ECONOMY

After witnessing a slowdown during 2008-09, the economy recovered in 2009-10, and a very high growth rate of GDP was recorded in 2010. Following figure depicts growth of GDP in India during the period.

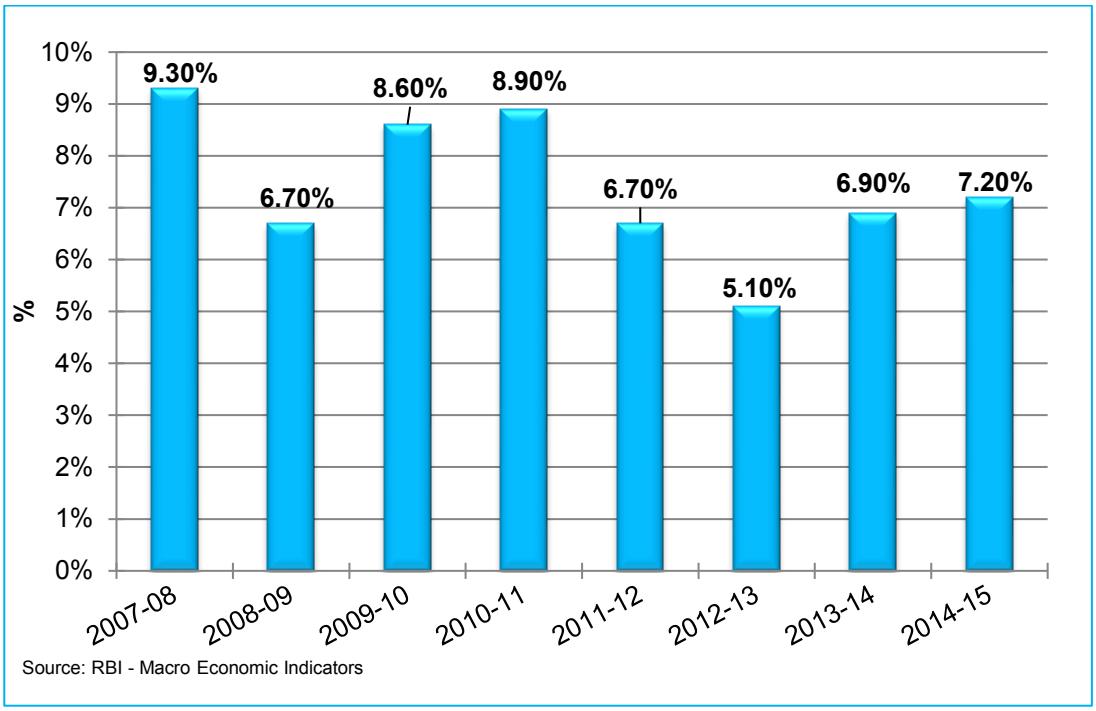


Figure 5-4 : Growth of GDP in India

After recording an all impressive growth of 8.9% in 2011, GDP declined between FY11 and FY14. GDP growth in 2014-2015 was pegged at 7.2% and is expected to be in the range of 7-8% going forward.

5.6 Developments Along and Around the Project Corridor & State

5.6.1 Developments around Namakkal Area

- Namakkal is noted for truck body building activity. Truck, trailer, tanker and rig unit body building activities are being carried out in Namakkal since 1956, products built up in this region are sold to customers from other states of India and are also exported to foreign countries. About 25000 people are employed directly and indirectly in truck body building activity in approximately 300 units which are engaged in this activity in Namakkal District. Approximately 40% of the trucks operating in state have body and other units done from Namakkal.

- Poultry development has been rather phenomenal in the district of Namakkal. About 1500 Poultry/Cattle feed manufacturing units are also in existence. Mostly every poultry unit has put up their own feed manufacturing unit. The district is also well known for its poultry and dairy industries, accounting for a bulk of supply of poultry products to neighboring industries. In fact, Namakkal produces about 65% of the egg output of Tamil Nadu.
- Tapioca is cultivated in Namakkal District in abundance. Tapioca serves as a useful raw material in the production of Starch and Sago which has engaged 350 business units in the Namakkal region. These products often find a good market in northern India, where the demand is high.

5.6.2 Developments around Karur Area

- Karur is the district located "HEART" of Tamil Nadu. i.e. Karur is centre of Tamil Nadu and equally distance to all around Tamil Nadu districts & quick reach by Road ways.
- Karur is a hub for bus body building industries. Most of the South Indian private bus bodies are built in Karur. The total business turnover from building bus coaches is estimated to be around ₹1000 crore per annum. There are more than 50 companies that build coaches in Karur.
- Karur is a major home textile centre and has five major product groups - bed linens, kitchen linens, toilet linens, table linens and wall hangings. The town generates around ₹6000 crores in foreign exchange through direct and indirect exports. Allied industries like ginning and spinning mills, dyeing factories and weaving employ around 300,000 people in and around Karur. Hand-loom Exports from Karur began on a modest scale with just 15 exporters in 1975. Products, made in Karur, are supplied to world leading chain stores such as WalMart, Target, IKEA, JC Penny and Ahlens, which generates high volumes of traffic to nearby ports.

  Set up under the scheme for Integrated Textile Parks, the ₹130 crores Karur Textile Park Limited (KTPL) is rated the premier facility of its kind in the country for its technical and ancillary facilities.
- About 60% of mosquito nets in India are manufactured in Karur. About 2000 units are engaged in making High-density polyethylene (HDPE)

mono filament yarn and associated products and employ about 50,000 people.

- Bharat Petroleum Corporation in a joint venture with Petronet CCK has installed a pipeline facility from Cochin BPCL to Karur BPCL to transport petroleum products. The petroleum products received at the BPCL-Karur terminal is supplied to more than 20 districts of Tamil Nadu through container trucks.

- Tamil Nadu News Print and Papers Ltd., better known as TNPL the country's largest non-wood based paper maker was established in the early 80's at Pugalur near Karur. It is acknowledged as the world leader in the technology for manufacture of newsprint from bagasse which became operational from January 1996. The production of news print and paper have been raised from 90000 tonnes to 180000 tonnes per annum.

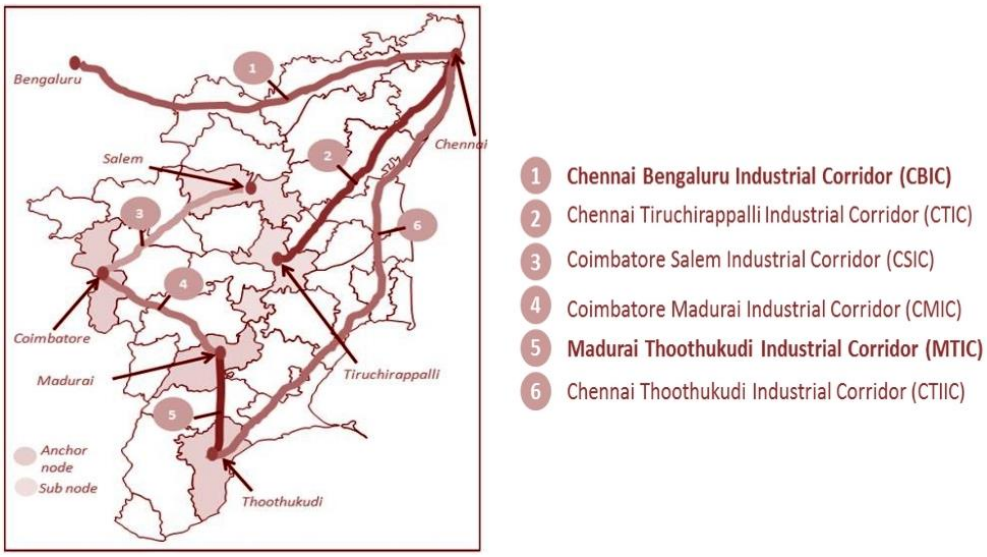
  TNPL produces 230,000 tons of Printing & writing paper and consumes 1 million tons of bagasse every year.

- Chettinad Cement Corporation Ltd was formed 1962 to cater to growing demands of cement in the country. The manufacturing unit located at Puliyur, Karur District, in Tamil Nadu commenced production in April 1968. Apart from cement, the Chettinad House is today engaged in activities as diverse as granite, engineering, silica, garnet, information technology, steel & textile trading, horse breeding, plantations, shipping, transportation, stevedoring, clearing and forwarding and logistics having a combined turnover of Rs. 8500 million.

Some of the big projects around the project corridor are detailed below

5.6.3 Coimbatore - Salem Industrial Corridor

Coimbatore - Salem Industrial Corridor is expected to attract an investment of about Rs 14,700 crore to create further infrastructure. This in turn is expected to create investment opportunities to the tune of about Rs 43,000 crore. Sources are predicting creation of jobs for approximately 18 lakh white and blue collar personnel. This has already translated into residential developers planning to expand their offerings.



5.7 Recommended Growth Rates of Traffic

Based on the above analysis and after giving due consideration to the entire listed factors, overall growth rates are recommended for each category of vehicle. Rate of growth is moderated considering overall regional trend. It is also expected that as the economy moves from developing to developed, rate of growth diminishes. Same growth rate is not sustainable for long. It is established practice to stepdown future growth rates at interval of 5 years.

Impact of other important factors affecting growth is taken as under.

- Historical data of project stretch is consistent except for truck and bus. 30% and 70% weightage is assigned for historical and future growth trends (elastic model) respectively for LCV and MAV category. For car, a weightage factor of 10% is assigned to historical growth trend. For bus and truck category, since the past growth trend is abnormally low, historical growth trend is ignored.
- Karnataka growth rates of elastic model assigned weightage of 10% and 20% is assigned to truck and MAV category while 90% and 80% weightage is given to Tamil Nadu elastic model growth rate in line with state wise traffic distribution of traffic. For car and LCV category only Tamil Nadu growth rates are considered.
- Due to technological advances in logistic industry greater preference is now given to Multi Axle (MAV) over conventional 2/3 Axle truck. To accommodate this in growth projection growth rate of MAV is stepped down in future year by lesser offset as compared to that of Car, LCV and Bus truck

- Namakkal and Karur being second class cities a negative growth rate of -0.5% and -1% is applied to car and LCV category respectively

Taking all above factors in to consideration, Growth rates are recommended for three scenarios for sensitivity analysis namely **Optimistic, Pessimistic** and **Most Likely** with a positive and negative variation 0.5% from Most Likely case.

Table 5-8 : Recommended Growth Rates Optimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30
CAR	11.60%	10.60%	9.35%
Mini Bus /LCV	7.60%	6.60%	5.10%
Truck / Bus	8.50%	7.50%	6.00%
Multi Axle	8.80%	8.30%	7.30%

Table 5-9 : Recommended Growth Rates Pessimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30
CAR	10.60%	9.60%	8.35%
Mini Bus /LCV	6.60%	5.60%	4.10%
Truck / Bus	7.50%	6.50%	5.00%
Multi Axle	7.80%	7.30%	6.30%

Table 5-10 : Recommended Growth Rates Most Likely

Year/ Vehicle Type	Up to 2020	2020-25	2025-30
CAR	11.10%	10.10%	8.85%
Mini Bus /LCV	7.10%	6.10%	4.60%
Truck / Bus	8.00%	7.00%	5.50%
Multi Axle	8.30%	7.80%	6.80%

CHAPTER 6
TRAFFIC FORECAST

6.1 Traffic Projections

Growth rates recommended in previous section of report are used to arrive at traffic projections for future years. Toll plaza wise futuristic traffic projection is given in tables below.

These projections have been done for following three cases of growth

1. Optimistic Scenario
2. Pessimistic Scenario
3. Most Likely Scenario

Table 6-1 : Total Tollable Traffic @ Toll Plaza 1- 259.500 KM
(Optimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	5617	1826	1910	2099	**11452**	**23776**
2017-18	6268	1965	2072	2284	**12589**	**25979**
2018-19	6994	2114	2248	2484	**13840**	**28384**
2019-20	7806	2276	2438	2702	**15222**	**31021**
2020-21	8634	2426	2622	2926	**16608**	**33665**
2021-22	9549	2586	2819	3169	**18123**	**36538**
2022-23	10561	2757	3030	3432	**19780**	**39660**
2023-24	11681	2938	3257	3717	**21593**	**43056**
2024-25	12919	3132	3502	4025	**23578**	**46751**
2025-26	14127	3292	3712	4319	**25450**	**50195**
2026-27	15448	3460	3934	4634	**27476**	**53897**
2027-28	16893	3636	4170	4973	**29672**	**57890**
2028-29	18472	3821	4420	5336	**32049**	**62184**
2029-30	20199	4016	4685	5725	**34625**	**66808**
2030-31	21785	4161	4896	6086	**36928**	**70923**

Table 6-2 : Total Tollable Traffic @ Toll Plaza 1- 259.500 KM
(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	5569	1809	1892	2080	**11350**	**23560**
2017-18	6159	1929	2034	2242	**12364**	**25508**
2018-19	6812	2056	2187	2416	**13471**	**27618**
2019-20	7534	2192	2351	2604	**14681**	**29909**
2020-21	8257	2315	2504	2793	**15869**	**32153**
2021-22	9050	2444	2667	2996	**17157**	**34571**
2022-23	9919	2581	2840	3214	**18554**	**37177**
2023-24	10871	2726	3025	3449	**20071**	**39993**
2024-25	11916	2878	3221	3701	**21716**	**43026**
2025-26	12911	2996	3382	3935	**23224**	**45768**
2026-27	13990	3119	3552	4183	**24844**	**48695**
2027-28	15159	3246	3730	4447	**26582**	**51816**
2028-29	16425	3379	3916	4727	**28447**	**55142**
2029-30	17797	3517	4112	5024	**30450**	**58692**
2030-31	19016	3608	4256	5291	**32171**	**61721**

Traffic projections for Most Likely scenario are given as under

Table 6-3 : Total Tollable Traffic @ Toll Plaza 1- 259.500 KM
(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	5593	1818	1901	2089	**11401**	**23666**
2017-18	6214	1947	2053	2262	**12476**	**25739**
2018-19	6905	2085	2218	2450	**13658**	**28005**
2019-20	7671	2233	2395	2653	**14952**	**30466**
2020-21	8446	2370	2562	2860	**16238**	**32908**
2021-22	9299	2515	2741	3082	**17637**	**35546**
2022-23	10238	2669	2934	3323	**19164**	**38414**
2023-24	11271	2832	3139	3583	**20825**	**41514**
2024-25	12410	3004	3359	3862	**22635**	**44867**
2025-26	13509	3142	3544	4125	**24320**	**47950**
2026-27	14705	3287	3739	4405	**26136**	**51250**
2027-28	16006	3438	3944	4704	**28092**	**54783**
2028-29	17423	3595	4161	5024	**30203**	**58575**
2029-30	18965	3760	4390	5366	**32481**	**62643**
2030-31	20359	3876	4566	5677	**34478**	**66184**

6.2 Modification in Concession Period

As discussed previously concession period may get extended by 5-6 years because of post award development of competing connectivity under provisions of clause 8.2.

It can be observed that in most likely case project traffic is expected to cross four lane capacity of 60000 PCU. In such event, authority may opt for capacity augmentation for which concessionaire will have option of matching the preferred bid.

Taking both the fact into consideration concession period of project has been taken as original. Accordingly, traffic projection and revenue is worked out up to year 2030-31.

CHAPTER 7
FORECAST OF TOLL REVENUE

7.1 General

This chapter presents the tolling rate calculations, categories and toll revenue of the project.

7.2 Discount Categories

Fee schedule of agreement of Namakkal - Karur section of NH-7 is based on old toll policy. As per the Toll Notification (Schedule G) the following discounts have been considered:

1. Monthly Pass: For frequent user's monthly pass would be issued at fee 30 time the single journey fee. There are other local monthly passes for car /Jeep/ Van category I and II and school bus @ Rs.150, Rs.300 and Rs.1000 respectively.
2. Multiple Journeys (for Return Trip): Will be charged at 1.5 times single journey.
3. Single Journey: Full single journey toll would be charged to this category of vehicles who are infrequent travelers or whose frequency does not yield any discount from the above categories.
4. There are several categories of local discounts.
    a) Local Bus / truck and LCV (within 20 km) will be charged @ Rs. 25 and 15 respectively. Rate will be constant throughout concession period

Building of inflation and escalation of rate based on WPI are done as per toll notification (Schedule G) as given under also.

$$\text{Base Fee} \times \frac{\text{WPI-B}}{\text{WPI-A}} \times \text{length of the said section.}$$

Where

- WPI-A = is the Wholesale Price Index of June, 1997 (131.4).
- WPI-B = is the Average Wholesale Price Index for the year ending March, 31st preceding the fee revision date.

7.3 Estimation of Toll Rates

As per the applicable MORTH notification and Schedule G of contract agreement, the following Base rate of fee for the categories mentioned in the table stands true in the National Highways Fee Rules applicable for contract.

Table 7-1 : Base Toll Rates 1997

Type of Vehicle	Base Rate of Fee / Km (in Rs.)
Car, Jeep, Van or Jeep	0.40
Light Commercial Vehicle, (LCV)	0.70
Bus or Truck (2 Axle)	1.40
MAV (> 2 axle)	2.25

Factor of inflation / growth has been incorporated as per Schedule G. WPI are available up to 2015-16. Following graph provides projection of rate of inflation (WPI) in India. Data has been taken from Office of Economic Advisor web site (www.eaindustry.nic.in)

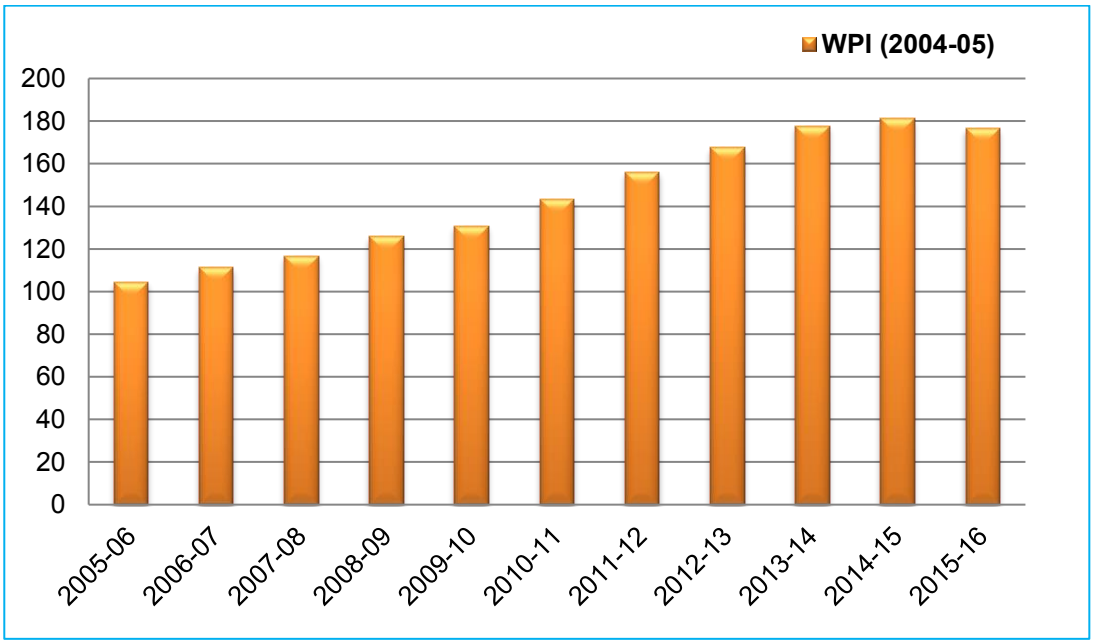


Figure 7-1 : Historical Rate of WPI Inflation in India

Average inflation in WPI in last 10 years is 5.5%. Taking future trend of economy into consideration following average WPI inflation is used for projections of toll rates

- Up to Year 2018 - 4.0%
- 2019-21 - 5.0%
- 2022-26 - 4.0%
- 2027-31 - 3.0%
- 2036-40 - 2.0%

Toll rates are calculated as per guidelines provided in schedule G for the concession period including expected extension and are given below.

Thus, worked out rates for various categories of vehicle and discounts are given as under

Table 7-2 : Toll Rates for Single Journey @ Toll Plaza 1- 259.500 KM

Year	Car/Jeep / Van	LCV	Truck / Bus	Multi Axle (> 2 axle)	Car - LCO	LCV - LTO	Truck/ Bus - LTO
2016-17	40	70	145	235	15	15	25
2017-18	45	75	150	240	15	15	25
2018-19	45	80	155	250	15	15	25
2019-20	45	80	165	265	15	15	25
2020-21	50	85	175	275	15	15	25
2021-22	50	90	180	290	15	15	25
2022-23	55	95	190	305	15	15	25
2023-24	55	100	195	315	15	15	25
2024-25	60	100	205	330	15	15	25
2025-26	60	105	210	340	15	15	25
2026-27	65	110	220	355	15	15	25
2027-28	65	115	225	365	15	15	25
2028-29	65	115	235	375	15	15	25
2029-30	70	120	240	385	15	15	25
2030-31	70	125	250	400	15	15	25

Table 7-3 : Toll Rates for Multiple Journeys @ Toll Plaza 1- 259.500 KM

Year	Car	Mini Bus /LCV	Truck/ Bus	Multi Axle
2016-17	60	110	215	350
2017-18	65	115	225	365
2018-19	65	115	235	375
2019-20	70	125	245	395
2020-21	75	130	260	415
2021-22	80	135	270	435
2022-23	80	140	285	455
2023-24	85	145	295	475
2024-25	85	155	305	490
2025-26	90	160	320	510
2026-27	95	165	330	530
2027-28	95	170	340	545
2028-29	100	175	350	565
2029-30	105	180	360	580
2030-31	105	185	370	600

Table 7-4 : Toll Rates for Monthly Pass @ Toll Plaza 1- 259.500 KM

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car - LT1	Car – LT2	School Bus
2016-17	1240	2170	4340	6980	150	300	1000
2017-18	1290	2260	4515	7260	150	300	1000
2018-19	1340	2350	4695	7550	150	300	1000
2019-20	1410	2465	4930	7925	150	300	1000
2020-21	1480	2590	5180	8320	150	300	1000
2021-22	1555	2720	5435	8740	150	300	1000
2022-23	1615	2825	5655	9085	150	300	1000
2023-24	1680	2940	5880	9450	150	300	1000
2024-25	1745	3060	6115	9830	150	300	1000
2025-26	1815	3180	6360	10220	150	300	1000
2026-27	1890	3305	6615	10630	150	300	1000
2027-28	1945	3405	6815	10950	150	300	1000
2028-29	2005	3510	7020	11280	150	300	1000
2029-30	2065	3615	7230	11615	150	300	1000
2030-31	2125	3720	7445	11965	150	300	1000

7.4 Toll Revenue

As indicated earlier, toll revenue on the Project Road has been calculated under in all three scenarios. The estimates of toll revenue under ***Optimistic***, ***Pessimistic*** and ***Most Likely*** growth scenarios are presented in the following section.

7.5 Toll Revenue at all toll plazas under Scenarios

Toll Revenue estimates under most likely scenario at each of the toll plaza up to 2030-31 (Expected End of Concession Period in including extension) starting from the year 2016-17 are shown in tables below.

Overloading of commercial vehicles is a known phenomenon on Indian roads. Currents project witnessed instances of overloading. These vehicles can be charge at extra higher rate as per contract to discourage overloading. A sample study done at Hosur Krishnagiri section of NH-7 by concessionaire shows that at present overloading charges can be translated to about 7% extra revenue. For next 2-3 years, this trend may continue at same % then it would gradually diminish over a period of say 8-10 years. Same phenomenon can be expected to occur at project stretch. Expected proportion of revenue from overloading is provided in following table.

Table 7-5 : Expected Overloading Revenue

Year	Expected Revenue from Overloading
2016-17	7%
2017-18	7%
2018-19	7%
2019-20	5%
2020-21	5%
2021-22	4%
2022-23	4%
2023-24	3%
2024-25	3%
2025-26	2%
2026-27	2%
2027-28	1%
2028-29	1%

Toll revenue projections, excluding revenue from overloading, are given in following tables.

Table 7-6 : Toll Revenue Optimistic Scenario (Rs. Crores)

Year	Toll at Plaza 259.500	Total
2016-17	37.55	**37.55**
2017-18	43.05	**43.05**
2018-19	48.28	**48.28**
2019-20	55.34	**55.34**
2020-21	63.22	**63.22**
2021-22	71.76	**71.76**
2022-23	81.54	**81.54**
2023-24	91.70	**91.70**
2024-25	102.86	**102.86**
2025-26	114.27	**114.27**
2026-27	128.25	**128.25**
2027-28	141.01	**141.01**
2028-29	155.33	**155.33**
2029-30	172.00	**172.00**
2030-31	187.02	**187.02**

Table 7-7 : Toll Revenue Pessimistic Scenario (Rs. Crores)

Year	Toll at Plaza 259.500	Total
2016-17	36.99	**36.99**
2017-18	42.01	**42.01**
2018-19	46.69	**46.69**
2019-20	53.03	**53.03**
2020-21	60.02	**60.02**
2021-22	67.50	**67.50**
2022-23	75.98	**75.98**
2023-24	84.65	**84.65**
2024-25	94.05	**94.05**
2025-26	103.51	**103.51**
2026-27	115.08	**115.08**
2027-28	125.34	**125.34**
2028-29	136.78	**136.78**
2029-30	150.06	**150.06**
2030-31	161.62	**161.62**

Table 7-8 : Toll Revenue Most Likely Scenario (Rs. Crores)

Year	Toll at Plaza 259.500	Total
2016-17	37.25	**37.25**
2017-18	42.51	**42.51**
2018-19	47.45	**47.45**
2019-20	54.14	**54.14**
2020-21	61.56	**61.56**
2021-22	69.56	**69.56**
2022-23	78.68	**78.68**
2023-24	88.07	**88.07**
2024-25	98.32	**98.32**
2025-26	108.71	**108.71**
2026-27	121.44	**121.44**
2027-28	132.90	**132.90**
2028-29	145.71	**145.71**
2029-30	160.60	**160.60**
2030-31	173.82	**173.82**

CHAPTER 8
OPERATION & MAINTENANCE COST

8.1 General

While traffic and toll rates account income of project. Capital cost of construction and O & M cost form part of expenses. Health of any highway project considerably depends on pattern of its O&M cost. For these purpose major O&M elements such as civil infrastructure, toll system and manpower's, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analyzed. It is defined in contract that major maintenance including overlay of wearing course would be taken once in 5 year. Same is considered while developing cost of major maintenance & repair.

8.2 Major Elements of maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

8.3 Project Details

Following are project parameters which would contribute towards cost of operation and maintenance.

Table 8-1 : Project Parameters for O & M

Item	Parameter	Quantity	Unit
Length of Road	KM	41.37	KM
Main Carriageway	Paved Area	742680.75	SQM
Service Road	Paved Area	78785	SQM
Bus bays	Paved Area	735	SQM
Truck Lay bye	Paved Area	0	SQM
Structure		**23211**	SQM
Major Bridge	Area	18029.75	SQM
Minor Bridge	Area	943.68	SQM
Flyover	Area	4237.5	SQM
RCC Crash Barrier	Length	4496.8	RMT
Metal Beam Crash Barrier	Length	8274	RMT
Guard Post	Nos	16548	No.
Kerb Detail	Length	82740	RMT

Operation and maintenance cost of project depends number of factors like quality of construction, response of maintenance team to early damage, local climate (rain etc.).

8.4 Operation & Maintenance Cost

Following are project parameters which would contribute towards cost of operation and maintenance.

Future cost of operation and maintenance is estimate on engineering judgment and experience basis. Keeping all above factors in view, following can be basis of working out cost of operation and maintenance for project corridor from Namakkal to Karur section on NH-7 in state of Tamil Nadu.

b) **Annual Regular Maintenance** – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll plaza maintenance, Toll collection, other services like medical help and rescue operations etc.

c) **Periodic Maintenance** – This will be done on periodic basis every 5 years mentioned in conditions of contract. It will consist of overlaying of wearing course and painting and marking. Ministry in its Specifications for Road & Bridge Works (5th Revision) has included Micro Surfacing as surface sealing and renewal treatment. NHAI has also issued instruction to use Micro Surfacing for periodic renewal course vide letter dated 15th November 2016. In light of above,

Micro Surfacing is considered as overlay course in 45% of the project stretch. For balance 55% normal asphalt course is considered. Also, from practicality of construction and traffic operation on project road, Major Maintenance and Repair (MMR) work is spread over a period of 2 years without escalation. Toll operation on project road commenced in year 2009-10. Considering 5 years MMR cycle, next cycle of MMR is expected in year 2021-22.

Cost for above operations is taken on prevailing rates.

Following table provides year wise details of operation and maintenance cost.

Table 8-2 : Year wise Details of Regular Operation & Maintenance Cost

Year	Total Regular O & M Expenditure (Rs. Crores) Current Price	Escalation Factor	Total Regular O & M Expenditure (Rs. Crores) with escalation
2016-17	5.73	1.04	5.96
2017-18	5.73	1.08	6.20
2018-19	5.73	1.14	6.51
2019-20	5.73	1.19	6.83
2020-21	5.73	1.25	7.17
2021-22	5.73	1.30	7.46
2022-23	5.73	1.35	7.76
2023-24	5.73	1.41	8.07
2024-25	5.73	1.46	8.39
2025-26	5.73	1.51	8.64
2026-27	5.73	1.55	8.90
2027-28	5.73	1.60	9.17
2028-29	5.73	1.65	9.44
2029-30	5.73	1.70	9.73
2030-31	5.73	1.73	9.92

- Considered upto the date of concession.

Table 8-3 : Year wise Details of Major Maintenance & Repair (MMR) Cost

Year	Total Length of Project Road (Km)	No. of Lanes	Total Lane Km	Normal Overlay Lane Km Length (55% of the total)	Micro Surfacing Lane Km Length (45% of the total)	Rate of Normal Overlay Per Km Per Lane (Rs. Cr.)	Rate of Micro Surfacing Overlay Per Km Per Lane (Rs. Cr.)	Total Cost of Major Maintenance & Repair Current Price Rs. Cr.)	Escalation Factor	Total Cost of Major Maintenance & Repair at Escalated Price Rs. Cr.)
2016-17	41.38	4	165.50							
2017-18	41.38	4	165.50							
2018-19	41.38	4	165.50							
2019-20	41.38	4	165.50							
2020-21	41.38	4	165.50							
2021-22	41.38	4	165.50	45.51	37.24	0.16	0.05	9.14	1.25	11.45
2022-23	41.38	4	165.50	45.51	37.24	0.16	0.05	9.14	1.25	11.45
2023-24	41.38	4	165.50							
2024-25	41.38	4	165.50							
2025-26	41.38	4	165.50							
2026-27	41.38	4	165.50							
2027-28	41.38	4	165.50							
2028-29	41.38	4	165.50	45.51	37.24	0.16	0.05	9.14	1.60	14.64
2029-30	41.38	4	165.50	45.51	37.24	0.16	0.05	9.14	1.60	14.64
2030-31	41.38	4	165.50							

Following graph depicts Year wise operation and maintenance cost illustratively. Higher cost columns represent periodic & special Repair years.

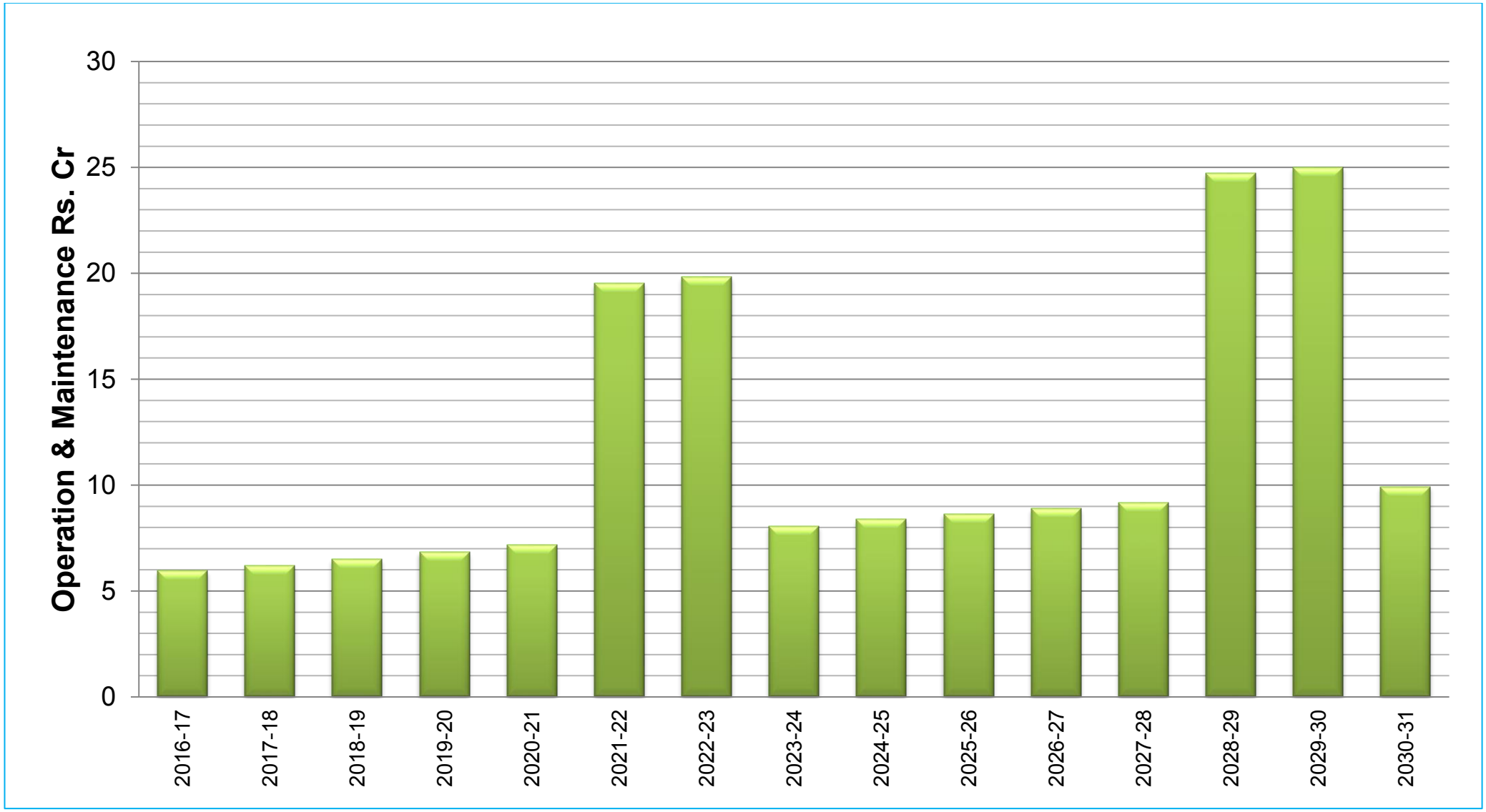


Figure 8-1 : Year wise Operation & Maintenance Cost

CHAPTER 9
CONCLUSION & RECOMMENDATIONS

9.1 Conclusion & Recommendations

Project stretch of Namakkal to Karur section of NH-7 in state of Tamil Nadu from km 248.625 to km 292.600 is presently a four lane road. The road is in sound condition and serves healthy traffic volumes. The project corridor is a part of critical North – South connectivity via national highway NH-7. There are many upcoming projects in area which are proposed to boost economic growth of area and add value to development of the region. All the developments considered in the Report have the potential to have a positive impact to traffic flow on project. Following can considered as major outcome of study

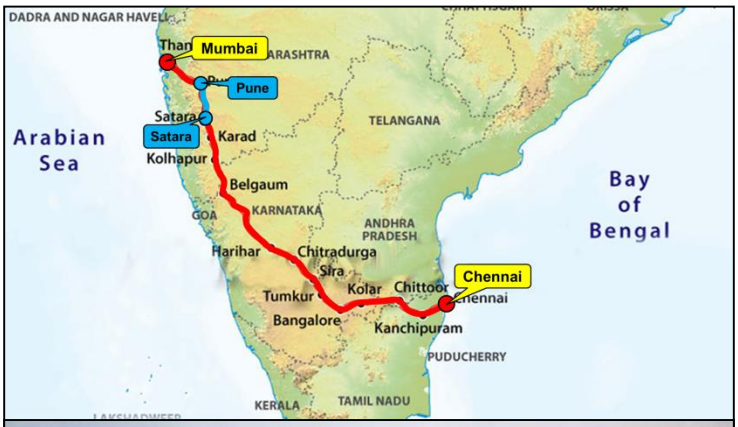
a) There is a healthy volume of tollable traffic running on project

b) Project corridor has the potential to witness traffic growth @ about 8% annually in near future due to various development in area and overall development of economy

c) Project corridor does not have risk of traffic leakage on account of competing roads of comparable quality

d) Project infrastructure is in good condition and its maintenance costs are feasible for the successful operation of the toll road

Based on above it can be considered a stable healthy project from traffic and revenue point of view.



RELIANCE

Reliance Infrastructure InvIT Fund

Traffic Study for Pune-Satara Section of NH - 4

Final Report

December 2016

SYSTRA

SYSTRA INDIA

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Chapter 1
Introduction

1.1 Preamble

The expansion and development of efficient road network is one of the prerequisites for country's economic progress. Over the years, roads have emerged as preferred mode of transport in India and figures suggest that highways carry 60% of freight and 80% of passenger traffic.

The National Highways Authority of India (NHAI) has been entrusted by Government of India with the development, maintenance and management of National Highways. Under Phase V of National Highways Development Program (NHDP), the Government has upgraded some of the existing four lane highways into six lane highways including **Pune-Satara Section of NH-4**. This Project was executed by *Reliance Infrastructure Limited* (*PS Toll Road Private Limited*) as BOT on Design, Build, Finance and Operate (DBFO) pattern.

On March 10, 2010, the NHAI and PS Toll Road Private Limited entered into a concession agreement in respect of the Pune Satara Project. The concession period commenced on October 1, 2010 and the collection of tolls commenced on October 1, 2010. On August 28, 2016, the NHAI issued a certificate of completion of six laning for a length of 110 km. The NHAI granted PS Toll Road Private Limited a concession for a period of 24 years for this project. The concession period commenced on October 1, 2010 and is expected to expire on September 30, 2034. PS Toll Road Private Limited began collecting tolls with respect to this project on October 1, 2010. The NHAI owns the land that underlies the PS Project.

Reliance Infrastructure InvIT Fund has engaged *M/s Systra MVA Consulting (India) Private Limited* as Consultants for carrying out necessary traffic studies and assess the future traffic and toll potential of project along with related Operation and Maintenance expenditure involved.

1.2 Project Corridor

National Highway – 4 (NH-4), a busy corridor with exceptionally high traffic, connects Panvel (Mumbai) and Bengaluru via Pune, Satara, Kolhapur, Belgaum, Dharwar, Haveri, Davangere, Chitradurga and Tumkur. Further it connects Bengaluru and Chennai via Kolar, Palmaner and Kanchipuram (refer **Figure 1:1**).

The project corridor, *Pune- Satara Section of NH-4,* starts at Satara (725 km) of Satara district of Maharashtra and ends at Dehu Road junction (865.35 km) of Mumbai – Pune Expressway. It is a well-designed four lane divided corridor (currently 6 laning in progress) carrying heavy traffic. It passes through three major industrial town's viz. Satara, Pune and Pimpri - Chinchwad and provides access to Hinjewadi IT Park near Pune. The total length of the project stretch is 140.35 km as per Concession Agreement and traverses through plain/ rolling and hilly terrains. The important towns/ village's enroute are: Pimpri - Chinchwad, Pune, Katraj, Shindewadi, Velu, Khed Shivapur, Kapurthol, Nasrapur, Shirwal, Sasvad, Khandala, Wele, Surul, Limb and Anewadi.

The construction of the remaining portion of the project is delayed due to local demands for alterations to the project facilities, delayed forest clearance approvals and delays/disputes in the land acquisition process.

1.3 Corridor Description

National Highway 4 is a busy highway carrying heavy traffic. The corridor starts at Chennai and connects the financial capital of India, Mumbai via Bengaluru. The total length of the corridor is about 1335 km. It is a part of the Golden Quadrilateral connecting all the four Metropolitan cities of India.

Figure 1:1 National Highway 4 between Mumbai and Chennai

PS Toll Road Private Limited was set up with the objective to design, build and operate 140.35 km long National Highway (NH4) between Pune and Satara in Maharashtra. The project corridor is along the main corridor connecting Mumbai - Pune to southern parts of Maharashtra and southern states of India. Apart from the through traffic, the stretch attracts traffic of Mahabaleshwar, Balaji temple and sugar factories. The two toll plazas that are in operation on the project corridor are:

- Khed Shivapur Toll Plaza (km 819.240) (refer **Figure 1:2**)
- Anewadi Toll Plaza (km 748.60) (refer **Figure 1:3** and **Figure 1:4**)

At Khed Shivapur toll is collected for 80.70 km of road section and at Anewadi it is for 56 km.

1.4 Salient Features of Project Corridor

The salient features of the Pune - Satara section of NH 4 are as follows

- Six Laning of Carriageway of length 140 kms
- Major bridges - 4 Nos
- Minor bridges - 53 Nos

- Vehicle Underpass (VUP) - 23 Nos
- Number of Bus-bays - 6 Nos
- Number of Truck lay - 4 Nos
- Length of Service Road - 50.4 km

Details of infrastructure are given in the following paragraphs.

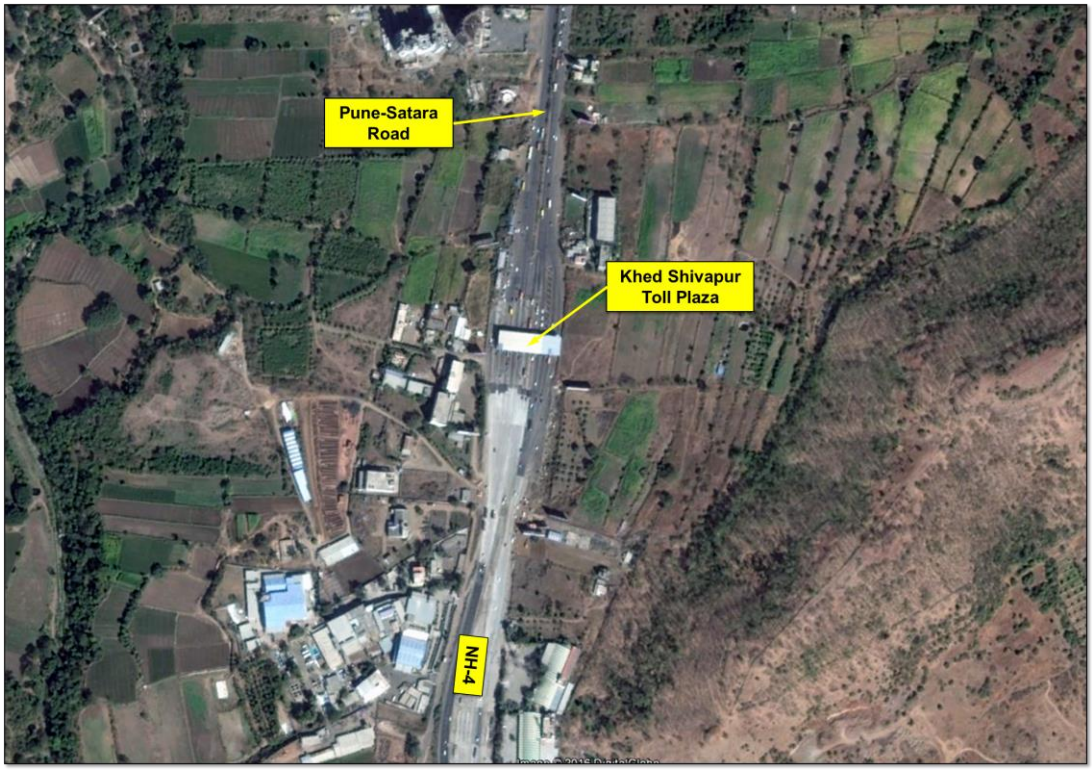

Figure 1:2 Existing Toll Plaza at Khed Shivapur on Project Road

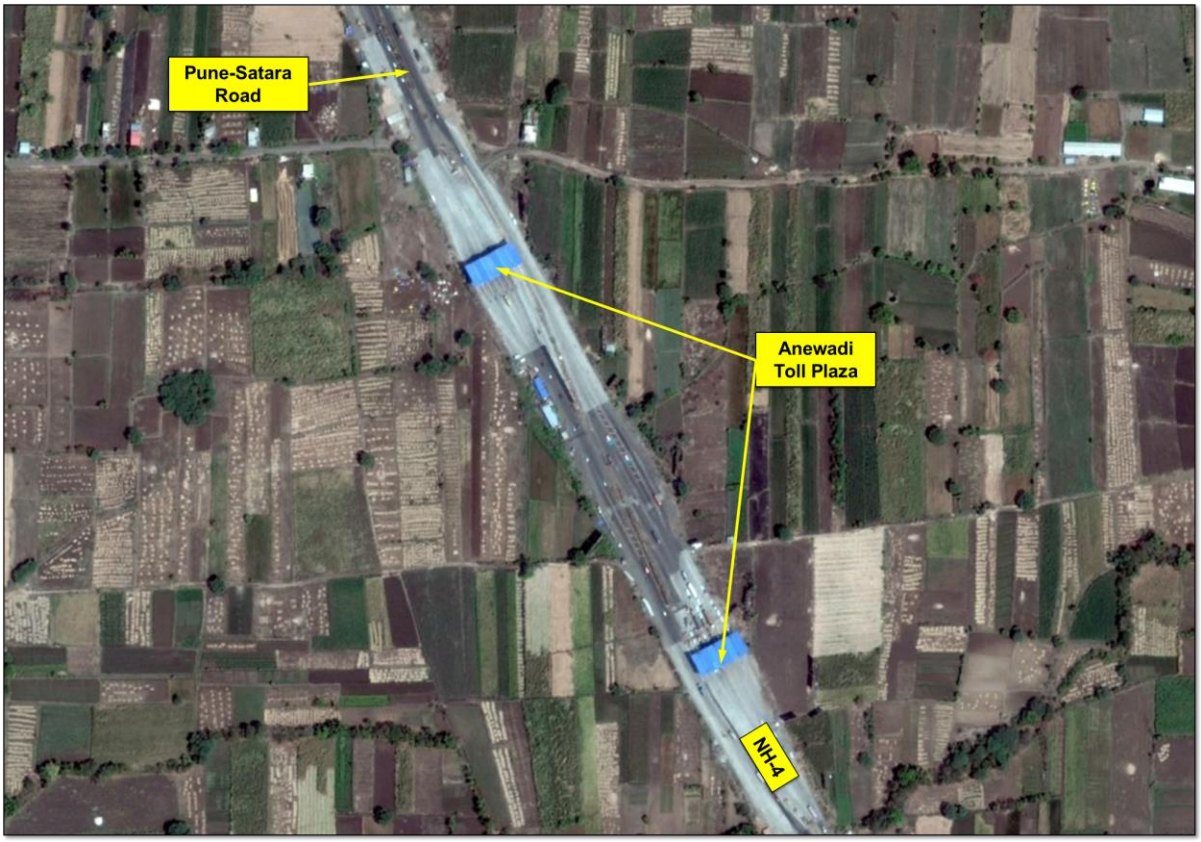

Figure 1:3 Existing Toll Plaza at Anewadi on the Project Road

Figure 1:4 Anewadi Toll Plaza on Pune Satara Section of NH 4

1.4.1 Right of Way Details

The details of Right of Way along the Pune – Satara section of NH 4 are given in **Table 1:1**.

Table 1:1 Details of Right of Way

Chainage		Row Width		Total Width	Remarks
From	To	Left	Right		
725	725.1	32.5	32.5	65	
725.1	725.2	37	37	74	
725.2	725.3	34	34	68	
725.3	726.5	30	30	60	
726.5	726.6	38.5	38.5	77	
726.6	726.7	38	40	78	
726.7	726.8	68	42	110	
726.8	728.6	30	30	60	
728.6	728.7	38	41	79	
728.7	728.75	12	40	52	
728.75	728.8	35	30	65	
728.8	728.85	32	40	72	
728.85	728.9	23	47	70	
728.9	729	30	30	60	
729	729.1	27	35	62	
729.1	729.2	30	30	60	
729.2	729.3	30	30	60	
729.3	729.35	30	30	60	
729.35	729.4	30	30	60	
729.4	729.6	35	35	70	
729.6	729.7	40	42	82	
729.7	729.8	35	30	65	
729.8	729.85	60	30	90	
729.85	729.9	50	25	75	
729.9	732	30	30	60	
732	732.1	30	55	85	
732.1	732.2	40	70	110	
732.2	732.3	30	45	75	
732.3	733.5	30	30	60	
733.5	733.6	25	25	50	
733.6	735.4	30	30	60	
735.45	735.5	30	40	70	
735.5	735.55	30	53	83	
735.55	735.6	30	52	82	
735.6	735.65	30	40	70	
735.65	756.7	30	30	60	
756.7	759.35	30	30	60	
759.35	759.4	30	30	60	
759.4	759.5	31	52	83	
759.5	759.6	65	45	110	

Chainage		Row Width		Total Width	Remarks
From	To	Left	Right		
759.6	759.65	46	40	86	
759.65	759.7	30	30	60	
759.7	765.5	30	30	60	
765.5	765.7	30	30	60	
765.7	765.8	55	30	85	
765.8	765.9	50	30	80	
765.9	766	45	30	75	
766	769.9	30	30	60	
769.9	773	30	30	60	
773	774.2	30	30	60	Khambatki Ghat
774.2	778.6	20	20	40	Under PWD LCW
773	778.7	22	22.5	45	Under PWD LCW
778.7	781	30	30	60	
781	781.6				Not under NHAI
781.6	782.65	30	30	60	
782.65	782.7	30	40	70	
782.7	782.75	32	38	70	
782.75	782.8	33	30	63	
782.8	791.4	30	30	60	
791.4	791.5	30	45	75	
791.5	791.6	30	60	90	
791.6	791.7	30	60	90	
791.7	791.8	30	65	95	
791.8	791.9	30	42	72	
791.9	792	30	30	60.5	
792	792.1	30	30.5	60.5	
792.1	792.2	30	30.5	60.5	
792.2	792.3	30	30.5	60.5	
792.3	796.3	30	30	60	
796.3	796.6	22.5	37.5	60	
796.6	797.1	20	40	60	
797.1	797.3	22	38	60	
797.3	805.8	30	30	60	
805.8	805.9	30	70	100	
805.9	806	27.5	27.5	55	
806	806.1	30	35	65	
806.1	806.2	30	50	80	
806.2	806.3	30	30	60	
806.3	806.4	32	28	60	
806.4	816.4	30	30	60	
81816.4	817.3	30	40	70	
817.3	818.3	30	40	70	
818.3	819	42	18	60	

Chainage		Row Width		Total Width	Remarks
From	To	Left	Right		
819	819.5	42.5	42.5	85	
819.5	823.9	30	30	60	
823.9	824	27	27	54	
824	824.1	30	30	60	
824.1	824.2	18	37.5	55.5	
824.2	824.3	20	40	60	
824.3	824.4	22.5	47.5	70	
824.4	824.5	42.5	42.5	85	
824.5	824.6	32	34	66	
824.6	824.7	26	38	64	
824.7	824.8	26	41	67	
824.8	824.9	30	41	71	
824.9	825	33	41	74	
825	825.25	28	42	70	
825.25	825.75	35	35	70	
825.75	826.05	50	30	80	
826.5	826.625	50	50	100	
826.625	827.865	35	35	70	Katraj Ghat Tunnel
827.865	828.35	50	50	100	
828.35	830.65	50	40	90	
830.65	830.775		40	40	
830.775	830.91		35	35	
830.91	831.45	35	35	70	
831.45	831.2	28.75	25	53.75	
831.2	831.29	35	35	70	
831.29	832.02	40	50	90	
832.2	832.925	35	35	70	
832.925	833.98	40	40	80	
833.98	835.35	30	30	60	
0(835.350)	30(865.350)	30	30	60	Of Westerly Diversion

1.4.2 Road Inventory

Details of Road inventory along Pune – Satara section of NH 4 and Westerly Diversion from Dehu Road towards Katraj are given in **Table 1:2** and **Table 1:3**.

Table 1:2 Details of Road Inventory

Chainage		Carriageway				Paved Shoulder		Earthen Shoulder	
		Left	Right	Left	Right	Left	Right	Left	Right
From	To	Width	Type	Width	Type	Width	Width	Width	Width
725+000	726+000	7.5	BT	7.5	BT	1	1	1.5	1.5
726+000	727+000	7.5	BT	7.5	BT	1	1	1.5	1.5

Chainage		Carriageway				Paved Shoulder		Earthen Shoulder	
		Left	Right	Left	Right	Left	Right	Left	Right
From	To	Width	Type	Width	Type	Width	Width	Width	Width
727+000	728+000	7.5	BT	7.5	BT	1	1	1.5	1.5
728+000	729+000	7.5	BT	7.5	BT	1	1	1.5	1.5
729+000	730+000	7.5	BT	7.5	BT	1	1	1.5	1.5
730+000	731+000	7.5	BT	7.5	BT	1	1	1.5	1.5
731+000	732+000	7.5	BT	7.5	BT	1	1	1.5	1.5
732+000	733+000	10.5	BT	10.5	BT				
733+000	734+000	10.5	BT	10.5	BT				
734+000	735+000	10.5	BT	10.5	BT				
735+000	736+000	7.5	BT	7.5	BT	1	1	1.5	1.5
736+000	737+000	7.5	BT	7.5	BT	1	1	1.5	1.5
737+000	738+000	7.5	BT	7.5	BT	1	1	1.5	1.5
738+000	739+000	7.5	BT	7.5	BT	1	1	1.5	1.5
739+000	740+000	7.5	BT	7.5	BT	1	1	1.5	1.5
740+000	741+000	7.5	BT	7.5	BT	1	1	1.5	1.5
741+000	742+000	7.5	BT	7.5	BT	1	1	1.5	1.5
742+000	743+000	7.5	BT	7.5	BT	1	1	1.5	1.5
743+000	744+000	7.5	BT	7.5	BT	1	1	1.5	1.5
744+000	745+000	7.5	BT	7.5	BT	1	1	1.5	1.5
745+000	746+000	7.5	BT	7.5	BT	1	1	1.5	1.5
746+000	747+000	7.5	BT	7.5	BT	1	1	1.5	1.5
747+000	748+000	7.5	BT	7.5	BT	1	1	1.5	1.5
748+000	749+000	7.5	BT	7.5	BT	1	1	1.5	1.5
749+000	750+000	7.5	BT	7.5	BT	1	1	1.5	1.5
750+000	751+000	7.5	BT	7.5	BT	1	1	1.5	1.5
751+000	752+000	7.5	BT	7.5	BT	1	1	1.5	1.5
752+000	753+000	7.5	BT	7.5	BT	1	1	1.5	1.5
753+000	754+000	7.5	BT	7.5	BT	1	1	1.5	1.5
754+000	755+000	1 0.5	BT	10.5	BT				
755+000	756+000	7.5	BT	7.5	BT	1	1	1.5	1.5
756+000	757+000	7.5	BT	7.5	BT	1	1	1.5	1.5
757+000	758+000	10.5	BT	10.5	BT				
758+000	759+000	7.5	BT	7.5	BT	1	1	1.5	1.5
759+000	760+000	7.5	BT	7.5	BT	1	1	1.5	1.5
760+000	761+000	7.5	BT	7.5	BT	1	1	1.5	1.5
761+000	762+000	7.5	BT	7.5	BT	1	1	1.5	1.5
762+000	763+000	7.5	BT	7.5	BT	1	1	1.5	1.5
763+000	764+000	7.5	BT	7.5	BT	1	1	1.5	1.5
764+000	765+000	7.5	BT	7.5	BT	1	1	1.5	1.5
765+000	766+000	7.5	BT	7.5	BT	1	1	1.5	1.5
766+000	767+000	7.5	BT	7.5	BT	1	1	1.5	1.5
767+000	768+000	10.5	BT	10.5	BT				

Chainage		Carriageway				Paved Shoulder		Earthen Shoulder	
		Left	Right	Left	Right	Left	Right	Left	Right
From	To	Width	Type	Width	Type	Width	Width	Width	Width
768+000	769+000	7.5	BT	7.5	BT	1	1	1.5	1.5
769+000	770+000	7.5	BT	7.5	BT	1	1	1.5	1.5
770+000	771+000	7.5	BT	7.5	BT	1	1	1.5	1.5
771+000	772+000	10.5	BT	10.5	BT				
772+000	773+000	7.5	BT	7.5	BT	1	1	1.5	1.5
773+000	774+000	10.5	BT			1	1		
774+000	775+000	7.5	BT						
775+000	776+000	10.5	BT			1	1	1.5	1.5
776+000	777+000	10.5	BT			1	1	1.5	1.5
777+000	778+000	10.5	BT			1	1	1.5	1.5
778+000	778+400	10.5	BT			1	1	1.5	1.5
773+000	774+000			7.5	BT			1.5	1.5
774+000	775+000			7.5	BT			1.5	1.5
775+000	776+000			7.5	BT			1.5	1.5
776+000	777+000			7.5	BT			1.5	1.5
777+000	778+000			7.5	BT			1.5	1.5
778+000	779+000			7.5	BT			1.5	1.5
779+000	780+000			7.5	BT			1.5	1.5
780+000	781+000			7.5	BT			1.5	1.5
781+000	782+000	7.5	BT	7.5	BT	1	1	1.5	1.5
782+000	783+000	10.5	BT	10.5	BT				
783+000	784+000	10.5	BT	10.5	BT				
784+000	785+000	7.5	BT	7.5	BT	1	1	1.5	1.5
785+000	786+000	7.5	BT	7.5	BT	1	1	1.5	1.5
786+000	787+000	7.5	BT	7.5	BT	1	1	1.5	1.5
787+000	788+000	7.5	BT	7.5	BT	1	1	1.5	1.5
788+000	789+000	7.5	BT	7.5	BT	1	1	1.5	1.5
789+000	799+000	7.5	BT	7.5	BT	1	1	1.5	1.5
790+000	791+000	7.5	BT	7.5	BT	1	1	1.5	1.5
791+000	792+000	7.5	BT	7.5	BT	1	1	1.5	1.5
792+000	793+000	10.5	BT	10.5	BT				
793+000	794+000	10.5	BT	10.5	BT				
794+000	795+000	7.5	BT	7.5	BT	1	1	1.5	1.5
795+000	796+000	7.5	BT	7.5	BT	1	1	1.5	1.5
796+000	797+000	7.5	BT	7.5	BT	1	1	1.5	1.5
797+000	798+000	7.5	BT	7.5	BT	1	1	1.5	1.5
798+000	799+000	7.5	BT	7.5	BT	1	1	1.5	1.5
799+000	800+000	7.5	BT	7.5	BT	1	1	1.5	1.5
801+000	802+000	7.5	BT	7.5	BT	1	1	1.5	1.5
802+000	803+000	7.5	BT	7.5	BT	1	1	1.5	1.5
803+000	804+000	7.5	BT	7.5	BT	1	1	1.5	1.5

Chainage		Carriageway				Paved Shoulder		Earthen Shoulder	
		Left	Right	Left	Right	Left	Right	Left	Right
From	To	Width	Type	Width	Type	Width	Width	Width	Width
804+000	805+000	7.5	BT	7.5	BT	1	1	1.5	1.5
805+000	806+000	7.5	BT	7.5	BT	1	1	1.5	1.5
806+000	807+000	7.5	BT	7.5	BT	1	1	1.5	1.5
807+000	808+000	7.5	BT	7.5	BT	1	1	1.5	1.5
808+000	809+000	7.5	BT	7.5	BT	1	1	1.5	1.5
809+000	810+000	7.5	BT	7.5	BT	1	1	1.5	1.5
810+000	811+000	7.5	BT	7.5	BT	1	1	1.5	1.5
811+000	812+000	7.5	BT	7.5	BT	1	1	1.5	1.5
812+000	813+000	7.5	BT	7.5	BT	1	1	1.5	1.5
813+000	814+000	7.5	BT	7.5	BT	1	1	1.5	1.5
814+000	815+000	7.5	BT	7.5	BT	1	1	1.5	1.5
815+000	816+000	7.5	BT	7.5	BT	1	1	1.5	1.5
816+000	817+000	7.5	BT	7.5	BT	1	1	1.5	1.5
817+000	818+000	7.5	BT	7.5	BT	1	1	1.5	1.5
818+000	819+000	7.5	BT	7.5	BT	1	1	1.5	1.5
819+000	820+000	7.5	BT	7.5	BT	1	1	1.5	1.5
820+000	821+000	7.5	BT	7.5	BT	1	1	1.5	1.5
821+000	822+000	7.5	BT	7.5	BT	1	1	1.5	1.5
822+000	823+000	7.5	BT	7.5	BT	1	1	1.5	1.5
823+000	824+000	7.5	BT	7.5	BT	1	1	1.5	1.5
824+000	825+000	10.5	BT	10.5	BT	1	1	1.5	1.5
825+000	826+000	10.5	BT	10.5	BT	1	1	1.5	1.5
826+000	827+000	10.5	BT	10.5	BT				
827+000	828+000	10.5	BT	10.5	BT				
828+000	829+000	7.5	BT	7.5	BT	1	1	1.5	1.5
829+000	830+000	7.5	BT	7.5	BT	1	1	1.5	1.5
830+000	831+000	7.5	BT	7.5	BT	1	1	1.5	1.5
831+000	832+000	7.5	BT	7.5	BT	1	1	1.5	1.5
832+000	833+000	7.5	BT	7.5	BT	1	1	1.5	1.5
833+000	834+000	7.5	BT	7.5	BT	1	1	1.5	1.5
834+000	835+000	10.5	BT	10.5	BT	1		1.5	
835+000	835+350	10.5	BT	10.5	BT	1		1.5	

Table 1:3 Road Inventory – Westerly Diversion from Dehu Road towards Katraj

Chainage		Carriageway				Paved Shoulder		Earthen Shoulder	
		Left	Right	Left	Right	Left	Right	Left	Right
From	To	Width	Type	Width	Type	Width	Width	Width	Width
0+000	1+000	7.5	BT	7.5	BT	1	1	1.5	1.5
1+000	2+000	7.5	BT	7.5	BT	1	1	1.5	1.5
2+000	3+000	7.5	BT	7.5	BT	1	1	1.5	1.5
3+000	4+000	10.5	BT	10.5	BT				

Chainage		Carriageway				Paved Shoulder		Earthen Shoulder	
		Left	Right	Left	Right	Left	Right	Left	Right
From	To	Width	Type	Width	Type	Width	Width	Width	Width
4+000	5+000	7.5	BT	7.5	BT	1	1	1.5	1.5
5+000	6+000	7.5	BT	7.5	BT	1	1	1.5	1.5
6+000	7+000	7.5	BT	7.5	BT	1	1	1.5	1.5
7+000	8+000	7.5	BT	7.5	BT	1	1	1.5	1.5
8+000	9+000	7.5	BT	7.5	BT	1	1	1.5	1.5
9+000	10+000	7.5	BT	7.5	BT	1	1	1.5	1.5
10+000	11+000	7.5	BT	7.5	BT	1	1	1.5	1.5
11+000	12+000	7.5	BT	7.5	BT	1	1	1.5	1.5
12+000	13+000	7.5	BT	7.5	BT	1	1	1.5	1.5
13+000	14+000	7.5	BT	7.5	BT	1	1	1.5	1.5
14+000	15+000	7.5	BT	7.5	BT	1	1	1.5	1.5
15+000	16+000	7.5	BT	7.5	BT	1	1	1.5	1.5
16+000	17+000	7.5	BT	7.5	BT	1	1	1.5	1.5
17+000	18+000	7.5	BT	7.5	BT	1	1	1.5	1.5
18+000	19+000	7.5	BT	7.5	BT	1	1	1.5	1.5
19+000	20+000	7.5	BT	7.5	BT	1	1	1.5	1.5
20+000	21+000	7.5	BT	7.5	BT	1	1	1.5	1.5
21+000	22+000	7.5	BT	7.5	BT	1	1	1.5	1.5
22+000	23+000	7.5	BT	7.5	BT	1	1	1.5	1.5
23+000	24+000	7.5	BT	7.5	BT	1	1	1.5	1.5
24+000	25+000	7.5	BT	7.5	BT	1	1	1.5	1.5
25+000	26+000	7.5	BT	7.5	BT	1	1	1.5	1.5
26+000	27+000	7.5	BT	7.5	BT	1	1	1.5	1.5
27+000	28+000	10.5	BT	10.5	BT				
28+000	29+000	7.5	BT	7.5	BT	1	1	1.5	1.5
29+000	30+000	10.5	BT	10.5	BT				

1.4.3 Existing Service Road

Details of existing service road along the project corridor are shown in **Table 1:4**.

Table 1:4 Location of Existing Service Road

Sl No.	Chainage		Side	Width		Length
	From	To		Left	Right	
1	725+000	725+800	Both	7	7	01+600
2	725+800	726+400	Left	7		00+600
3	731+250	732+750	Both	5.5	5.5	03+000
4	732+750	733+650	Both	7	7	01+800
5	733+650	735+500	Both	7	5.5	03+700
6	741+450	742+000	Right		5.5	00+550
7	754+300	755+600	Both	5.5	5.5	02+600
8	756+450	756+650	Left	3		00+200
9	756+650	757+000	Both	3	3	00+700
10	757+200	758+000	Both	7	4	01+600

Sl No.	Chainage		Side	Width		Length
	From	To		Left	Right	
11	764+900	765+150	Both	3.5	3.5	00+500
12	766+700	767+250	Both	7	3.5	01+100
13	767+250	767+800	Both	8.5	3.5	01+100
14	769+200	769+450	Left	3.5		00+250
15	770+600	771+150	Both	7	3.5	01+100
16	771+750	772+150	Both	7	3.5	00+800
17	781+800	782+400	Both	7	7	01+200
18	782+600	784+050	Both	3.5	3.5	02+900
19	792+150	794+200	Both	5.5	5.5	04+100
20	818+300	819+000	Left	505		00+700
21	824+300	825+100	Both	3.5	3.5	01+600
22	825+100	825+250	Right		3.5	00+150
23	825+600	826+200	Right		7	00+600
24	832+000	833+600	Both	5.5	5.5	03+200
25	833+700	833+950	Left	5.5		00+250
26	834+200	834+700	Right		5.5	00+500
27	834+600	835+400	Left	5.5		00+800
28	834+850	835+350	Right		8.5	00+500
29	835+400	835+850	Left	7		00+450
30	835+350	835+850	Right		6.5	00+500
31	01+650	01+850	Left	3.5		00+200
32	02+850	03+150	Right		5.5	00+300
33	03+150	03+550	Both	5.5	5.5	00+800
34	06+100	09+600	Left	5.5		03+500
35	09+600	11+200	Both	5.5	5.5	03+200
36	20+550	21+050	Right		3.5	00+500
37	22+750	23+200	Left	3.8		00+450
38	23+200	23+800	Right		5.5	00+600
39	26+750	27+850	Both	7	7	02+200
TOTAL LENGTH						**50+400**

1.4.4 Bus Bay Locations along the Project Corridor

The details of Bus Bay locations along the project corridor is given in **Table 1:5**

Table 1:5 Bus Bay Locations

Sl No.	Chainage	Side	Location
1	726+500	Left	Satara Y Junction
2	743+600	Left	Village Nagewadi Junction
3	744+375	Left	Village Limb Junction
4	747+060	Left	Village Raigaon
5	752+000	Left	Uditare Khadki Junction
6	822+075	Left	Shindewadi Area

1.4.5 Truck Lay Bye Locations

The details of truck lay bye locations are given **Table 1:6**.

Table 1:6 Truck Lay Bye Locations

Sl No.	Chainage	Side	Location
1	760+655	Left	SH-72 Crossing
2	790+915	Right	Near Panderpur Junction
3	791+010	Left	Near Panderpur Junction
4	794+570	Both	Near Shirwal

1.4.6 Proposed Vehicular Underpass (VUP)

The list of proposed vehicular underpass along the Pune – Satara section of NH 4 are given in **Table 1:7**

Table 1:7 List of Proposed Vehicular Underpass (VUP)

Sl.No	Chainage	Location	Span
1	729+500	Road to Satara Polytechnic	1*20
2	744+510	Road to Village Limb	1*20
3	748+060	Anewadi-Mardhe	1*20
4	751+915	Udtare- Khadki	1*20
5	785+715	Road to village Kaiurdi	1*30
6	797+860	Road to Sarole Village	1*20
7	802+350	Road to Shri Mandir	1*20
8	805+310	Road to Kapurhole	1*20
9	808+980	Road to Village Kanithadi	1*20
10	815+450	Road to village Varve	1*30
11	818+500	Shogini industries	1*30
12	821+190	Road to village Khandanpur	1*30
13	822+965	Road to village Velu	1*30
14	825+830	To old NH-4, Ashoka build cons.Plant	1*30
15	839+255	Shubhpuram-Panorama Meadows	1*30
16	840+910	Funkey building	1*30
17	844+580	Bavdhan	1*12
18	844+975	Bavdhan-Flame campus	1*30
19	846+400	HEMRL entrance-Pashan	1*12
20	849+300	Hotel Amrit	1*30
21	853+970	Hinjewadi	1*30
22	854+310	Hinjewadi	1*30
23	861+040	Kivli-Rawat intersection	1*30

1.4.7 New Minor Bridges on Service Road

The list of proposed new minor bridges on service road along the Pune – Satara section of NH 4 are given in **Table 1:8**.

Table 1:8 List of Proposed New Minor Bridges on Service Road

Sl. NO	Chainage	Remarks
1	732+470	Bridge on left service road
		Bridge on right service road
2	733+550	Bridge on left service road
		Bridge on right service road
3	736+310	Bridge on left service road
		Bridge on right service road
4	737+315	Bridge on left service road
		Bridge on right service road
5	737+845	Bridge on left service road
		Bridge on right service road
6	742+930	Bridge on left service road
		Bridge on right service road
7	743+760	Bridge on left service road
		Bridge on right service road
8	743+900	Bridge on left service road
		Bridge on right service road
9	745+175	Bridge on left service road
		Bridge on right service road
10	747+585	Bridge on left service road
		Bridge on right service road
11	747+800	Bridge on left service road
		Bridge on right service road
12	749+575	Bridge on left service road
		Bridge on right service road
13	750+170	Bridge on left service road
		Bridge on right service road
14	751+600	Bridge on left service road
		Bridge on right service road
15	757+460	Bridge on left service road
		Bridge on right service road
16	758+370	Bridge on left service road
		Bridge on right service road
17	759+640	Bridge on left service road
		Bridge on right service road
18	760+900	Bridge on left service road
		Bridge on right service road
19	761+130	Bridge on left service road
		Bridge on right service road
20	763+280	Bridge on left service road
		Bridge on right service road
21	765+090	Bridge on left service road
		Bridge on right service road
22	765+840	Bridge on left service road
		Bridge on right service road
23	767+160	Bridge on right service road
24	768+525	Bridge on left service road
		Bridge on right service road
25	769+180	Bridge on left service road
		Bridge on right service road
26	771+595	Bridge on right service road
27	778+885	Bridge on left service road

Sl. NO	Chainage	Remarks
28	780+880	Bridge on right service road
29	782+070	Bridge on left service road
		Bridge on right service road
30	782+500	Bridge on right service road
31	783+570	Bridge on left service road
		Bridge on right service road
32	783+940	Bridge on left service road
		Bridge on right service road
33	787+210	Bridge on left service road
		Bridge on right service road
34	789+560	Bridge on right service road
		Bridge on right service road
35	790+510	Bridge on left service road
		Bridge on right service road
36	791+855	Bridge on left service road
		Bridge on right service road
37	793+555	Bridge on left service road
		Bridge on right service road
38	794+460	Bridge on left service road
		Bridge on right service road
39	796+395	Bridge on right service road
		Bridge on right service road
40	800+850	Bridge on left service road
		Bridge on right service road
41	803+080	Bridge on left service road
		Bridge on right service road
42	804+745	Bridge on left service road
		Bridge on right service road
43	805+920	Bridge on left service road
		Bridge on right service road
44	808+910	Bridge on right service road
		Bridge on right service road
45	809+500	Bridge on left service road
		Bridge on right service road
46	815+160	Bridge on left service road
		Bridge on right service road
47	817+840	Bridge on left service road
		Bridge on right service road
48	820+570	Bridge on left service road
		Bridge on right service road
49	823+655	Bridge on left service road
		Bridge on right service road
	Westerly Diversion	
50	28+735/836+615	Bridge on left service road
51	27+890/837+460	Bridge on left service road
		Bridge on right service road
52	27+650/837+715	Bridge on left service road
		Bridge on right service road
53	21+770/844+280	Bridge on left service road
		Bridge on right service road

1.4.8 New Major Bridges

The list of new major bridges along the Pune–Satara section of NH 4 are given in **Table 1:9**

Table 1:9 Proposed New Major Bridges

Sl No.	Chainage (Existing/Proposed)	Left/Right Bridges	Super Structure Type	Span Arrangement of Proposed Bridge (NxL)	No of Lanes
1	735+909	Left Bridge	PSC T Beam	2x35.2+1x26.6	3
2	77+557	Right Bridge	PSC T Beam	9x25.2	3
3	50+050/860+350	Left Bridge	PSC T Beam	3x30.52	3
4		Right Bridge	PSC T Beam	3x30.52	3

1.5 Objectives & Scope of Work

The main objective of the study is to assess the future traffic and toll potential of project along with related Operation & Maintenance expenditure involved. The scope of consultancy services broadly covers the following:

- ✓ 7 days Video graphic traffic count at the existing toll plazas to derive the Average Daily Traffic (ADT).
- ✓ 24 hours Origin-Destination Survey at all the toll plaza locations to assess the existing travel pattern of vehicles plying on the project road including origin and destination.
- ✓ Analysis of past traffic data provided by the Concessionaire.
- ✓ Establish seasonality factors using toll traffic data.
- ✓ Estimation of Annual Average Daily Traffic (AADT).
- ✓ Estimation of traffic diversion/leakage, if any.
- ✓ Traffic projections for the remaining concession period.
- ✓ Estimation of toll revenue as per categories of traffic streams stipulated in the Concession Agreement for the remaining concession period.
- ✓ Prepare a Report on Revenue and Traffic Forecast.
- ✓ O&M cost analysis (O&M Cost per km) including projections based on the historical cost incurred/ booked by the toll operator.

1.6 Report Structure

For the above Scope of Work, Systra MVA has carried out a series of investigations. This report presents details on various surveys carried out for estimation of toll traffic and revenue on the Project Road, as well as findings from the analysis of survey data.

This Final Report is organized under five Chapters. **Chapter 1** deals with the Introduction and objectives of the study and the project corridor details. **Chapter 2** covers Study Approach & Methodology and a review of the secondary data collected is presented in **Chapter 3**. **Chapter 4** deals with the traffic surveys and their analysis. Estimation of traffic growth rates, traffic forecast, toll revenue estimation and O&M Cost is presented in **Chapter 5**.

Chapter 2
Study Approach & Methodology

2.1 General

The estimation of tollable traffic requires development of well-defined objectives and traffic database containing relevant information concerning traffic flow characteristics. The broad methodology followed for the present study is presented in **Figure 2:1**.

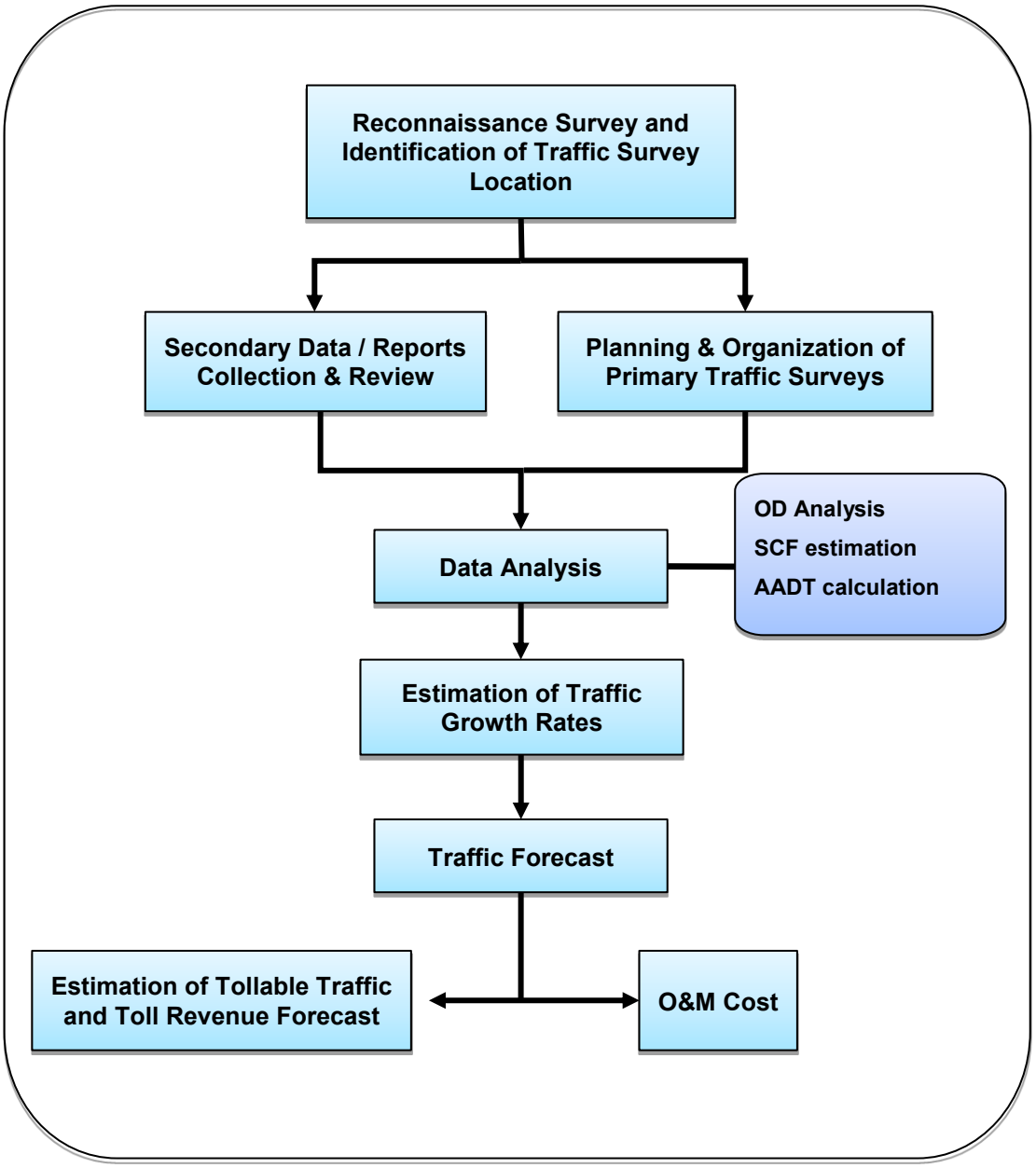

Figure 2:1: Broad Study Methodology

2.2 Primary Traffic Surveys

For traffic projections and toll revenue estimation, base year traffic volume on the project corridor and traffic characteristics like *local, through* traffic, proportion of frequent vehicles opting for return pass, monthly pass, etc. are required. To obtain these details, various surveys and studies were organized. The various traffic surveys carried out as part of the present study, the survey methodology and the survey schedule are presented in detail in the following sections. The review of secondary data collected is presented in **Chapter 3.**

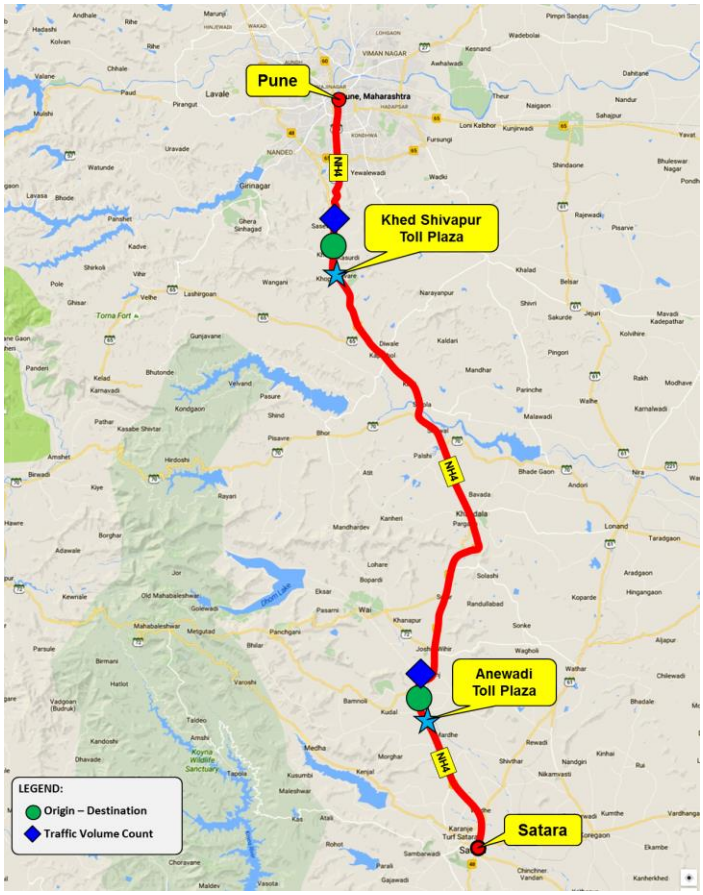

Figure 2:2: Traffic Survey Locations

The following primary surveys, in addition to the secondary data from various sources, are identified to establish the traffic & travel characteristics on the project corridor:

1. Detailed Inventory within project corridor and adjoining roads in Project Influencing Area
2. Video graphic Traffic Volume Count
3. Origin and Destination Survey

The project corridor and the survey location are schematically shown in **Figure 2:2** . It can be observed that the entire project stretch is covered extensively and appropriately in terms of capturing the traffic flows and characteristic of the project road. The survey methodology and the schedule is discussed in the following sections.

2.3 Classified Traffic Volume Count Survey

The 7-day (24 hours, both directions) Video graphic traffic volume count survey was carried out at the two toll plaza locations (Khed Shivapur Toll Plaza - km 819.240 and Anewadi Toll Plaza - km 748.60). Traffic was recorded using video cameras (Refer **Figure 2:3**) and data was extracted. Sufficient lighting arrangement was ensured for the video recording during night time. The traffic volume count data was processed using the commonly used spread sheet package. The processed hourly traffic volume data was compiled direction-wise.

Figure 2:3: Camera Location and Recorded Video for Extraction

Data collected from site was analyzed to study daily variation and hourly variation of traffic, traffic composition and Average Daily Traffic (ADT) at the survey location. The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress as per IRC: 64-1990 *Guidelines for Capacity of Roads in Rural Areas* were adopted.

Average Daily Traffic (ADT)

Daily traffic volume by vehicle type and direction were added separately and averaged to determine the Average Daily Traffic.

Annual Average Daily Traffic (AADT)

To account for the seasonal variation in the traffic, seasonal correction factors were worked out using past toll traffic data from the toll operator. Seasonal variation factors were estimated for each category of vehicle.

2.4 Origin and Destination Survey

The origin and destination (OD) survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic along the study corridor. The OD survey was carried out for one day (24 hours) on a typical weekday at the toll plaza locations (Khed Shivapur Toll Plaza - km 819.240 and Anewadi Toll Plaza - km 748.60) (Refer **Figure 2:4**)

Figure 2:4: Origin Destination Survey

Roadside Interview method was adopted for conducting the survey. The vehicles were stopped on random sample basis and the drivers/ users were interviewed by trained enumerators to collect the needed information/data. The survey format is finalized keeping in view the existing concessions as per Concession Agreement. The pertinent information in respect of travel characteristics including the following were collected during the OD Surveys;

- Origin zone & Destination zone of the trip
- Trip Purpose
- Frequency of travel
- Trip Length
- Type of Commodity (Commercial Vehicles)

2.5 Secondary Data collection

In addition to the data collected through primary surveys, the following data/ information was collected from various authorities. Review of the secondary data collected is presented in **Chapter 3.**

- Registered motor vehicles data from the Road Transport Authority (RTA) for the Project Influencing states.
- Past toll traffic data
- Net State Domestic Product for the major influencings states of project corridor traffic.
- Competing facilities that could affect the traffic on project road in future.

2.6 Survey Schedule

The traffic surveys were carried out in consultation with the Client and survey schedule is presented in the **Table 2:1**.

Table 2:1: Survey Schedule

S. No	Type of Surveys	Chainage Location	Duration
1	7 Day Video graphic Volume Count	Km 819.240 (Khed Shivapur Toll Plaza)	28th September to 5th October 2016 (7 Days)
2	Origin Destination Survey	Km 819.240 (Khed Shivapur Toll Plaza)	24 Hours (29th September 2016)

S. No	Type of Surveys	Chainage Location	Duration
3	7 Day Video graphic Volume Count	Km 748.60 (Anewadi Toll Plaza)	28th September to 5th October 2016 (7 Days)
4	Origin Destination Survey	Km 748.60 (Anewadi Toll Plaza)	24 Hours (30th September 2016)

2.7 Traffic Data Analysis

Detailed analysis of the primary survey data and secondary data was undertaken to assess the traffic and travel characteristics of the project corridor. Daily traffic volume by vehicle type and direction at the survey location was used in determining Average Daily Traffic (ADT). The Annual Average Daily Traffic (AADT) was determined after applying seasonal correction factors to ADT. The tollable traffic was assessed after considering the toll exempted vehicles.

2.8 Traffic Forecast

The accuracy of traffic forecast depends upon the accuracy of the growth factors. To establish the future traffic growth rates, following approaches were explored.

- Growth in registered motor vehicles
- Transport Demand Elasticity Approach

The growth rates are assessed for three scenarios viz. optimistic, realistic and pessimistic. Based on these growth rates, traffic was projected for the reaming concession period. The diversion of traffic due to competing facilities, if any, as well as the generated traffic due to proposed new developments is also taken into consideration while estimating the future traffic.

2.9 Toll Revenue Estimation

The project is a toll road project. Tollable traffic on section of the project corridor was derived from the analysis of primary surveys. The base year tollable traffic was projected to future years using the adopted growth rates and toll revenue is estimated for each horizon year using the specified toll rates as per the Concession Agreement. While estimating the toll revenue, toll exempted vehicles and various applicable concessions, if any, was taken into consideration.

2.9.1 Toll Exempted Vehicles

The toll exempted vehicles and the exempted dignitaries as per NHAI are presented in **Table 2:2**.

Table 2:2 Toll Exempted Vehicles

Exempted Vehicles	Exempted Dignitaries
i) Defence Vehicles	i) President of India
ii) Police vehicles	ii) Vice- President of India
iii) Vehicles with VIP symbol	iii) Central and State Minister while in vehicles

Exempted Vehicles	Exempted Dignitaries
iv) Fire Fighting vehicles	iv) Leader of Opposition in Lok Sabha or Rajya Sabha or State Legislatures having the status of Cabinet Minister, while in vehicles
v) Ambulances	v) Governors of States
vi) Funeral vans	vi) Lieutenant Governors of Union Territories
vii) Post and Telegraphs Department's vehicles	vii) Speakers or Chairman of Central and State Legislatures while in vehicles
viii) Central and State Govt. vehicles on duty	viii) Executive councillors
	ix) Foreign dignitaries on State visit to India
	x) Foreign Diplomats Stationed in India using cars with CD or CC Number Plate

Chapter 3
Review of Secondary Data

3.1 General

The project corridor connects two most dynamic industrial districts of Maharashtra (Pune and Satara). The traffic intensity on any highway is a function of population, Net State Domestic Product (NSDP)/ Net District Domestic Product (NDDP) and number of registered motor vehicles in the influencing area. The growth in each parameter will have significant impact on the traffic intensity on the project corridor. For the estimation of future traffic on the corridor and toll revenues, Consultants have collected extensive secondary information/ data including the following:

- ❖ Population of Maharashtra State and other influencing districts of Maharashtra
- ❖ Net State Domestic Product (NSDP) of Maharashtra State and major influencings states of project corridor traffic
- ❖ Registered Motor Vehicles in Pune, Satara, Mumbai and Thane
- ❖ Past traffic data at the two toll plazas located on project road

3.2 Population of Maharashtra

Growth in population in project road influence area will have significant impact on the passenger traffic on the project corridor. **Table 3:1** shows the population of Maharashtra State and Pune, Mumbai, Thane and Satara districts.

Table 3:1 Population Details

(in Lakhs)

Year	Maharashtra	Pune District	Mumbai	Thane District	Satara District
1951	320.03 --	19.51 --	29.94 --	12.82 --	11.75 --
1961	395.54 **(24%)**	24.67 **(26%)**	41.52 **(39%)**	16.53 **(29%)**	14.3 **(22%)**
1971	504.12 **(27%)**	31.78 **(29%)**	59.7 **(44%)**	22.82 **(38%)**	17.27 **(21%)**
1981	627.83 **(25%)**	41.64 **(31%)**	82.43 **(38%)**	33.52 **(47%)**	20.39 **(18%)**
1991	789.37 **(26%)**	55.33 **(33%)**	99.26 **(20%)**	52.49 **(57%)**	24.51 **(20%)**
2001	968 **(23%)**	72.33 **(31%)**	119.78 **(21%)**	81.32 **(55%)**	28.09 **(15%)**
2011	1123 **(16%)**	94.29 **(30%)**	124.42 **(3.8%)**	110.60 **(36%)**	30.04 **(7%)**

Source : Census of India, District Socio-Economic Review of Pune, Thane and Satara

The average decadal growth in Maharashtra during 1951-2011 is about 23%. The decadal growth observed during 2001-2011 is maximum in Thane District (36%) followed by Pune District (30%). Minimum growth is in Mumbai district (3.8%) followed by Satara District (7%)

3.3 Net State Domestic Product (NSDP) of Influencing States

In estimating travel demand elasticity, it is logical to relate growth in passenger and freight traffic with Net State Domestic Product (NSDP) and population. The compiled data of NSDP at constant prices (2004-2005) for Influencing States are presented in **Table 3:2**.

Table 3:2 NSDP of Influencing States at Constant Prices (2004-2005)

Year	Maharashtra		Gujarat		Karnataka		Tamil Nadu	
	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change	NSDP in Rs. Crores	% Change
2004-05	370023	--	172265	--	148730	--	193645	--
2005-06	423633	14%	197270	15%	164029	10%	221588	14%
2006-07	481985	14%	213954	8%	181088	10%	256286	16%
2007-08	538083	12%	239253	12%	203809	13%	272340	6%
2008-09	546533	2%	249480	4%	218307	7%	286744	5%
2009-10	599338	10%	284732	14%	218362	0%	316759	10%
2010-11	667625	11%	315892	11%	240818	10%	359960	14%
2011-12	698086	5%	336887	7%	248040	3%	386508	7%
2012-13	739040	6%	356478	6%	259500	5%	397471	3%
2013-14	811268	10%	385472	8%	274531	6%	427182	7%
2014-2015	868000	7%	411179	7%	299959	9%	479546	12%

Source: Economic Survey of respective States

3.4 Registered Motor Vehicles in Project Road Influencing Districts

Registered motor vehicles growth in the project corridor influence area is considered as an alternative approach in estimating the traffic growth in the absence of any additional information or usable past traffic data on the project road. Also, this can be used in determining the travel demand elasticity. Consultants have collected the data related to register motor vehicles Maharashtra and the same are presented in **Table 3*:3***. The percentage variation is presented in **Table 3:4.**

Table 3:3 Registered Motor Vehicles (Maharashtra)

Year	Car	Bus	LCV	Trucks & MAV
2005-06	1587777	66754	334741	287230
2006-07	1763450	71187	383854	316502
2007-08	1953826	77042	436725	344267
2008-09	2118630	79073	478975	366642
2009-10	2332524	83816	521692	374705
2010-11	2590223	89861	583847	389941
2011-12	2731146	89540	656407	411418
2012-13	3045945	98329	739725	440866
2013-14	3306642	108214	803128	470128
2014-15	3610028	107012	868632	491582
Avg Annual GR (2005-06 TO 2014-15)	9.56%	5.38%	11.18%	6.15%

** Source: Motor Transport Statistics of Maharashtra*

Table 3:4 Growth Rate of Registered Motor Vehicles

Year	Car	Bus	LCV	Trucks &MAV
2005-06	--	--	--	--
2006-07	11%	7%	15%	10%
2007-08	11%	8%	14%	9%
2008-09	8%	3%	10%	6%
2009-10	10%	6%	9%	2%
2010-11	11%	7%	12%	4%
2011-12	5%	0%	12%	6%
2012-13	12%	10%	13%	7%
2013-14	9%	10%	9%	7%
2014-15	9%	-1%	8%	5%

The growth rate of total registered vehicles in Maharashtra during 2014-2015 is 9%, -1% (decrease in growth rate), 8% and 5% for Car, Bus, LCV and Truck/MAV respectively.

3.5 Toll Traffic Data from Existing Toll Plazas

The toll traffic data for the last 3 years (April 2013 to June 2016) is collected for the two toll plazas, viz. Khed Shivapur and Anewadi. The summary of the data collected is presented in **Table 3:5** for Anewadi and Khed Shivapur Toll Plazas. This data is used for assessing the seasonality factors and trend of traffic growth on the project corridor.

Table 3:5 Toll Traffic Data

Month/ Year	Khed Shivapur					Anewadi				
	Car	LCV	Bus	Truck	MAV	Car	LCV	Bus	Truck	MAV
April 2013	14860	2834	2616	1508	2333	10538	2278	2626	1394	2116
May 2013	19161	2849	2087	2371	2180	14032	2314	2530	1746	2029
June 2013	15269	2692	2303	1600	2189	10727	2207	2335	1491	2005
July 2013	11988	2714	2345	1240	2172	8390	2156	2319	1118	2007
August 2013	12849	2690	2452	1220	2187	8910	2079	2355	1128	1998
September 2013	12988	2664	2323	1427	2281	9576	2130	2289	1330	2065
October 2013	12170	2753	2495	1276	2402	8781	2241	2392	1193	2166
November 2013	16839	2551	1952	1630	2156	12334	2007	1954	1505	1956
December 2013	16536	2836	2527	1481	2383	11802	2264	2388	1361	2142
January 2014	14088	2807	1405	2323	2323	9903	2250	2435	1289	2170
February 2014	14084	2945	1369	2357	2574	10232	2388	1986	1694	2361
March 2014	13278	2921	1322	2317	2640	9348	2359	1874	1734	2366
April 2014	14490	2811	2567	1538	2482	10439	2253	2409	1700	2258
May 2014	19085	2914	1562	2693	2360	14067	2342	2548	1713	2135
June 2014	15938	2826	2423	1656	2512	11320	2290	2307	1646	2252
July 2014	12188	2692	2264	1279	2457	8765	2141	1832	1598	2225
August 2014	13376	2627	2305	1374	2399	9805	2074	1906	1581	2173
September 2014	11502	2676	2407	1320	2562	8659	2172	1899	1677	2298
October 2014	15316	2595	2185	1683	2413	11509	2063	2140	1521	2185
November 2014	14737	2812	2338	1474	2729	10599	2215	1900	1629	2462

Month/ Year	Khed Shivapur					Anewadi				
	Car	LCV	Bus	Truck	MAV	Car	LCV	Bus	Truck	MAV
December 2014	16889	2899	2247	1649	2827	12297	2227	1997	1592	2462
January 2015	16228	2954	2300	1642	2749	11291	2244	2057	1612	2449
February 2015	14778	3089	2133	1704	2887	10860	2456	1858	1707	2581
March 2015	13357	3000	1987	1694	2821	9842	2424	1808	1722	2537
April 2015	16029	3043	2534	1623	2855	12047	2456	2221	1739	2556
May 2015	21438	3109	2791	1536	2800	16043	2474	2413	1592	2460
June 2015	16807	2989	2451	1535	2776	11875	2374	2131	1592	2470
July 2015	14081	2918	2111	1598	2804	9782	2289	1852	1639	2549
August 2015	14849	2897	2093	1593	2729	10438	2272	1852	1627	2476
September 2015	15099	2934	2280	1622	2795	11247	2325	1988	1612	2478
October 2015	14754	3124	2090	1681	2827	10892	2454	1825	1594	2393
November 2015	19167	2836	2515	1448	2682	14313	2254	2248	1477	2424
December 2015	18572	3005	2341	1554	2987	13600	2439	1901	1617	2713
January 2016	17276	3012	2346	1516	3014	12559	2441	2007	1576	2730
February 2016	15920	3196	2188	1630	3147	11787	2606	1968	1721	2876
March 2016	15749	3182	2136	1681	3196	11790	2602	1916	1823	2931
April 2016	17687	3153	2604	1645	3069	13866	2568	2307	1758	2779
May 2016	21926	3258	2903	1681	3164	16942	2634	2618	1746	2790
June 2016	17214	3031	2467	1710	2984	12604	2466	2202	1755	2699
July 2016	15136	2937	2208	1622	2960	10960	2362	1912	1661	2600
August 2016	14469	2978	2140	1661	2918	11052	2378	1915	1731	2624
September 2016	14958	2947	2358	1614	2893	12471	2530	2094	1710	2622

Source: Reliance

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3:6: Tollable Traffic Count by Category of Vehicles

Modes	For the FY ended March 31, 2016			For the six months ended September 30, 2016		CAGR FY14 – FY16 (%)
	2014	2015	2016	2015	2016	
Car(1)	4,679,420	4,807,986	5,426,785	2,654, 801	2,799,487	8%
LCV(2)	929,612	943,869	1,014,970	506, 100	516,344	4%
Bus/Truck(3)	1,376,020	1,380,816	1,393,280	727, 263	735,672	1%
Multi-axle(4)	815,591	908,972	1,011, 351	495,737	525,276	11%
Total	7,800,643	8,041,642	8,846,387	4,383,901	4,576,777	6%

Source: TMS Data

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

3.6 Historical Annual Average Daily Tollable Traffic

The annual average daily tollable traffic for the project increased to 42,842 PCUs in 2016 from 38,006 PCUs in 2014, representing a CAGR of 6%. The **Table 3:7** below sets forth the annual average daily tollable traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3:7: Historical Tollable Annual Average Daily Traffic

Modes	For the FY ended March 31,			For the six months ended September 30,		CAGR FY14 –FY16 (%)
	2014	2015	2016	2015	2016	
Car(1)	12,820	13,173	14,827	14, 507	15,297	8%
LCV(2)	2,547	2,586	2,773	2,765	2,821	4%
Bus/Truck(3)	3,770	3,783	3,807	3,974	4,020	0%
Multi-axle(4)	2,234	2,490	2,763	2,708	2,870	11%
Total	21,372	22,032	24,171	23,955	25,009	6%
Total PCUs	38,006	39,607	42,842	42,768	44,506	6%

Source: TMS Data

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On an average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the PS Project's total traffic mix, 60%, 12%, 17% and 11% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 61%, 11%, 16%, and 12% of tollable traffic, respectively.

3.7 Toll Structure at Existing Toll Plazas

Existing toll structure including toll concessions at the two toll plazas on the project corridor is summarized in **Table 3:8**.

Table 3:8 Toll Structure at Existing Toll Plazas (2016-2017)

Toll Plaza	Vehicle Type	Toll Rates in Rs.		
		Single Journey	Return Journey Within a day	Monthly Pass (50 Journey)
Khed Shivapur	Car/ Jeep/ Van	80	125	2740

Toll Plaza	Vehicle Type	Toll Rates in Rs.		
		Single Journey	Return Journey Within a day	Monthly Pass (50 Journey)
	Light Commercial Vehicle/ Light Goods Vehicle/ Min Bus	135	200	4430
	Bus or Truck (2 Axles)	280	420	9280
	HCM/ MAV (3 to 6 Axles)	435	655	14550
	Oversized vehicles (7 or more axles)	530	795	17715
Anewadi	Car/ Jeep/ Van	55	85	1905
	Light Commercial Vehicle/ Light Goods Vehicle/ Min Bus	90	140	3075
	Bus or Truck (2 Axles)	195	290	6440
	HCM/ MAV (3 to 6 Axles)	305	455	10100
	Oversized vehicles (7 or more axles)	370	555	12295

The rates for monthly pass applicable for local non-commercial vehicle resides within a distance 20 km from the plaza for the financial year 2016-2017 shall be Rs. 235.

Chapter 4
Traffic Surveys and Analysis

4.1 General

This Chapter presents details about the various traffic surveys carried out as part of the present study and the survey data analysis. The results of analysis will form input for estimation of tollable traffic and toll revenue.

4.2 Classified Traffic Volume Count Survey

Video graphic traffic volume count survey was carried out at two locations on the project corridor; Khed Shivapur Toll Plaza (km 819.240) and Anewadi Toll Plaza (km 748.600). The traffic count survey was carried out for 7 days, from 28th September to 5th October 2016. The video graphic data was extracted for all the 7 days. During the data extraction, toll exempted vehicles were count separately. The extracted video graphic data was analyzed to study the hourly variation and daily variation of traffic, peak hour share, traffic composition and Average Daily Traffic (ADT) at all the survey locations. Seasonality factors were applied for obtaining the Annual Average Daily Traffic (AADT).

4.3 Passenger Car Units

The various vehicle types having different sizes and characteristics were converted into equivalent passenger car units. The Passenger Car Unit (PCU) factors recommended by Indian Roads Congress in *Guidelines for Capacity of Roads in Rural Areas* (IRC: 64-1990) were used (**Table 4:1**). The PCU factor for Auto Rickshaw is considered as 0.75 based on the latest research done by IIT Bombay and other research organisations.

Table 4:1 PCU Factors

Vehicle Type	PCU Factor	Vehicle Type	PCU Factor
Car/Jeep	1.00	LCV	1.50
Van/Tempo (passenger)	1.00	2-Axle Truck	3.00
Mini Bus	1.50	3-Axle Rigid Truck	3.00
Standard Bus	3.00	Multi Axle Vehicles	4.50

Source: Guidelines for Capacity of Roads in Rural Areas (IRC 64-1990)

4.4 Average Daily Traffic

Daily traffic volume by vehicle type and direction is added separately and averaged to determine the Average Daily Traffic (ADT). ADT, observed at the two survey locations, in vehicles and in PCUs, are presented in **Table 4:2** and shown in **Figure 4:1**.

Table 4:2 Average Daily Traffic on the Project Corridor

Mode	ADT			
	Khed Shivapur		Anewadi Toll Plaza	
	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)
2 Wheelers	10962	5481	9621	4810
Auto Rickshaw	526	395	233	175
Tata Magic	16	16	22	22
Car, Jeep & Van	17959	17959	12408	12408
Mini Bus	375	563	151	226
School/Inst. Bus	48	144	21	64

Mode	ADT			
	Khed Shivapur		Anewadi Toll Plaza	
	ADT (no)	ADT (PCU)	ADT (no)	ADT (PCU)
Government Bus	1263	3789	1086	3258
Private Bus	931	2793	821	2463
LCV	3087	4631	2904	4356
2 Axle Truck	1885	5656	2048	6145
3 Axle Truck	1240	3721	1266	3798
MAV (4- 6 Axle)	1759	7915	1449	6521
7 and More Axle Truck	4	24	3	17
Tractor	5	7	20	29
Tractor Trailer	5	24	22	100
Car – Exempted	1588	1588	2238	2238
Ambulance	27	40	40	60
Bus – Exempted	1	2	7	20
LCV – Exempted	17	26	101	151
2-Axle – Exempted	0	1	13	40
3-Axle – Exempted	0	0	1	2
Total	**41699**	**54775**	**34475**	**46905**

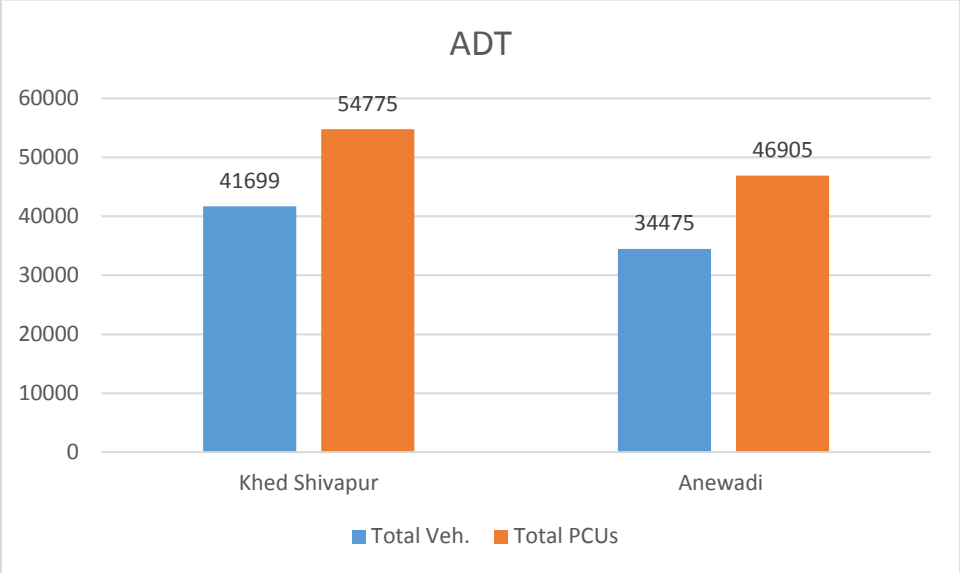

Figure 4:1 Average Daily Traffic

4.5 Daily Variation of Total Traffic

Daily traffic variation in terms of vehicles as well as in PCUs at each of the survey locations is presented in **Table 4:3** and graphically shown in **Figure 4:2** and **Figure 4:3**.

Table 4:3 Daily Variation of Total Traffic

Date	Day	Khed Shivapur Toll Plaza		Anewadi Toll Plaza	
		Total Vehicles	Total PCUs	Total Vehicles	Total PCUs
28-Sep-16	Wednesday	41322	55151	32165	46536
29-Sep-16	Thursday	44132	57417	31641	45778
30-Sep-16	Friday	41590	57068	32857	46803
01-Oct-16	Saturday	40860	53420	32288	45818

Date	Day	Khed Shivapur Toll Plaza		Anewadi Toll Plaza	
		Total Vehicles	Total PCUs	Total Vehicles	Total PCUs
02-Oct-16	Sunday	44100	58673	35739	49574
03-Oct-16	Monday	38992	47835	44834	49321
04-Oct-16	Tuesday	40900	53865	31803	44506
Average Traffic		**41699**	**54775**	**34475**	**46905**

The salient observations at each survey location are as follows.

- ❖ Khed Shivapur toll plaza has registered maximum PCUs on Sunday. Tuesday and Saturday can be considered as average traffic days.
- ❖ Anewadi toll plaza has registered maximum PCUs of 49,574 on Sunday. Friday can be considered as average traffic day.

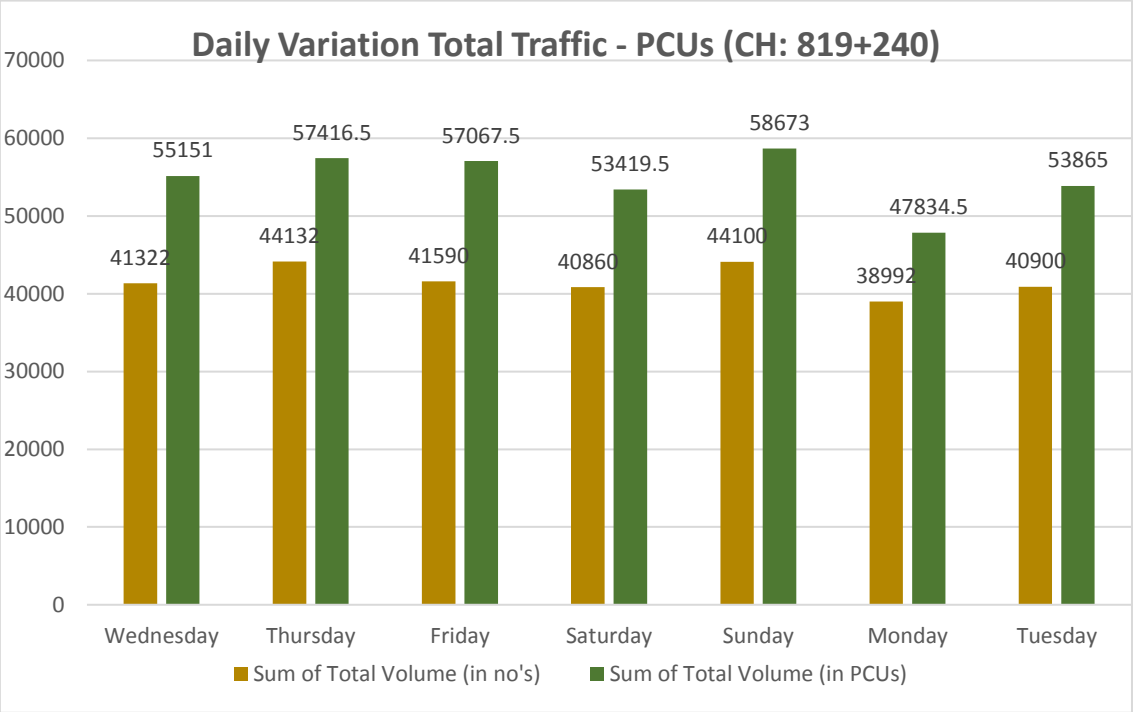

Figure 4:2 Daily Variation of Traffic – Khed Shivapur Toll Plaza

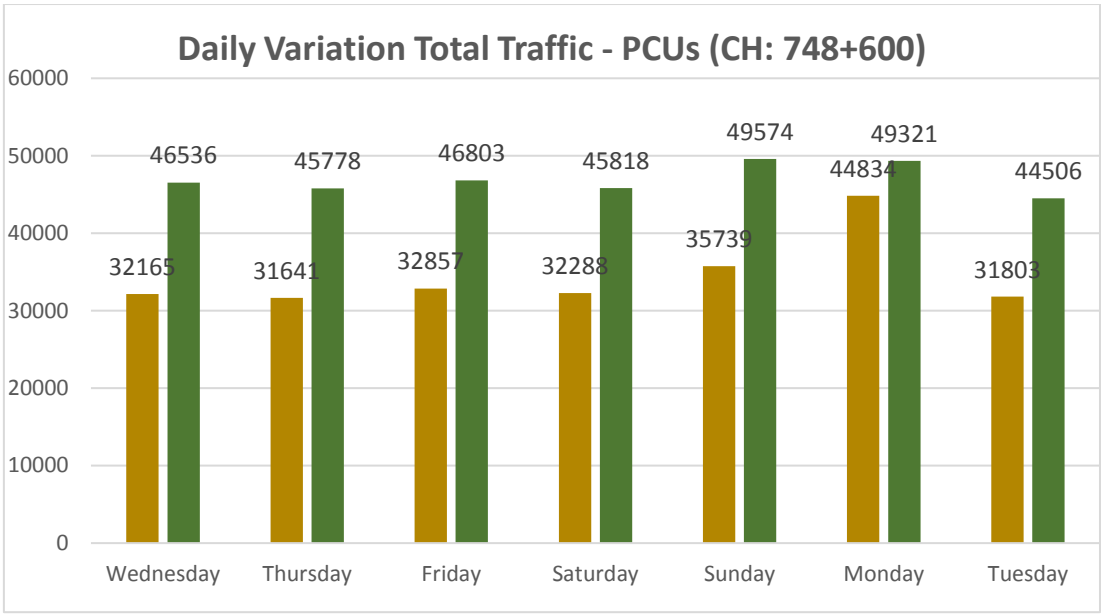

Figure 4:3 Daily Variation of Traffic –Anewadi Toll Plaza

The mode-wise tollable traffic breakup for the 7 days of traffic count survey and the ADT at the two survey locations are presented in **Table 4:4** and **Table 4:5**.

Table 4:4 Mode-wise Tollable Traffic – Khed Shivapur

Mode	Khed Shivapur						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Car	16797	18146	16140	19097	22415	15997	17232
LCV	3940	3940	3798	3286	3452	2654	3170
Bus	2230	2274	2352	2216	2318	2104	2202
Truck	1880	2064	2134	1586	2032	1600	1902
MAV	3192	3096	3626	2770	2980	2266	3064
Over Sized Vehicles	2	12	2	8	2	0	2

Table 4:5 Mode-wise Tollable Traffic – Anewadi

Mode	Anewadi						
	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday
Car	11696	11262	11417	13902	16801	9705	12229
LCV	3347	3221	3377	2948	3272	2309	2911
Bus	1932	1948	1931	2019	2135	1685	1848
Truck	2106	2157	2268	2066	1991	1741	2010
MAV	3067	2981	3016	2515	2592	2144	2690
Over Sized Vehicles	7	4	5	2	0	0	2

4.6 Average ADT

Location-wise variation of toll traffic with respect to average in terms of vehicles and PCUs observed at the survey locations is presented in **Table 4:6.**

Table 4:6 Minimum, Maximum and Average Daily Traffic

Location	Khed Shivapur		Anewadi	
	Total Vehicles	Total PCUs	Total Vehicles	Total PCUs
ADT	41699	54775	34475	46905
Maximum Daily Traffic	44132	58673	44834	49574
Minimum Daily Traffic	38992	47835	31641	44506
% Variation of Max Traffic w.r.t. ADT	6%	7%	23%	5%
% Variation of Min Traffic w.r.t. ADT	7%	15%	9%	5%

The salient observations are as follows:

- ❖ At Khed Shivapur toll plaza, the minimum variation in terms of PCUs (15% with respect to ADT) and maximum variation in terms of PCU's (7% with respect to ADT).
- ❖ Anewadi toll plaza has minimum variation in terms of PCUs (5% with respect to ADT) and maximum variation in terms of vehicles (9% with respect to ADT).

4.7 Hourly Variation of Traffic

Average hourly variation of toll traffic observed at the two survey locations is presented in **Figure 4:4** and **Figure 4:5**. Important inferences drawn from analysis are presented below:

- ➢ At *Khed Shivapur Toll Plaza location*, it is observed that peak period occurs between 18.00 hours and 19.00 hours with maximum peak hour traffic of 3300 PCUs.
- ➢ At *Anewadi Toll Plaza location*, it is observed that peak period occurs between 10.00 hours and 11.00 hours with maximum peak hour traffic of 2,748 PCUs

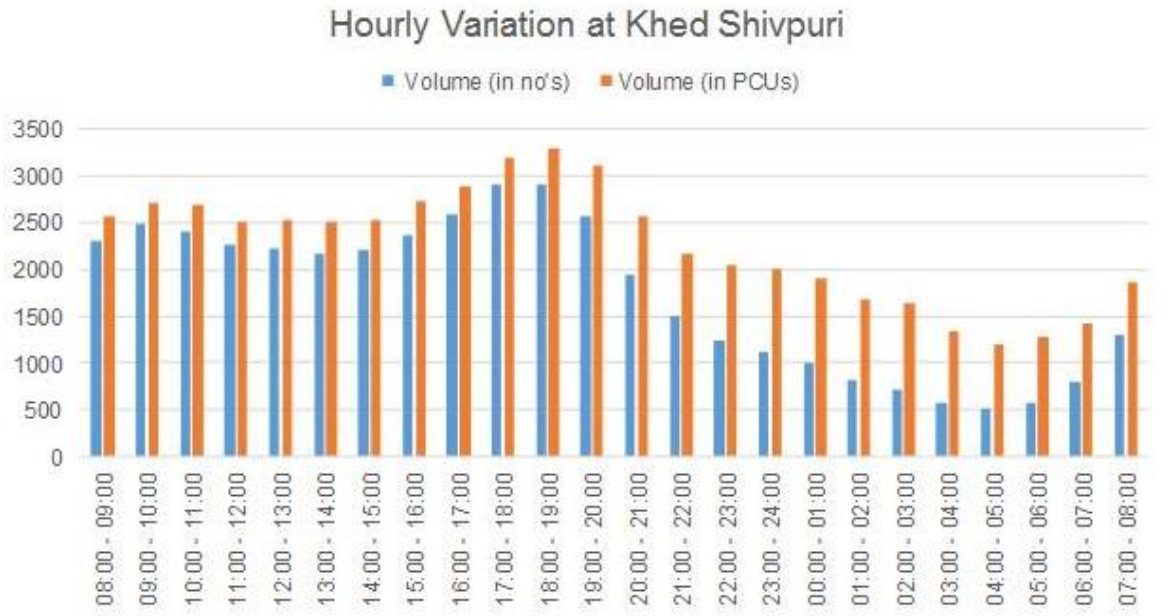

Figure 4:4 Hourly Variation of Traffic –Khed Shivapur Toll Plaza

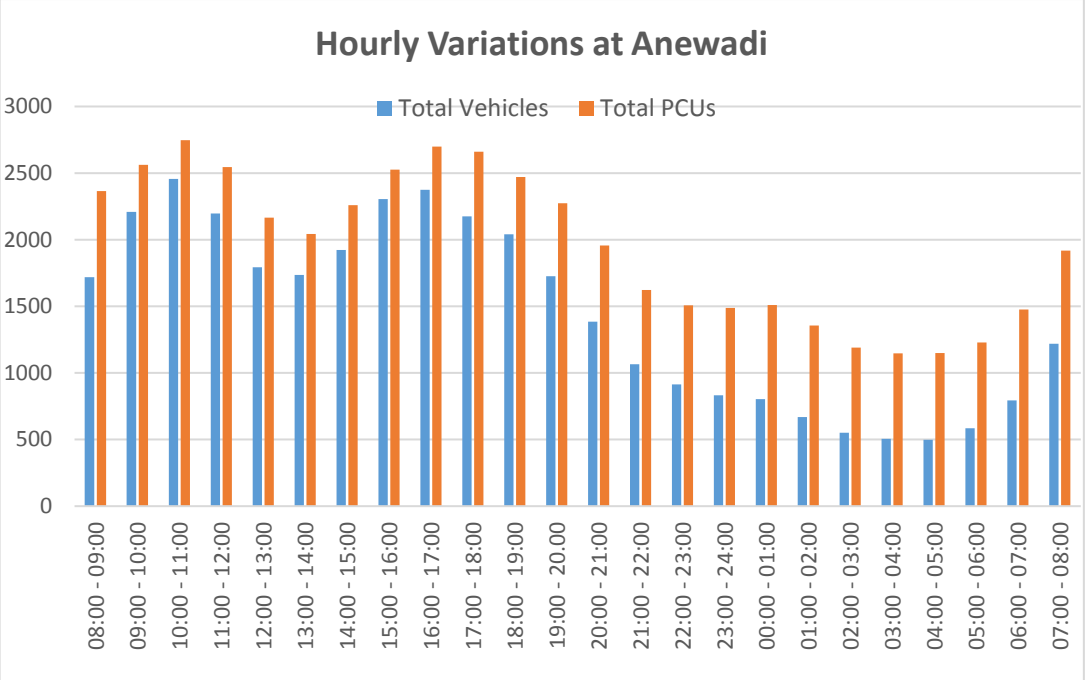

Figure 4:5 Hourly Variation of Traffic –Anewadi Toll Plaza

4.8 Traffic Composition

Average composition of tollable traffic observed at the volume count survey locations are presented in **Table 4:7** and graphically shown in **Figure 4:6** and **Figure 4:7**

Table 4:7 Average Traffic Composition at Survey Locations

Mode	Khed Shivapur	Anewadi
Car	65%	59%
LCV	12%	13%
Bus	7%	8%
Truck	6%	9%
MAV	10%	11%

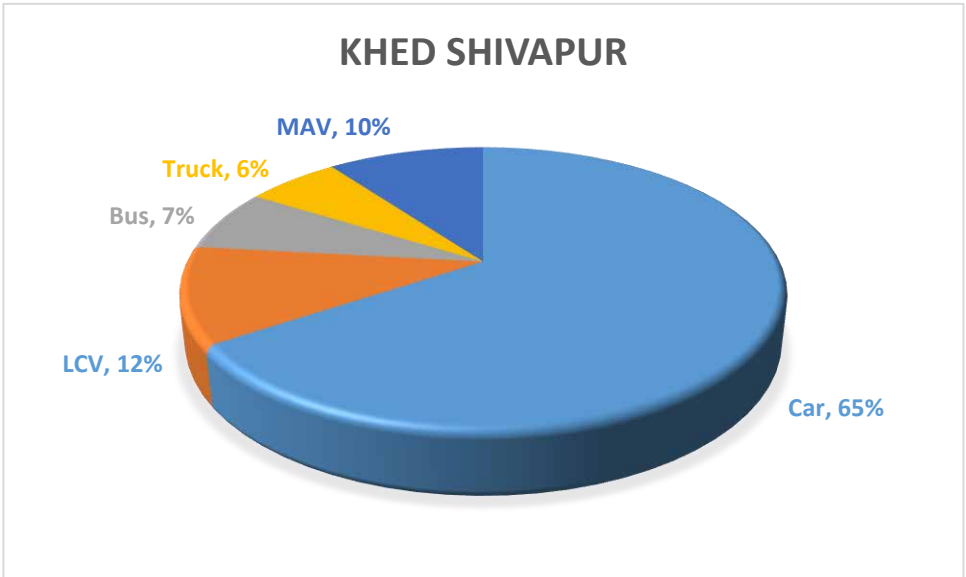

Figure 4:6 Traffic Composition – Khed Shivapur Toll Plaza

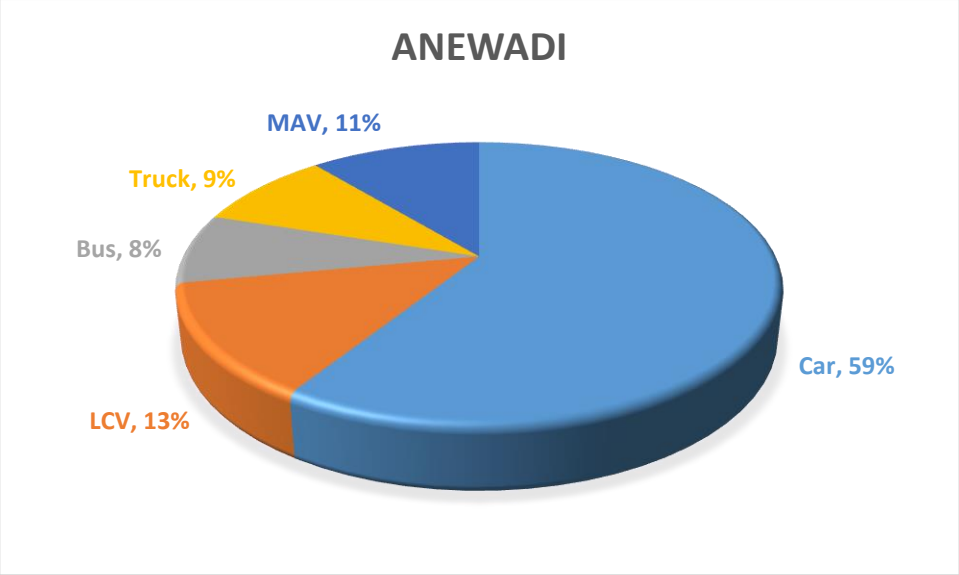

Figure 4:7 Traffic Composition – Anewadi Toll Plaza

The major inferences drawn are:

- Share of Car/Jeep/Vans at Khed Shivapur and Anewadi Toll Plaza is 65% and 59% respectively.
- Share of Bus at Khed Shivapur and Anewadi Toll Plaza, is 7% and 8% respectively.
- Share of freight vehicles at Khed Shivapur and Anewadi Toll Plaza is about 28% and 33% respectively.
- Proportion of Car traffic is high amongst passenger vehicles.

4.9 Estimation of Seasonal Variation Factors

To account for the seasonal variation in the traffic, seasonal variation factors have been worked out using past toll traffic data collected from toll operator. The data used for estimating the seasonality factors is presented in **Chapter 3**. The factors have been estimated separately for passenger vehicles and freight vehicles by taking the ratio of monthly average to actual counting month. It may be noted that, surveys have been carried out for 3 days in the month of September and 4 days in October. Therefore, weighted average of September and October with respect to number of survey days in each month has been estimated. The Seasonal Correction Factors are presented in **Table 4:8**.

Table 4:8 Seasonal Correction Factors

Mode	Khed Shivapur	Anewadi
Car	1.13	1.10
LCV	1.03	1.02
Truck (2 Axle)	1.03	1.01
Bus	1.00	1.07
MAV	1.02	1.03

4.2.9 Annual Average Daily Traffic

Considering the above seasonality factors, Annual Average Daily Toll Traffic at the two survey locations on the project corridor is estimated. The mode wise Annual Average Daily Traffic (AADT) at the toll plaza locations is presented in **Table 4:9.**

Table 4:9 Annual Average Daily Traffic

Mode		Khed Shivapur		Anewadi	
		ADT	AADT	ADT	AADT
Passenger Vehicles	Tata Ace	16	18	22	25
	Car/Jeep/Van	17959	20280	12408	13708
	Mini Bus	375	375	151	161
	School/Inst. Bus	48	48	21	23
	Govt Bus	1263	1262	1086	1159
	Pvt Bus	931	930	821	877
Commercial Vehicles	LCV	3087	3168	2904	2976
	2-Axle	1885	1935	2048	2055
	3-Axle	1240	1273	1266	1307
	4-6 Axles	1759	1790	1449	1496
	>6 Axles	4	4	3	3
Tollable Traffic		**28569**	**31084**	**22180**	**23789**
Two Wheeler		10962	12379	9621	10629
Auto Rickshaw		526	594	233	258
Tractor		5	5	20	20
Tractor Trailer		5	6	22	22
Non Tollable Traffic		**11498**	**12983**	**9896**	**10928**
Toll Exempted Car		1588	1793	2238	2472
Toll Exempted Mini Bus		27	27	40	43
Toll Exempted Bus		1	1	7	7
Toll Exempted LCV		17	18	101	103
Toll Exempted 2 Axle		0	0	13	13
Toll Exempted 3Axle/MAV		0	0	1	1
Toll Exempted Vehicles		**1633**	**1838**	**2399**	**2640**
Total		**41699**	**45905**	**34475**	**37357**

4.10 Origin – Destination Survey

4.10.1 General

The origin-destination survey was carried out with the primary objective of studying the travel pattern of passenger and goods traffic on the project corridor. The results of these surveys are useful in estimating the traffic split / segmentation and in assessing the traffic characteristics of vehicles. The O-D survey was carried out for 24 hours at 2 locations i.e. at Khed Shivapur Toll Plaza (on 29th September) and Anewadi Toll Plaza (on 30th September) simultaneously along with traffic volume count survey.

4.10.2 Sample Size

Sample size achieved during the OD survey as percentage to the total traffic is presented in **Table 4:10.**

Table 4:10 Sample Size of OD Survey

Mode	Anewadi	Khed Shivapur
Car	25%	33%
Bus	58%	78%
LCV	36%	53%

Mode	Anewadi	Khed Shivapur
2 - Axle Truck	33%	60%
MAV	32%	44%

4.10.3 Zoning System

For understanding the spatial dimensions of the trip characteristics of the vehicles interviewed during the O-D survey, it is required to code the origin and destination of trip. Broad zoning system was developed to analyse the O-D data collected from the field. The zoning system was evolved mainly considering the toll notification issued by *Ministry of Shipping, Road Transport and Highways* (Department of Road Transport & Highways). Local travelers (resident within 20 km from toll plaza) would get concession on the toll rates. This has been considered while finalizing the zoning system. In all, total 271 Traffic Analysis Zones (TAZ) were considered. The details of traffic zones and codes adopted for the study are presented in **Annexure**. The pictorial representation of zoning is given in the **Figure 4:8**. The mode-wise OD matrix is provided in the form of soft copy (xls).

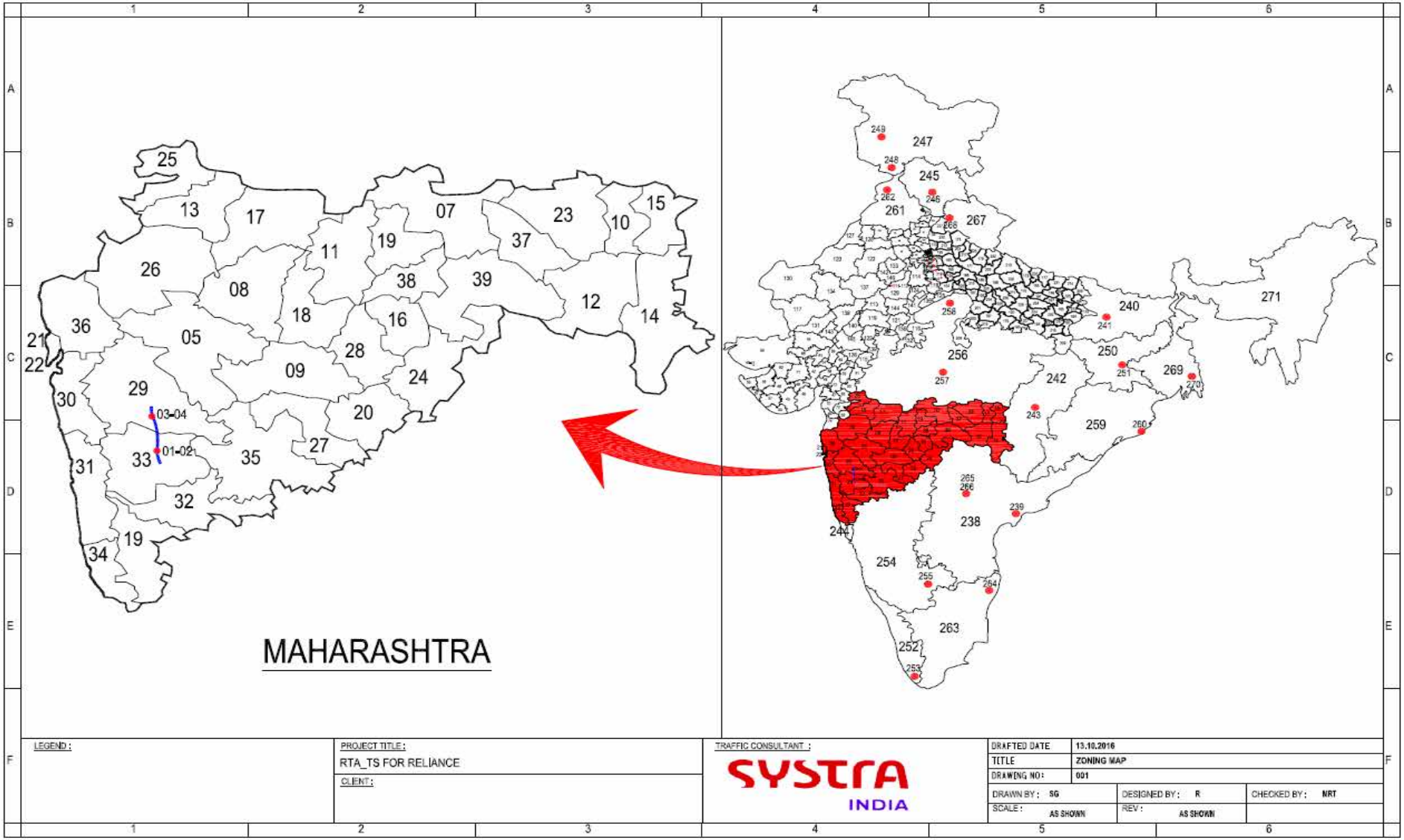

Figure 4:8 Zoning System

The proportion of vehicles with both origin and destination within Maharashtra State are presented in **Table 4:11**. It can be observed that maximum proportion of Cars are within Maharashtra. With regard to the commercial vehicles, maximum proportion is having either origin or destination within Maharashtra.

Table 4:11 Trips within Maharashtra

Mode	Khed Shivapur	Anewadi
Car	93%	95%
Mini Bus	94%	94%
Pvt. Bus	85%	86%
Govt. Bus	93%	94%
Mini LCV	90%	88%
LCV	80%	82%
2-Axle Truck	78%	79%
MAV	70%	66%

The following tables **Table 4:12** and **Table 4:13** show the major traffic generators along with their percentage contribution. From the following Table, it can be inferred that the majority of the traffic is from Maharashtra.

Table 4:12 Major Traffic Generators - Khed Shivapur

Khed Shivapur			
Cities		Passengers Vehicles	Goods Vehicles
Maharashtra	Areas within 10 km from Toll Plaza	4%	2%
	Areas within 20 km from Toll Plaza	6%	4%
	Mumbai	9%	16%
	Kolhapur	8%	1%
	Pune	35%	21%
	Sangli	3%	3%
	Satara	21%	16%
Karnataka		3%	9%
Tamil Nadu (TN)		--	4%
Other Places		11%	24%

Table 4:13 Major Traffic Generators– Anewadi

Anewadi			
Cities		Passenger Vehicles	Goods Vehicles
Maharashtra	Areas within 10 km from Toll Plaza	3%	1%
	Areas within 20 km from Toll Plaza	5%	3%
	Kolhapur	8%	9%
	Mumbai	9%	16%
	Pune	24%	18%
	Sangli	5%	4%
	Satara	32%	20%
Karnataka		3%	11%
Other Places		11%	18%

4.10.4 Commodity

During OD Survey the commodity, which is carried by the goods vehicle was also noted. It is observed that at Anewadi toll plaza, fuel, oil & gas, fruits, vegetables are the major

commodities. At Khed Shivapur toll plaza location, consumer goods are the major commodity. **Table 4:14** and **Figure 4:9** show the commodity distribution observed at the survey locations.

Table 4:14 Commodity Distribution

Commodity	Location	
	Khed Shivapur	Anewadi
Empty	20%	20%
Agricultural Products	4%	7%
Forest Products	3%	6%
Fuel, Oil & Gas	7%	11%
Construction Materials	3%	8%
Fruits and Vegetables	8%	9%
Powder	4%	8%
Textiles	5%	4%
Chemicals &Fert.	2%	3%
Iron & Steel	3%	4%
Machinery	5%	2%
Consumer Goods	16%	6%
Timber & furniture	2%	1%
Poultry, Cattles & feed	8%	4%
Iron ore	10%	5%
Other	1%	1%

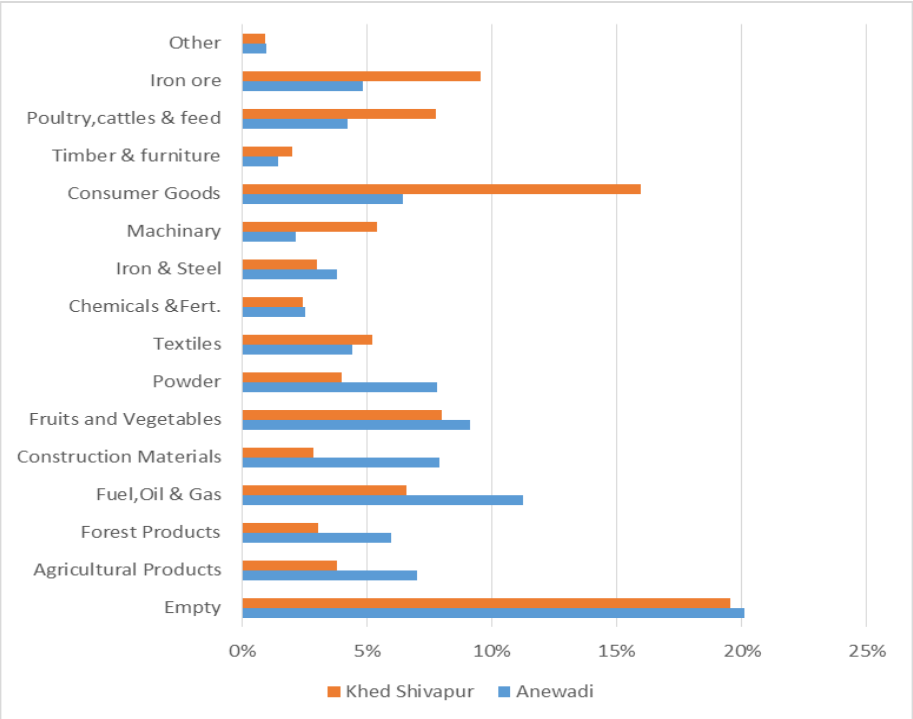

Figure 4:9 Commodity Distribution

4.10.5 Trip Length

a) Khed Shivapur

Distance matrix is developed for the traffic analysis zones and **Table 4:15** and **Table 4:16** present mode-wise trip length frequency distribution at the survey location (Khed Shivapur). It can be observed that maximum proportion of trips is observed within 300 km and 1500 km range for passenger and goods vehicle respectively. Graphical representation of trip length frequency distribution is presented in **Figure 4:10** & **Figure 4:11**.

Table 4:15 Trip Length Frequency Distribution - Passenger Vehicles at Khed Shivapur

Distance (km)	Passenger Vehicles			
	Car	Mini Bus	Private Bus	Govt. Bus
0-50	26%	26%	18%	23%
50-150	33%	40%	27%	32%
150-300	27%	26%	27%	29%
300-500	10%	7%	16%	12%
500-750	2%	1%	5%	3%
750-1000	3%	1%	6%	1%
>1000	0%	0%	0%	0%

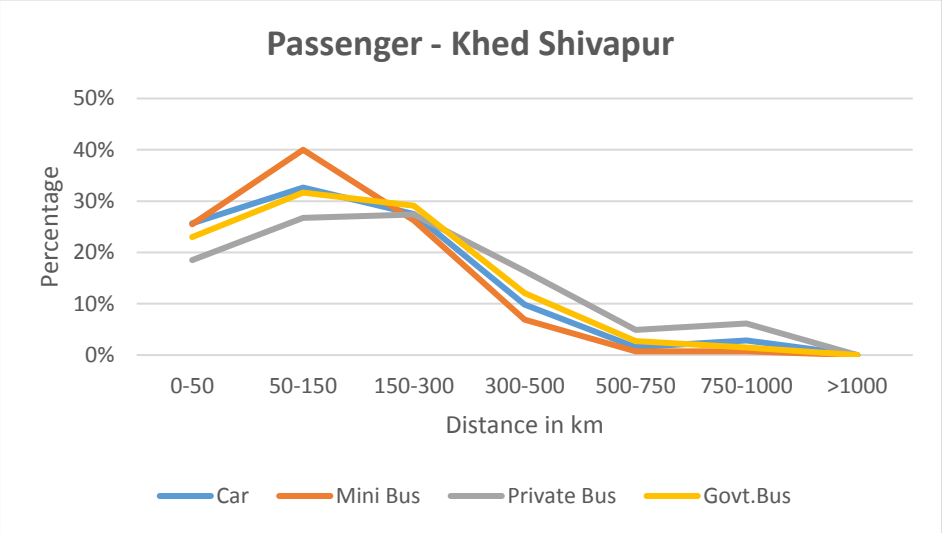

Figure 4:10 Trip Length Frequency Distribution (Passenger) – Khed Shivapur Toll Plaza

Table 4:16 Trip Length Frequency Distribution - Goods Vehicles at Khed Shivapur

Distance (km)	Goods Vehicles				
	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV
0-250	98%	55%	53%	44%	40%
250-500	2%	21%	22%	23%	24%
500-750	0%	5%	6%	8%	7%
750-1000	0%	10%	8%	12%	13%
1000-1500	0%	6%	8%	10%	12%
1500-2000	0%	3%	3%	3%	4%
>2000	0%	0%	0%	0%	0%

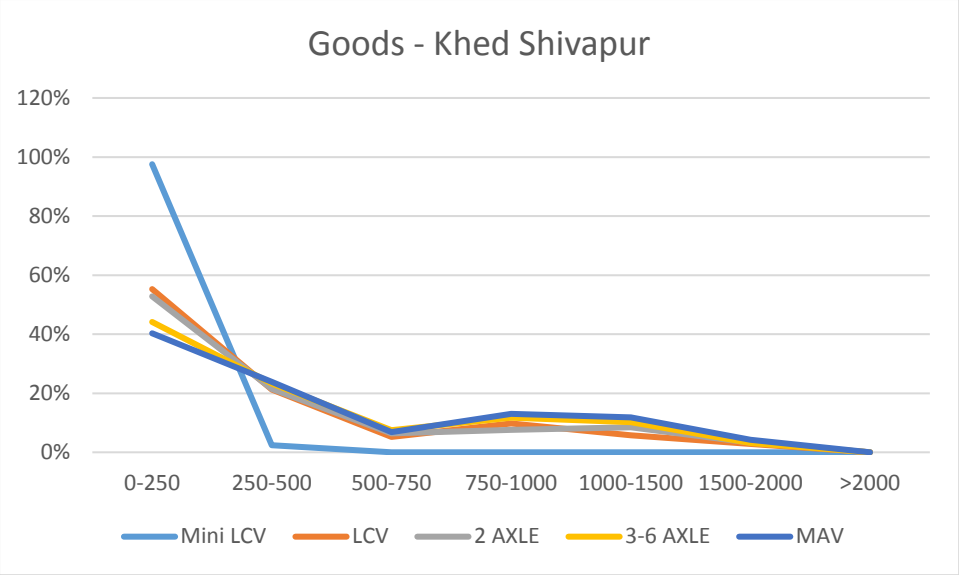

Figure 4:11 Trip Length Frequency Distribution (Goods) – Khed Shivapur Toll Plaza

b) Anewadi

The trip length covered during journey is enquired during OD survey. Distance matrix is developed for the traffic analysis zones and the analysis of trip length is presented in **Table 4:17** and **Table 4:18** for passenger vehicles and goods vehicles respectively. It can be observed that maximum proportion of trips is observed within 300 km range and 500 km range for passenger and goods vehicles respectively. Graphical representation of trip length frequency distribution is presented in **Figure 4:12** and **Figure 4:13** for passenger vehicles and goods vehicles respectively.

Table 4:17 Trip Length for Frequency Distribution - Passenger Vehicles at Anewadi

Distance (km)	Passenger Vehicles			
	Car	Mini Bus	Private Bus	Govt. Bus
0-50	16%	22%	2%	13%
50-150	35%	28%	12%	23%
150-300	30%	30%	32%	38%
300-500	14%	16%	29%	21%
500-750	3%	1%	10%	3%
750-1000	2%	1%	11%	2%
>1000	1%	1%	4%	1%

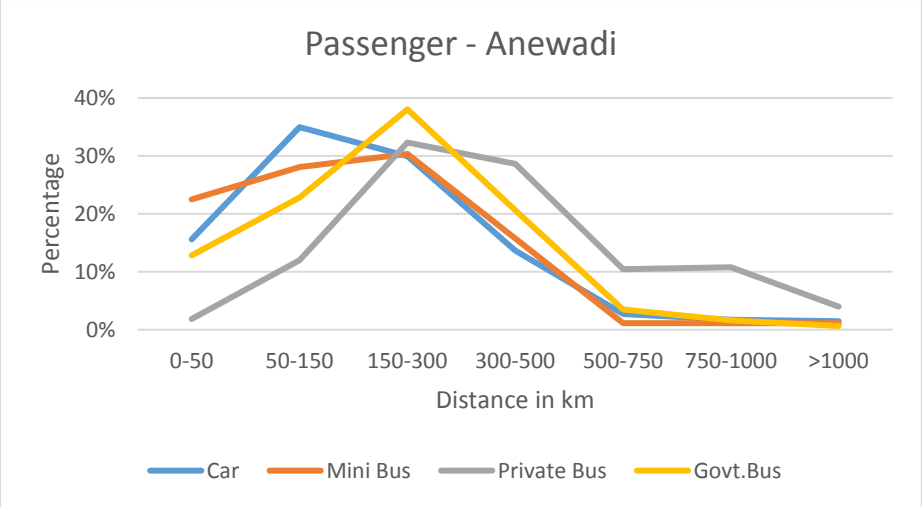

Figure 4:12 Trip Length Frequency Distribution (Passenger) – Anewadi Toll Plaza

Table 4:18 Trip Length Frequency Distribution - Goods Vehicles at Anewadi

Distance (km)	Goods Vehicles				
	Mini LCV	LCV	2 AXLE	3-6 AXLE	MAV
0-250	66%	48%	40%	29%	24%
250-500	28%	28%	28%	27%	29%
500-750	6%	7%	9%	12%	10%
750-1000	0%	9%	12%	18%	16%
1000-1500	0%	4%	7%	9%	12%
1500-2000	0%	2%	2%	4%	7%
>2000	0%	1%	2%	1%	2%

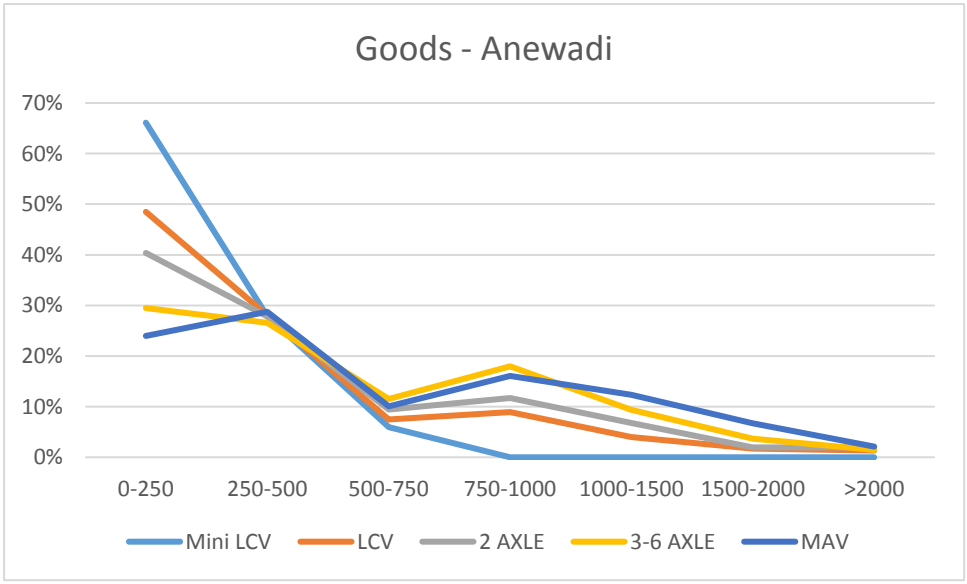

Figure 4:13 Trip Length Frequency Distribution (Goods Vehicles) – Anewadi Toll Plaza

4.10.6 Trip Frequency

In order to assess the proportion of users using single journey, return journey and monthly pass, the historical data obtained from the toll plaza has been used. Total historical traffic data for last three years was available The observed traffic segmentation at Khed Shivapur

and Anewadi Toll Plaza locations is given in **Table 4:19** and **Table 4*:20*** and respectively and the same is shown graphically in **Figure 4:14 and Figure 4:15.**

Table 4:19 Traffic Segmentation - Khed Shivapur Toll Plaza

Mode	Khed Shivapur		
	Single Journey	Return Journey	Monthly Pass
Car	56%	41%	3%
LCV	60%	33%	7%
Bus	19%	45%	36%
Truck	88%	11%	1%
MAV	86%	12%	2%

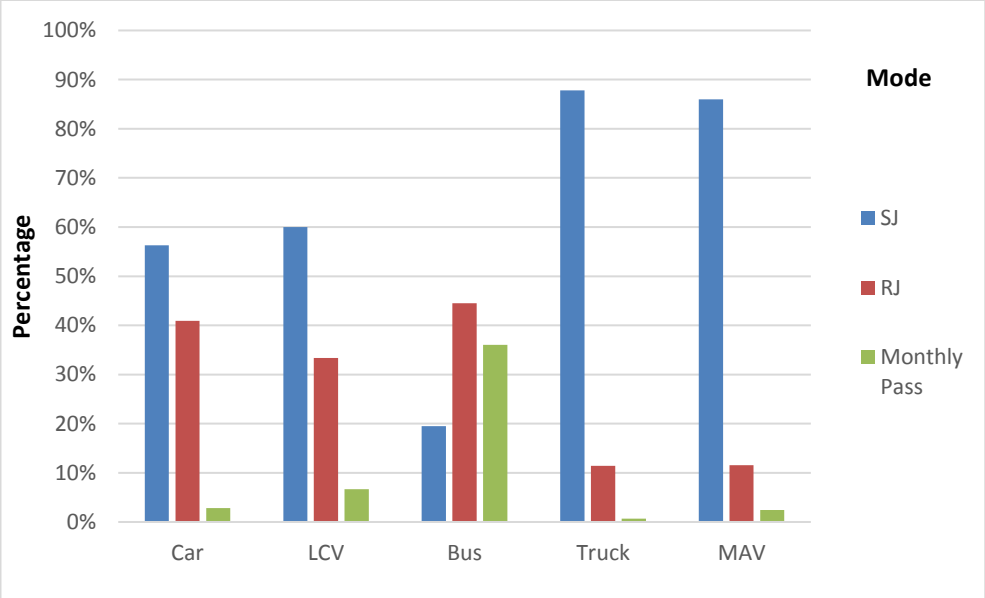

Figure 4:14 Traffic Segmentation – Khed Shivapur Toll Plaza

Table 4:20 Traffic Segmentation – Anewadi Toll Plaza

Mode	Anewadi		
	Single Journey	Return Journey	Monthly Pass
Car	62%	37%	1%
LCV	73%	27%	0%
Bus	22%	45%	33%
Truck	87%	13%	0%
MAV	88%	9%	3%

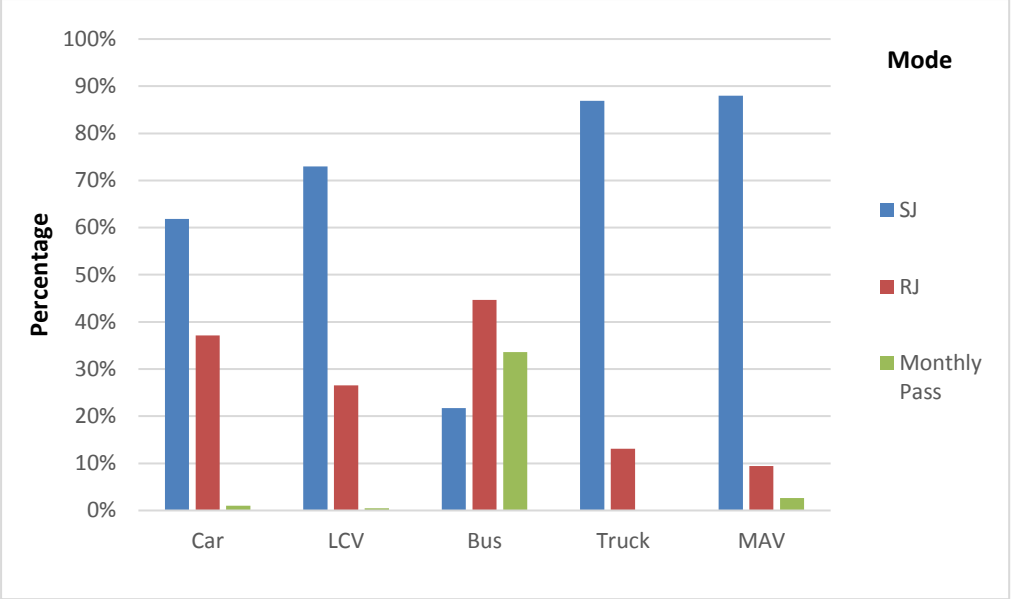

Figure 4:15 Traffic Segmentation– Anewadi Toll Plaza

4.10.7 Local Vehicles

As per the existing toll concession, local travellers (excluding commercial) residing within 20 km from the toll plaza can avail the monthly pass at Rs.235. Based on the OD Survey analysis, the proportion of local travellers (Car/ Jeep/ Van) within 20 km from toll plaza is estimated as 8% at Khed Shivapur and 9% at Anewadi.

Chapter 5 Traffic Forecast and Toll Revenue Analysis

5.1 General

Assessment of traffic growth rates by various methods and traffic forecast for horizon years up to year 2034 are presented in this Chapter. Based on the traffic projections and toll rates, tollable traffic and toll revenue has been estimated and presented in this Chapter.

5.1.1 Assessment of Traffic Growth Rates

Long term forecasting of traffic on the project road during the time horizon of the study is required for assessing the financial viability of the project. To establish the future traffic growth rates, various approaches, including Transport Demand Elasticity Approach, were attempted.

5.1.2 Growth Rates Based on Past Toll Traffic Data

Consultants had carried out detailed analysis of the past toll traffic data of the two toll plazas (Anewadi and Khed Shivapur) on the project corridor. The average traffic growth rate observed during period of 2013-2016 is about 9% for Cars and 11% for MAV. For assessing the traffic growth rates, based on historical traffic data, at least 10 years' time series data are required. However, only three years' toll traffic data is available and it is not logical to conclude the growth in traffic based on three years' traffic data. It is worth mentioning the latest IRC 108-2015 (*Guidelines for Traffic Forecast on Highways*) recommended that the past growth rates cannot be used directly for estimating future traffic on the project corridor.

5.1.3 Growth Rates based on Registered Motor Vehicles

If the area of influence is well defined and the general development pattern of influence area remains the same, then it can be assumed that traffic growth rate is approximately equal to the average growth rate of vehicle registration. It may be emphasized that the project corridor indicates a strong influence of Maharashtra State in the traffic generation/ attraction. From the OD survey analysis, it is found that about 78% of passenger traffic and 62% of freight traffic are originating from or destined to Pune, Satara and Mumbai region (Mumbai & Thane districts). Therefore, there is a strong influence of number of registered vehicles in Pune, Satara, Mumbai and Thane districts on project road traffic.

Table 5:1 presents the growth rates in the Registered Motor Vehicles on road in Pune, Mumbai, Thane and Satara districts. The vehicle registration data was obtained from the *Motor Transport Statistics of Maharashtra* reports.

Table 5:1 Growth in Registered Motor Vehicles

Year	Growth in Registered Motor Vehicles			
	Pune	Mumbai	Thane	Satara
2011	11.76%	5.8%	9.90%	12.16%
2012	10.77%	8.46%	8.99%	8.63%
2013	9.95%	7.83%	10.15%	5.32%
2014	9.48%	6.65%	9.06%	8.61%
2015	9.06%	10.22%	7.82%	8.15%

The growth rates in total registered motor vehicles during 2014-2015 are 9.06%, 10.22%, 7.82% & 8.15% in Pune, Mumbai, Thane, and Satara districts respectively. However, assuming that the traffic growth rate equal to the average growth of vehicle registration may

not be correct, unless the area of influence is well defined and the general development pattern of influence area remains same. However, this would be an alternative approach in the absence of any additional information or usable past traffic data on the project road. As transport demand elasticity approach is more proven approach, Consultants propose to adopt the growth rates derived from this approach.

5.1.4 Transport Demand Elasticity Approach

Long term forecasting of the project road traffic, during the time horizon of the study, is required for designing the highway and assessing the financial viability of the proposed investment for improving the facility.

As the growth of vehicle population can also be related to other influences, it is logical to relate vehicle population with one or more logically derived independent variables for deriving elasticity of transport demand. Elasticity of transport (traffic) demand, in the present context, is defined as the ratio of percentage change in traffic to the percentage change in socio-economic parameters. The concept of developing regression equation to relate the dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes. This approach is even recommended by the recent Indian Roads Congress (IRC) *Guidelines for Traffic Forecast on Highways IRC: 108-2015*.

Elasticity in the present context is defined as the ratio of percentage change in traffic to the percentage change in socio-economic parameters. The concept of developing regression equation to express dependent variable in terms of one or more independent variable is widely used in transportation engineering for variety of purposes. In the present case, the dependent variable is the registered motor vehicles in the zone of influence (District/ State). The preferred dependent variable would have been past time series traffic on the project corridor. Number of registered motor vehicles growth in Maharashtra, Gujarat, Karnataka, Tamil Nadu and Rest of India is taken as dependent variable. The independent variables are socio-economic parameters. The choice of independent variable depends upon vehicle type under consideration. It is logical to relate growth in traffic with NSDP/ NDDP, PCI and population. The vehicles types have been clubbed into two categories; passenger vehicles and freight/ goods vehicles. The independent variable used in case of passenger vehicles is Population and PCI and in case of freight vehicles NSDP is used.

It is possible to predict independently the socio-economic variables like population, per capita income (PCI), NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach. Based on the above considerations, the growth rates based on elasticity approach have been adopted for projecting future traffic.

The traffic growth rates, by vehicle type, are obtained by running simple regression and fitting the regression equation with prospective values of independent variables. Separate equations using PCI and registered motor vehicles have been developed for influencing states for passenger vehicles. Similarly, equations by using NSDP and registered motor

vehicles of influencing states are developed for freight vehicles. Traffic growth rate projections are done using the below formula;

$$T = \left[\left(1 + \frac{P}{100}\right) * \left(1 + \frac{R}{100}\right) - 1\right] * 100 * E$$

Where:

T - Traffic growth rate (in %)

P - Growth rate of population

R - Growth rate of per capita NSDP /per capita income

E - Elasticity.

The growth rates for the horizon years are arrived by taking the average of the Net State Domestic Product at constant price. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down. India GDP has been considered for estimation of future NSDP of influencing states. India's current GDP growth during 2015-16 is 7.6% and *World Economic Outlook* (October 2016) has projected India's GDP growth as 7.6% for 2017.

Elasticity values for different sections of the project corridor have been arrived based on the *Weightage Factors*. These weightage factors are assessed considering the contribution of the traffic on the project corridor based on primary traffic surveys (OD Survey) and the average weightage factors are presented in **Table 5:2** to **Table 5:3** for passenger vehicles and freight vehicles for the Khed Shivapur toll plaza.

Table 5:2 : Weightage Factors (CH: 819+240) - Passenger Vehicles (%)

Location	Passenger Vehicles				
	Maharashtra	Gujarat	Tamil Nadu	Karnataka	ROI
Khed Shivapur	93%	1%	1%	3%	2%

Table 5:3: Weightage Factors (CH: 819+240) – Freight Vehicles (%)

Location	Goods Vehicles				
	Maharashtra	Gujarat	Karnataka	Tamil Nadu	ROI
Khed Shivapur	74%	3%	17%	3%	1%

** ROI – Rest of India*

Table 5:4: Weightage Factors (CH: 748+600) - Passenger Vehicles (%)

Location	Passenger Vehicles			
	Maharashtra	Gujarat	Karnataka	ROI
Anewadi	95%	1%	2%	1%

Table 5:5: Weightage Factors (CH: 748+600) – Freight Vehicles (%)

Location	Goods Vehicles			
	Maharashtra	Gujarat	Karnataka	ROI
Anewadi	63%	3%	9%	22%

Majority of passenger traffic is generated from Maharashtra state (about 94%) as presented in **Table 5:4** and **Table 5:5**. In case of Freight Vehicles, 63% and 74% of the total freight traffic is generated from Maharashtra state at Anewadi and Khed Shivapur toll plaza locations respectively. Other major contributors are Karnataka, Gujarat and Tamil Nadu.

5.1.5 Economic Growth of Project influencing Areas

Growth of traffic on the project road depends on the existing development and future growth prospects of the PIA. A number of econometric indicators for the PIA states, as published by Central Statistical Organisation/ Economic Survey Reports have been studied to assess their past performance. Some of the salient features are presented below;

- **Maharashtra**

  Maharashtra's economy expanded at a CAGR of 12.5% during FY2005 to FY2015, in line with the national average of 12.6%. The pace of growth of the services sector in Maharashtra moderated from a good 8.2% in FY2013 to 7.0% in FY2015, before rising to a robust 10.0% in FY2015. Agricultural output in Maharashtra has recorded a volatile trend, recording contraction of 1.9% in FY2013 and 16.0% in FY2015, interspersed with a double-digit expansion of 12.6% in FY2014. The motor vehicles registered in Maharashtra expanded at a CAGR of 10.1% during FY2006 to FY2013, somewhat lower than 10.7% growth at the all-India level.

- **Karnataka**

  Karnataka Net State Domestic Product (NSDP) stood at Rs 2899 Billion in 2014-15 and has been growing at a compounded annual growth rate of 6.93% during 2005-06 to 2014-15.

- **Gujarat**

  Gujarat's economy expanded at a CAGR of 13.1% during FY2005 to FY2015, exceeding the national average of 12.6%. After recording a good growth of 18.5% in FY2013, industrial growth declined to 2.9% in FY2014, before recovering to 8.0% in FY2015. In contrast, the agricultural sector recorded a considerable growth of 25.9% in FY2014. Services sector growth ranged between 8%-12% during FY2013 to FY2015. The motor vehicles registered in Gujarat expanded at a CAGR of 9.0%, from FY2006 to FY2013, lower than the 10.7% growth at the all-India level.

- **Tamil Nadu**

  Tamil Nadu Net State Domestic Product (NSDP) stood at Rs 4795 Billion in 2014-15 and has been growing at a compounded annual growth rate of 8.96% during 2005-06 to 2014-15.

Table 5:3 presents the average annual economic growth rate (2005 - 2015) indicators for different influencing states of the project corridor. Highest growth rate of 8.96% in NSDP is observed for Tamil Nadu state followed by Gujarat with 8.50%.

Table 5:6: Growth in Economic Indicators during 2005-2015

State	NSDP	Population	PCI
Maharashtra	8.27%	1.42%	6.78%
Gujarat	8.50%	1.59%	6.80%

State	NSDP	Population	PCI
Karnataka	6.94%	1.41%	5.44%
Tamil Nadu	8.96%	1.38%	7.47%

5.1.6 PIA Outlook

For determining the perspective growth of the PIA States, their long and short term past growth were considered, along with their performances relative to India's and the opportunities for growth for each of them. Considering the big base of NSDP and already saturated development in the influencing states of the project corridor, the present growth may sustain only for a few years (say 5 years) and later slowly tapering down.

5.1.7 Estimated Traffic Growth Rates

Based on the derived elasticity values and the projected growth in economy of PIA, traffic growth rates have been estimated and presented in **Table 5:7 and Table 5:8.**

Table 5:7: Estimated Traffic Growth Rates (% per annum) – Khed Shivapur

Traffic Growth Rates – 819+240						
Period	**Car**	**Bus**	**LCV**	**Truck (2 Axle)**	**MAV (3-6 Axles)**	**> 6 Axle**
Up to 2019	10	6.0	7.0	6.0	6.0	6.0
2019-2020	7.0	4.5	6.0	5.5	5.0	5.0
2020-2026	6.0	4.0	4.5	4.0	4.0	4.0
2026-2031	5.0	3.0	2.5	2.5	2.5	2.5
Beyond 2031	5.0	3.0	2.5	2.5	2.5	2.5

Table 5:8: Estimated Traffic Growth Rates (% per annum) - Anewadi

Projected Traffic Growth Rates - 748+600						
Period	**Car**	**Bus**	**LCV**	**Truck (2 Axle)**	**MAV (3-6 Axles)**	**> 6 Axle**
Up to 2019	9.0	6.5	7.0	6.5	6.0	6.0
2019-2020	7.5	4.5	6.0	5.5	5.5	5.0
2020-2026	5.5	3.5	4.5	4.0	4.0	4.0
2026-2031	3.5	2.0	2.5	2.5	2.5	2.5
Beyond 2031	3.5	2.0	2.5	2.5	2.5	2.5

5.1.8 Suggested Elasticity Values

Derived elasticity values obtained for some vehicle types are low/high, which could be attributed mainly to the inconsistency in the data due to variety of reasons. Therefore, to make a realistic estimate of the traffic growth rates, necessary updation in the elasticity values is done considering the current scenario and the recommended standard elasticity values.

The shift from public transport to personalized modes is one of the major changes occurred over the past few years. This has led in elasticity of bus lower than unity. The growth in per capita income won't assure an increasing trend in car, as the trend may reach saturation and a decline may take place.

Car

Car's elasticity has been considered at 1.07 for 2018-19. It is likely that this growth would slow down over time as the market becomes more mature and saturated, therefore elasticity to NSDP can be expected to decline over time.

- **Trucks**

There are has been a rapid shift in freight transport in last decade. With enhance carrying capacity of LCV and better operational efficiencies of MAV over 2 Axle Truck for longer distance travel, there is a huge fluctuation in trend of truck traffic. This has been duly considered while finalising the growth rates for good vehicles and higher elasticity values for MAV have been considered as compared to 2 Axle trucks **Table 5:10** shows the recommended elasticity values.

Table 5:9: **Recommended Elasticity Values**

Period	Vehicle Type				
	Car	Bus	LCV	2 Axle	MAV
Up to 2019	1.07	0.89	1.05	-0.49	1.11
2019-2020	0.93	0.75	0.90	-0.36	0.84
2020-2026	0.68	0.57	0.72	-0.24	0.60
2026-2031	0.46	0.52	0.62	-0.19	0.50
Beyond 2031	0.41	0.54	0.52	-0.13	0.39

5.1.9 Variable Elasticity

Elasticity value is the factor by which the socio-economic growth rate is multiplied to get the growth rate of traffic. Traffic is directly linked to the economic growth such as per capita income, population and NSDP/GDP. According to IRC-108, elasticity based econometric model for highway projects could be derived in the following form:

$$\text{Log e (P)} = A0 + A1 \text{ Log e (EI)}$$

where:

P = Traffic volume (of any vehicle type)

EI = Economic Indicator (GDP/NSDP/Population/PCI)

A0 = Regression constant;

A1 = Regression co-efficient (Elasticity Index)

In coming years, the Economic indicators will be reducing. Hence the regression coefficient will taper down. This tapering in elasticity is considered while deriving the traffic growth rates.

5.1.10 Key Growth Points

Some of the key growth points for the traffic on the project corridor are listed below;

- Project Road is the main highway connecting Pune, Satara, and tourist spots like Mahabaleshar, Panchgani etc.
- The corridor therefore sees huge north-south long distance goods traffic, along with high intensity short distance passenger traffic due to the many tourist destinations present in the vicinity.

- Major industries in the area include chemical and allied products, electrical and non-electrical machinery, textiles, petroleum and allied products and information technology, Agro and food processing and Biotech sectors.
- Also, Maharashtra Industrial Developmental Corporation (MIDC), has set up huge Industrial area in Shirwal along the project corridor. It is also in process of setting up SEZ and has other expansion plans.
- NH 4 is one of major roads feeding traffic to JNPT and Mumbai Port. These ports are in expansion phase, leading to more traffic on project corridor.
- Since NH4 traverse through bigger cities of the country, in all scenarios it will experience high traffic growth in future. (Load & Lead)
- Due to ongoing construction activity, Bangalore bound traffic has shifted to NH 13. After completion of widening of project corridor, Bangalore traffic will shift back to project corridor as it will be a 6 lane road with lesser distance than NH 13. NH 13 is also being tolled.
- Construction activity has made vehicles to shift to hilly SH 61 Road. This traffic will also be added after completion of widening of project corridor.

5.1.11 Suggested Traffic Growth Rates

The estimated growth rates based on past traffic data have no definite trend. Therefore, registered motor vehicles growth in Pune, Satara, and Mumbai and Thane districts is explored. It showed a growth rate of more than 8% to 10%. These past growth rates cannot be used for estimating future traffic on the project road. The future traffic may not follow these growth rates due to several reasons, like changes in price of new vehicles, fuel and taxes on several commodities. Any substantial change in policy (e.g., fare, travel time, loading and unloading of goods, etc.) and infrastructure (e.g. improvement of existing rail services, new railway line, etc.) may also affect the traffic volume on the project road.

It is possible to predict independently the socio-economic variables like population, per capita income, NSDP, etc. for future years and then assess future traffic growth rates using elasticity values. This is theoretically a sound and acceptable approach. Based on the above discussions, the growth rates based on elasticity approach have been adopted for projecting future traffic.

Based on the suggested elasticity values**,** the traffic growth rates have been estimated for three scenarios: (1) Realistic Scenario, (2) Optimistic Scenario and (3) Pessimistic Scenario. The 6 laning of project road section is expected to be completed by early 2017. Once the widening is completed, there would be diversion of traffic from other roads in the influence area of the project road. In addition, there would be some generated traffic due to the improved facility. The key growth points are duly considered and accordingly higher traffic growth rates are suggested for the first two years (2018 and 2019). While estimating the growth rates for freight vehicles, the decreasing trend in growth of 2 axle and 3 axle Trucks is taken into consideration and the same is counter balanced in the growth of LCV & MAV. 70% of the traffic comprises of passenger vehicles while 30% of traffic is freight traffic. The suggested traffic growth rates are presented **Table 5:10**.

Table 5:10: Suggested Traffic Growth Rates (%)

Realistic						Optimistic					Pessimistic				
Year period	Vehicle Type														
	Car	Bus	LCV	2 Axle	MAV	Car	Bus	LCV	2 Axle	MAV	Car	Bus	LCV	2 Axle	MAV
Up to 2019	9	8	9	-4	9	10	9	10	-3	10	7	6	7	-6	7
2019-2020	8	7	8	-3	7	9	8	9	-2	8	6	5	6	-5	5
2020-2026	6	5	6	-2	5	7	6	7	-1	6	4	3	4	-4	3
2026-2031	4	5	5	-2	4	5	6	6	-1	5	2	3	3	-4	2
Beyond 2031	3	4	4	-1	3	4	5	5	0	4	1	2	2	-3	1

5.2 Alternate Routes

Consultants identified one potential alternate road to the project corridor. This Road connects Satara and Mumbai (Panvel) via Mahabaleshwar and Poladpur. Once NH-17 is improved to 4/6 lane road, it is likely that the Mahabaleshwar bound tourist traffic from Mumbai would use this alternate route instead of project road, as it shortens the length by about 40 km (228 km to 188 km). Even if NH-17 is tolled, it might become cheaper, as the toll on Mumbai Pune Expressway also can be avoided. From the OD survey analysis, it is observed that about 2% of the Car traffic on the project corridor is Mahabaleshwar bound traffic. There is very less commercial traffic between Mumbai and Mahabaleshwar and therefore no diversion of freight vehicles is envisaged from the project road to this alternate route.

Due to ongoing construction activity on project corridor, Bangalore bound traffic has shifted to NH 13. After completion of widening of project corridor, Bangalore traffic will shift back to Pune – Satara Section as it will be a 6 lane road with lesser distance than NH 13. NH 13 is also being tolled. Construction activity has made vehicles to shift to hilly SH 61 road. This traffic will also be added after completion of project. There would not be any diversion of traffic from project road and such the diverted traffic to other roads due to construction activity, will start using the project corridor after completing of widening.

5.3 Traffic Forecast

Daily traffic volume of 7 days traffic count, by vehicle type, at each of the two locations, is added separately and averaged to determine the Average Daily Traffic (ADT). Seasonal variation factors (given in Chapter 4) have been applied to get Annual Average Daily Traffic (AADT). The AADT for the base year (2017) is presented in **Table 5:11**.

Table 5:11: Annual Average Daily Traffic (2017)

Mode		Khed Shivapur		Anewadi	
		ADT	AADT	ADT	AADT
Passenger Vehicles	Tata Ace	16	18	22	25
	Car/Jeep/Van	17959	20280	12408	13708
	Mini Bus	375	375	151	161
	School/Inst. Bus	48	48	21	23
	Govt Bus	1263	1262	1086	1159
	Pvt Bus	931	930	821	877
	LCV	3087	3168	2904	2976

Mode		Khed Shivapur		Anewadi	
		ADT	AADT	ADT	AADT
Commercial Vehicles	2-Axle	1885	1935	2048	2055
	3-Axle	1240	1273	1266	1307
	4-6 Axles	1759	1790	1449	1496
	>6 Axles	4	4	3	3
Tollable Traffic		**28569**	**31084**	**22180**	**23789**
Two Wheeler		10962	12379	9621	10629
Auto Rickshaw		526	594	233	258
Tractor		5	5	20	20
Tractor Trailer		5	6	22	22
Non Tollable Traffic		**11498**	**12983**	**9896**	**10928**
Toll Exempted Car		1588	1793	2238	2472
Toll Exempted Mini Bus		27	27	40	43
Toll Exempted Bus		1	1	7	7
Toll Exempted LCV		17	18	101	103
Toll Exempted 2 Axle		0	0	13	13
Toll Exempted 3Axle/MAV		0	0	1	1
Toll Exempted Vehicles		**1633**	**1838**	**2399**	**2640**
Total		**41699**	**45905**	**34475**	**37357**

5.3.1 Tollable Traffic Forecast

Using the growth rates presented in **Table 5:10**, the tollable traffic for Realistic Scenario has been projected up to the horizon year 2036. Traffic forecast in terms of vehicles and PCUs, upto the horizon year 2036, for both the toll plaza locations (Khed Shivapur & Anewadi) are presented in **Table 5:12** and **Table 5:13**.

Table 5:12: Tollable Traffic Forecast – Khed Shivapur Toll Plaza

Financial Year	Car/Van/ Tata Magic	Bus	LCV	2-Axle Trucks	MAV (3-6 Axles)	MAV (7 and more Axles)	Total Vehicles	Total (PCUs)
2017	20298	2240	3543	1935	3063	4	**31083**	**51945**
2018	22125	2408	3844	1858	3339	4	**33578**	**55738**
2019	23895	2565	4132	1802	3572	5	**35971**	**59296**
2020	25806	2731	4442	1748	3822	5	**38555**	**63138**
2021	27355	2868	4709	1713	4014	5	**40663**	**66253**
2022	28996	3011	4991	1679	4214	6	**42897**	**69550**
2023	30736	3162	5291	1645	4425	6	**45264**	**73040**
2024	32580	3320	5608	1612	4646	6	**47773**	**76733**
2025	34535	3486	5945	1580	4879	6	**50430**	**80641**
2026	36607	3660	6302	1548	5122	7	**53246**	**84776**
2027	38071	3825	6617	1525	5327	7	**55372**	**88061**
2028	39594	3997	6948	1502	5540	7	**57588**	**91488**
2029	41178	4177	7295	1480	5762	8	**59899**	**95064**
2030	42825	4365	7660	1457	5993	8	**62307**	**98794**
2031	44538	4561	8043	1436	6232	8	**64818**	**102686**
2032	45874	4744	8364	1421	6419	8	**66831**	**105852**
2033	47250	4933	8699	1407	6612	9	**68910**	**109124**

Financial Year	Car/Van/ Tata Magic	Bus	LCV	2-Axle Trucks	MAV (3-6 Axles)	MAV (7 and more Axles)	Total Vehicles	Total (PCUs)
2034	48668	5131	9047	1393	6810	9	**71057**	**112508**
2035	50128	5336	9409	1379	7014	9	**73275**	**116006**
2036	51632	5549	9785	1365	7225	9	**75566**	**119621**
2037	52664	5716	10079	1365	7369	10	**77203**	**122245**
2038	53717	5887	10381	1365	7517	10	**78878**	**124931**
2039	54792	6064	10692	1365	7667	10	**80591**	**127680**

Table 5:13: Tollable Traffic Forecast – Anewadi Toll Plaza

Financial Year	Car/ /Van/Tata Magic	Bus	LCV Wheelers	2-Axle Trucks	MAV (3-6 Axles)	MAV (7 and more Axles)	Total Vehicles	Total (PCUs)
2017	13732	2058	3137	2054	2803	3	**23788**	**43408**
2018	14968	2213	3404	1972	3055	3	**25615**	**46398**
2019	16166	2357	3659	1913	3269	4	**27367**	**49196**
2020	17459	2510	3933	1856	3498	4	**29259**	**52219**
2021	18506	2635	4169	1818	3673	4	**30806**	**54674**
2022	19617	2767	4419	1782	3857	4	**32446**	**57274**
2023	20794	2905	4685	1746	4049	4	**34184**	**60026**
2024	22041	3051	4966	1711	4252	5	**36026**	**62938**
2025	23364	3203	5264	1677	4465	5	**37978**	**66021**
2026	24766	3363	5580	1644	4688	5	**40045**	**69282**
2027	25756	3515	5858	1619	4875	5	**41629**	**71916**
2028	26787	3673	6151	1595	5070	6	**43282**	**74666**
2029	27858	3838	6459	1571	5273	6	**45005**	**77537**
2030	28972	4011	6782	1547	5484	6	**46803**	**80534**
2031	30131	4191	7121	1524	5703	6	**48677**	**83662**
2032	31035	4359	7406	1509	5875	6	**50190**	**86222**
2033	31966	4533	7702	1494	6051	7	**51753**	**88869**
2034	32925	4715	8010	1479	6232	7	**53368**	**91607**
2035	33913	4903	8331	1464	6419	7	**55037**	**94440**
2036	34931	5099	8664	1449	6612	7	**56762**	**97369**
2037	35629	5252	8924	1449	6744	7	**58006**	**99513**
2038	36342	5410	9191	1449	6879	8	**59279**	**101707**
2039	37069	5572	9467	1449	7017	8	**60582**	**103955**

5.4 Target Traffic

For this project, the target date set forth in the concession agreement is March 31, 2019, and the target traffic volume set forth in the concession agreement 60,848 passenger car units ("PCUs"), the passenger car equivalent for various types of vehicles based on industry guidelines. Based on the terms of the concession agreement, in the event that the actual traffic volume on the target date falls short of or exceeds the target traffic volume by more than 2.5%, the concession period will be deemed to be modified and may be increased by 1.5% for every 1% of shortfall in traffic, provided that the aggregate increase in the concession period does not exceed 20% of the original concession period. Any extension, however, is subject to NHAI approval and may differ from the Traffic Consultant's estimate

depending on actual traffic volumes on the target date. Extension of the concession period is limited to five years. As per the current traffic growth, the concession period would be extended by 5 years.

5.5 Toll Revenue Estimation

5.5.1 Adopted Toll Rates

Consultants have compiled the unit toll rates suggested by NHAI for 4/6 laning projects. The NHAI unit toll rates are of 2007-08 price levels and they are updated to current level using WPI are given in **Table 5:14**. Toll fee is calculated for the two sections of project road considering the length of each section (Khed Shivapur: 80.70 km; Anewadi: 56.00 km). For convenience of the toll collection, in line with the NHAI toll notification, toll rates are rounded to the nearest R. 5.00. The base year toll rates (single journey) for the two sections of project corridor are presented in **Table 5:15.**

Table 5:14 Unit Toll Rates

(Rs per km)

Sl.No	Type of Vehicle	Unit Toll Rates 2007-08	Unit Toll Rates 2016-17
1	Car	0.65	1.02
2	LCV	1.05	1.646
3	Bus/ Truck	2.20	3.45
4	MAV (3 to 6 Axles)	3.45	5.41
5	Oversized Vehicles	4.20	6.586

Table 5:15 Base Year Toll Rates

(in Rs per single journey)

S. No	Type of Vehicle	Khed Shivapur	Anewadi
1	Car, Jeep, Van or Light Motor Vehicle	80	55
2	Light Commercial Vehicle, Light Good Vehicle or Mini Bus	135	90
3	Bus/ Truck (Two Axle)	280	195
4	Heavy Construction Machinery (HCM) or Earth Moving Equipment (EME) or Multi Axle or Multi Axle Vehicle (3 to 6 Axle)	435	305
5	Oversized Vehicles (7 or more axle)	530	370

Table 5:16 Future Toll Rates-Khed Shivapur (Rs)

Single Journey																								
Financial Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Car	80	85	90	95	100	105	110	115	120	125	130	130	135	140	145	150	155	160	165	170	175	180	185	190
LCV	135	140	145	155	160	170	175	185	190	200	205	215	220	230	235	245	250	260	265	275	285	290	300	310
Bus\ Truck	280	290	305	320	335	350	365	385	400	415	430	450	465	480	495	510	530	545	560	575	595	610	630	650
MAV	280	290	305	320	335	350	365	385	400	415	430	450	465	480	495	510	530	545	560	575	595	610	630	650
> 6 Axles	435	455	480	505	530	550	575	600	630	650	675	700	730	755	780	805	830	855	880	905	930	960	990	1015

Daily Pass																								
Financial Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Car	125	130	135	140	150	155	165	170	175	185	190	200	205	215	220	225	235	240	250	255	265	270	280	285
LCV	200	210	220	230	240	250	265	275	285	300	310	320	335	345	355	365	380	390	400	415	425	440	450	465
Bus\ Truck	420	435	460	480	505	525	550	575	600	625	645	670	695	725	745	770	790	815	840	865	890	920	945	975
MAV	420	435	460	480	505	525	550	575	600	625	645	670	695	725	745	770	790	815	840	865	890	920	945	975
> 6 Axles	655	685	720	755	790	825	865	900	940	980	1015	1055	1095	1135	1170	1205	1240	1280	1320	1360	1400	1440	1480	1525

Monthly Pass																								
Financial Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Car	2740	2865	3005	3155	3315	3465	3615	3775	3945	4095	4250	4410	4575	4750	4895	5045	5200	5360	5520	5685	5855	6025	6205	6385
LCV	4430	4625	4860	5100	5355	5595	5840	6100	6370	6615	6865	7125	7395	7670	7910	8155	8400	8655	8915	9185	9455	9735	10020	10315
Bus\ Truck	9280	9695	10180	10685	11220	11720	12240	12785	13350	13860	14385	14930	15495	16075	16570	17080	17605	18135	18680	19240	19815	20400	21000	21610
MAV	9280	9695	10180	10685	11220	11720	12240	12785	13350	13860	14385	14930	15495	16075	16570	17080	17605	18135	18680	19240	19815	20400	21000	21610
> 6 Axles	14550	15200	15960	16760	17595	18380	19195	20045	20935	21735	22560	23415	24295	25210	25990	26785	27605	28440	29300	30175	31070	31990	32930	33890

Table 5:17 Future Toll Rates-Anewadi (Rs)

Single Journey																								
Financial Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Car	55	60	65	65	70	70	75	80	80	85	90	90	95	100	100	105	110	110	115	120	120	125	130	135
LCV	90	95	100	105	110	115	120	125	135	140	145	150	155	160	165	170	175	180	185	190	195	205	210	215
Bus\ Truck	195	200	210	220	235	245	255	265	280	290	300	310	325	335	345	355	365	380	390	400	410	425	435	450
MAV	195	200	210	220	235	245	255	265	280	290	300	310	325	335	345	355	365	380	390	400	410	425	435	450
> 6 Axles	305	315	330	350	365	385	400	415	435	450	470	485	505	525	540	560	575	590	610	630	645	665	685	705

Daily Pass																								
Financial Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Car	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	160	165	170	180	185	190	195	200
LCV	140	145	150	160	165	175	180	190	200	205	215	225	230	240	245	255	260	270	280	285	295	305	315	320
Bus\ Truck	290	305	320	335	350	365	380	400	415	435	450	465	485	500	520	535	550	565	585	600	620	635	655	675
MAV	290	305	320	335	350	365	380	400	415	435	450	465	485	500	520	535	550	565	585	600	620	635	655	675
> 6 Axles	455	475	500	525	550	575	600	625	655	680	705	730	760	785	810	835	860	890	915	940	970	1000	1030	1060

Monthly Pass																								
Financial Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Car	1905	1990	2085	2190	2300	2405	2510	2620	2735	2840	2950	3060	3175	3295	3400	3500	3610	3720	3830	3945	4060	4180	4305	4430
LCV	3075	3210	3370	3540	3715	3880	4055	4235	4420	4590	4765	4945	5130	5325	5490	5655	5830	6005	6190	6375	6560	6755	6955	7160
Bus\ Truck	6440	6725	7065	7415	7785	8135	8495	8870	9265	9615	9985	10360	10750	11155	11500	11855	12215	12585	12965	13350	13750	14155	14570	14995
MAV	6440	6725	7065	7415	7785	8135	8495	8870	9265	9615	9985	10360	10750	11155	11500	11855	12215	12585	12965	13350	13750	14155	14570	14995
> 6 Axles	10100	10550	11075	11630	12210	12755	13320	13910	14525	15080	15655	16245	16860	17495	18035	18590	19155	19735	20330	20940	21560	22200	22850	23520

5.5.2 Wholesale Price Index (WPI)

The annual rate of inflation, based on monthly WPI, stood at 3.57% (provisional) for the month of September, 2016 (over September, 2015) as compared to 3.74% (provisional) for the previous month and -4.59% during the corresponding month of the previous year. Build-up inflation rate in the financial year so far was 4.28% compared to a build-up rate of 0.23% in the corresponding period of the previous year. The adopted WPI for the horizon years are given in **Table 5:18**

Table 5:18: Wholesale Price Index for the Entire Concession Period

Up to 2018	Up to 2021	Up to 2026	Up to 2031	And Beyond
4.00%	5.00%	4.00%	3.00%	2.00%

5.5.3 Toll Concessions

As per the NHAI toll notification:

- The concessionaire shall not collect any fee from local non-commercial traffic (residence within 20 km from toll plaza) and shall issue passes in respect thereof for commuting on the Project Highway. The concessionaire shall be entitled to charge a monthly fee equal to Rs. 235.
- No concession for local transporters
- The return pass cost is 150% of the single journey trip.
- Discounted rate for 50 coupons is two thirds of the single one-way trip, and they must be used in a period of one month.

5.5.4 Adopted Toll Concessions

Considering all the above factors and based on the results of OD Survey, Consultants adopted the following toll concessions for different categories of tollable vehicles.

Table 5:19 Adopted Toll Concessions

Location	Mode	Single Entry	Return	Monthly Pass
Khed Shivapur	Car	56%	42%	2%
	Mini Bus	19%	45%	36%
	Private Bus	19%	45%	36%
	Government Bus	19%	45%	36%
	School Bus	19%	45%	36%
	Mini LCV	60%	33%	7%
	LCV	60%	33%	7%
	2 Axle	88%	11%	1%
	3 Axle	86%	12%	2%
	MAV	86%	12%	2%
	MAV (7 and more Axles)	86%	12%	2%
Anewadi	Car	62%	37%	1%
	Mini Bus	24%	47%	29%
	Private Bus	24%	47%	29%
	Government Bus	24%	47%	29%
	School Bus	24%	47%	29%

Location	Mode	Single Entry	Return	Monthly Pass
	Mini LCV	73%	27%	0%
	LCV	73%	27%	0%
	2 Axle	87%	13%	0%
	3 Axle	89%	9%	2%
	MAV	89%	9%	2%
	MAV (7 and more Axles)	100%	0%	0%

5.5.5 Toll Revenue

An assessment of likely toll revenue has been made by applying the estimated toll rates to the projected tollable traffic. Traffic forecast given in Section 5.3 includes the non-compliance vehicles. Also, though AADT is estimated based on the traffic count surveys and the seasonal correction factors, it is felt that the observed Annual Average Daily Traffic would be more appropriate for the traffic forecast, as it takes account of non-compliance traffic. Therefore, actual historical toll traffic data provided by the Client is used to forecast the Toll revenue. The tollable traffic for the FY 2016 is taken as base to project the toll revenue. Toll revenue for each section of the project road is estimated using *growth rates* and presented in **Table 5:20**.

The estimated total annual toll revenue is about Rs. 231 million for Khed Shivapur and Anewadi for the year FY 2017. The total estimated annual toll revenue from the two toll plazas is about Rs. 260 million in FY 2018 and Rs. 320 million in FY 2020. Out of the total toll revenue, the contribution of Khed Shivapur Toll Plaza is about 62% and 38% from Anewadi for FY 2017

Table 5:20 Estimated Annual Toll Revenue (Rs. Million) – Khed Shivapur & Anewadi

FY	Realistic	Optimistic	Pessimistic
2017	231	233	227
2018	260	265	250
2019	291	300	275
2020	320	332	297
2021	353	370	321
2022	386	408	344
2023	424	453	371
2024	465	501	399
2025	508	553	428
2026	550	604	454
2027	594	658	481
2028	635	712	505
2029	686	776	535
2030	741	846	567
2031	786	905	589
2032	837	974	615
2033	890	1046	642
2034	943	1119	667
2035	1004	1202	696
2036	1067	1291	726
2037	1131	1381	754
2038	1202	1482	786

FY	Realistic	Optimistic	Pessimistic
2039	1278	1591	819
2040*	412	109	259

* In case of Optimistic Scenario, the concession period gets extended only for 6% of FY 40, whereas in Pessimistic and Realistic scenario the concession period extends upto 30% of FY 40

5.5.6 Revenue due to Overloading

As per the notification of National Highway Authority of India (NHAI), Concessioners are eligible to levy penalties on overloading vehicles. As per the notification;

- A Mechanical vehicle loaded in excess of permissible maximum Gross Vehicle Weight (GVW) shall not be permitted to use the National Highway or cross the toll plaza until the excess load is removed.
- The overloaded vehicle shall be liable to pay fee equal to ten times of the applicable fee;
- Maximum GVW is as indicated in vehicle RC under MV Act.

In the absence of exact data related to over loading, it is estimated that the toll revenue at each toll plaza would increase by about 3% to 5% due to overloading. In the long run OV trend is expected to taper down to 0%.

5.6 Operation and Maintenance Cost

5.6.1 General

The toll revenue account for the returns of the project. While the Operation and Maintenance cost apart from the Capital Cost account for expenditure towards the project cost. For this purpose, major O&M elements such as civil infrastructure, toll system and manpower, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analysed based on the data provided by Client.

The SPV had certain onetime accounting expenses in the FY 2016 in addition to higher operations expenses owing to the ongoing construction in the project and hence there is an upward bias in the operations and maintenance expenses of FY 2016 and FY 2017. It is expected that the operational expenses being incurred due to ongoing construction will be reduced post completion in FY 2017. Based on the actual historical operations and maintenance expenses, the figure for FY 2018 has been normalized.

5.6.2 Major Element of Maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

5.6.3 Project Parameters for O & M

Operation and Maintenance cost of the project depends on a number of factors like quality of construction, response of maintenance team to early damage, climate.

Future cost of operation and maintenance is the estimate made on engineering judgement and experience basis. Keeping all above factors in view, following can be basis of working out cast operation and maintenance for project corridor from Pune to Satara on NH 4 in state of Maharashtra.

a. Annual Regular Maintenance – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll Collection, toll plaza maintenance, other services mile medical help and rescue operation etc.
b. Periodic Maintenance this will be done on periodic basis say. It usually consists of overlaying of wearing course, Road Marking. Some pavement strengthening is also anticipated in few sections. As project stretch is long periodic maintenance items have also been spread on annual basis from execution point of view. Since the project is commissioned and traffic is running for 6 years, periodic maintenance shall be as per condition of pavement and other infrastructure. Inputs of the concessionaire have been taken in this regard.

Cost for above operations is taken on prevailing rates. Following table provides year wise details of operation and maintenance cost.

Table 5:21 MMR Cost (in Rs Crores)

Year	Total Expenditure	Renewal Cost of BC	Micro Surfacing Cost	Escalation Factor	Total Expenditure	Remarks
FY 2025	109.94	101.05	8.89	1.41	77	Major Maintenance
FY 2026	109.94	101.05	8.89		77	Major Maintenance
FY 2033	109.94	101.05	8.89	1.77	95	Major Maintenance
FY 2034	109.94	101.05	8.89		95	Major Maintenance

Based on the NHAI circular dated Nov 15, 2016 on use of Micro surfacing on 30% continuous stretch of the project road, the overall cost of MMR are reduces by 15-20%. It has been assumed that this provision will be used on alternate major maintenance activities of the SPV. It is assumed that micro surfacing will be used on 20% of the project stretch, which will cost 13.1 lakhs per lane km (approx.) based on current raw material price

Table 5:22 O&M Cost (in Rs Crores)

Year	Base Year O& M Cost	Escalation Factor	Total Expenditure
FY 2017	17	1	17.00
FY 2018	17	1.04	17.68
FY 2019	17	1.09	18.56
FY 2020	17	1.15	19.49
FY 2021	17	1.20	20.47
FY 2022	17	1.25	21.29
FY 2023	17	1.30	22.14
FY 2024	17	1.35	23.02
FY 2025	17	1.41	23.94
FY 2026	17	1.46	24.90
FY 2027	17	1.51	25.65

Year	Base Year O& M Cost	Escalation Factor	Total Expenditure
FY 2028	17	1.55	26.42
FY 2029	17	1.60	27.21
FY 2030	17	1.65	28.03
FY 2031	17	1.70	28.87
FY 2032	17	1.73	29.44
FY 2033	17	1.77	30.03
FY 2034	17	1.80	30.63
FY 2035	17	1.84	31.25
FY 2036	17	1.87	31.87
FY 2037	17	1.91	32.51
FY 2038	17	1.95	33.16
FY 2039	17	1.99	33.82
FY 2040	17	2.03	34.50

The SPV had certain onetime accounting expenses in the FY 2016 in addition to higher operations expenses owing to the ongoing construction in the project and hence there is a upward bias in the operations and maintenance expenses of FY 2016 and FY 2017. It is expected that the operational expenses being incurred due to ongoing construction will be reduced post completion in FY 2017. Based on the actual historical operations and maintenance expenses, the figure for FY 2018 has been normalized

Annexure

	Zone Name	Region		Zone Name	Region
1	PS_Anewadi TP1_10KM	Toll Plaza1	74	Valsa	
2	PS_Anewadi TP1_20KM		75	Kandla Port	
3	PS_Khedshivpur_TP2_10KM	Toll Plaza 2	76	Mundra Port	
4	PS_Khedshivpur_TP2_20KM		77	Mandivi Port	
5	Ahmadnagar		78	Hazira Port	
6	Akola		79	GF_TP1_10KM	Toll Plaza1
7	Amravati		80	GF_TP1_20KM	
8	Aurangabad		81	GF_TP2_10KM	Toll Plaza 2
9	Beed		82	GF_TP2_20KM	
10	Bhandara		83	GF_TP3_10KM	Toll Plaza3
11	Buldhana		84	GF_TP3_20KM	
12	Chandrapur		85	GF_TP4_10KM	Toll Plaza 4
13	Dhule		86	GF_TP4_20KM	
14	Gadchiroli		87	Ambala	
15	Gondia		88	Bhiwani	
16	Hingoli		89	Chandigarh	
17	Jalgaon		90	Faridabad	
18	Jalna		91	Fatehabad	
19	Kolhapur		92	Gurgaon	
20	Latur		93	Hisar	
21	Mumbai Suburban		94	Jhajjar	
22	Mumbai	Maharashtra	95	Jind	
23	Nagpur		96	Kaithal	
24	Nanded		97	Karnal	
25	Nandurbar		98	Kurukshetra	Haryana
26	Nashik		99	Mahendragarh	
27	Osmanabad		100	Mewat	
28	Parbhani		101	Palwal	
29	Pune		102	Panchkula	
30	Raigad		103	Panipat	
31	Ratnagiri		104	Rewari	
32	Sangli		105	Rohtak	
33	Satara		106	Sirsa	
34	Sindhudurg		107	Sonipat	
35	Solapur		108	Yamunanagar	
36	Thane		109	Ballabhgarh	
37	Wardha		110	Sohna	
38	Washim		111	JR_TP1_10KM	Toll Plaza
39	Yavatmal		112	JR_TP1_20KM	
40	KM_Mokha_TP1_10KM	Toll Plaza	113	Ajmer	
41	KM_Mokha_TP1_20KM		114	Alwar	
42	Ahmedabad		115	Banswara	
43	Amreli		116	Baran	
44	Anand		117	Barmer	
45	Aravalli		118	Bharatpur	
46	Banaskantha		119	Bhilwara	
47	Bharuch		120	Bikaner	
48	Bhavnagar		121	Bundi	
49	Botad		122	Chittaurgarh	
50	Chhota Udaipur		123	Churu	
51	Dahod		124	Dausa	
52	Dang		125	Dhaulpur	
53	Devbhoomi Dwarka		126	Dungarpur	
54	Gandhinagar		127	Ganganagar	
55	Gir Somnath		128	Hanumangarh	
56	Jamnagar		129	Jaipur	Rajasthan
57	Junagadh	Gujarat	130	Jaisalmer	
58	Kheda		131	Jalor	
59	Kutch		132	Jhalawar	
60	Mahisagar		133	Jhunjhunun	
61	Mehsana		134	Jodhpur	
62	Morbi		135	Karauli	
63	Narmada		136	Kota	
64	Navsari		137	Nagaur	
65	Panchmahal		138	Pali	
66	Patan		139	Pratapgarh	
67	Porbandar		140	Rajsamand	
68	Rajkot		141	Sawai Madhopur	
69	Sabarkantha		142	Sikar	
70	Surat		143	Sirohi	
71	Surendranagar		144	Tonk	
72	Tapi		145	Udaipur	
73	Vadodara		146	Reengus	

	Zone Name	Region	Zone	Zone Name	Region
147	DA_TP1_10KM	Toll Plaza1	220	Muzaffarnagar	Uttar Pradesh
148	DA_TP1_20KM		221	Panchsheel Nagar district (Hapur)	
149	DA_TP2_10KM	Toll Plaza 2	222	Pilibhit	
150	DA_TP2_20KM		223	Shamli	
151	DA_TP3_10KM	Toll Plaza3	224	Pratapgarh	
152	DA_TP3_20KM		225	Rampur	
153	DA_TP4_10KM	Toll Plaza 4	226	Raebareli	
154	DA_TP4_20KM		227	Saharanpur	
155	Central Delhi	Delhi	228	Sitapur	
156	East Delhi		229	Shahjahanpur	
157	New Delhi		230	Sant Kabir Nagar	
158	North Delhi		231	Siddharthnagar	
159	North East Delhi		232	Sonbhadra	
160	North West Delhi		233	Sant Ravidas Nagar	
161	South Delhi		234	Sultanpur	
162	South West Delhi		235	Shravasti	
163	West Delhi		236	Unnao	
164	Agra	Uttar Pradesh	237	Varanasi	
165	Allahabad		238	Andhra Pradesh (AP)	Rest of India
166	Aligarh		239	Vijayawada	
167	Ambedkar Nagar		240	Bihar (BR)	
168	Auraiya		241	Patna	
169	Azamgarh		242	Chhattisgarh (CG)	
170	Barabanki		243	Raipur	
171	Budaun		244	Goa (GA)	
172	Bagpat		245	Himachal Pradesh (HP)	
173	Bahraich		246	Simla	
174	Bijnor		247	Jammu and Kashmir (JK)	
175	Ballia		248	Kashmir	
176	Banda		249	Jammu	
177	Balrampur		250	Jharkhand (JH)	
178	Bareilly		251	Ranchi	
179	Basti		252	Kerala (KL)	
180	Bulandshahr		253	Trivendrum	
181	Chandauli		254	Karnataka (KA)	
182	Nagar		255	Bengaluru	
183	Chitrakoot		256	Madhya Pradesh (MP)	
184	Deoria		257	Bhopal	
185	Etah		258	Gwalior	
186	Kanshi Ram Nagar		259	Odisha (OR)	
187	Etawah		260	Bhubaneshwar	
188	Firozabad		261	Punjab (PB)	
189	Farrukhabad		262	Amritsir	
190	Fatehpur		263	Tamil Nadu (TN)	
191	Faizabad		264	Chennai	
192	Gautam Buddh Nagar		265	Telangana	
193	Gonda		266	Hyderabad	
194	Ghazipur		267	Uttarakhand (UK)	
195	Gorakhpur		268	Dehradun	
196	Ghaziabad		269	West Bengal (WB)	
197	Hamirpur		270	Kolkata	
198	Hardoi		271	North East States	
199	Mahamaya Nagar				
200	Jhansi				
201	Jalaun				
202	Jyotiba Phule Nagar				
203	Jaunpur district				
204	Dehat)				
205	Kannauj				
206	Kanpur				
207	Kaushambi				
208	Kushinagar				
209	Lalitpur				
210	Lakhimpur Kheri				
211	Lucknow				
212	Mau				
213	Meerut				
214	Maharajganj				
215	Mahoba				
216	Mirzapur				
217	Moradabad				
218	Mainpuri				
219	Mathura				

SALEM – ULUNDURPET (KM 0.313 to KM 136.670)

SECTION OF NH-68 IN THE STATE OF

TAMIL NADU

TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

DEC 2016

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ABBREVIATIONS

AADT	-	Annual Average Daily Traffic	**NHAI**	-	National Highway Authority of India
BOT	-	Build Operate Transfer	**NHDP**	-	National Highways Development Project
CAGR	-	Compound Annual Growth Rate	**NSDP**	-	Net State Domestic Product
CTV	-	Classified traffic volume	**O&M**	-	Operation & Maintenance
DBFOT	-	Design, Build, Finance, Operate & Transfer	**PCDP**	-	Per Capita Domestic Product
EME	-	Earth Moving Equipment	**PCI**	-	Per Capita Income
GDP	-	Gross Domestic Product	**PCU**	-	Passenger Car Unit
GSDP	-	Gross State Domestic Product	**PSC**	-	Pre-stressed Concrete
HCM	-	Heavy Construction Machinery	**RCC**	-	Reinforced cement concrete
HCV	-	Heavy Commercial Vehicle	**RHS**	-	Right Hand Side
HTMS	-	Highway Traffic Management System	**SH**	-	State Highway
IRC	-	Indian Road Congress	**TP**	-	Toll Plaza
IRR	-	Internal Rate of Return	**WPI**	-	Wholesale Price Index
LCV	-	Light Commercial Vehicle	**SIR**	-	Special Investment Region
LHS	-	Left Hand Side	**c.**	-	Circa
LGV	-	Light Goods Vehicle	**ROB**	-	Railway Over Bridge
MAV	-	Multi Axle Vehicle	**MDR**	-	Major District Road
MORTH	-	Ministry of Road Transport and Highways	**ODR**	-	Other District Road
NH	-	National Highway	**CA**	-	Concession Agreement
PCC	-	Plain Cement Concrete	**RMT**	-	Running Meter
CR	-	Coarse Rubble			

CHAPTER 1
INTRODUCTION

1.1 Background

The Government of India has approved 4 laning of 4000 Kms length of National Highways on BOT basis under NHDP Phase IIIA and entrusted implementation of the programme to the NHAI.

The project under consideration, Salem - Ulundurpet Section of NH-68 from Km 0.313 to Km 136.670 is one such road project NHAI intended to implement on a BOT basis in the DBFOT format. Project has concession period of 25 years. The concession period commenced on January 15, 2008 and the collection of tolls started on project from 26th July 2012. The Project has been commissioned and is currently in the operation / maintenance phase. Project also include approximately 38 Km of bypass length, which will be converted to a four lane road after 8 years and before 11 years from the COD pursuant to the concession agreement.

1.2 Objective of the Study

M/s Reliance Infrastructure InvIT Fund has engaged GMD Consultants to assess the future traffic and toll potential of project along with related operation & maintenance expenditure involved.

This report named as "***Toll Revenue and O&M Cost Projection Report***" mainly focuses on traffic and O&M aspects of the project. Other parameters like competing road, area developments etc. have been considered from a traffic development point of view.

1.2.1 Scope of Services

The broad scope of work covered in the assignment is as follows

a) Analysis of Traffic Growth

b) Toll Rate Growth

c) Revenue Forecasting

d) Operation and Maintenance Cost Projections

The Concessionaire has provided basic traffic data and other project details based on which the above analysis has been carried out.

CHAPTER 2
PROJECT DETAILS

2.1 Project Corridor

The project corridor is a segment of NH - 68 from Salem (Km 0.313) to Ulundurpet (Km 136.670) and lies in state of Tamil Nadu. This Project on the NH 68 was the first project of over 100 km to be awarded by the NHAI on a BOT basis. It connects the important city of Salem to Ulundurpet and is major part of east – west connectivity in state of Tamil Nadu.

Figure 2.1 to 2.3 shows the location of the project corridor at country/state/district levels respectively.

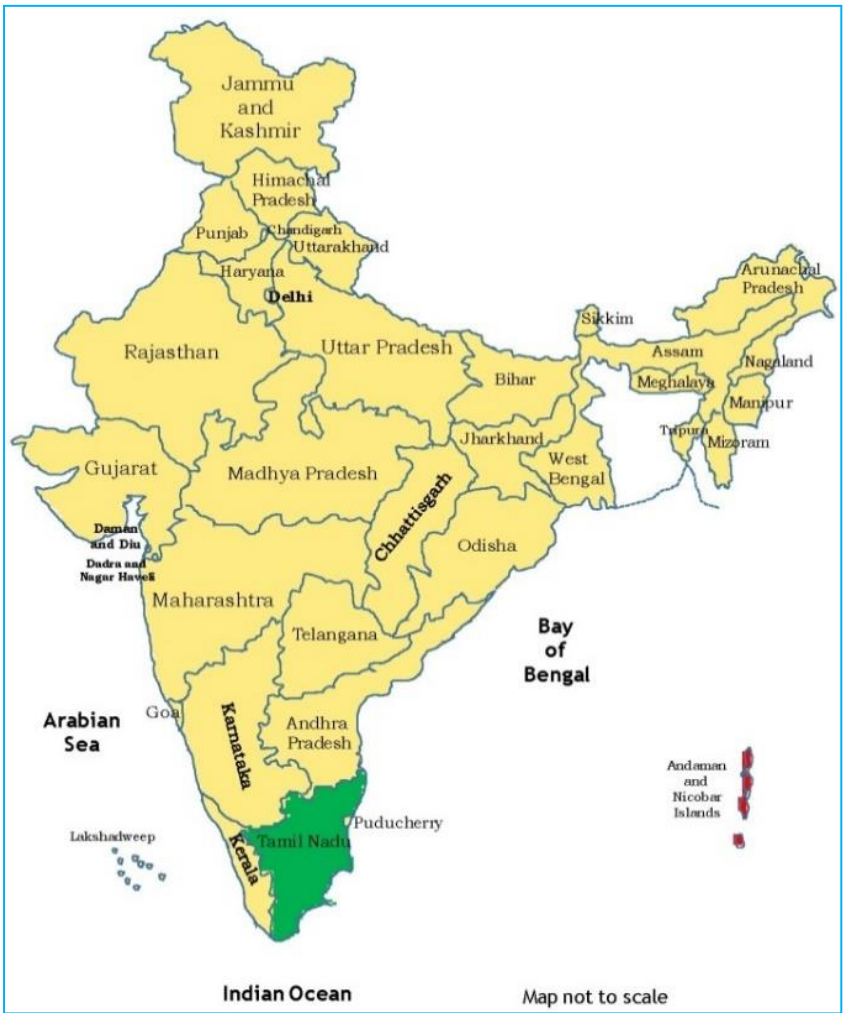


Figure 2-1 : Index Map of Project Highway - Country Level

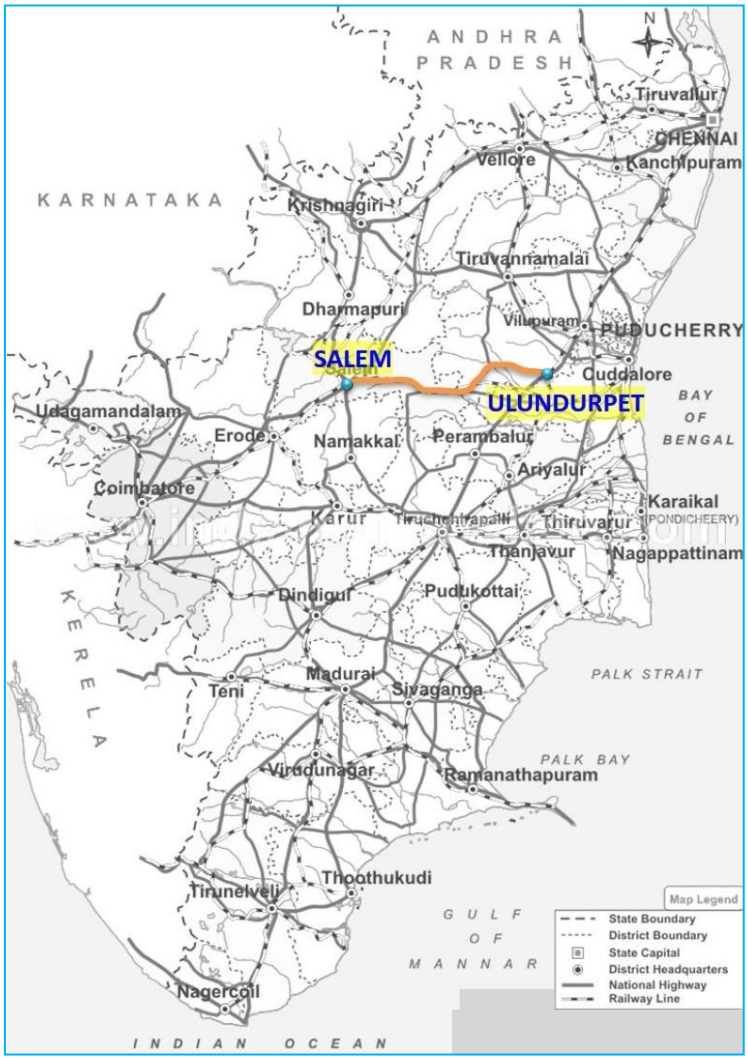


Figure 2-2 : Index Map of Project Highway - State Level

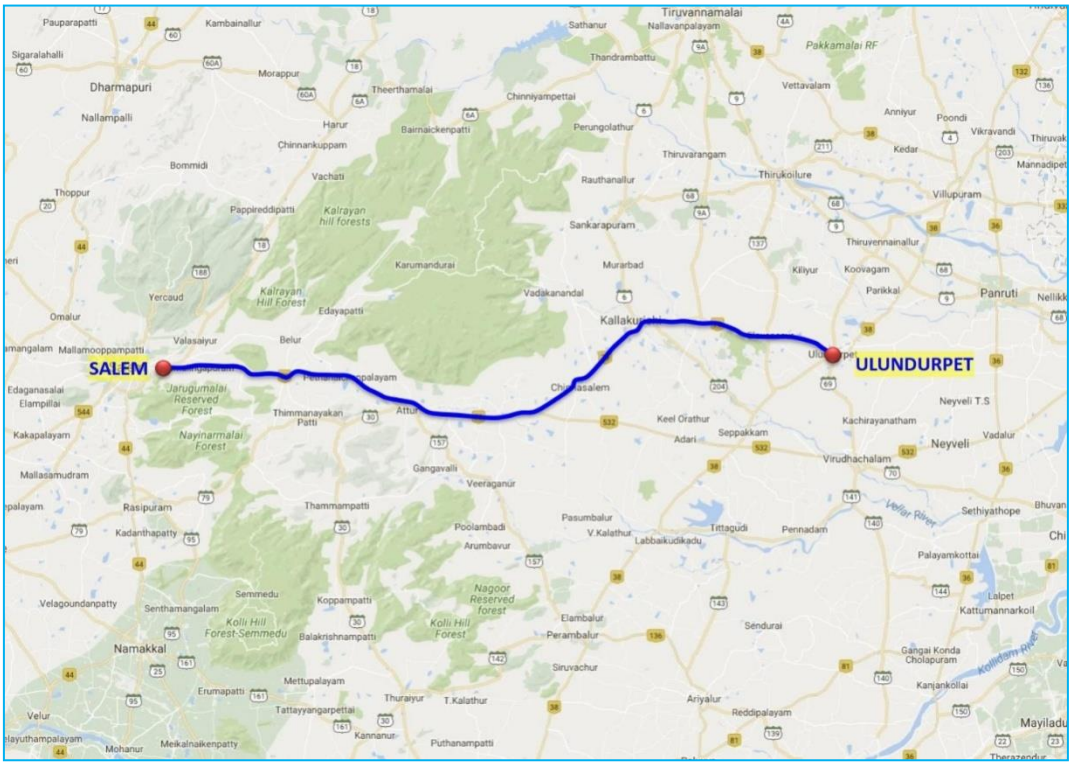


Figure 2-3 : Location Map of the Project Road

2.2 Corridor Description

NH-68 is entirely within the state of Tamil Nadu. The Project corridor starts at Km 0.313 of NH 68, in outskirts of Salem city and ends at Km 136.670 of NH 68 at Ulundurpet, thus providing connectivity with NH-45 which is a major north south arterial in Tamil Nadu State. The corridor lies partly in Salem district and partly in Villupuram district of Tamil Nadu.

It connects with NH 7 and NH 47 at Salem. It connects NH-45 and SH-69 at Ulundurpet.

The entire length of project corridor runs through the plain terrain except from Km 389.400 to Km 389.600 near Vadamadurai. It originates from Salem and traverses through major settlements of Attur. China Salem and Kallakurichu before ending at Ulundurpet.

Starting section of land falls in urban area for initial 10 km thereafter most of the land in project corridor is predominantly Agricultural. There are isolated built up section in between. The end section of corridor traverses through reserved forest area.

2.3 Salient Features

The salient features of the project corridor are as given below;

- Total Length of Project = 136.357 Kms
- Major Bridges = 05 Nos.
- Minor Bridges = 27 Nos.
- Flyovers & ROB's= 04 Nos.
- Culverts = 260 Nos.
- Vehicular Underpass = 17 Nos.
- Pedestrian Under passes = 10 Nos.
- Major Intersections = 10 Nos.
- Service Road = 47.645 Kms.
- Bus Bays = 54 Nos.
- Truck Lay Byes = 01 Nos.
- Toll Plaza Complex = 03 Nos.

The details of the structures are given below.

2.3.1 Major Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-1 : List of Major Bridges

Sr. No.	Chainage (km)	Span Arrangement (m)	Name of River	Total width of super structure	Type of Super structure	Type of Sub Structure and foundation
1	49.994	6 x 20.5 + 1 x 11.0	Vashishtra River	10.25	RCC T-Girder + Solid Slab	RCC Circular pier with open foundation
2	55.614	6 x 20.5	Vashishtra River	10.25	RCC T-Girder + Solid Slab	RCC Circular pier with open foundation
4	70.462	9 x 21.50 (30 deg Skew)	Vellar / Vashishtra River	10.25	RCC T-Girder	RCC Circular pier with open foundation
5	102.087	4 x 20.5 (13 deg Skew)	Gomukhi River	10.25	RCC T-Girder	RCC Circular pier with open foundation
7	108.487	4 x 18.7	Manimuthar River	10.25	RCC T-Girder	RCC Circular pier with open foundation

2.3.2 Flyovers & ROB's

The list of flyovers & ROB's along the project corridor is as given below

Table 2-2 : List of Flyovers & ROB's along Project Corridor

Sr. No.	Chainage (km)	Span Arrangement (m)	Total width of super Structure	Type of Super Structure	Type of Sub Structure and Foundation
1	31.500	2 x 45	10.25 m total width for each carriageways & 7.5 m carriageway with 1.5 m footpath	PSC Post Tensioned T-Girder	RCC Abutment Open foundation & Reinforced earth wall
2	68.073	1 x 12.5 + 1 x 45 + 1 x 12.5	10.25 m total width for each carriageways & 7.55 m carriageway with 1.5 m footpath	RCC Solid Slab + PSC Post Tensioned T-Girder + RCC Solid Slab	RCC Abutment Open foundation & Reinforced earth wall
3	83.250	1 x 12.5 + 1 x 45 + 1 x 12.5	10.25 m total width for each carriageways & 7.55 m carriageway with 1.5 m footpath	RCC Solid Slab + PSC Post Tensioned T-Girder + RCC Solid Slab	RCC Abutment Open foundation & Reinforced earth wall
4	8.293	2 x 45	10.25	PSC T-Girder	RCC Circular pier with open foundation

2.3.3 Minor Bridges

The list of Minor Bridges along the project corridor is as given below

Table 2-3 : List of Minor Bridges along Project Corridor

Sr. No.	Chainage (Km)	Span Arrangement	Details of Structural Components
1	8+315.6	1 (25.0)	RCC & PCC
2	15+376.0	2 (7.40 x 2.02)	RCC & PCC
3	16+837.0	1 (7 x 2.70)	RCC & PCC
4	18+087.0	2 (3.5 x 2.22)	RCC & PCC
5	21+463.0	2 (6.2 x 1.9)	RCC & PCC
6	24+430.0	4 (8.35 x 2.6)	RCC & PCC
7	28+557.0	2 (25.00)	RCC & PCC
8	30+233.0	2 (25.00)	RCC & PCC
9	31+125.0	1 (15.10)	RCC & PCC
10	34+040.0	3 (17.30)	RCC & PCC
11	34+383.0	2 (11.6 x 6.5)	RCC & PCC
12	35+946.0	2 (2.25 x 3.5)	RCC & PCC
13	60+695.0	3 (6.75 x 3.4)	RCC & PCC
14	72+130.0	1 (6.80)	RCC & PCC
15	79+220.0	3 (8.75 x 4.80)	RCC & PCC
16	82+469.0	1 (8.60)	RCC & PCC
17	84+826.0	1 (21.5)	RCC & PCC
18	87+186.0	1 (9 x 9.5)	RCC & PCC
19	88+937.771	4 (8.7 x 5.6)	RCC & PCC
20	90+377.641	3 (8.75 x 4.4)	RCC & PCC
21	95+832.275	(3 x 6.70)	RCC & PCC
22	107+385.710	1 (9 x 2.50)	RCC & PCC
23	109+447.598	1 (9 x 1.9)	RCC & PCC
24	110+333.922	1 (8 x 3.55)	RCC & PCC
25	129+864.116	3 (5.7 x 2.34)	RCC & PCC
26	135+342.970	1 (7.5 x 3.15)	RCC & PCC
27	136+106.799	1 (12.2 x 3.15)	RCC & PCC

2.4 Project Corridor Illustration

Following photographs illustrate project section along the corridor

Figure 2-4 : Photographs showing Project Corridor

CHAPTER 3
TRAFFIC SURVEYS AND ANALYSIS

3.1 Traffic Surveys

During the course of study work we have collected required information for project corridor to understand the general traffic and travel characteristics on the corridor.

The following traffic data has been collected for project.

- Classified traffic volume counts at toll plaza locations on Salem - Ulundurpet section of NH-68 for base year 2015-16
- Local Component of traffic
- Component of Return Journey
- Component of Monthly Pass Journey

The main objective of the traffic data analysis is to:

- Determine the existing traffic movement characteristics of project
- Establish base year traffic
- Identification of travel patterns and modal split of project traffic
- Deriving growth factors for traffic forecasting
- Estimation of corridor traffic including traffic diversion if any
- Preparation of revenue model and projection of revenue as per toll policy for various scenarios

Project can be divided into following homogenous sections from traffic point of view.

Project road from Salem to Ulundurpet can be taken as single homogeneous section as there is no major traffic diversion along alignment.

Table 3-1 below lists provides details of locations from where traffic details have been collected.

Table 3-1 : Traffic Data Details

Sr. No.	Location	CTV	Single Journey Traffic	Multiple Journey	Monthly Pass	Local Traffic
1	Km 21.750 Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016
2	Km 73.760 Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016
3	Km 105.000 Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016

The locations of each of the traffic survey are illustrated in Figure 3-1.

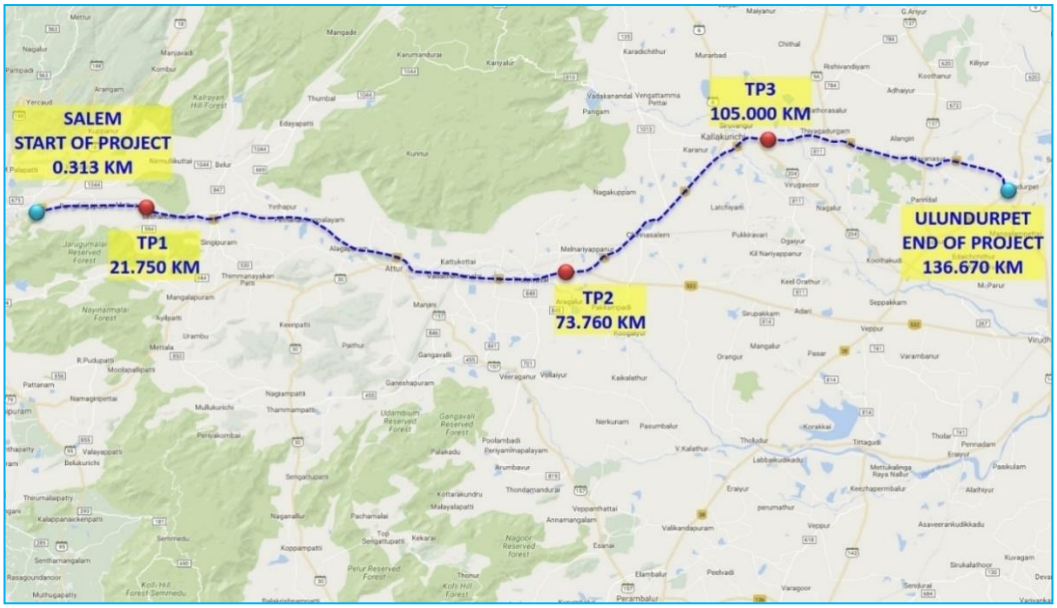


Figure 3-1 : Toll Plaza Locations

3.2 Classified Traffic Volume Count

The objective of conducting a Classified Traffic Volume Count is to understand the traffic flow pattern including modal split on a roadway. The Classified Traffic Volume Count survey has been provided by concessionaire of project highway from actual traffic data gathered at toll plaza locations based on monthly data shared with NHAI. These locations are indicated in ***Figure 3-1*** and listed in ***Table 3-1***.

The vehicles can broadly be classified into fast moving / motorized and slow moving / non-motorized vehicles, which can be further classified into specific categories of vehicles. The groupings of vehicles are further segregated to capture the tollable vehicle

categories specifically and toll exempted vehicles are counted separately. The detailed vehicle classification system as per IRC: 64-1990 is given in ***Table 3-2***.

Table 3-2 : Vehicle Classification System

Vehicle Type	
Auto Rickshaw	
Passenger Car	Car, Jeep, Taxi & Van (Old / new technology)
Bus	Mini Bus
	Standard Bus
Truck	Light Goods Vehicle (LCV)
	2 – Axle Truck
	3 Axle Truck (HCV)
	Multi Axle Truck (4-6 Axle)
	Oversized Vehicles (7 or more axles)
Other Vehicles	Agriculture Tractor, Tractor & Trailer

Source - IRC: 64 – 1990

However, since project highway is currently under toll operation, the data collected is corresponding to category of tollable vehicles. Following are the type of vehicles as per concession agreement.

- Car / Jeep / Van
- LCV
- Truck / Bus
- Multi Axle (MAV)
- Oversize Vehicle

3.3 Traffic Characteristic

Toll revenue of project highway does not solely depend on traffic volume. There are certain characteristics of traffic which have substantial potential to affect toll collection. Component of local traffic, component of passenger and commercial traffic, portion of return journey traffic, % of monthly pass traffic are some of such characteristics of traffic. These will be discussed in subsequent sections of report.

3.3.1 Traffic Data

Project concessionaire has provided Traffic data for base year 2015-16 as under at the toll plaza locations -

Table 3-3 : Traffic Data at Toll Plaza at Km 21.750

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	7089
2	LCV	1149
3	Truck/Bus	2123
4	Multi Axle	1199
	Total	**11560**

Table 3-4 : Traffic Data at Toll Plaza at Km 73.760

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	5654
2	LCV	1042
3	Truck/Bus	2110
4	Multi Axle	1171
	Total	**9977**

Table 3-5 : Traffic Data at Toll Plaza at Km 105.000

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	4463
2	LCV	876
3	Truck/Bus	1616
4	Multi Axle	725
	Total	**7681**

This data was then bifurcated to various components like through local, monthly, return journey etc. category. Same is discussed in detail in following section.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-6 : Historical Tollable Traffic

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY15 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	1,525,419	1,717,405	1,899,737	984,505	1,106,598	11%
LCV (2)	306,826	323,087	354,921	179,827	202,115	10%
Bus/Truck (3)	639,267	685,671	678, 147	349,182	357,828	-1%
Multi-axle (4)	356, 147	372,784	360,114	182, 018	191,629	-3%
Total	**2,827,659**	**3,098,948**	**3,292,919**	**1,695,532**	**1,858,170**	**6%**

* One Toll plaza out of total 3 operational for partial period

** Toll operations suspended for 16 days due to floods in Dec 2015

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project increased to 17,392 PCUs in 2016 from 15,085 PCUs in 2014, representing a CAGR of 7%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-7 : Historical AADT

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY15 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	4,179	4,705	5,428	5,380	6,047	15%
LCV (2)	841	885	1,014	983	1,104	15%
Bus/Truck (3)	1,751	1,879	1,938	1,908	1,955	3%
Multi-axle (4)	976	1,021	1,029	995	1,047	1%
Total	7,747	8,490	9,408	9,265	10,153	11%
Total PCUs	**15,085**	**16,265**	**17,392**	**17, 054**	**18,281**	**7%**

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the SU Project's total traffic mix, 56%, 11%,22% and 12% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 58%, 11%, 21%, and 11% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of SU's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the SU Project's by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-8 : Historical Toll Revenue

Category	(in Rs. Millions) For the FY ended March 31			(in Rs. Millions) For the Six Months Ended September 30		CAGR FY15 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	136.5	197.7	227.4	117.0	132.7	15%
LCV (2)	52.1	68.9	79.0	39.7	44.7	15%
Bus/Truck (3)	180.0	240.7	250.0	126.0	129.3	4%
Multi-axle (4)	199.3	265.3	268.2	134.2	143.2	1%
Total	569.0	772.6	824.6	416.9	449.7	7%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

Table 3-9 : Gross Monthly Toll Revenue

Month	2016 (Rs. in millions)
April	75.3
May	77.5
June	75.8
July	75.7
August	74.8
September	70.7

3.4 Data Analysis

3.4.1 Analysis of Traffic Volume Count

Understanding the character of existing traffic forms the basis of traffic forecast. The various vehicle types having different sizes and characteristics can be converted into a single unit called Passenger Car Unit (PCU). Passenger Car equivalents for various vehicles are adopted based on recommendations of Indian Road Congress prescribed in "IRC-64-1990: Guidelines for Capacity of Roads in Rural areas". The adopted passenger car unit values (PCU) are presented in table below

Table 3-10 : PCU Factors Adopted for Study

Vehicle Type	PCUs
Car	1.0
Mini Bus	1.5
Standard Bus	3.0
LCV/LGV	1.5
2 Axle Truck	3.0
3 – 6 Axle Truck	4.5
MAV	4.5
Auto Rickshaw	1.0
Van/Tempo	1.0
Agriculture Tractor with Trailer	4.5
Agriculture Tractor without Trailer	1.5

Source: IRC: 64-1990

Traffic volume at each toll plaza was converted to PCU and same is presented as under

Table 3-11 : Traffic in PCU at Project Stretch

Toll Plaza Location	Traffic No	PCU	PCU Index
Mettupatti (Km 21.750)	11560	20576	**1.78**
Nathakkari (Km 73.760)	9977	18815	**1.89**
Viracholapuram (Km 105.000)	7681	13889	**1.81**

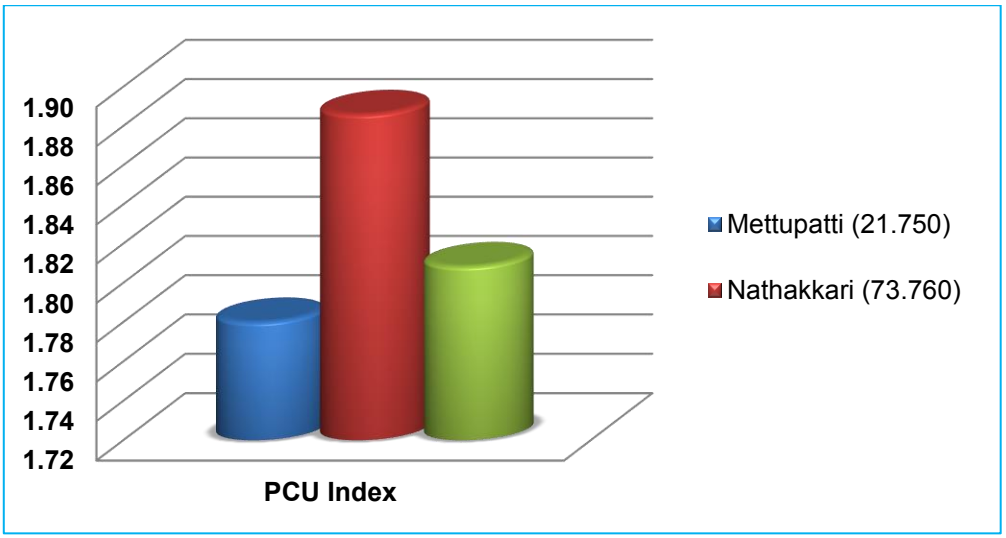


Figure 3-2 : Comparison of PCU Index

It can be observed from above that at all toll plaza locations project traffic has PCU index more than 1.5 which is a fair indicator of mix being split between commercial and urban traffic. Commercial traffic is more at toll plaza location at Km 73.760. Other two toll plazas are at end of stretch and have urban traffic dominance.

3.4.2 Components of Traffic

As discussed previously, components of traffic volume play an important role in determining project revenue. A larger component of commercial traffic with higher axle configuration adds to project revenue positively. Similarly, a larger component of local traffic affects the project revenue potential negatively.

Following graphs show modal split at all three toll plazas

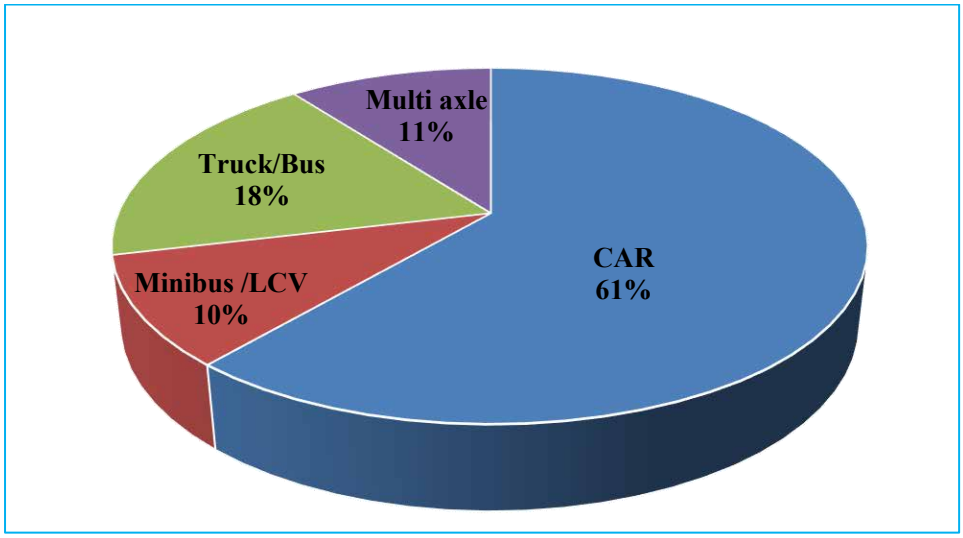


Figure 3-3 : Modal Split of Traffic at Toll Plaza Km 21.750

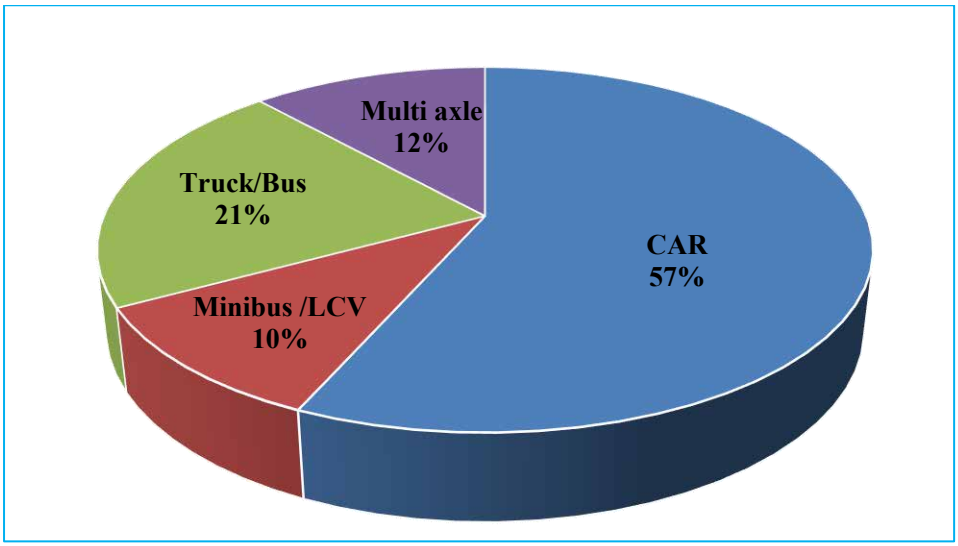


Figure 3-4 : Modal Split of Traffic at Toll Plaza Km 73.760

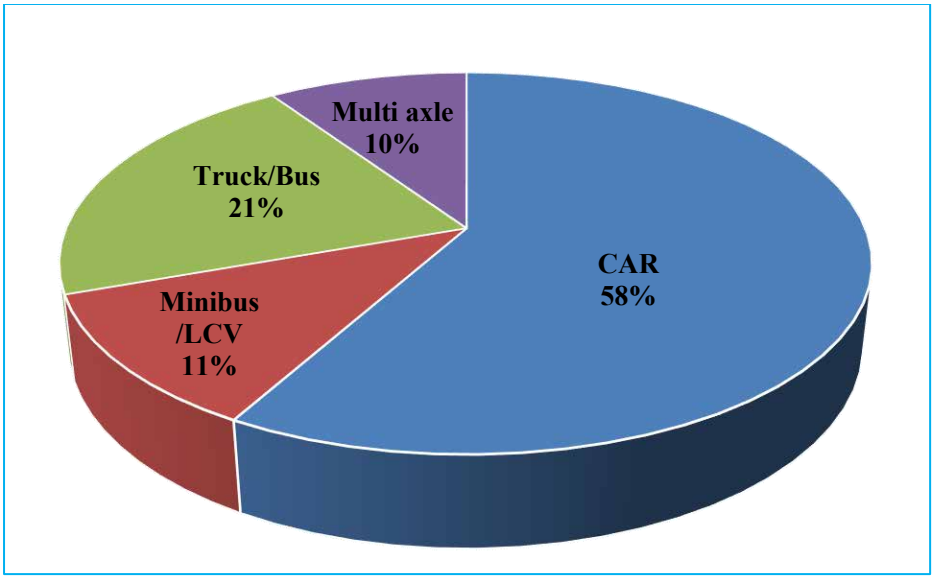


Figure 3-5 : Modal Split of Traffic at Toll Plaza Km 105.000

It is observed that share of car traffic varies from 58% to 61% of total traffic. It is expectedly high at Toll Plaza @ Km 21.750 which is near to Salem. Share of LCV and is constant at about 10-11%. Share of multi axle is 10% to 12%. Higher percentage of urban traffic is due to the project corridor being under influence zone of urban development of Salem and Ulundurpet on both ends.

Another important bifurcation of traffic is components of traffic with respect to various type of toll ticketing like

1. Single Journey
2. Multi Journey
3. Monthly Pass (Local and General)

Following table provides numbers of vehicle falling in each of above category on base year 2015-16

Table 3-12 : Journey Type Bifurcation of Traffic at Toll Plaza Km 21.750

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	40.2%	56.1%	0.4%	3.3%	**100.0%**
Minibus /LCV	60.0%	36.1%	0.0%	3.8%	**100.0%**
Truck/Bus	33.4%	29.3%	0.0%	37.4%	**100.0%**
Multi axle	81.8%	17.6%	0.0%	0.6%	**100.0%**

Table 3-13 : Journey Type Bifurcation of Traffic at Toll Plaza Km 73.760

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	46.4%	51.6%	0.3%	1.7%	**100.0%**
Minibus /LCV	65.2%	34.2%	0.0%	0.6%	**100.0%**
Truck/Bus	35.9%	31.6%	0.0%	32.5%	**100.0%**
Multi axle	73.1%	26.9%	0.0%	0.1%	**100.0%**

Table 3-14 : Journey Type Bifurcation of Traffic at Toll Plaza Km 105.000

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	52.0%	44.5%	0.4%	3.0%	**100.0%**
Minibus /LCV	70.5%	28.5%	0.0%	1.0%	**100.0%**
Truck/Bus	36.4%	26.5%	0.0%	37.1%	**100.0%**
Multi axle	82.3%	17.7%	0.0%	0.0%	**100.0%**

Following figure illustrate component of each type of journey in graphics for better understanding.

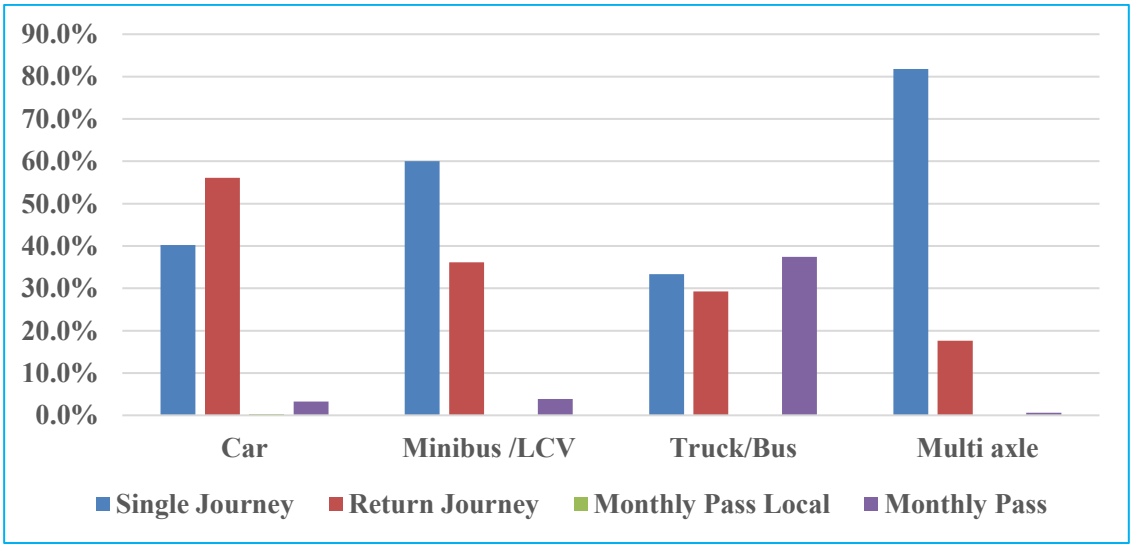


Figure 3-6 : Journey Type Bifurcation at Toll Plaza Km 21.750

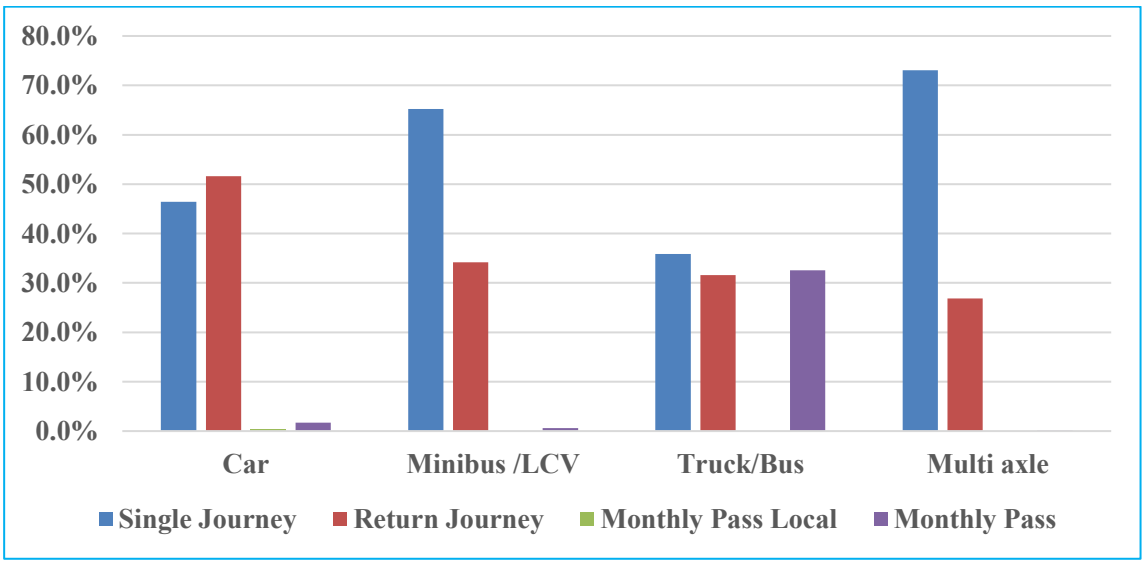


Figure 3-7 : Journey Type Bifurcation at Toll Plaza Km 73.760

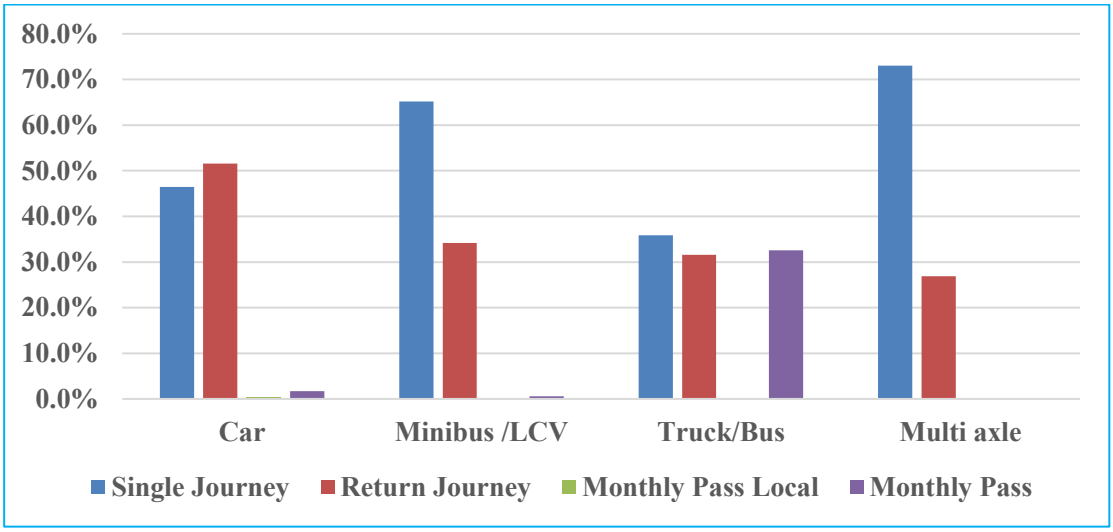


Figure 3-8 : Journey Type Bifurcation at Toll Plaza Km 105.000

It can be observed that local passes are negligible. Return journey component for cars is higher than single journey at all toll plazas, maximum being at toll plaza near Salem. Over all return journeys represent about 35% of the total traffic. This reflects presence of strong local urban traffic. Buses also have high share of monthly passes at all locations, which confirms the same. In case of LCVs and multi axle share of single journey is predictably higher than return journey.

3.4.3 Seasonal Variation in Traffic

Traffic on highway does not remain uniform throughout the year. Festivals, rains etc. are factors for such variation. Seasonal variation of traffic was worked out from the data available. Following figure depict monthly variation of AADT at toll plaza near Salem.

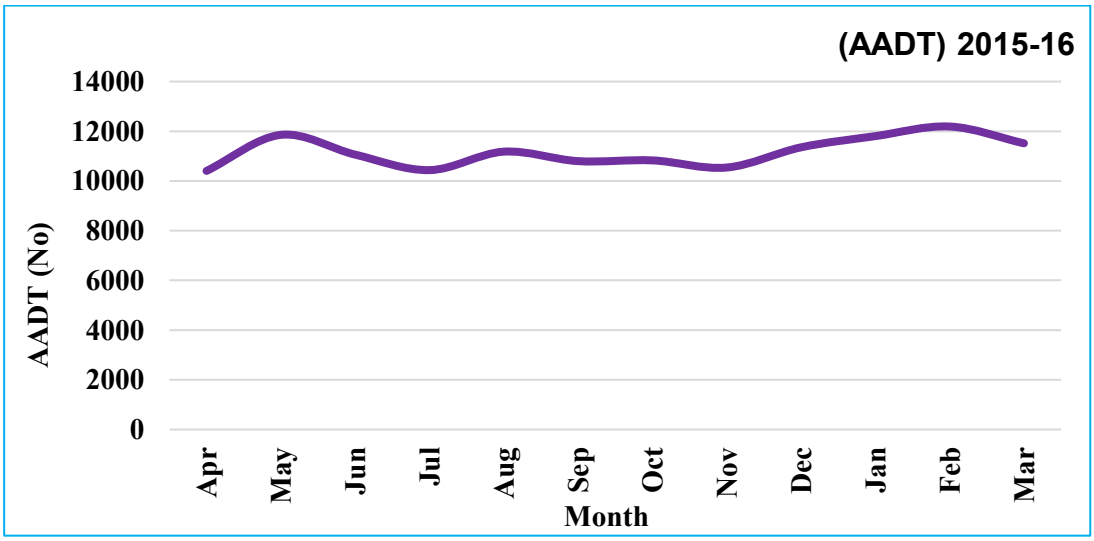


Figure 3-9 : Seasonal Variation of Traffic at Project Highway at Toll Plaza at Km 21.750

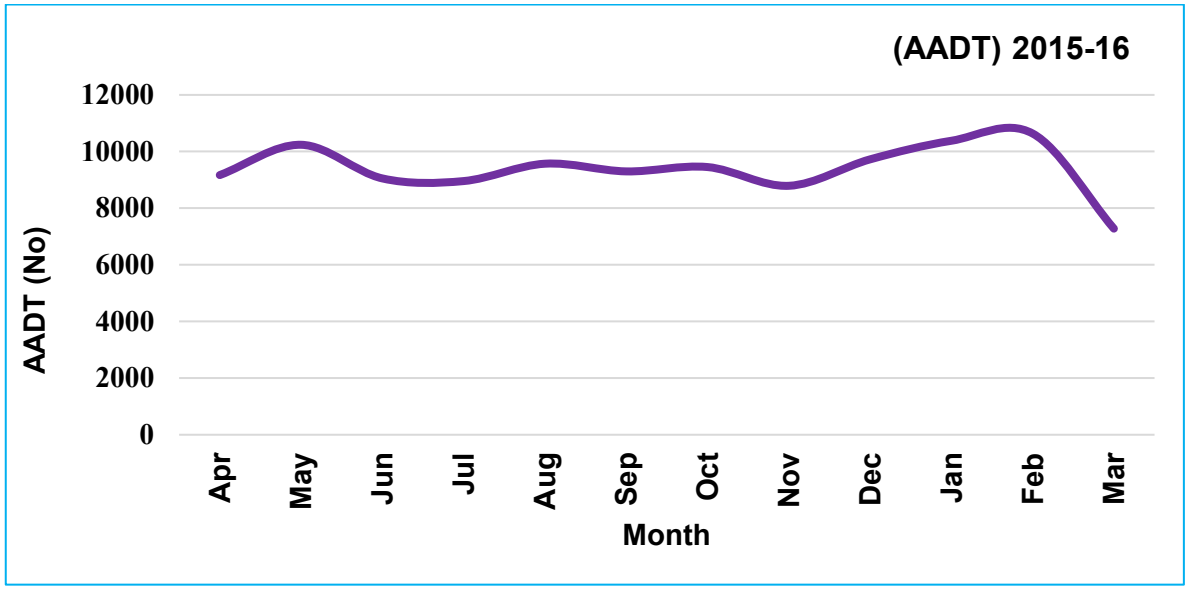


Figure 3-10 : Seasonal Variation of Traffic at Project Highway at Toll Plaza at Km 73.760

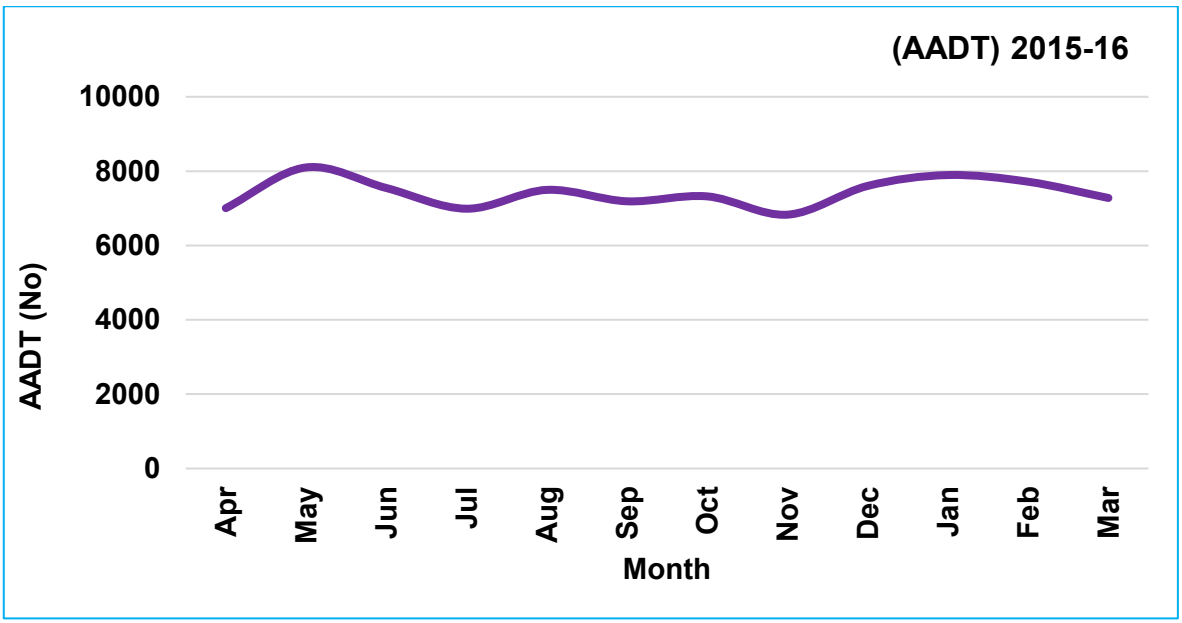


Figure 3-11 : Seasonal Variation of Traffic at Project Highway at Toll Plaza at Km 105.000

It is observed that traffic volume reduces in the rainy season from August to November and then picks up after November during the harvest season. Maximum Season correction factor varies between 0.92 to 1.07.

3.5 Secondary Data Collection

There are several other factors which have substantial impact on traffic pattern and growth on any project corridor. Following are some of such important factors

- Industrial development around project corridor and its catchment
- Educational infrastructure along project corridor
- Demographic pattern
- Urban area development
- Tourism potential
- Upcoming major infrastructural or industrial projects
- Special industry in project corridor
- Overall trends of economic growth local as well as national / regional

Hence in addition to traffic details on project site, secondary data was also collected from the various sources. Typical secondary data includes the following:

1. Vehicle registration data of regional and national level.
2. Economic Data
    a) GDP
    b) NSDP
    c) Population Growth
    d) Per Capita Income growth
    e) Industrial Growth
    f) Special Industry Potential
    g) Regional and National development vision / plan
    h) Any other relevant data
3. Competing road network.

We have collected and utilized such underlying data in the study to estimate the growth and risk factors for traffic along the project corridor.

CHAPTER 4
INFLUENCE ZONE TRANSPORT NETWORK ANALYSIS

4.1 Introduction

Highway corridors behave like integrated circuit network and more often than not every road is connected to various networks having different origin and destinations. Traffic running on these networks behave like fluid and flows on network on alignment of least friction.

Following Factors can be considered as major contributors to friction on transportation network

- Travel Speed / Travel Time,
- Geometric deficiencies,
- Configuration of road,
- Riding comfort,
- Traffic delays,
- Length of road,
- Built up passing through,
- Terrain,
- Facilities

Following set of urban origin and destination have been selected for this analysis

- Salem to Valappadi
- Valappadi to Chinnasalem
- Chinnasalem to Ulundurpet

Following figures depict competing road network of above pair of origin & destinations

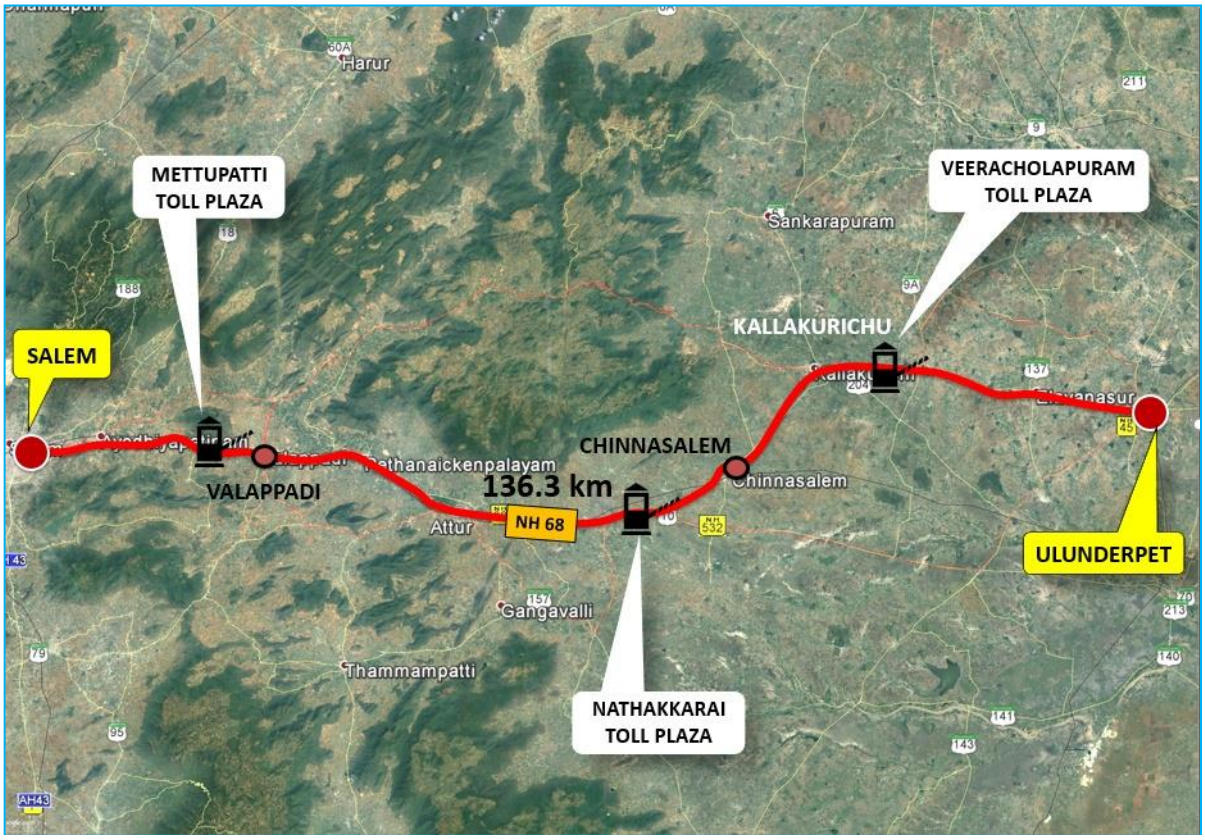


Figure 4-1 : Project Alignment Salem to Ulundurpet

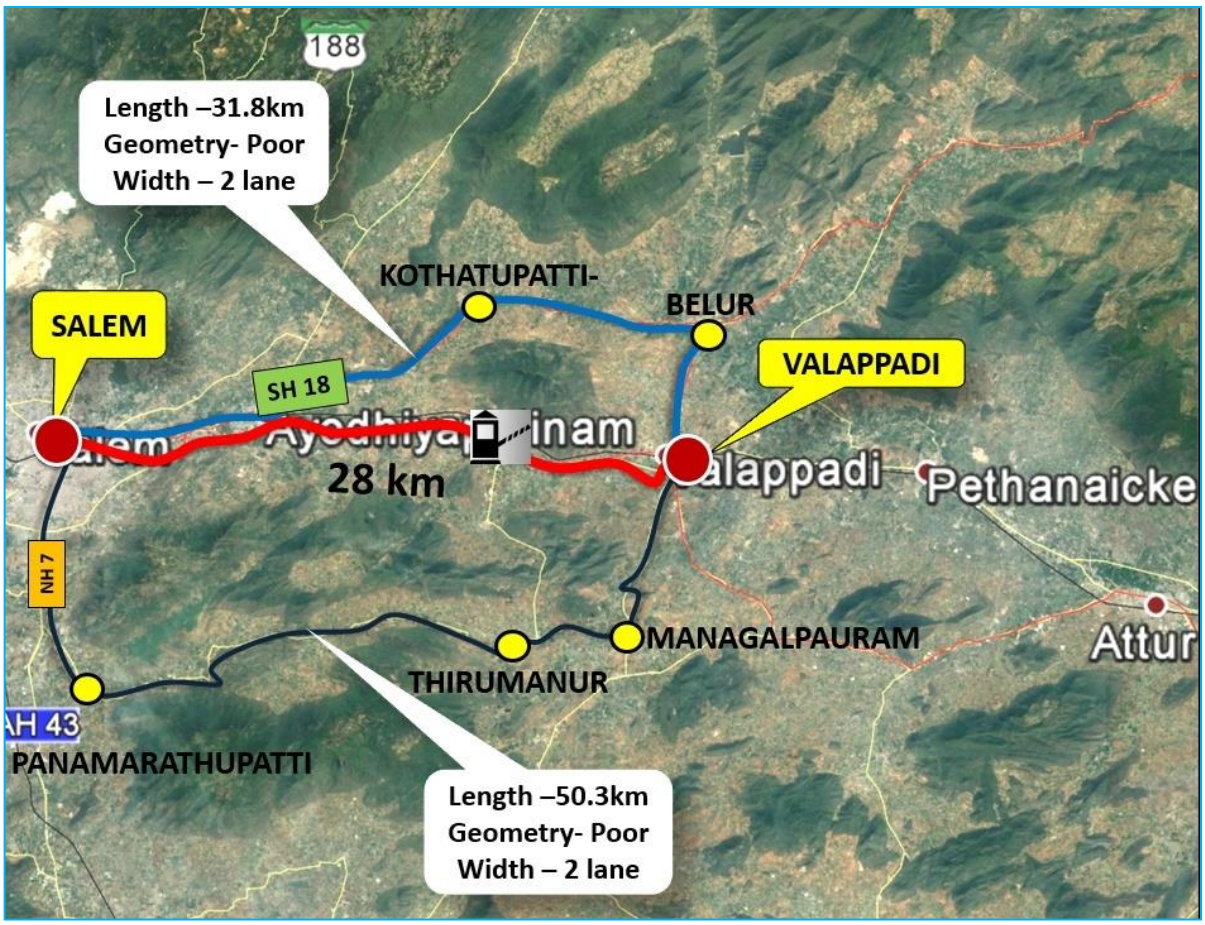


Figure 4-2 : Competing Roads Salem to Valappadi

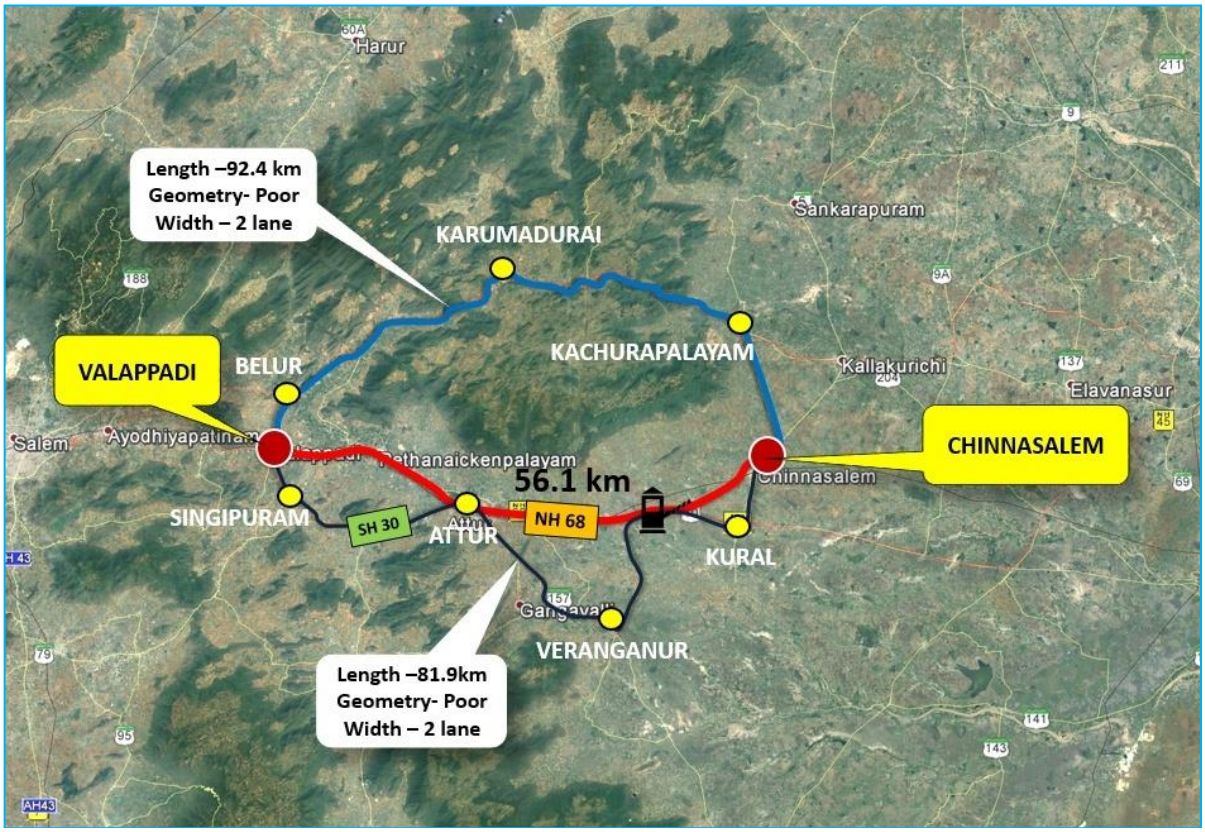


Figure 4-3 : Competing Roads Valappadi to Chinnasalem

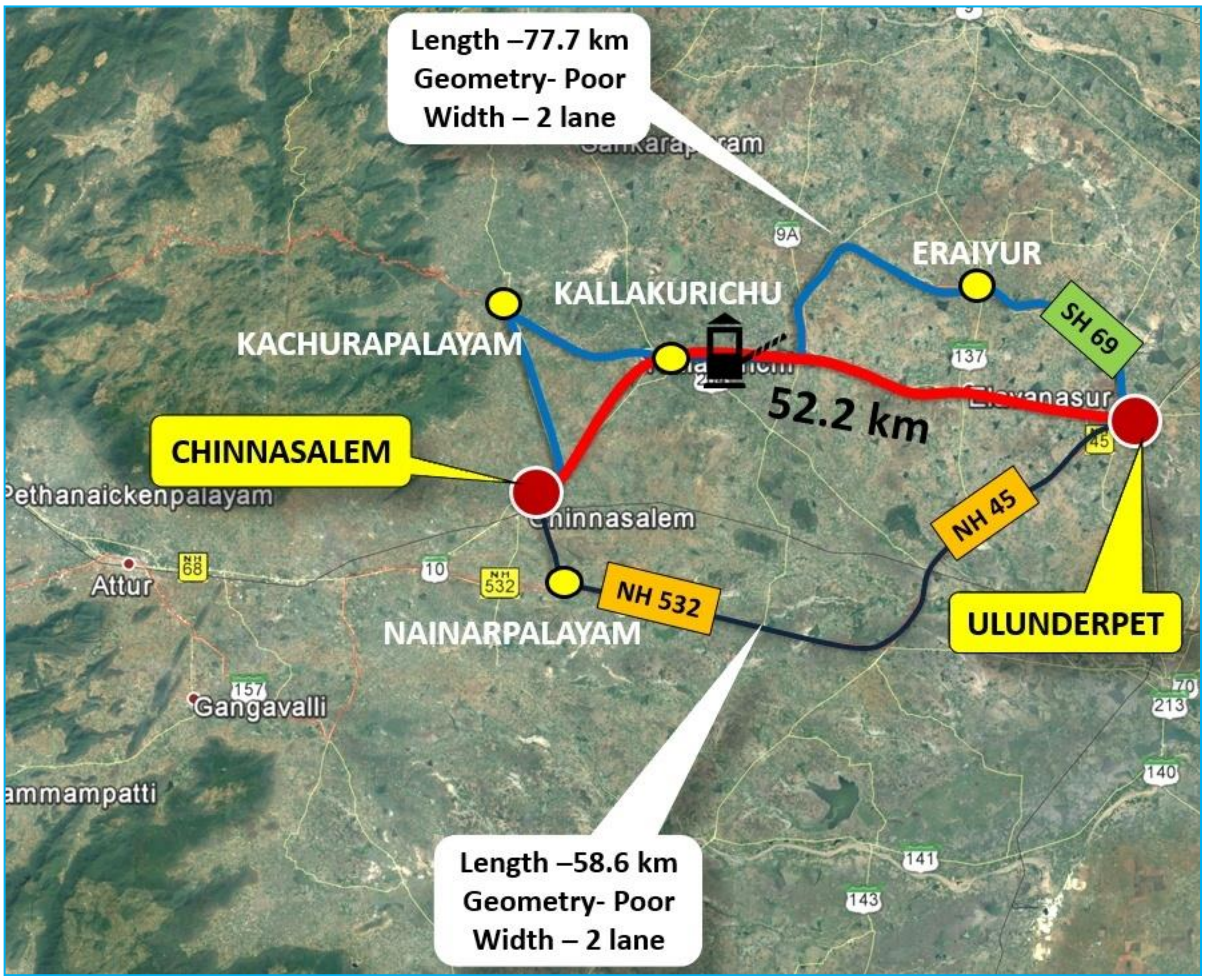


Figure 4-4 : Competing Roads Chinnasalem to Ulundurpet

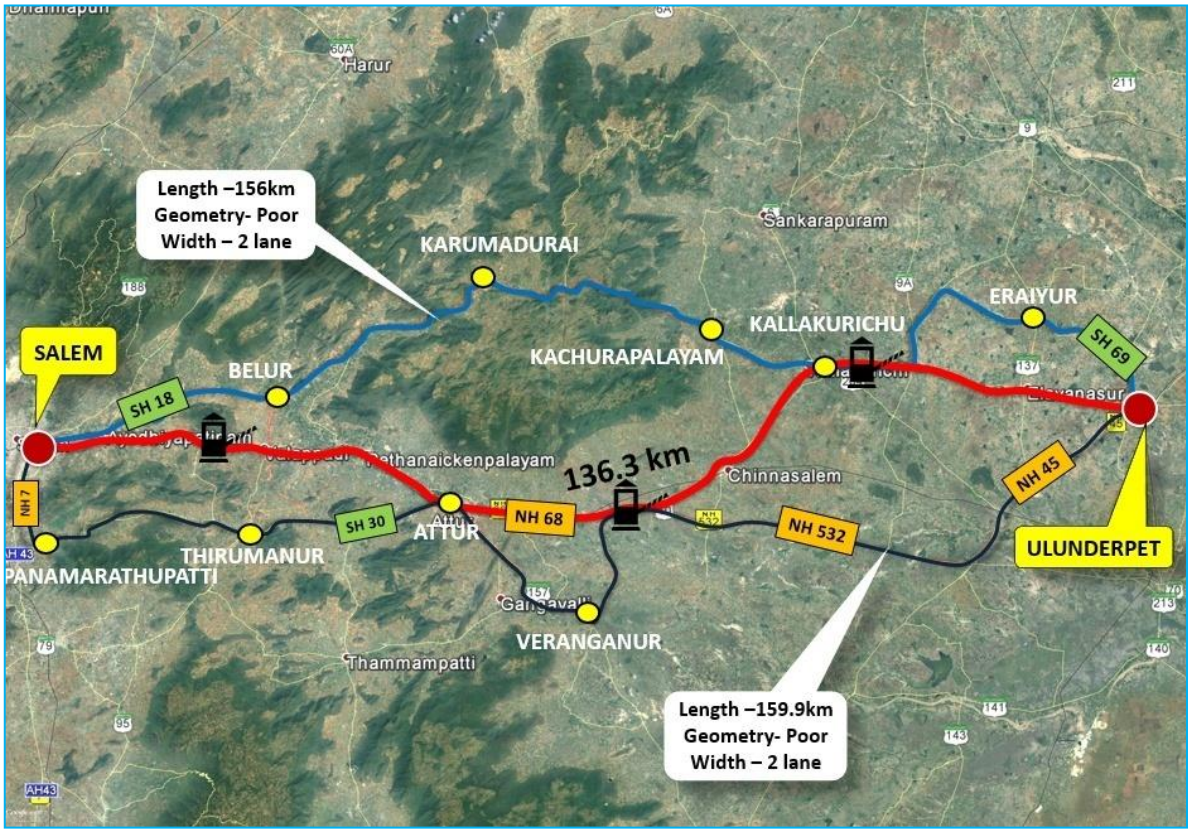


Figure 4-5 : Competing Roads Salem to Ulundurpet

It can be observed that the project highway is the spine of the corridor between Salem to Ulundurpet. The entire length of the NH 68, between Salem and Ulundurpet primarily carries intra-state traffic in addition to east bound traffic to the Chennai Cuddalore Port and the tourist city of Pondicherry and west bound traffic to Coimbatore and the major cities of Palakkad and Thrissur in Kerala.

There are several local roads and state highways which if integrated can form a competing road network. However most of these roads run across project corridor covering much longer distances for the same pairs of origin and destination as compared to project highway. Moreover, the geometry and quality of road is inferior as compared to project section of NH-68, adding to travel time and consequently the costs. These have sharp turns, bottlenecks and patches of damaged pavement. The following table provides quantity cum quality analysis of competing roads.

Table 4-1 : Competing Roads Details

Sr. No	Route Details	Designation	Length (Km)	Avg. Speed (KMPH)	Time Taken (Min)	Observations
1	Salem to Valappadi competing road (SH-18- Kothatupatti- Belur Road) on North side	Competing Road	31.8	40	48	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-68 not expected
	Salem to Valappadi via Project Road NH-68	**Project Road**	**28**	**70**	**24**	
	Salem to Valappadi competing road (Panamarathupatti- Managalpauram Road) on South side	Competing Road	50.3	40	75	
Sr. No	**Route Details**	**Designation**	**Length (Km)**	**Avg. Speed (KMPH)**	**Time Taken (Min)**	**Observations**
2	Valappadi to Chinnasalem competing road (Belur- Karumadurai- Kachurapalayam Road) on North side	Competing Road	92.4	40	139	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-68 not expected
	Valappadi to Chinnasalem via Project Road NH-68	**Project Road**	**56.1**	**70**	**48**	
	Valappadi to Chinnasalem competing road (SH-30 - SH-157 - Kural Road) on South side	Competing Road	81.9	40	123	
3	Chinnasalem to Ulundurpet via competing road (Kachurapalayam- Kallakurichu- Eraiyur Road) on North side	Competing Road	77.7	40	117	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-68 not expected
	Chinnasalem to Ulundurpet via Project Road NH-68	**Project Road**	**52.2**	**70**	**45**	
	Chinnasalem to Ulundurpet via competing road (Nainarpalayam- NH-532- NH-45) on South side	Competing Road	58.6	40	88	
4	Salem to Ulundurpet competing road (SH-18- Belur- Karumadurai- Kallakurichu- Eraiyur-SH-69) on North side	Competing Road	156	40	234	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from
	Salem to Ulundurpet via Project Road NH-68	**Project Road**	**136.3**	**70**	**117**	

	Salem to Ulundurpet competing road (Panamarathupatti-Thirumanur- Attur-Veranganur- NH-532- NH-45) on South side	Competing Road	159.9	40	240	NH-68 not expected

As can be observed from table above, the point regarding significant time saving and consequently cost savings for traffic which align to the project highway is reaffirmed. Time and fuel saving is a major criterion for selection of routes. Under these circumstances, it is not envisaged that commercial or passenger traffic would switch to competing roads from the project road. Further, it may be noted that since the project highway has already been commissioned and has a tolling history, the current traffic traversing the project corridor already factors in traffic diversion (if any) that may have taken place.

CHAPTER 5
GROWTH OF TRAFFIC ON PROJECT HIGHWAY

5.1 Introduction

Traffic growth is a function of the interplay of a number of contributory factors such as National economy, Government policy, socio-economic conditions of the people, and changes in land uses along the project corridor precincts etc. As these factors have several uncertainties associated with them, forecasts of traffic are dependent on the forecasts of factors such as population, gross domestic product (GDP), vehicle ownership, per capita income (PCI), agricultural output, fuel consumption etc. Future pattern of change in these factors can be estimated with only a reasonable degree of accuracy and hence the resultant traffic forecast levels may not be precise.

Traffic growth forecast for project corridor Salem - Ulundurpet section of NH-68 has been carried out taking above factors in to consideration. "**IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**" is established best practice and has been used for traffic growth forecast.

5.2 Trend Analysis

One of the methods of estimation of future rate of traffic growth is to assume the same rate of growth as experienced in the past. However, it may be noted that major influencing factors which reflect Economic conditions such as GDP, agricultural output, industrial output, national policies etc. are susceptible to change over a longer period of time and necessary adjustments need to be made to past trends to account for these changes.

Thus, we have considered the Elasticity model of growth projection which is one of the most widely acceptable methods for traffic forecast and is recommended in **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**.

In this method, past trends of any vehicular data are paired with an economic indicator and a regression analysis is done to yield the economic model of growth. Growth of vehicular traffic varies for different type of vehicle. It is a proven fact that growth patterns for passenger and goods vehicles are different. Traffic growth on any highway typically depends on several economic parameters. The most important and direct parameters are given as under

- Per Capita Income
- Net State Domestic Product (NSDP)
- Population

It is observed that the ownership of a car is more closely related to affordability hence per capita is the index which closely fits with growth of car traffic among other criteria. In similar fashion, following pairs of vehicle type and independent variable can be established for elasticity modeling of growth.

- Car / Jeep – Par Capita Income
- Bus / Minibus – Population
- Trucks / Heavy / Goods Vehicle – NSDP
- Time series data of vehicle (both passenger and goods) Registered in the state of Tamil Nadu is used as the base data for analysis of growth

5.3 Estimation of Traffic Demand Elasticity

Elasticity of traffic demand is defined as the rate at which traffic intensity varies due to change in the corresponding indicator selected. Hence, in order to estimate the elasticity of traffic demand, it is necessary to establish the relationship between the growth in number of given category of vehicle with one of the economic variables considered, such as NSDP, per capita income and population growth. Latest available data for vehicle registration, per capita income, NSDP and population is used in analysis.

As per IRC: 108-1996 the model for estimating elasticity index for the project corridor is of the following form and is as given below:

$$Log\ (P) = k \times Log\ (EI) + A$$

Where,

P = *Number of Vehicles (Mode wise)*

EI = *Economic Indicator*

A = *Regression constant*

k = *Elasticity coefficient (Regression coefficient)*

The elasticity for car and bus (passenger vehicles) is calculated based on Population and Per Capita Domestic Product (PCDP) and the elasticity for trucks is calculated based on the Net State Domestic Product (NSDP).

Following tables and graphs depict regression and elasticity of growth model.

Table 5-1 : Per Capita Income Vs Car

Year	PCI	Car	Log PCI	Log Car	PCI Growth	Average Growth
2004	30062	657339	4.48	5.82		
2005	34126	714978	4.53	5.85	14%	
2006	39166	787085	4.59	5.90	15%	
2007	41314	871917	4.62	5.94	5%	
2008	43193	967310	4.64	5.99	5%	
2009	47394	1080445	4.68	6.03	10%	
2010	53507	1230492	4.73	6.09	13%	
2011	57093	1385143	4.76	6.14	7%	
2012	58360	1549950	4.77	6.19	2%	
2013	62361	1709528	4.79	6.23	7%	8.5%

Regression analysis of same is given in figure below

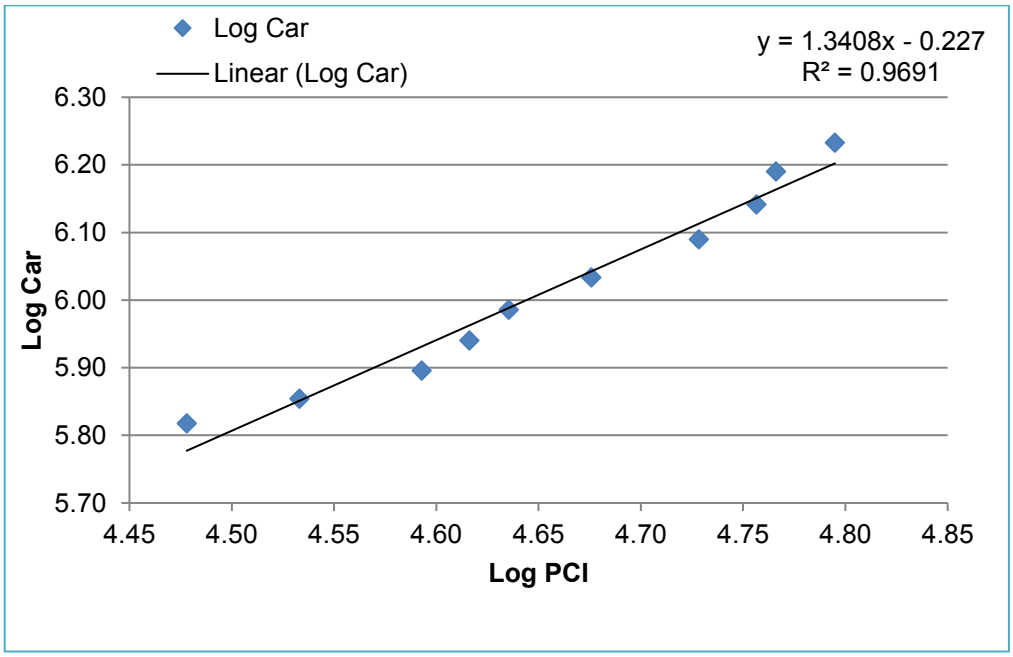


Figure 5-1 : Regression and Elasticity PCI vs. Car – Extrapolation

Table 5-2 : Population Vs Bus

Year	Population	Buses	Log Pop	Log Bus	Pop Growth	Average Growth
2004	64096000	37937	7.81	4.58		
2005	64623000	42109	7.81	4.62	0.8%	
2006	65135000	42999	7.81	4.63	0.8%	
2007	65629000	47765	7.82	4.68	0.8%	
2008	66106000	52617	7.82	4.72	0.7%	
2009	66566000	56338	7.82	4.75	0.7%	
2010	67012000	59240	7.83	4.77	0.7%	
2011	67444000	62725	7.83	4.80	0.6%	
2012	67862000	68096	7.83	4.83	0.6%	
2013	68265000	84488	7.83	4.93	0.6%	0.70%

Regression analysis of same is given in figure below

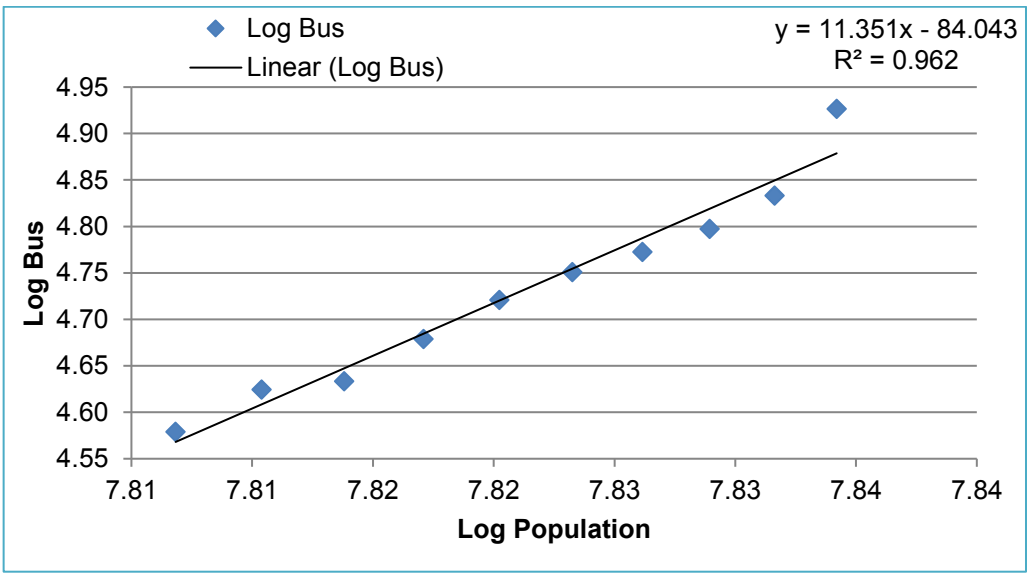


Figure 5-2 : Regression and Elasticity Population vs. Bus - Extrapolation

Elasticity of goods traffic has been worked out by regression analysis with NSDP. Following table represents the data and details.

Table 5-3 : Goods Traffic Vs NSDP

Year	NSDP	Trucks	Log NDSP	Log Truck	NSDP Growth	Average Growth (5 Year)
2004	19364500	220016	7.29	5.34		
2005	22158800	272756	7.35	5.44	14%	
2006	25628600	279984	7.41	5.45	16%	
2007	27234000	340542	7.44	5.53	6%	
2008	28674400	385948	7.46	5.59	5%	
2009	31676000	404326	7.50	5.61	10%	
2010	35996100	433814	7.56	5.64	14%	
2011	38650800	474226	7.59	5.68	7%	
2012	39747100	493564	7.60	5.69	3%	
2013	42718200	544201	7.63	5.74	7%	7.62%

Following figure depict regression analysis and extrapolation.

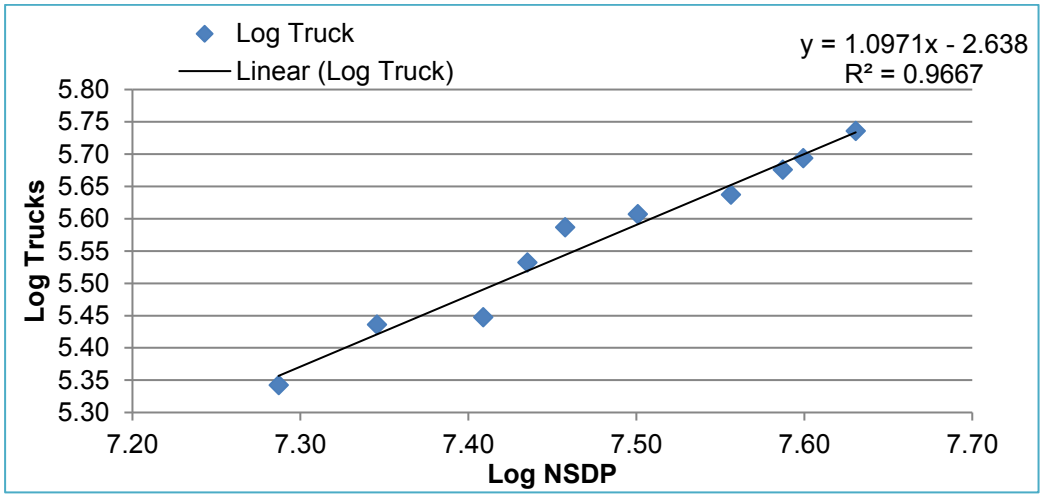


Figure 5-3 : Regression and Elasticity NSDP vs. Goods Traffic - extrapolation

Using the regression analysis above, we have arrived at the elasticity of traffic demand for each class of vehicle to a given change in relevant economic indicators. Average traffic growth of a vehicle class is multiplied by the corresponding elasticity coefficient to arrive at traffic growth. R^2 is statistical measure of how close the data are to the fitted regression line. It varies from 0 to 1. Higher the value of R^2 more representative is the regression model of data.

The results of these analyses for the good fit as reflected by R^2 values are presented in the Table below

Table 5-4 : Summary Regression Analysis

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient (y)	Average Growth	Growth Elastic Model
Tamil Nadu	Car/Jeep	PCI	y = 1.3408x - -0.227	R^2 = 0.9691	1.3408	8.52%	11.43%
	Bus	Population	y = 11.3505x - -84.0434	R^2 = 0.962	11.3505	0.70%	7.98%
	Truck	NSDP	y = 1.0971x - -2.638	R^2 = 0.9667	1.0971	7.62%	8.36%

While the economic model for predicting growth is a good tool, other local, regional, national factors such as proposed developments etc. should also be considered before finalizing growth factors. These factors are discussed in subsequent sections.

Concessionaire has carried out a sample survey to analyze the share of vehicles from various states in the traffic on project road. The study was conducted recently in March 2016 at toll plaza locations and both side traffic was covered in it. Survey covered over 90% of the vehicles. Following table provides summary of the same at all three toll plaza locations.

Table 5-5 : Component Share of Various States in Project Traffic at Toll Plaza @ 21.750 Km

State / Vehicle	Car	Truck/Bus	LCV	MAV
Tamil Nadu	92.30%	92.18%	91.50%	87.13%
Kerala	0.93%	0.72%	1.09%	1.34%
Karnataka	1.94%	1.47%	2.18%	5.38%
Puducherry	2.31%	3.65%	0.88%	1.02%
Andhra Pradesh	0.10%	0.00%	0.20%	0.51%
Rest of India	2.4%	1.98%	4.15%	4.62%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Table 5-6 : Component Share of Various States in Project Traffic at Toll Plaza @ 73.760 Km

State / Vehicle	Car	Bus	LCV	Truck	MAV
Tamil Nadu	90.00%	89.87%	94.34%	89.83%	89.50%
Kerala	1.48%	0.29%	2.01%	2.00%	1.33%
Karnataka	1.99%	0.36%	1.55%	1.22%	4.36%
Puducherry	4.38%	8.76%	0.64%	0.78%	0.96%
Andhra Pradesh	0.09%	0.07%	0.46%	0.18%	0.96%
Rest of India	2.06%	0.65%	1.00%	5.99%	2.89%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Table 5-7 : Component Share of Various States in Project Traffic at Toll Plaza @ 105.760 Km

State / Vehicle	Car	Bus	LCV	Truck	MAV
Tamil Nadu	88.91%	89.29%	93.35%	86.69%	86.39%
Kerala	1.54%	0.26%	2.22%	3.08%	2.12%
Karnataka	1.13%	0.35%	1.06%	1.79%	4.37%
Puducherry	6.46%	9.24%	1.06%	0.97%	1.62%
Andhra Pradesh	0.07%	0.09%	0.51%	0.16%	1.37%
Rest of India	1.89%	0.77%	1.80%	7.31%	4.13%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

It can be observed from above distribution of state share in traffic volume that all toll plaza locations local state (Tamil Nadu) traffic is predominating. Other states have very little share in it. Hence in economic model of growth projection, only Tamil Nadu model is considered.

5.4 Analysis of Historic Traffic Data

Historic traffic data forms useful information for any highway project. It provides useful information for establishing past trend of growth. Project stretch of Salem to Ulundurpet has been commissioned and it is under tolled operation since July 2012. Thus only 2-3 years' historic reliable data is available. Following tables provide trend of historic growth at toll plaza locations.

Table 5-8 : Past Traffic Trends at toll plaza @ Km 21.750

Type of Vehicle	Year 2013-14	Year 2015-16	Overall Growth % (CAGR)
Car	5200	6724	13.71%
LCV	2845	1135	10.29%
Bus/Truck	3145	2112	5.12%
MAV	1233	1194	-1.61%

Table 5-9 : Past Traffic Trends at toll plaza @ Km 73.760

Type of Vehicle	Year 2013-14	Year 2015-16	Overall Growth % (CAGR)
Car	4230	5345	12.41%
LCV	899	1036	7.38%
Bus/Truck	1923	2095	4.37%
MAV	1076	1169	4.21%

Table 5-10 : Past Traffic Trends at toll plaza @ Km 105.000

Type of Vehicle	Year 2013-14	Year 2015-16	Overall Growth % (CAGR)
Car	3107	4214	16.46%
LCV	690	871	12.34%
Bus/Truck	1419	1605	6.35%
MAV	618	724	8.27%

It can be noted that except at toll plaza at Km 21.750, traffic has registered impressive growth for all categories of vehicles. At toll plaza at Km 21.750 MAV has shown marginal negative growth. Since historic data is available for past 2-3 years only, it would be taken in consideration appropriately while working out growth projections of traffic on project corridor.

As recommended by **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways** "*This (historic growth) for short term projects but for long term projections it would be erroneous for assume that the past rate of growth would prevail for long time in future. Economic conditions are bound to change over long period and it would be necessary to modify the rate of growth accordingly*".

It is thus clear that while developing a futuristic growth projections for highway projects, long terms factors like growth of economy and upcoming developments in area have greater impact than past trends. Considering above, both historic trend and economic factors (elasticity) have been considered suitably to work out recommended growth rate of traffic on project corridor.

5.5 Other Factors Influencing Growth

There are many factors which have impact on traffic growth. As discussed previously these factors can be economic, social, educational, and industrial.

Potentiality of such factors for project highway is discussed as under.

ECONOMY

After witnessing a slowdown during 2008-09, the economy recovered in 2009-10, and a very high growth rate of GDP was recorded in 2010. Following figure depicts growth of GDP in India during the period.

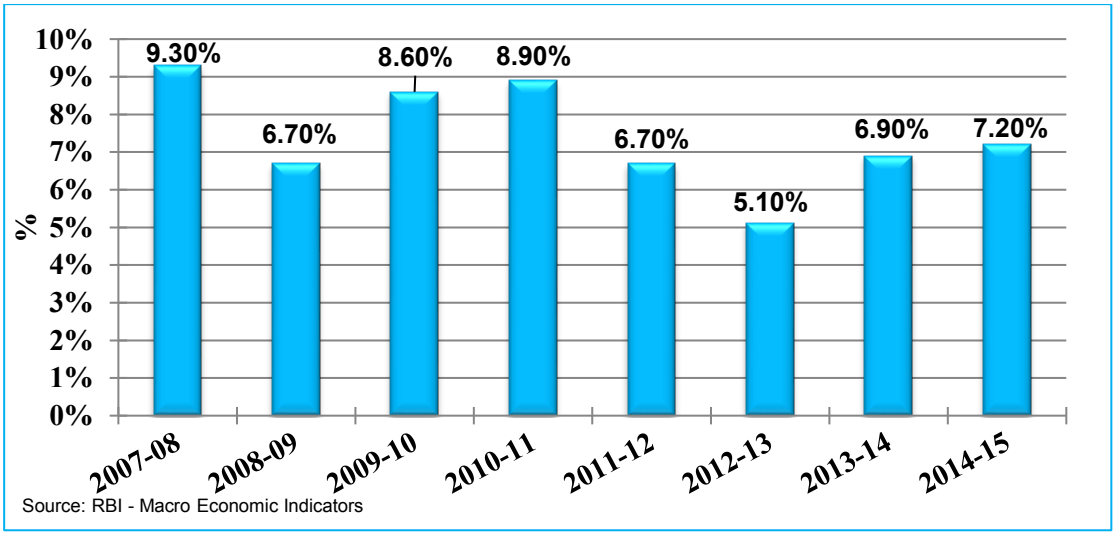


Figure 5-4 : Growth of GDP in India

After recording an all impressive growth of 8.9% in 2011, GDP declined between FY11 and FY14. GDP growth in 2014-2015 was pegged at 7.2% and is expected to be in the range of 7-8% going forward.

5.6 Developments Along and Around the Project Corridor & State

5.6.1 Developments around Salem Area

Salem is the sixth largest city in Tamil Nadu by population. As a district, Salem has its significance in various aspects; it is known for mango cultivation, silver ornaments, textile, sago industries and steel production.

- **The Salem handloom industry** - is one of the most ancient cottage industries producing quality sari, dothi and angavasthram (traditional Indian garments) out of silk and cotton yarns. In the recent past, home furnishing items are also woven, mainly for export purposes. More than 75,000 handlooms are working and the total value of cloth produced per annum is estimated at Rs. 5,000 crores. With more than 125 spinning mills, with modern weaving units and garment units Salem has established itself as one of the major textile center in Tamil Nadu.
- **Sago Industries** - The Salem region houses the Tamil Nadu largest number of Sago industries which are engaged in the production Sago Foods and Starch. In Salem District alone, 34000 hectares of land is under tapioca cultivation which is the raw material for the sago industries and there are 650 units engaged in tapioca processing. In and around Salem the yield of tapioca is about 25-30 T/ha, highest in the World. National average is 19 T/ha and World average production stands at 10 T/ha. Hence it is called land of sago. In 1981, Salem Starch and Sago Manufacturers Service Industrial Co-operative Society Ltd (popularly called as SAGOSERVE) was established to promote the growth of sago industries. Nearly 80% of the national demand for Sago and Starch is being met by the Sagoserv.
- The region around Salem is rich in mineral ores. Salem has one of the largest magnesite, bauxite and iron ore deposits in India. It has many magnesite factories operated by private and public sectors such as Burn Standard & Co, Dalmia Magnesites, Tata Refractories and SAIL Refractories.
- The Leigh Bazaar is the region's largest market for agricultural products, and Narasus Coffee, Nandhi Dall Mills (an old flour mill) and BSP Refineries (Usha Refined Sunflower Oil) are in Salem.
- Being one of the fastest growing tier II cities, the Tamil Nadu government and ELCOT are planning to establish an IT park in Salem covering about 160 acres (0.65 sq.km).
- There is an exclusive Electrical and Electronics Industrial Estate in the Suramangalam area of Salem town.

5.6.2 Developments around Ulundurpet Area

Ulundurpet is located in the southern region of Villupuram district in the state of Tamil Nadu. The town of Ulundurpet is the taluka headquarters.

- The town is well connected by NH 45 (Chennai - Tambaram - Chengalpattu - Madurantakam - Tindivanam - Viluppuram - Ulundurpet - Trichy - Manapparai - Dindigul - Theni) and SH 69 (Virudhachalam - Ulundurpet).
- Ulundurpet has a bus stand, which is used by TNSTC and private operators. This is situated inside the town on Chennai-Trichy main road (NH 45).
- As it is one of the busiest roadways in Tamil Nadu, frequently bus services are available to major places like Chennai, Trichy, Salem, Pondicherry, Cuddalore, Villupuram, Virudhachalam, Kallakurichu etc. For every 6-10 mins in the peak hours, buses are frequently available to the places like Virudhachalam, Villupuram, Kallakurichu, Trichy, Chennai and Salem. It is the major advantage of this town.

Some of the big projects around the project corridor are detailed below

5.6.3 Salem Steel Plant & Steel SEZ by Steel Authority of India Ltd.

Salem Steel Plant, a special steel unit of Steel Authority of India Ltd has their plant located in Salem which produces cold rolled stainless steel and hot rolled stainless steel/carbon steel. The plant can produce austenitic, ferritic, martensitic and low-nickel stainless steel in the form of coils and sheets with an installed capacity of 70,000 tonnes/year in cold rolling mill and 1,86,000 tonnes/year in hot rolling mill. In addition, the plant has country's first top-of-the-line stainless steel blanking facility with a capacity of 3,600 tonnes/year of coin blanks and utility blanks/circles. Expansion and modernisation of Salem Steel Plant is ongoing. The plan envisages installation of steel melting and continuous casting facilities to produce 1,80,000 tonnes of slabs along with expansion of the cold rolling mill complex, enhancing the capacity of Cold Rolled Stainless Steel Products from 65,000 TPA to 1,46,000 TPA and an additional roll grinding machine for the hot rolling mill to increase production to 3,64,000 TPA. The total project area is 1130 acres and cost of the project is 1780 crores.

SAIL is planning a Steel SEZ inside the Salem Steel plant covering about 250 acres.

5.6.4 The Salem Plant by Southern Iron & Steel Co. Ltd (JV with JSW Steel)

It is the first integrated steel plant of India at a cost of 2,235 Crores, located near Salem for the production of TMT corrosion resistant bars/alloy steels. The

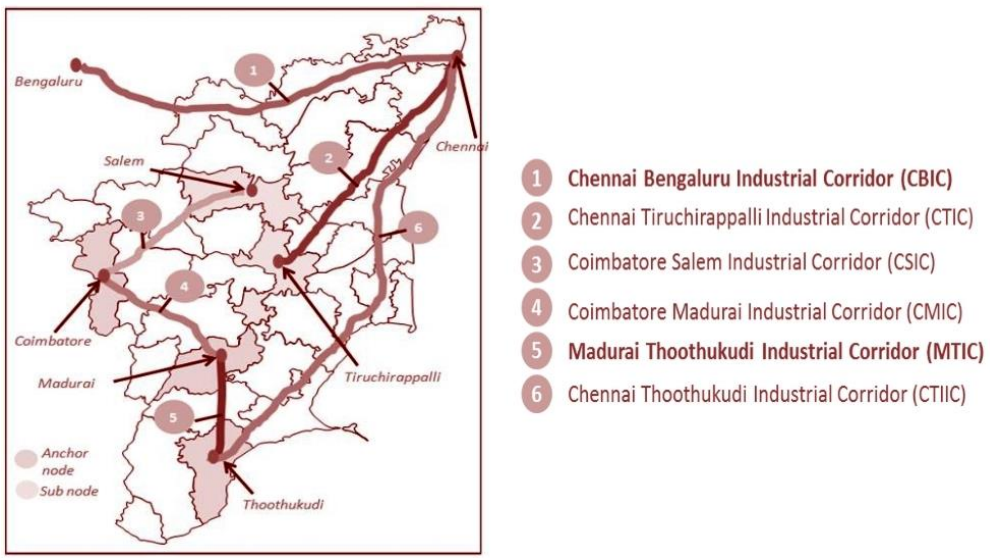
Salem plant is the largest special steel plant in India aims to develop the Kanjamalai, Kavuthimalai and Vediappanmalai iron ore mines in Tamil Nadu on receipt of requisite approvals to improve raw material security. This will facilitate expansion of production capacity to 2 MTPA. It will also allow the unit to diversify into the production of value-added products such as annealed, drawn and peeled steel. The plant is continuously working to develop special grades for critical automotive applications

5.6.5 Power Plant by The Madras Aluminum Company Ltd (MALCO)

MALCO is part of Vedanta Resources Plc, MALCO has a state-of-the-art, coal-based Captive Power Plant at the same location which was commissioned in the year 1999. In the year 2004 MALCO augmented its smelter capacity from earlier 25,000TPA to 40,000TPA. It generates 100 MW power from 4 units of 25MW each through power plant located at Mettur, Tamil Nadu. Around 90% of the entire power generated is exported; the rest is used internally.

5.6.6 Coimbatore - Salem Industrial Corridor

Coimbatore - Salem Industrial Corridor is expected to attract an investment of about Rs 14,700 crore to create further infrastructure. This in turn is expected to create investment opportunities to the tune of about Rs 43,000 crore. Sources are predicting creation of jobs for approximately 18 lakh white and blue collar personnel. This has already translated into residential developers planning to expand their offerings.



5.7 Recommended Growth Rates of Traffic

Based on the above analysis and after giving due consideration to the entire listed factors, overall growth rates are recommended for each category of vehicle. Rate of growth is moderated considering overall regional trend. Growth of Multi-Axle is kept slightly higher as trend of technological advances in logistic industry favors multi-axle over 2/3 axle carriage. It is also expected that as the economy moves from developing to developed, rate of growth diminishes. Same growth rate is not sustainable for long. It is established practice to stepdown future growth rates at interval of 5 years.

Impact of other important factors affecting growth, as discussed, is taken as under.

- Historical data of project stretch is consistent MAV at toll plaza location Km21.750. Since historic data is of 2-3 year only, 20% and 80% weightage is assigned for historical and future growth trends (elastic model) respectively. For MAV at toll plaza 21.750 km, weightage for historical trend is assigned as 10% since the past growth is abnormally low.
- Only Tamil Nadu elastic model of economic growth in considered since traffic from other state is minimal.
- Further to make growth projections more representative growth of car and LCV category is reduced by 1% for toll plaza at Km 21.750 and Km 73.760. The same is reduced by 1.5% for toll plaza at Km 105.00.
- Due to technological advances in logistic industry greater preference is now given to Multi Axle (MAV) over conventional 2/3 Axle truck. To accommodate this in growth projection growth rate of MAV is stepped down in future year by lesser offset as compared to that of Car, LCV and Bus truck. Additionally, the analyzed growth is jacked up by 0.75% and 0.5% for toll plaza at Km 21.750 and Km 73.760.

Potential traffic growth would also be driven by reopening of Puducherry Port and opening of Nagapattinam Port.

Growth rates are recommended for three scenarios for sensitivity analysis namely **Optimistic, Pessimistic** and **Most Likely** with a positive and negative variation 0.5% from Most Likely case. Toll plaza wise recommended growth rates are given as under.

Table 5-11 : Recommended Growth Rates Optimistic at Toll Plaza Km 21.750

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.40%	10.40%	9.15%	7.65%	6.15%
Mini Bus /LCV	7.60%	6.60%	5.10%	3.60%	2.10%
Truck / Bus	7.40%	6.40%	4.90%	3.40%	1.90%
Multi Axle	8.70%	8.20%	7.20%	6.20%	5.20%

Table 5-12 : Recommended Growth Rates Pessimistic at Toll Plaza Km 21.750

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.40%	9.40%	8.15%	6.65%	5.15%
Mini Bus /LCV	6.60%	5.60%	4.10%	2.60%	1.10%
Truck / Bus	6.40%	5.40%	3.90%	2.40%	0.90%
Multi Axle	7.70%	7.20%	6.20%	5.20%	4.20%

Table 5-13 : Recommended Growth Rates Most Likely at Toll Plaza Km 21.750

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.90%	9.90%	8.65%	7.15%	5.65%
Mini Bus /LCV	7.10%	6.10%	4.60%	3.10%	1.60%
Truck / Bus	6.90%	5.90%	4.40%	2.90%	1.40%
Multi Axle	8.20%	7.70%	6.70%	5.70%	4.70%

Similarly, growth rates for toll plaza at Km 73.760 and Km 105.000 are given in following tables.

Table 5-14 : Recommended Growth Rates Optimistic at Toll Plaza Km 73.760

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.20%	10.20%	8.95%	7.45%	5.95%
Mini Bus /LCV	7.70%	6.70%	5.20%	3.70%	2.20%
Truck / Bus	7.80%	6.80%	5.30%	3.80%	2.30%
Multi Axle	8.60%	8.10%	7.10%	6.10%	5.10%

Table 5-15 : Recommended Growth Rates Pessimistic at Toll Plaza Km 73.760

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.20%	9.20%	7.95%	6.45%	4.95%
Mini Bus /LCV	6.70%	5.70%	4.20%	2.70%	1.20%
Truck / Bus	6.80%	5.80%	4.30%	2.80%	1.30%
Multi Axle	7.60%	7.10%	6.10%	5.10%	4.10%

Table 5-16 : Recommended Growth Rates Most Likely at Toll Plaza Km 73.760

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.70%	9.70%	8.45%	6.95%	5.45%
Mini Bus /LCV	7.20%	6.20%	4.70%	3.20%	1.70%
Truck / Bus	7.30%	6.30%	4.80%	3.30%	1.80%
Multi Axle	8.10%	7.60%	6.60%	5.60%	4.60%

Recommended growth rates for traffic at toll plaza at Km 105.000 are given as under

Table 5-17 : Recommended Growth Rates Optimistic at Toll Plaza Km 105.000

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.50%	10.50%	9.25%	7.75%	6.25%
Mini Bus /LCV	8.20%	7.20%	5.70%	4.20%	2.70%
Truck / Bus	8.20%	7.20%	5.70%	4.20%	2.70%
Multi Axle	8.90%	8.40%	7.40%	6.40%	5.40%

Table 5-18 : Recommended Growth Rates Pessimistic at Toll Plaza Km 105.000

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.50%	9.50%	8.25%	6.75%	5.25%
Mini Bus /LCV	7.20%	6.20%	4.70%	3.20%	1.70%
Truck / Bus	7.20%	6.20%	4.70%	3.20%	1.70%
Multi Axle	7.90%	7.40%	6.40%	5.40%	4.40%

Table 5-19 : Recommended Growth Rates Most Likely at Toll Plaza Km 105.000

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.00%	10.00%	8.75%	7.25%	5.75%
Mini Bus /LCV	7.70%	6.70%	5.20%	3.70%	2.20%
Truck / Bus	7.70%	6.70%	5.20%	3.70%	2.20%
Multi Axle	8.40%	7.90%	6.90%	5.90%	4.90%

CHAPTER 6

TRAFFIC FORECAST

6.1 Traffic Projections

Growth rates recommended in previous section of report are used to arrive at traffic projections for future years. Toll plaza wise futuristic traffic projection is given in tables below.

These projections have been done for following three cases of growth

1. Optimistic Scenario
2. Pessimistic Scenario
3. Most Likely Scenario

Table 6-1 : Total Tollable Traffic at Toll Plaza Km 21.750 (Optimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	7520	1221	2269	1298	**12308**	**22457**
2017-18	8377	1315	2437	1411	**13540**	**24516**
2018-19	9332	1415	2617	1534	**14898**	**26769**
2019-20	10396	1523	2811	1668	**16398**	**29241**
202\0-21	11476	1623	2991	1805	**17895**	**31689**
2021-22	12669	1730	3182	1953	**19534**	**34349**
2022-23	13986	1844	3386	2113	**21329**	**37243**
2023-24	15441	1966	3602	2287	**23296**	**40393**
2024-25	17047	2096	3833	2474	**25450**	**43818**
2025-26	18607	2203	4021	2652	**27483**	**46990**
2026-27	20310	2315	4219	2843	**29687**	**50408**
2027-28	22168	2434	4426	3047	**32075**	**54086**
2028-29	24197	2558	4643	3266	**34664**	**58048**
2029-30	26412	2688	4871	3501	**37472**	**62321**
2030-31	28432	2785	5037	3717	**39971**	**66066**
2031-32	30607	2885	5208	3947	**42647**	**70056**
2032-33	32948	2989	5385	4191	**45513**	**74309**

Table 6-2 : Total Tollable Traffic at Toll Plaza Km 73.760
(Optimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	5962	1117	2259	1269	**10607**	**20518**
2017-18	6629	1203	2435	1378	**11645**	**22374**
2018-19	7372	1296	2625	1497	**12790**	**24409**
2019-20	8197	1396	2830	1626	**14049**	**26630**
2020-21	9032	1490	3023	1757	**15302**	**28827**
2021-22	9954	1590	3229	1899	**16672**	**31212**
2022-23	10969	1696	3448	2052	**18165**	**33794**
2023-24	12087	1810	3682	2219	**19798**	**36605**
2024-25	13319	1931	3932	2398	**21580**	**39649**
2025-26	14510	2031	4141	2568	**23250**	**42454**
2026-27	15809	2137	4360	2750	**25056**	**45466**
2027-28	17224	2248	4591	2945	**27008**	**48703**
2028-29	18765	2365	4834	3154	**29118**	**52181**
2029-30	20445	2488	5090	3378	**31401**	**55921**
2030-31	21968	2580	5283	3584	**33415**	**59178**
2031-32	23605	2676	5483	3803	**35567**	**62641**
2032-33	25364	2775	5692	4035	**37866**	**66323**

Table 6-3 : Total Tollable Traffic at Toll Plaza Km 105.000
(Optimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4719	942	1737	789	**8187**	**15202**
2017-18	5261	1019	1880	859	**9019**	**16638**
2018-19	5866	1103	2034	936	**9939**	**18215**
2019-20	6540	1194	2201	1020	**10955**	**19946**
2020-21	7227	1281	2360	1105	**11973**	**21666**
2021-22	7986	1373	2530	1197	**13086**	**23533**
2022-23	8824	1472	2712	1298	**14306**	**25572**
2023-24	9751	1578	2907	1407	**15643**	**27790**
2024-25	10775	1691	3116	1525	**17107**	**30204**
2025-26	11772	1787	3294	1638	**18491**	**32447**
2026-27	12862	1889	3482	1759	**19992**	**34864**
2027-28	14052	1997	3681	1889	**21619**	**37469**
2028-29	15352	2110	3891	2029	**23382**	**40276**
2029-30	16772	2230	4113	2180	**25295**	**43307**
2030-31	18072	2324	4286	2320	**27002**	**45973**
2031-32	19473	2422	4467	2468	**28830**	**48813**
2032-33	20982	2524	4655	2626	**30787**	**51838**

Table 6-4 : Total Tollable Traffic at Toll Plaza Km 21.750
(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	7453	1209	2248	1287	**12197**	**22255**
2017-18	8228	1289	2392	1386	**13295**	**24072**
2018-19	9083	1374	2545	1493	**14495**	**26043**
2019-20	10028	1464	2708	1608	**15808**	**28183**
2020-21	10971	1546	2855	1724	**17096**	**30265**
2021-22	12002	1632	3009	1848	**18491**	**32503**
2022-23	13131	1723	3172	1981	**20007**	**34919**
2023-24	14366	1820	3343	2124	**21653**	**37525**
2024-25	15715	1922	3524	2277	**23438**	**40334**
2025-26	16995	2001	3661	2418	**25075**	**42848**
2026-27	18380	2083	3804	2568	**26835**	**45536**
2027-28	19878	2168	3951	2727	**28724**	**48399**
2028-29	21499	2256	4105	2896	**30756**	**51463**
2029-30	23251	2349	4265	3076	**32941**	**54740**
2030-31	24797	2410	4367	3236	**34810**	**57486**
2031-32	26446	2473	4472	3405	**36796**	**60393**
2032-33	28205	2537	4579	3582	**38903**	**63460**

Table 6-5 : Total Tollable Traffic at Toll Plaza Km 73.760
(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	5907	1106	2237	1258	**10508**	**20327**
2017-18	6510	1179	2390	1354	**11433**	**21968**
2018-19	7174	1258	2552	1457	**12441**	**23742**
2019-20	7906	1342	2726	1568	**13542**	**25666**
2020-21	8633	1418	2885	1679	**14615**	**27529**
2021-22	9427	1499	3053	1798	**15777**	**29532**
2022-23	10294	1584	3231	1925	**17034**	**31685**
2023-24	11242	1674	3418	2062	**18396**	**34003**
2024-25	12276	1769	3617	2208	**19870**	**36496**
2025-26	13252	1843	3773	2342	**21210**	**38713**
2026-27	14306	1921	3935	2484	**22646**	**41072**
2027-28	15443	2002	4104	2636	**24185**	**43589**
2028-29	16671	2086	4281	2796	**25834**	**46267**
2029-30	17996	2173	4465	2967	**27601**	**49122**
2030-31	19157	2231	4590	3119	**29097**	**51497**
2031-32	20393	2291	4719	3278	**30681**	**53998**
2032-33	21709	2352	4851	3445	**32357**	**56629**

Table 6-6 : Total Tollable Traffic at Toll Plaza Km 105.000
(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4675	933	1720	781	**8109**	**15055**
2017-18	5166	1000	1844	843	**8853**	**16328**
2018-19	5708	1073	1976	910	**9667**	**17711**
2019-20	6307	1150	2119	982	**10558**	**19215**
2020-21	6906	1221	2251	1055	**11433**	**20682**
2021-22	7562	1297	2391	1133	**12383**	**22263**
2022-23	8281	1378	2539	1217	**13415**	**23969**
2023-24	9067	1463	2696	1307	**14533**	**25807**
2024-25	9928	1554	2863	1404	**15749**	**27794**
2025-26	10747	1627	2998	1494	**16866**	**29581**
2026-27	11633	1704	3138	1590	**18065**	**31488**
2027-28	12593	1784	3286	1692	**19355**	**33528**
2028-29	13632	1868	3440	1800	**20740**	**35702**
2029-30	14756	1956	3602	1915	**22229**	**38029**
2030-31	15752	2019	3718	2018	**23507**	**39989**
2031-32	16815	2083	3837	2127	**24862**	**42057**
2032-33	17950	2150	3961	2242	**26303**	**44249**

Traffic projections for Most Likely scenario are given as under

Table 6-7 : Total Tollable Traffic at Toll Plaza Km 21.750
(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	7487	1216	2258	1292	**12253**	**22354**
2017-18	8303	1302	2414	1399	**13418**	**24295**
2018-19	9209	1395	2581	1514	**14699**	**26411**
2019-20	10213	1494	2759	1638	**16104**	**28713**
2020-21	11224	1586	2922	1764	**17496**	**30975**
2021-22	12335	1683	3094	1900	**19012**	**33422**
2022-23	13556	1786	3277	2047	**20666**	**36076**
2023-24	14898	1894	3470	2205	**22467**	**38945**
2024-25	16373	2010	3674	2375	**24432**	**42053**
2025-26	17790	2102	3835	2534	**26261**	**44885**
2026-27	19329	2199	4004	2704	**28236**	**47926**
2027-28	21002	2300	4181	2885	**30368**	**51187**
2028-29	22819	2405	4365	3078	**32667**	**54681**
2029-30	24793	2515	4557	3284	**35149**	**58431**
2030-31	26565	2593	4689	3471	**37318**	**61653**
2031-32	28465	2673	4825	3669	**39632**	**65074**
2032-33	30500	2756	4965	3878	**42099**	**68704**

Table 6-8 : Total Tollable Traffic at Toll Plaza Km 73.760
(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	5934	1111	2249	1263	**10557**	**20422**
2017-18	6570	1191	2413	1365	**11539**	**22169**
2018-19	7273	1277	2589	1476	**12615**	**24072**
2019-20	8050	1369	2778	1595	**13792**	**26138**
2020-21	8830	1454	2953	1717	**14954**	**28167**
2021-22	9687	1545	3139	1847	**16218**	**30357**
2022-23	10627	1641	3336	1988	**17592**	**32724**
2023-24	11659	1743	3545	2139	**19086**	**35278**
2024-25	12789	1851	3769	2302	**20711**	**38044**
2025-26	13870	1939	3950	2454	**22213**	**40549**
2026-27	15042	2030	4140	2616	**23828**	**43227**
2027-28	16314	2126	4339	2788	**25567**	**46090**
2028-29	17692	2226	4548	2972	**27438**	**49155**
2029-30	19186	2331	4766	3168	**29451**	**52431**
2030-31	20520	2405	4923	3346	**31194**	**55226**
2031-32	21946	2482	5085	3533	**33046**	**58179**
2032-33	23471	2562	5253	3731	**35017**	**61308**

Table 6-9 : Total Tollable Traffic at Toll Plaza Km 105.000
(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4697	938	1729	785	**8149**	**15131**
2017-18	5214	1011	1862	851	**8938**	**16486**
2018-19	5786	1089	2005	923	**9803**	**17963**
2019-20	6422	1173	2159	1001	**10755**	**19578**
2020-21	7064	1251	2304	1080	**11699**	**21167**
2021-22	7771	1335	2458	1165	**12729**	**22887**
2022-23	8547	1425	2623	1257	**13852**	**24755**
2023-24	9403	1520	2799	1357	**15079**	**26784**
2024-25	10343	1622	2986	1464	**16415**	**28976**
2025-26	11248	1706	3142	1565	**17661**	**30984**
2026-27	12232	1794	3306	1673	**19005**	**33137**
2027-28	13303	1888	3479	1788	**20458**	**35449**
2028-29	14467	1986	3660	1911	**22024**	**37926**
2029-30	15733	2089	3850	2042	**23714**	**40581**
2030-31	16874	2166	3993	2162	**25195**	**42874**
2031-32	18098	2246	4141	2290	**26775**	**45310**
2032-33	19410	2329	4295	2425	**28459**	**47893**

CHAPTER 7
FORECAST OF TOLL REVENUE

7.1 General

This chapter presents the tolling rate calculations, categories and toll revenue of the project.

7.2 Discount Categories

Fee schedule of agreement of Salem - Ulundurpet section of NH-68 is based on old toll policy. As per the Toll Notification (Schedule G) the following discounts have been considered:

1. Monthly Pass: For frequent user's monthly pass would be issued at fee 30 time the single journey fee. There are other local monthly passes for car /Jeep/ Van category I and II and school bus @ Rs.150, Rs.300 and Rs.1000 respectively.
2. Multiple Journeys (for Return Trip): Will be charged at 1.5 times single journey.
3. Single Journey: Full single journey toll would be charged to this category of vehicles who are infrequent travelers or whose frequency does not yield any discount from the above categories.
4. There are several categories of local discounts.
    a) Local Bus / truck and LCV (within 20 km) will be charged @ Rs. 25 and 15 respectively. Rate will be constant throughout concession period

Building of inflation and escalation of rate based on WPI are done as per toll notification (Schedule G) as given under.

$$\text{Base Fee} \times \frac{\text{WPI-B}}{\text{WPI-A}} \times \text{length of the said section.}$$

Where

- WPI-A = is the Wholesale Price Index of June, 1997 (131.4).
- WPI-B = is the Average Wholesale Price Index for the year ending March, 31st preceding the fee revision date.

7.3 Estimation of Toll Rates

As per the applicable MORTH notification and Schedule G of contract agreement, the following Base rate of fee for the categories mentioned in the table stands true in the National Highways Fee Rules applicable for contract.

Table 7-1 : Base Toll Rates 1997-98

Type of Vehicle	Base Rate of Fee / Km (in Rs.)
Car, Jeep, Van or Jeep	0.40
Light Commercial Vehicle, (LCV)	0.70
Bus or Truck (2 Axle)	1.40
MAV (> 2 axle)	2.25

Factor of inflation / growth has been incorporated as per Schedule G. WPI are available up to 2015-16. Following graph provides projection of rate of inflation (WPI) in India. Data has been taken from Office of Economic Advisor web site (www.eaindustry.nic.in)

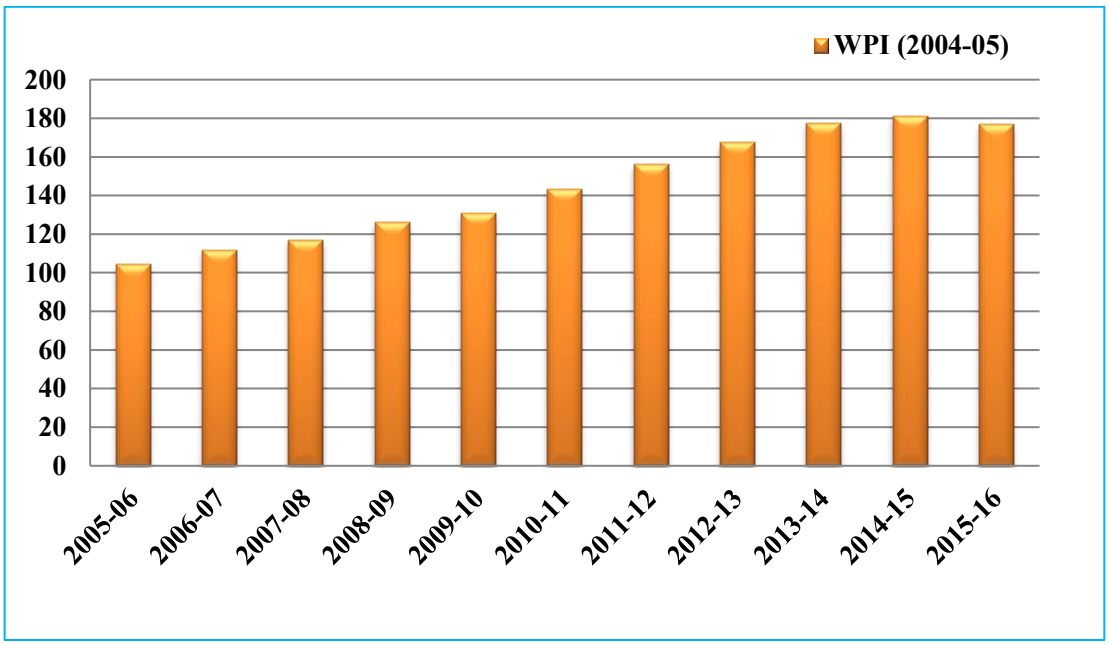


Figure 7-1 : Historical Rate of WPI Inflation in India

Average inflation in WPI in last 10 years is 5.5%. Taking future trends of economy into account following average WPI inflation is used for projections of toll rates

- Up to Year 2018 - 4.0%
- 2019-21 - 5.0%
- 2022-26 - 4.0%
- 2027-31 - 3.0%
- 2032-40 - 2.0%

Toll rates are calculated as per guidelines provided in schedule G for the concession period and are given below.

Total project length as per agreement is 136.37 Km. Total project length of 136.37 Km is equally divided for tollable length at all three Toll Plazas. Thus, tollable length at each Toll Plaza is 45.452 Km. In such case toll rates at all three Toll Plazas would be equal.

Thus, worked out rates for various categories of vehicle and discounts are given as under

Table 7-2 : Toll Rates for Single Journey at Toll Plaza 1, 2 & 3 (21.750 Km, 73.760 Km & 105.000 Km)

Year	Car/Jeep /Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car – LCO	LCV - LTO	Truck/ Bus - LTO
2016-17	45	80	160	260	15	15	25
2017-18	50	85	165	270	15	15	25
2018-19	50	85	175	280	15	15	25
2019-20	50	90	180	290	15	15	25
2020-21	55	95	190	305	15	15	25
2021-22	55	100	200	320	15	15	25
2022-23	60	105	210	335	15	15	25
2023-24	60	110	215	350	15	15	25
2024-25	65	115	225	365	15	15	25
2025-26	65	115	235	375	15	15	25
2026-27	70	120	245	390	15	15	25
2027-28	70	125	250	405	15	15	25
2028-29	75	130	260	415	15	15	25
2029-30	75	135	265	430	15	15	25
2030-31	80	135	275	440	15	15	25
2031-32	80	140	285	455	15	15	25
2032-33	80	145	290	465	15	15	25

Table 7-3 : Toll Rates for Multiple Journeys at Toll Plaza 1, 2 & 3 (21.750 Km, 73.760 Km & 105.000 Km)

Year	Car	Mini Bus /LCV	Truck/ Bus	Multi Axle
2016-17	70	120	240	385
2017-18	70	125	250	400
2018-19	75	130	260	420
2019-20	80	135	275	440
2020-21	80	145	285	460
2021-22	85	150	300	485
2022-23	90	155	315	505
2023-24	95	165	325	525
2024-25	95	170	340	545
2025-26	100	175	350	565
2026-27	105	185	365	590
2027-28	110	190	375	605
2028-29	110	195	390	625
2029-30	115	200	400	645
2030-31	120	205	410	660
2031-32	120	210	425	680
2032-33	125	215	435	695

Table 7-4 : Toll Rates for Monthly Pass at Toll Plaza 1, 2 &3

(21.750 Km, 73.760 Km & 105.000 Km)

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car - LT1	Car - LT2	School Bus
2016-17	1375	2405	4805	7725	150	300	1000
2017-18	1430	2500	5000	8035	150	300	1000
2018-19	1485	2600	5200	8355	150	300	1000
2019-20	1560	2730	5460	8775	150	300	1000
2020-21	1640	2865	5730	9215	150	300	1000
2021-22	1720	3010	6020	9675	150	300	1000
2022-23	1790	3130	6260	10060	150	300	1000
2023-24	1860	3255	6510	10465	150	300	1000
2024-25	1935	3385	6770	10880	150	300	1000
2025-26	2010	3520	7040	11315	150	300	1000
2026-27	2090	3660	7325	11770	150	300	1000
2027-28	2155	3770	7545	12120	150	300	1000
2028-29	2220	3885	7770	12485	150	300	1000
2029-30	2285	4000	8000	12860	150	300	1000
2030-31	2355	4120	8240	13245	150	300	1000
2031-32	2425	4245	8490	13645	150	300	1000
2032-33	2475	4330	8660	13915	150	300	1000

7.4 Toll Revenue

As indicated earlier, toll revenue on the Project Road has been calculated under in all three scenarios. The estimates of toll revenue under ***Optimistic***, ***Pessimistic*** and ***Most Likely*** growth scenarios are presented in the following section.

7.5 Toll Revenue at all toll plazas under Scenarios

Toll Revenue estimates under three scenarios at each of the toll plaza up to 2032-33 (Expected End of Concession Period) starting from the year 2016-17 are shown in tables below.

Overloading of commercial vehicles is a known phenomenon on Indian roads. Currents project witnessed instances of overloading. These vehicles can be charge at extra higher rate as per contract to discourage overloading. A sample study done at Hosur Krishnagiri section of NH-7 by concessionaire shows that at present overloading charges can be translated to about 7% extra revenue. For next 2-3 years, this trend may continue at same % then it would gradually diminish over a period of say 8-10 years.. Same phenomenon can be expected to occur at project stretch.

Table 7-5 : Expected Overloading Revenue

Year	Expected Revenue from Overloading
2016-17	7%
2017-18	7%
2018-19	7%
2019-20	5%
2020-21	5%
2021-22	4%
2022-23	4%
2023-24	3%
2024-25	3%
2025-26	2%
2026-27	2%
2027-28	1%
2028-29	1%

Toll revenue projections, excluding revenue from overloading, are given in following tables.

Table 7-6 : Toll Revenue Optimistic Scenario (Rs. Crores)

Year	Mettupatti Toll Plaza Km 21.750	Nathakkari Toll Plaza Km 73.760	Viracholapuram Toll Plaza Km 105.000	Total
2016-17	37.07	34.40	25.39	96.86
2017-18	42.31	39.28	29.17	110.76
2018-19	47.81	44.31	32.96	125.08
2019-20	54.08	50.05	37.30	141.43
2020-21	61.34	56.78	42.56	160.68
2021-22	69.54	64.31	48.27	182.13
2022-23	79.34	73.24	55.24	207.82
2023-24	89.28	82.24	62.16	233.68
2024-25	99.87	92.02	69.92	261.81
2025-26	110.39	101.53	77.28	289.19
2026-27	123.88	113.72	86.94	324.54
2027-28	137.07	125.52	96.17	358.76
2028-29	151.38	138.63	106.76	396.77
2029-30	166.12	151.78	117.08	434.98
2030-31	181.95	165.82	128.45	476.22
2031-32	197.32	179.83	139.62	516.77
2032-33	213.27	193.86	150.84	557.97

Table 7-7 : Toll Revenue Pessimistic Scenario (Rs. Crores)

Year	Mettupatti Toll Plaza Km 21.750	Nathakkari Toll Plaza Km 73.760	Viracholapuram Toll Plaza Km 105.000	Total
2016-17	36.54	33.90	25.01	**95.46**
2017-18	41.32	38.35	28.47	**108.14**
2018-19	46.25	42.88	31.87	**121.00**
2019-20	51.83	47.98	35.73	**135.55**
2020-21	58.25	53.94	40.39	**152.58**
2021-22	65.44	60.52	45.39	**171.35**
2022-23	73.97	68.29	51.46	**193.72**
2023-24	82.47	75.98	57.36	**215.82**
2024-25	91.39	84.23	63.92	**239.54**
2025-26	100.08	92.06	69.99	**262.13**
2026-27	111.27	102.16	78.00	**291.44**
2027-28	121.99	111.71	85.48	**319.18**
2028-29	133.47	122.23	94.00	**349.71**
2029-30	145.12	132.57	102.13	**379.81**
2030-31	157.46	143.46	110.99	**411.91**
2031-32	169.17	154.08	119.51	**442.77**
2032-33	181.13	164.53	127.90	**473.56**

Table 7-8 : Toll Revenue Most Likely Scenario (Rs. Crores)

Year	Mettupatti Toll Plaza Km 21.750	Nathakkari Toll Plaza Km 73.760	Viracholapuram Toll Plaza Km 105.000	Total
2016-17	36.80	34.16	25.22	**96.19**
2017-18	41.82	38.83	28.84	**109.48**
2018-19	47.02	43.61	32.44	**123.08**
2019-20	52.95	49.04	36.54	**138.53**
2020-21	59.77	55.39	41.51	**156.67**
2021-22	67.46	62.44	46.87	**176.77**
2022-23	76.60	70.77	53.39	**200.76**
2023-24	85.81	79.09	59.80	**224.70**
2024-25	95.55	88.08	66.96	**250.59**
2025-26	105.13	96.73	73.67	**275.52**
2026-27	117.43	107.84	82.49	**307.76**
2027-28	129.34	118.47	90.81	**338.61**
2028-29	142.17	130.22	100.33	**372.73**
2029-30	155.29	141.89	109.53	**406.72**
2030-31	169.29	154.30	119.60	**443.19**
2031-32	182.72	166.53	129.39	**478.64**
2032-33	196.55	178.67	139.13	**514.36**

CHAPTER 8
OPERATION & MAINTENANCE COST

8.1 General

While traffic and toll rates account income of project. Capital cost of construction and O & M cost form part of expenses. Health of any highway project considerably depends on pattern of its O&M cost. For these purpose, major O&M elements such as civil infrastructure, toll system and manpower's, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analyzed. As per condition of contract periodic repair and maintenance on project road is to be done on every 5 years' interval. Same is considered while developing cots of operation and maintenance.

8.2 Major Elements of maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

8.3 Project Details

Following are project parameters which would contribute towards cost of operation and maintenance. Project has about 17 Km of bypass length which will be converted to four lane in year 2022 as per condition of contract. Thus, area of main carriageway would be increased after widening of bypasses in year 2022.

Table 8-1 : Project Parameters for O & M up to Year 2022

Item	Parameter	Quantity	Unit
Length of Road		136.357	KM
Main Carriageway	Paved Area	2157164	SQM
Service Road	Paved Area	311717	SQM
Bus Bays	Paved Area	38220	SQM
Truck Lay Bye	Paved Area	1462.5	SQM
Structure			
Major Bridge	Area	12664	SQM
Minor Bridge	Area	15178	SQM
Flyover + ROB	Area	3280	SQM
RCC Crash Barrier	Length	124489.8	RMT
Metal Beam Crash Barrier	Length	27271.4	RMT
Guard Post	Nos	54543	No.

Table 8-2 : Project Parameters for O & M after Year 2022

Item	Parameter	Quantity	Unit
Length of Road		136.357	KM
Main Carriageway	Paved Area	2434222	SQM
Service Road	Paved Area	311717	SQM
Bus Bays	Paved Area	38220	SQM
Truck Lay Bye	Paved Area	1462.5	SQM
Structure			
Major Bridge	Area	21014	SQM
Minor Bridge	Area	20394	SQM
Flyover + ROB	Area	7680	SQM
RCC Crash Barrier	Length	196352.8	RMT
Metal Beam Crash Barrier	Length	27271.4	RMT
Guard Post	Nos	54543	No.

Operation and maintenance cost of project depends number of factors like quality of construction, response of maintenance team to early damage, local climate (rain etc.). The same is considered appropriately for working out year wise operation maintenance cost.

8.4 Operation & Maintenance Cost

Following are project parameters which would contribute towards cost of operation and maintenance.

Future cost of operation and maintenance is estimate on engineering judgment and experience basis. Keeping all above factors in view, following can be basis of working out cost of operation and maintenance for project corridor from Salem to Ulundurpet on NH-68 in state of Tamil Nadu.

b) **Annual Regular Maintenance** – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll plaza maintenance, Toll collection, other services like medical help and rescue operations etc.

c) **Periodic Maintenance** – This will be done on periodic basis say every 5 years. It will consist of overlaying of wearing course and painting and marking. Some pavement strengthening is also anticipated in few sections. Ministry in its Specifications for Road & Bridge Works (5th Revision) has included Micro Surfacing as surface sealing and renewal treatment. NHAI has also issued instruction to use Micro Surfacing for periodic renewal course vide letter dated 15th November 2016. In light of above, Micro Surfacing is considered as overlay course in 45% of the project stretch. For balance 55% normal asphalt course is considered. Also, from practicality of construction and traffic operation on project road, Major Maintenance and Repair (MMR) work is spread over a period of 2 years without escalation. Toll operation on project road commenced in year 2012-13. Taking 5 year for each cycle next cycle of MMR is expected in year 2018-19.

Cost for above operations is taken on prevailing rates.

Following tables provides year cost of Regular Operation and Maintenance and Major Maintenance and Repair

Table 8-3 : Year wise Details of Regular Operation & Maintenance Cost

Year	Total Regular O & M Expenditure (Rs. Crores) Current Price	Escalation Factor	Total Regular O & M Expenditure (Rs. Crores) with escalation
2016-17	12.44	1.04	12.94
2017-18	12.44	1.08	13.46
2018-19	12.44	1.14	14.13
2019-20	12.44	1.19	14.84
2020-21	12.44	1.25	15.58
2021-22	12.44	1.30	16.20
2022-23	12.44	1.35	16.85
2023-24	12.44	1.41	17.52
2024-25	12.44	1.46	18.23
2025-26	12.44	1.51	18.77
2026-27	12.44	1.55	19.34
2027-28	12.44	1.60	19.92
2028-29	12.44	1.65	20.51
2029-30	12.44	1.70	21.13
2030-31	12.44	1.73	21.55
2031-32	12.44	1.77	21.98
2032-33	12.44	1.80	22.42

Table 8-4 : Year wise Details of Major Maintenance & Repair (MMR) Cost

Year	Total Length of Project Road (Km)	No. of Lanes	Total Lane Km	Normal Overlay Lane Km Length (55% of the total)	Micro Surfacing Lane Km Length (45% of the total)	Rate of Normal Overlay Per km Per Lane (Rs. Cr.)	Rate of Micro Surfacing Overlay Per km Per Lane (Rs. Cr.)	Total Cost of Major Maintenance & Repair Current Price	Escalation Factor	Total Cost of Major Maintenance & Repair at Escalated Price
2016-17	136.36	42 km 2lane & 94 Km 4 Lane	461.44							
2017-18	136.36		461.44							
2018-19	136.36		461.44	126.90	103.82	0.16	0.05	25.49	1.08	27.57
2019-20	136.36		461.44	126.90	103.82	0.16	0.05	25.49	1.08	27.57
2020-21	136.36		461.44							
2021-22	136.36		461.44							
2022-23	136.36		461.44							
2023-24	136.36		461.44	126.90	103.82	0.16	0.05	25.49	1.35	34.53
2024-25	136.36		461.44	126.90	103.82	0.16	0.05	25.49	1.35	34.53
2025-26	136.36		461.44							
2026-27	136.36		461.44							
2027-28	136.36		461.44							
2028-29	136.36		461.44							
2029-30	136.36		461.44	126.90	103.82	0.16	0.05	25.49	1.65	42.03
2030-31	136.36		461.44	126.90	103.82	0.16	0.05	25.49	1.65	42.03
2031-32	136.36		461.44							
2032-33	136.36		461.44							

Following graph depicts Year wise operation and maintenance cost illustratively. Higher cost columns represent periodic & special Repair years.

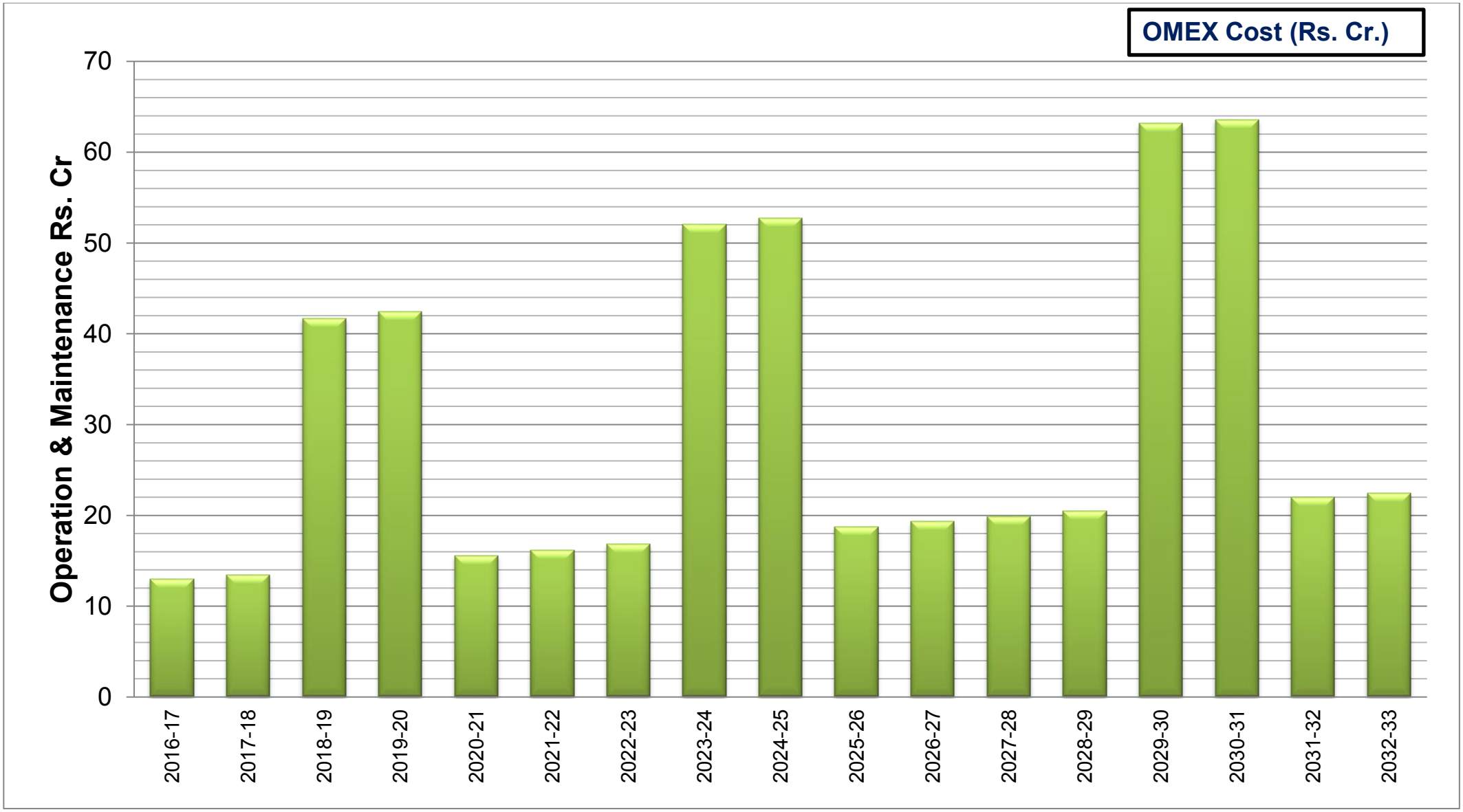


Figure 8-1 : Year wise Operation & Maintenance Cost

CHAPTER 9
CONCLUSION & RECOMMENDATIONS

9.1 Conclusion & Recommendations

Project stretch of Salem to Ulundurpet section of NH-68 in state of Tamil Nadu from km 0.313 to km 136.670 is presently a four lane road. The road is in sound condition and serves healthy traffic volumes. There are many upcoming projects in area which are proposed to boost economic growth of area and add value to development of the region. All the developments considered in the Report have the potential to have a positive impact to traffic flow on project. Following can considered as major outcome of study

a) There is a healthy volume of tollable traffic running on project

b) Project corridor has the potential to witness traffic growth @ 7-8% annually in near future due to various development in area and overall development of economy

c) Project corridor does not have risk of traffic leakage due to lack of competing roads of comparable quality

d) Project infrastructure is in good condition and its maintenance costs are feasible for the successful operation of the toll road

Based on above it can be considered a stable healthy project from traffic and revenue point of view.

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RELIANCE

TRICHY TO DINDIGUL (KM 333+000 TO KM 421.273) SECTION OF NH-45 IN THE STATE OF TAMIL NADU

TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

DEC 2016

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TRICHY TO DINDIGUL (KM 333+000 TO KM 421.273)
SECTION OF NH-45 IN THE STATE OF
TAMIL NADU

TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

DEC 2016

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ABBREVIATIONS

AADT	-	Annual Average Daily Traffic	**NHAI**	-	National Highway Authority of India
BOT	-	Build Operate Transfer	**NHDP**	-	National Highways Development Project
CAGR	-	Compound Annual Growth Rate	**NSDP**	-	Net State Domestic Product
CTV	-	Classified traffic volume	**O&M**	-	Operation & Maintenance
DBFOT	-	Design, Build, Finance, Operate & Transfer	**PCDP**	-	Per Capita Domestic Product
EME	-	Earth Moving Equipment	**PCI**	-	Per Capita Income
GDP	-	Gross Domestic Product	**PCU**	-	Passenger Car Unit
GSDP	-	Gross State Domestic Product	**PSC**	-	Pre-stressed Concrete
HCM	-	Heavy Construction Machinery	**RCC**	-	Reinforced cement concrete
HCV	-	Heavy Commercial Vehicle	**RHS**	-	Right Hand Side
HTMS	-	Highway Traffic Management System	**SH**	-	State Highway
IRC	-	Indian Road Congress	**TP**	-	Toll Plaza
IRR	-	Internal Rate of Return	**WPI**	-	Wholesale Price Index
LCV	-	Light Commercial Vehicle	**SIR**	-	Special Investment Region
LHS	-	Left Hand Side	**c.**	-	Circa
LGV	-	Light Goods Vehicle	**ROB**	-	Railway Over Bridge
MAV	-	Multi Axle Vehicle	**MDR**	-	Major District Road
MORTH	-	Ministry of Road Transport and Highways	**ODR**	-	Other District Road
NH	-	National Highway	**CA**	-	Concession Agreement
PCC	-	Plain Cement Concrete	**RMT**	-	Running Meter
CR	-	Coarse Rubble			

CHAPTER 1
INTRODUCTION

1.1 Background

The Government of India has approved 4 laning of 4000 Kms length of National Highways on BOT basis under NHDP Phase IIIA and entrusted implementation of the programme to the NHAI.

The project under consideration, Trichy - Dindigul Section of NH-45 from Km 333.000 to Km 421.60 is one such road project NHAI intended to implement on a BOT basis in the DBFOT format. The project was engaged for strengthening and maintenance of the existing NH 45 carriageway and has concession period of 30 years. The concession period commenced on January 15,2008 and is expected to expire on January 14, 2038. Toll operation started on project from 10th January 2012. The Project has been commissioned and is currently in the operation / maintenance phase. A capex grant of Rs. 107.46 crores and opex grant of 118.8 crores has been provided towards the project of which Rs. 37.33 crores of the opex grant is still to be received by the project.

1.2 Objective of the Study

M/s Reliance Infrastructure InvIT Fund has engaged GMD Consultants to assess the future traffic and toll potential of project along with related operation & maintenance expenditure involved.

This report named as "***Toll Revenue and O&M Cost Projection Report***" mainly focuses on traffic and O&M aspects of the project. Other parameters like competing road, area developments etc. have been considered from a traffic development point of view.

1.2.1 Scope of Services

The broad scope of work covered in the assignment is as follows

a) Analysis of Traffic Growth
b) Toll Rate Growth
c) Revenue Forecasting
d) Operation and Maintenance Cost Projections

The Concessionaire has provided basic traffic data and other project details based on which the above analysis has been carried out.

CHAPTER 2
PROJECT DETAILS

2.1 Project Corridor

The project corridor is a segment of NH - 45 from Trichy (Km 333.000) to Dindigul (Km 421.273) and lies in state of Tamil Nadu. It connects the important city of Trichy to Dindigul which is located on North - South corridor and passes through places such as Manaparai, Vaiyampatti, Ayyalur and Vadamadurai. Project stretch on NH-45 is one the busiest section in Tamil Nadu connecting southern Tamil Nadu to Eastern Coastal Regions of the State.

Figure 2.1 to 2.3 shows the location of the project corridor at country/state/district levels respectively.

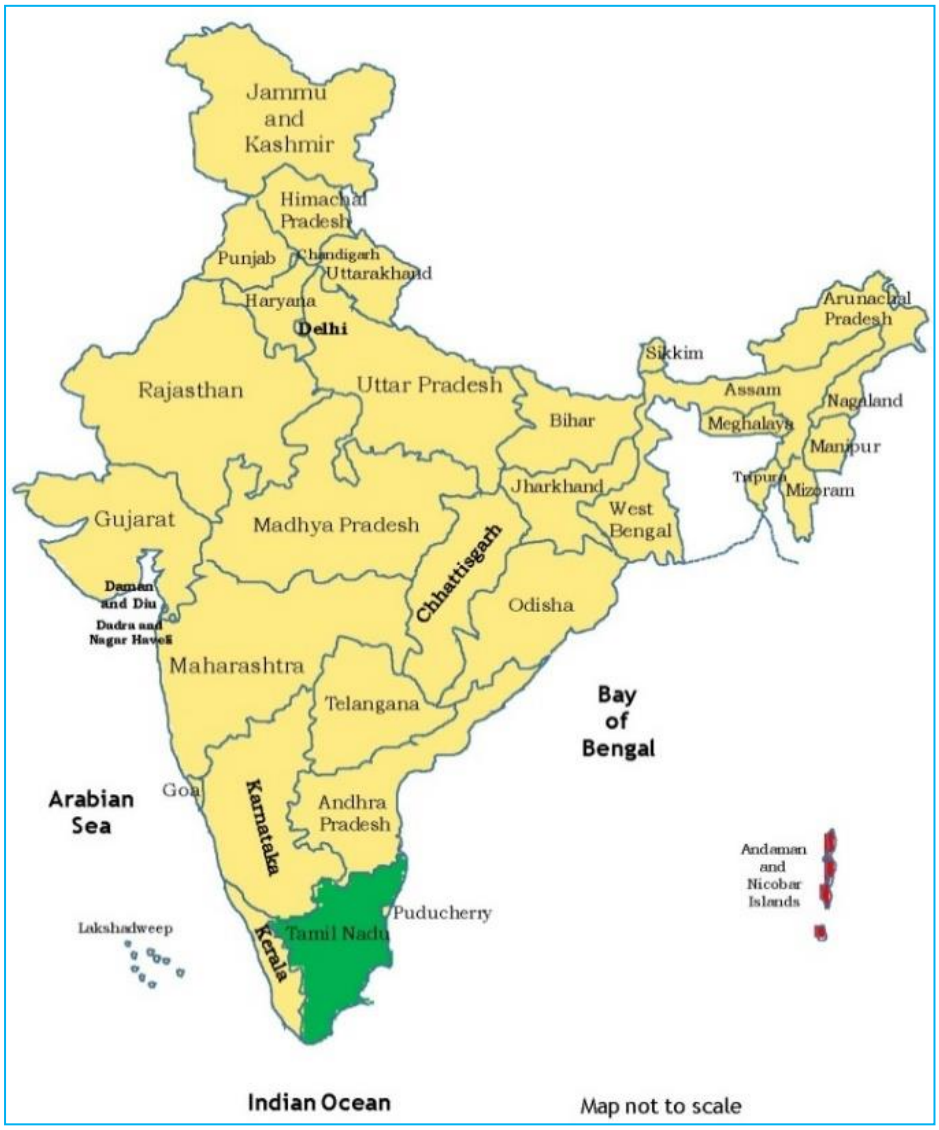

Figure 2-1 : Index Map of Project Highway - Country Level

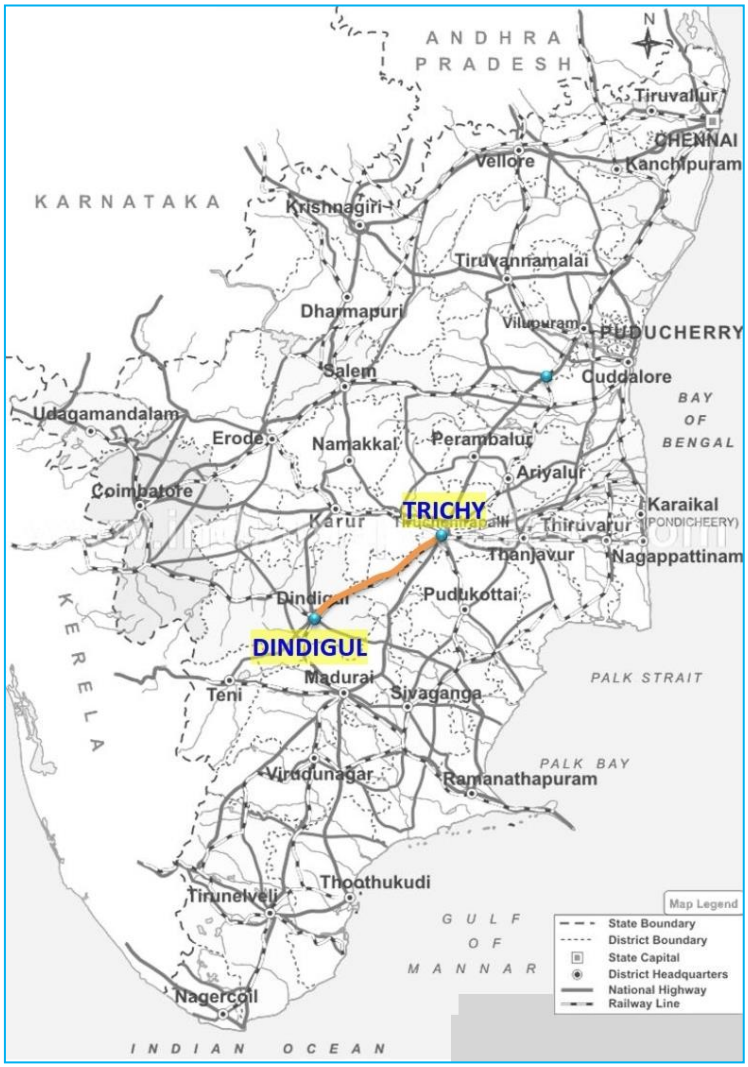

Figure 2-2 : Index Map of Project Highway - State Level

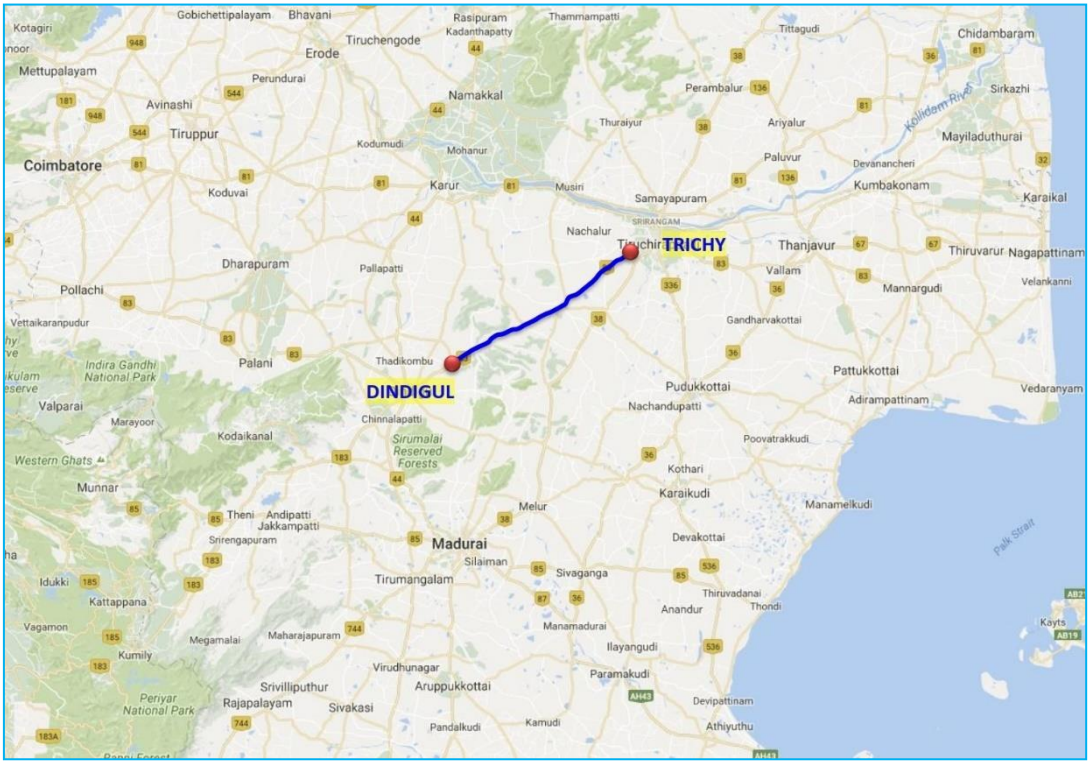

Figure 2-3 : Location Map of the Project Road

2.2 Corridor Description

The Project corridor starts at Km 333.000 of NH 45, in outskirts of Trichy city and ends at Km 421.273 of NH 45 at Dindigul, where it meets with NH 7 (Km 347.600) on North - South corridor. The corridor lies partly in Trichy district about 59 km (Km 333.000 to 392.000) and the remaining stretch lies in the Dindigul district of Tamil Nadu.

The entire length of project corridor runs through the plain terrain except from Km 389.400 to Km 389.600 near Vadamadurai.

Abutting land along the project corridor is predominantly Agricultural. Residential, barren, rural, semi urban, urban and urban commercial are other land usage found along the Project corridor. There are many settlements and ribbon developments found along the Project corridor.

2.3 Salient Features

The salient features of the project corridor are as given below;

- Total Length of Project = 87.273 Kms
- Major Bridges = 05 Nos.
- Minor Bridges = 10 Nos.
- Road Under Bridge (RUB) = 01 Nos.
- Culverts = 183 Nos.
- Vehicular Underpass = 04 Nos.
- Pedestrian Under passes = 02 Nos.
- Animal Under passes = 02 Nos.
- Major Intersections = 10 Nos.
- Service Road = 12.562 Kms.
- Bus Bays = 23 Nos.
- Truck Lay Byes = 01 Nos.
- Toll Plaza Complex = 01 Nos.

The details of the structures are given below.

2.3.1 Major & Minor Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-1 : List of Major & Minor Bridges

Sr. No.	Chainage (km)	Span Arrangement (m)	Total Width of Super Structure (m)	Name of River Crossing
1	335.621	3 x 4.5	21	New Kattalal canal
2	350.678	5 x 26.5	21	Ariyaru
3	360.782	3 x 26.16	21	Mamundi
4	363.177	2 x 19	21	Manaparal Korai River
5	364.077	1 x 11.6	21	Siru Odal
6	367.454	5 x 13.2	21	Dompatchi
7	382.149	1 x 8.7	21	Palapatti Odal
8	386.383	1 x 16.5 (Skew 37 degree)	21	Chetty Odal
9	387.841	1 x 7.8 (Skew 27 degree)	21	Kalpatti Odal -1
10	388.366	1 x 16.3	21	Kalpatti Odal -2
11	397.587	2 x 20.2 (Skew 32 degree)	21	Mallatar River
12	397.747	1 x 9 (Skew 15 degree)	21	Malyadipatti Odal -1
13	398.645	1 x 13.4	21	Malyadipatti Odal -2
14	411.030	3 x 20.6	21	Kallar
15	414.080	4 x 18	21	Sandhana Varthini

2.4 Project Corridor Illustration

Following photographs illustrate project section along the corridor

Figure 2-4 : Photographs showing Project Corridor

CHAPTER 3
TRAFFIC SURVEYS AND ANALYSIS

3.1 Traffic Surveys

During the course of our work we have collected required information for project corridor to understand the general traffic and travel characteristics on the corridor.

The following traffic data has been collected for project.

- Classified traffic volume counts at toll plaza location on Trichy - Dindigul section of NH-45 for base year 2015-16
- Local Component of traffic
- Component of Return Journey
- Component of Monthly Pass Journey

The main objective of the traffic data analysis is to:

- Determine the existing traffic movement characteristics of project
- Establish base year traffic
- Identification of travel patterns and modal split of project traffic
- Deriving growth factors for traffic forecasting
- Estimation of corridor traffic including traffic diversion if any
- Preparation of revenue model and projection of revenue as per toll policy for various scenarios

Project can be divided into following homogenous sections from traffic point of view.

These sections can be

- Trichy – Manapparai
- Manapparai - Dindigul

Table 3-1 below lists provides details of locations from where traffic details have been collected.

Table 3-1 : Traffic Data Details

Sr. No.	Location	CTV	Single Journey Traffic	Multiple Journey	Monthly Pass	Local Traffic
1	Km 382.850 Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016

The locations of each of the traffic survey are illustrated in Figure 3-1.

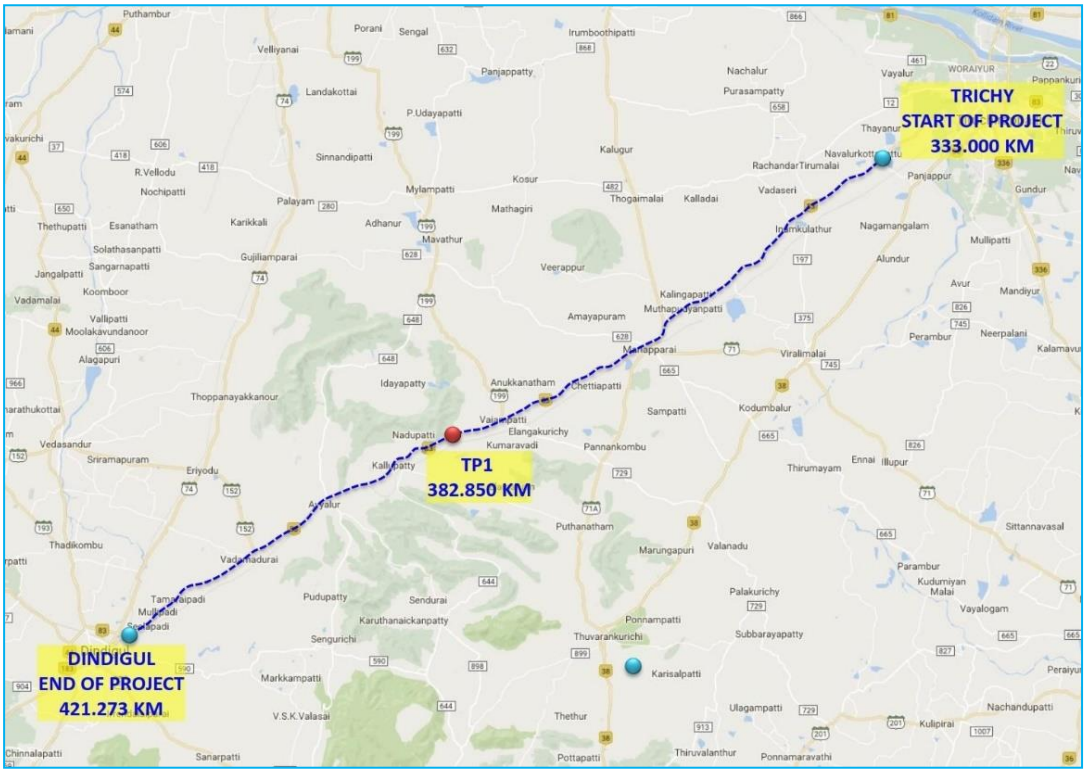

Figure 3-1 : Toll Plaza Locations

3.2 Classified Traffic Volume Count

The objective of conducting a Classified Traffic Volume Count is to understand the traffic flow pattern including modal split on a roadway. The Classified Traffic Volume Count survey has been provided by concessionaire of project highway from actual traffic data gathered at toll plaza locations based on monthly data shared with NHAI. These locations are indicated in ***Figure 3-1*** and listed in ***Table 3-1***.

The vehicles can broadly be classified into fast moving / motorized and slow moving / non-motorized vehicles, which can be further classified into specific categories of vehicles. The groupings of vehicles are further segregated to capture the tollable vehicle categories specifically and toll exempted vehicles are counted separately. The detailed vehicle classification system as per IRC: 64-1990 is given in ***Table 3-2***.

Table 3-2 : Vehicle Classification System

Vehicle Type	
Auto Rickshaw	
Passenger Car	Car, Jeep, Taxi & Van (Old / new technology)
Bus	Mini Bus
	Standard Bus
Truck	Light Goods Vehicle (LCV)
	2 – Axle Truck
	3 Axle Truck (HCV)
	Multi Axle Truck (4-6 Axle)
	Oversized Vehicles (7 or more axles)
Other Vehicles	Agriculture Tractor, Tractor & Trailer

Source - IRC: 64 – 1990

However, since project highway is currently under toll operation, the data collected is corresponding to category of tollable vehicles. Following are the type of vehicles as per concession agreement.

- Car / Jeep / Van
- LCV
- Truck / Bus
- Multi Axle (MAV)
- Oversize Vehicle

3.3 Traffic Characteristic

Toll revenue of project highway does not solely depend on traffic volume. There are certain characteristics of traffic which have substantial potential to affect toll collection. Component of local traffic, component of passenger and commercial traffic, portion of return journey traffic, % of monthly pass traffic are some of such characteristics of traffic. These will be discussed in subsequent sections of report.

3.3.1 Traffic Data

Project concessionaire has provided Traffic data for base year 2015-16 as under at the toll plaza -

Table 3-3 : Traffic Data at Toll Plaza at Km 382.850

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	3288
2	LCV	870
3	Truck/Bus	1173
4	Multi Axle	399
	Total	**5730**

Volume of oversize vehicle was negligible

This data was then bifurcated to various components like through local, monthly, return journey etc. category. Same is discussed in detail in following section.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-4 : Historical Tollable Traffic at Toll Plaza at Km 382.850

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	1,012,822	1,048, 648	1,104,140	559,061	629,004	4%
LCV (2)	335,338	312,699	301,490	157,195	158,160	-5%
Bus/Truck (3)	470,400	416,654	410, 502	220,853	225,242	-7%
Multi-axle (4)	158,874	155,760	139,508	75,578	91,213	-6%
Total	1,977,434	1933,764	1,955,639	1,012,687	1,103,619	-1%

* Toll operations suspended for 16 days due to floods in Dec 2015

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The tollable annual average daily traffic for the project decreased to 9,759 PCUs in 2016 from 9,978 PCUs in 2014, representing a CAGR of -1%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-5 : Historical AADT at Toll Plaza at Km 382.850

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	2,775	2,873	3,155	3,055	3,437	7%
LCV (2)	919	857	861	859	864	-3%
Bus/Truck (3)	1,289	1,142	1,173	1,207	1,231	-5%
Multi-axle (4)	435	427	399	413	498	-4%
Total	5,418	5,298	5,588	5,534	6,031	2%
Total PCUs	9,978	9,503	9, 759	9,822	10,669	-1%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the TD Project's total traffic mix, 54%,16%,22% and 8% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 55%,16%,21%, and 7% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

Substantially all of TD's operating revenues are derived from the tolls that it is entitled to collect. The following table sets forth the toll fees charged for the TD Project's by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-6 : Historical Toll Revenue at Toll Plaza at Km 382.850

Category	(in Rs. Millions) For the FY ended March 31			(in Rs. Millions) For the Six Months Ended September 30		CAGR FY14 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	73.0	81.1	86.4	44.0	50.1	9%
LCV (2)	38.8	40.0	40.3	20.9	21.0	2%
Bus/Truck (3)	103.3	95.4	98.2	51.8	53.1	3%
Multi-axle (4)	65.5	69.2	65.1	34.5	41.0	0%
Total	280.6	285.7	290.1	151.2	165.2	2%

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

Table 3-7 : Gross Monthly Toll Revenue at Toll Plaza at Km 382.850

Month	2016 (Rs. in millions)
April	27.0
May	29.2
June	27.3
July	27.3
August	27.6
September	27.3

3.4 Data Analysis

3.4.1 Analysis of Traffic Volume Count

Understanding the character of existing traffic forms the basis of traffic forecast. The various vehicle types having different sizes and characteristics can be converted into a single unit called Passenger Car Unit (PCU). Passenger Car equivalents for various vehicles are adopted based on recommendations of Indian Road Congress prescribed in "IRC-64-1990: Guidelines for Capacity of Roads in Rural areas". The adopted passenger car unit values (PCU) are presented in table below

Table 3-8 : PCU Factors Adopted for Study

Vehicle Type	PCUs
Car	1.0
Mini Bus	1.5
Standard Bus	3.0
LCV/LGV	1.5
2 Axle Truck	3.0
3 – 6 Axle Truck	4.5
MAV	4.5
Auto Rickshaw	1.0
Van/Tempo	1.0
Agriculture Tractor with Trailer	4.5
Agriculture Tractor without Trailer	1.5

Source: IRC: 64-1990

Traffic volume at each toll plaza was converted to PCU and same is presented as under

Table 3-9 : Traffic in PCU at Project Stretch

Toll Plaza Location	Traffic No	PCU	PCU Index
382.850	5730	9906	**1.73**

It can be observed from above that project traffic has PCU index more than 1.5 which is a fair indicator of mix being split between commercial and urban traffic with urban traffic dominance.

3.4.2 Components of Traffic

As discussed previously, components of traffic volume play an important role in determining project revenue. A larger component of commercial traffic with higher axle configuration adds to project revenue positively. Similarly, a larger component of local traffic affects the project revenue potential negatively.

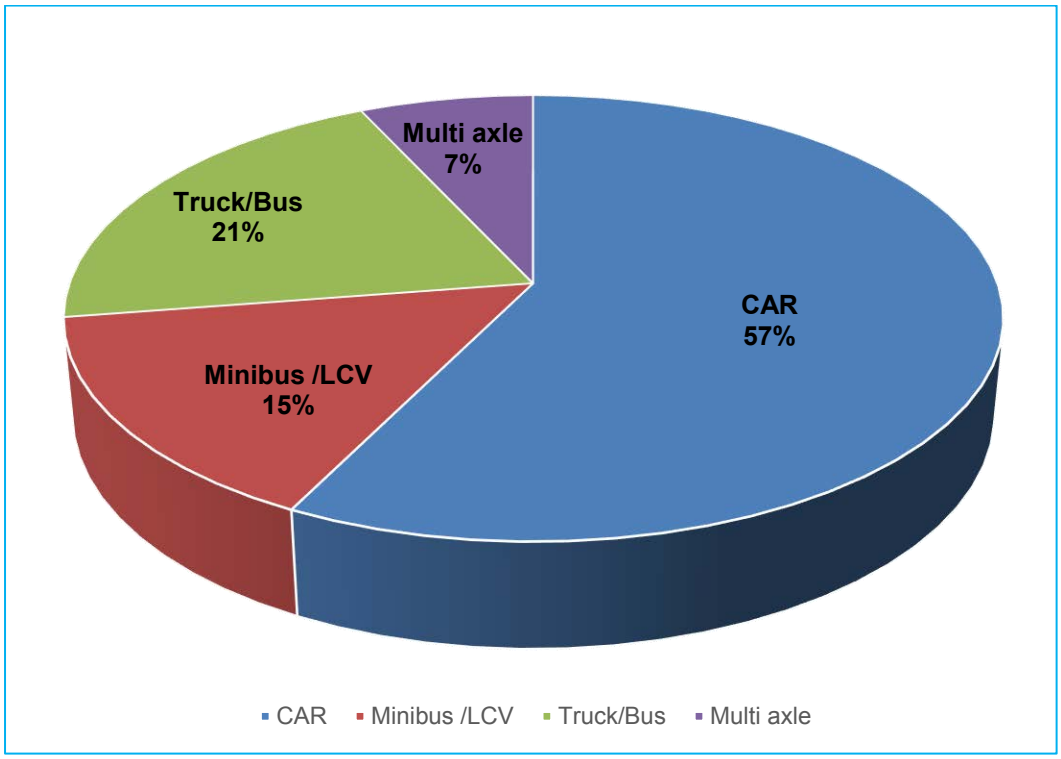

Figure 3-2 : Modal Split of Traffic at Toll Plaza 382.850

It is observed that car traffic forms 57% of total traffic at toll plaza location Km 382.850. Share of LCV and bus / truck was 15% and 21% respectively. Multi axle consists of 7% of total traffic. Over all about 30% of traffic is commercial in nature. Higher percentage of urban traffic is due to the project corridor being under influence zone of urban development of Trichy and Dindigul on both ends.

Another important bifurcation of traffic is components of traffic with respect to various type of toll ticketing like

1. Single Journey
2. Multi Journey
3. Monthly Pass (Local and General)

Following table provides numbers of vehicle falling in each of above category on base year 2015-16

Table 3-10 : Journey Type Bifurcation of Traffic at KM 382.850

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	57.6%	41.0%	0.2%	1.2%	**100.0%**
Minibus /LCV	41.1%	56.5%	0.0%	2.4%	**100.0%**
Truck/Bus	32.5%	40.4%	0.0%	27.1%	**100.0%**
Multi axle	69.7%	29.3%	0.0%	1.0%	**100.0%**

Following figure illustrate component of each type of journey in graphics for better understanding.

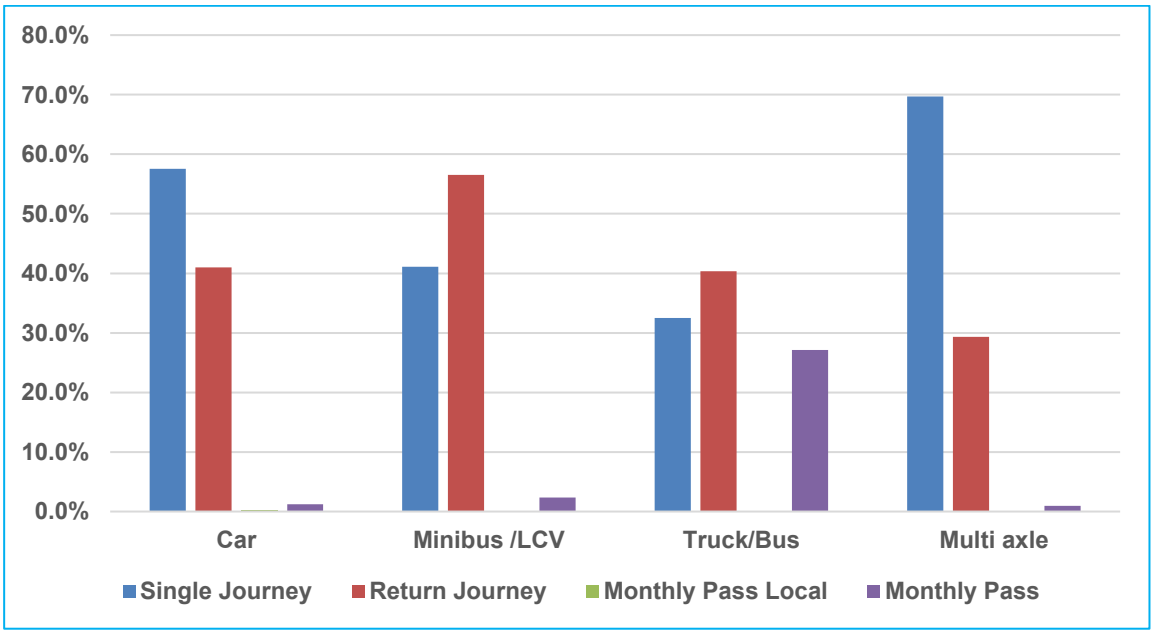

Figure 3-3 : Journey Type Bifurcation at Toll Plaza 382.850

It can be observed that car has higher single journey component. Bus and LCV have higher share of return journey as compared to single journey. Multi axle have higher share of single journey. The distribution of journey type indicates good mix of local and long distance travel pattern for cars. LCV and buses are predominantly local with high return journey component. Over all return journeys represent about 42% of the total traffic on project road. This high share of return journey reflects location of project road between to major urban centers on either side. Characteristic of Multi axle and trucks are typical of rural highways which have larger share of single journey.

3.4.3 Seasonal Variation in Traffic

Traffic on highway does not remain uniform throughout the year. Festivals, rains etc. are factors for such variation. Seasonal variation of traffic was worked out from the data available. Following figure depict monthly variation of AADT.

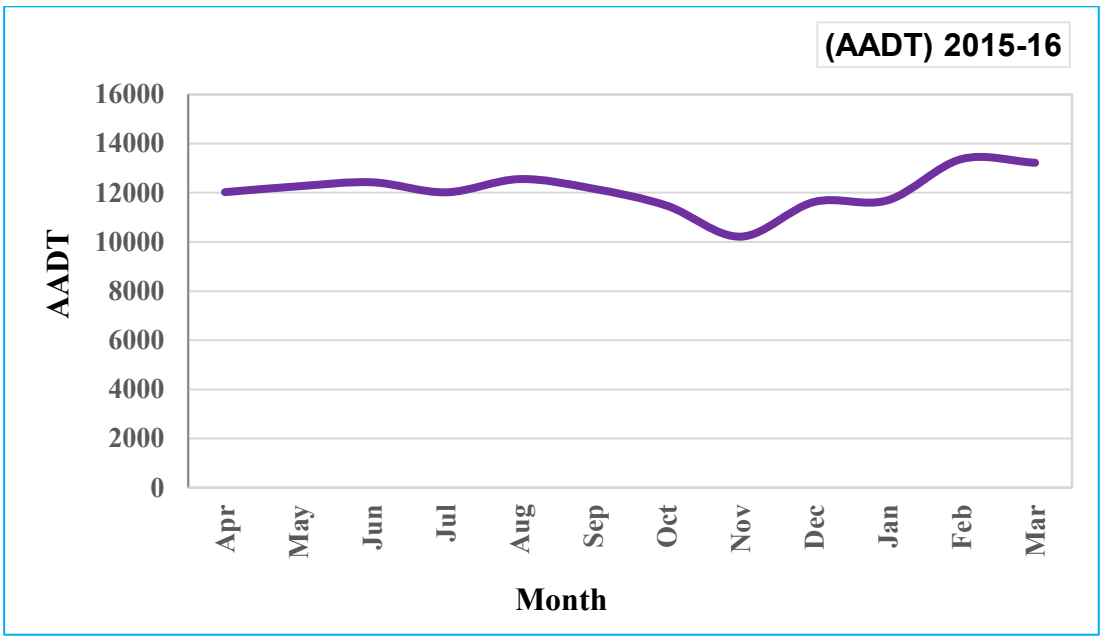

Figure 3-4 : Seasonal Variation of Traffic at Project Highway

It is observed that traffic volume reduces in the rainy season from August to November and then picks up after November during the harvest season. Maximum Season correction factor varies between 0.90 to 1.18.

3.5 Secondary Data Collection

There are several other factors which have substantial impact on traffic pattern and growth on any project corridor. Following are some of such important factors

- Industrial development around project corridor and its catchment
- Educational infrastructure along project corridor
- Demographic pattern
- Urban area development
- Tourism potential
- Upcoming major infrastructural or industrial projects
- Special industry in project corridor
- Overall trends of economic growth local as well as national / regional

Hence in addition to traffic details on project site, secondary data was also collected from the various sources. Typical secondary data includes the following:

1. Vehicle registration data of regional and national level.
2. Economic Data
    a) GDP
    b) NSDP
    c) Population Growth
    d) Per Capita Income growth
    e) Industrial Growth
    f) Special Industry Potential
    g) Regional and National development vision / plan
    h) Any other relevant data
3. Competing road network.

We have collected and utilized such underlying data in the study to estimate the growth and risk factors for traffic along the project corridor.

CHAPTER 4
INFLUENCE ZONE TRANSPORT NETWORK ANALYSIS

4.1 Introduction

Highway corridors behave like integrated circuit network and more often than not every road is connected to various networks having different origin and destinations. Traffic running on these networks behave like fluid and flows on network on alignment of least friction.

Following Factors can be considered as major contributors to friction on transportation network

- Travel Speed / Travel Time,
- Geometric deficiencies,
- Configuration of road,
- Riding comfort,
- Traffic delays,
- Length of road,
- Built up passing through,
- Terrain,
- Facilities

Following set of urban origin and destination have been selected for this analysis

- Trichy to Manapparai
- Manapparai to Dindigul

Following figures depict competing road network of above pair of origin & destinations

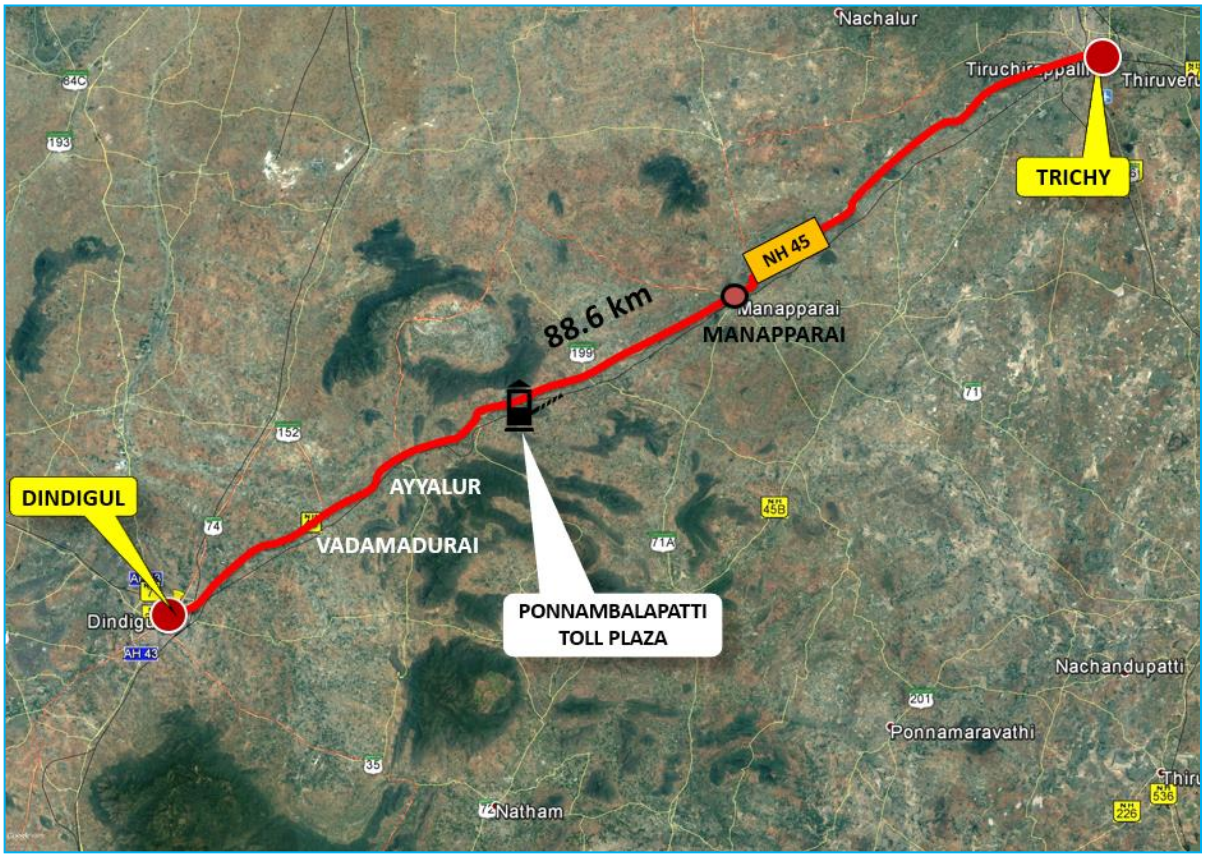

Figure 4-1 : Project Alignment Trichy to Dindigul

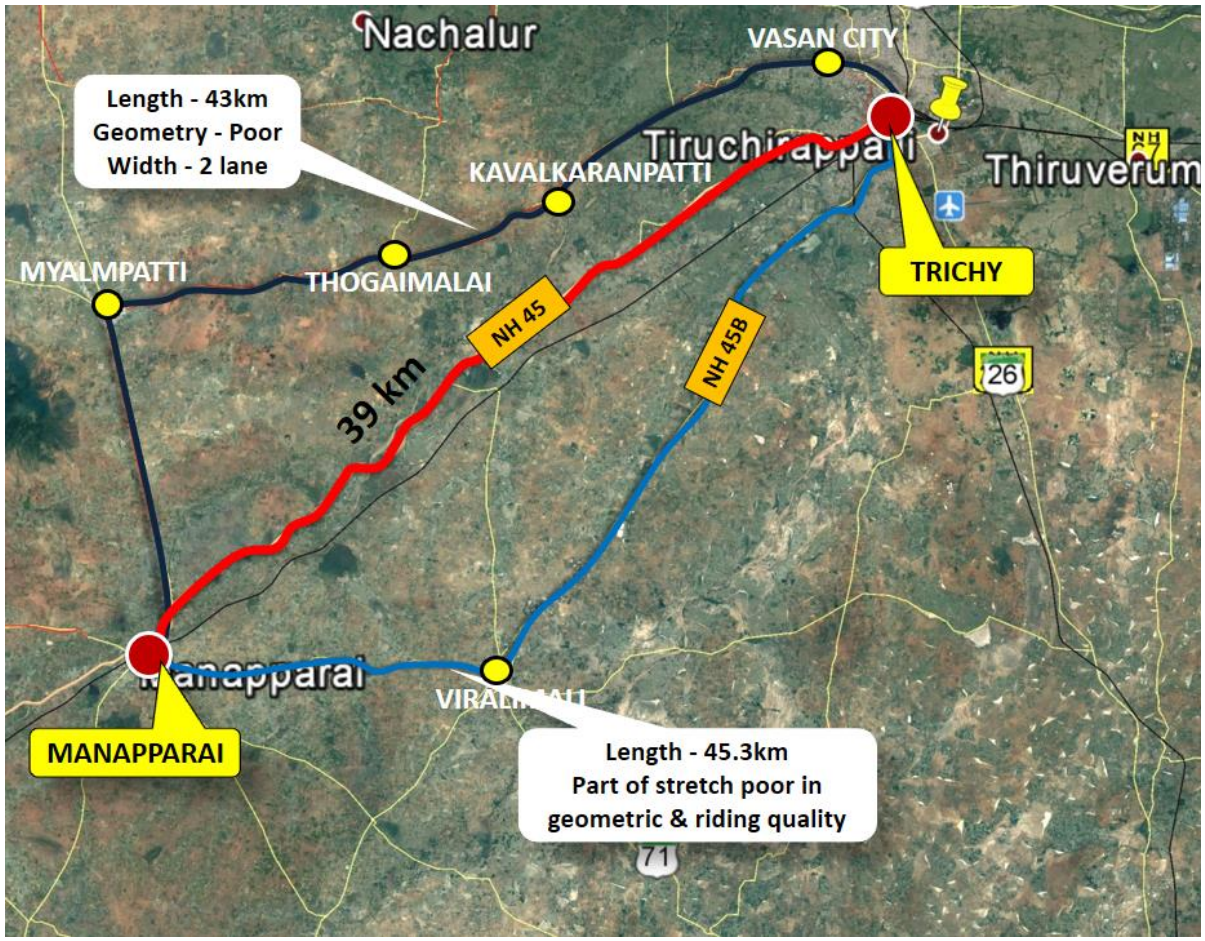

Figure 4-2 : Competing Roads Trichy to Manapparai

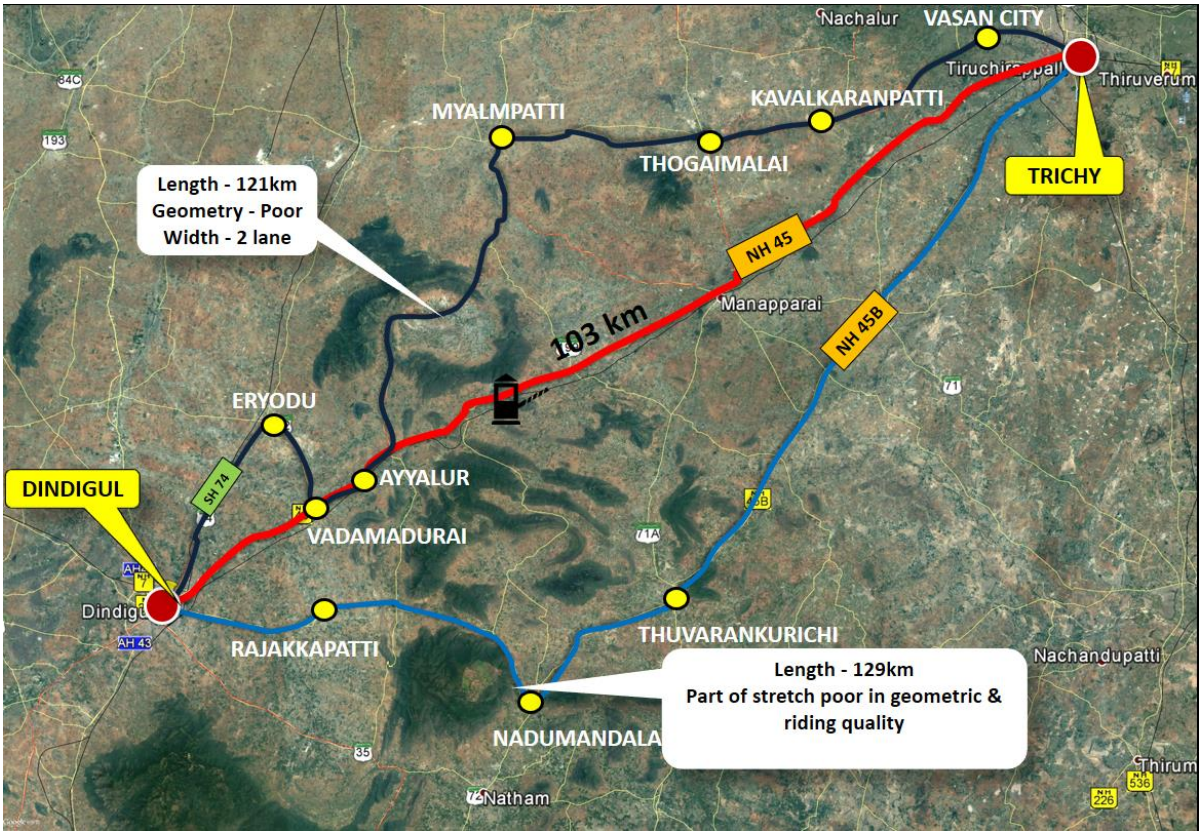

Figure 4-3 : Competing Roads Trichy to Dindigul

It can be observed that the project highway is the spine of the corridor between Trichy to Dindigul. Pilgrims also use this road to access Vaishnavite temple in Srirangam, the Sabrimala Temple in Kerala and the historical monument of Rock Fort in Dindigul. Tourist traffic primarily consists of traffic from Trichy towards Kodiakanal. There are several local roads and state highways which if integrated can form a competing road network. However most of these roads run across project corridor covering much longer distances for the same pairs of origin and destination as compared to project highway. Moreover, the geometry and quality of road is inferior as compared to project section of NH-45, adding to travel time and consequently the costs. These have sharp turns, bottlenecks and patches of damaged pavement. The following table provides quantity cum quality analysis of competing roads.

Table 4-1 : Competing Roads Details

Sr. No	Route Details	Designation	Length (Km)	Avg. Speed (KMPH)	Time Taken (Min)	Observations
1	Trichy to Manapparai competing road (NH-45B- Viralimali Road) on East side	Competing Road	45.3	40	68	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-45 not expected
	Trichy to Manapparai via Project Road NH-45	**Project Road**	**39**	**70**	**33**	
	Trichy to Manapparai competing road (Vasan city-Kavalkaranpatti-Thogaimalai-Myalmpatti Road) on West side	Competing Road	43	40	65	
2	Trichy to Dindigul competing road (NH-45B- Thuvarankurichi-Nadumandalam-Rajakkapatti Road) on East side	Competing Road	129	60	129	NH-45B which is part of competing road on east is four lane. Balance part of competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-45 not expected
	Trichy to Dindigul via Project Road NH-45	**Project Road**	**103**	**70**	**88**	
	Trichy to Dindigul competing road (Vasan city-Thogaimalai-Myalmpatti- Ayyalur-Vadamadurai- Eryodu-SH-74 Road) on West side	Competing Road	121	40	182	

As can be observed from table above, the point regarding significant time saving and consequently cost savings for traffic which align to the project highway is reaffirmed. Time and fuel saving is a major criterion for selection of routes. NH-45B is good road for Trichy Madurai traffic. This road is also tolled and stabilization of traffic is expected to have been achieved by now. Under these circumstances, it is not envisaged that commercial or passenger traffic would switch any more to competing roads from the project road. Further, it may be noted that since the project highway has already been commissioned and has a tolling history, the current traffic traversing the project corridor already factors in traffic diversion (if any) that may have taken place.

CHAPTER 5
GROWTH OF TRAFFIC ON PROJECT HIGHWAY

5.1 Introduction

Traffic growth is a function of the interplay of a number of contributory factors such as National economy, Government policy, socio-economic conditions of the people, and changes in land uses along the project corridor precincts etc. As these factors have several uncertainties associated with them, forecasts of traffic are dependent on the forecasts of factors such as population, gross domestic product (GDP), vehicle ownership, per capita income (PCI), agricultural output, fuel consumption etc. Future pattern of change in these factors can be estimated with only a reasonable degree of accuracy and hence the resultant traffic forecast levels may not be precise.

Traffic growth forecast for project corridor Trichy - Dindigul section of NH-45 has been carried out taking above factors in to consideration. "**IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**" is established best practice and has been used for traffic growth forecast.

5.2 Trend Analysis

One of the methods of estimation of future rate of traffic growth is to assume the same rate of growth as experienced in the past. However, it may be noted that major influencing factors which reflect Economic conditions such as GDP, agricultural output, industrial output, national policies etc. are susceptible to change over a longer period of time and necessary adjustments need to be made to past trends to account for these changes.

Thus, we have considered the Elasticity model of growth projection which is one of the most widely acceptable methods for traffic forecast and is recommended in **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**.

In this method, past trends of any vehicular data are paired with an economic indicator and a regression analysis is done to yield the economic model of growth. Growth of vehicular traffic varies for different type of vehicle. It is a proven fact that growth patterns for passenger and goods vehicles are different. Traffic growth on any highway typically depends on several economic parameters. The most important and direct parameters are given as under

- Per Capita Income
- Net State Domestic Product (NSDP)
- Population

It is observed that the ownership of a car is more closely related to affordability hence per capita is the index which closely fits with growth of car traffic among other criteria. In similar fashion, following pairs of vehicle type and independent variable can be established for elasticity modeling of growth.

- Car / Jeep – Par Capita Income
- Bus / Minibus – Population
- Trucks / Heavy / Goods Vehicle – NSDP
- Time series data of vehicle (both passenger and goods) Registered in the state of Tamil Nadu is used as the base data for analysis of growth

5.3 Estimation of Traffic Demand Elasticity

Elasticity of traffic demand is defined as the rate at which traffic intensity varies due to change in the corresponding indicator selected. Hence, in order to estimate the elasticity of traffic demand, it is necessary to establish the relationship between the growth in number of given category of vehicle with one of the economic variables considered, such as NSDP, per capita income and population growth. Latest available data for vehicle registration, per capita income, NSDP and population is used in analysis.

As per IRC: 108-1996 the model for estimating elasticity index for the project corridor is of the following form and is as given below:

$$Log\ (P) = k \times Log\ (EI) + A$$

Where,

P = *Number of Vehicles (Mode wise)*

EI = *Economic Indicator*

A = *Regression constant*

k = *Elasticity coefficient (Regression coefficient)*

The elasticity for car and bus (passenger vehicles) is calculated based on Population and Per Capita Domestic Product (PCDP) and the elasticity for trucks is calculated based on the Net State Domestic Product (NSDP).

Following tables and graphs depict regression and elasticity of growth model.

Table 5-1 : Per Capita Income Vs Car

Year	PCI	Car	Log PCI	Log Car	PCI Growth	Average Growth
2004	30062	657339	4.48	5.82		
2005	34126	714978	4.53	5.85	14%	
2006	39166	787085	4.59	5.90	15%	
2007	41314	871917	4.62	5.94	5%	
2008	43193	967310	4.64	5.99	5%	
2009	47394	1080445	4.68	6.03	10%	
2010	53507	1230492	4.73	6.09	13%	
2011	57093	1385143	4.76	6.14	7%	
2012	58360	1549950	4.77	6.19	2%	
2013	62361	1709528	4.79	6.23	7%	8.5%

Regression analysis of same is given in figure below

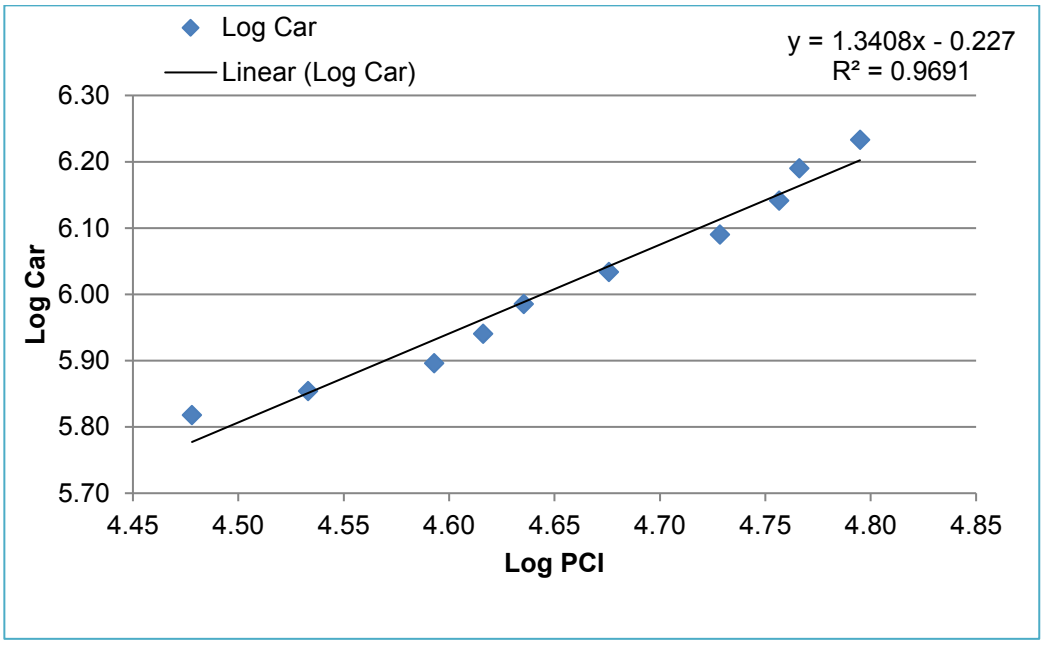

Figure 5-1 : Regression and Elasticity PCI vs. Car – Extrapolation

Table 5-2 : Population Vs Bus

Year	Population	Buses	Log Pop	Log Bus	Pop Growth	Average Growth
2004	64096000	37937	7.81	4.58		
2005	64623000	42109	7.81	4.62	0.8%	
2006	65135000	42999	7.81	4.63	0.8%	
2007	65629000	47765	7.82	4.68	0.8%	
2008	66106000	52617	7.82	4.72	0.7%	
2009	66566000	56338	7.82	4.75	0.7%	
2010	67012000	59240	7.83	4.77	0.7%	
2011	67444000	62725	7.83	4.80	0.6%	
2012	67862000	68096	7.83	4.83	0.6%	
2013	68265000	84488	7.83	4.93	0.6%	0.70%

Regression analysis of same is given in figure below

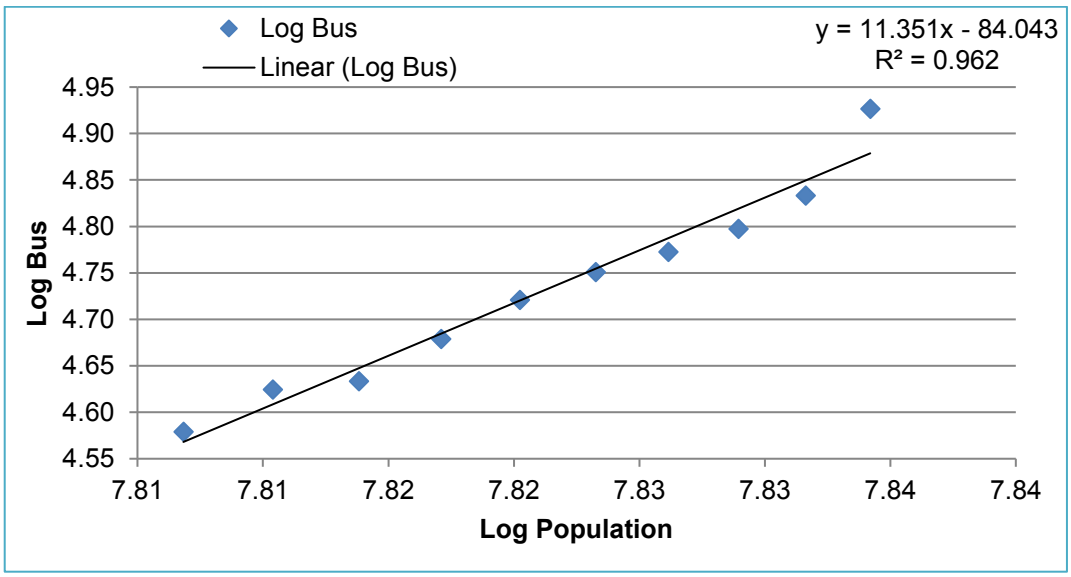

Figure 5-2 : Regression and Elasticity Population vs. Bus – Extrapolation

Elasticity of goods traffic has been worked out by regression analysis with NSDP. Following table represents the data and details.

Table 5-3 : Goods Traffic Vs NSDP

Year	NSDP	Trucks	Log NDSP	Log Truck	NSDP Growth	Average Growth (5 Year)
2004	19364500	220016	7.29	5.34		
2005	22158800	272756	7.35	5.44	14%	
2006	25628600	279984	7.41	5.45	16%	
2007	27234000	340542	7.44	5.53	6%	
2008	28674400	385948	7.46	5.59	5%	
2009	31676000	404326	7.50	5.61	10%	
2010	35996100	433814	7.56	5.64	14%	
2011	38650800	474226	7.59	5.68	7%	
2012	39747100	493564	7.60	5.69	3%	
2013	42718200	544201	7.63	5.74	7%	7.62%

Following figure depict regression analysis and extrapolation.

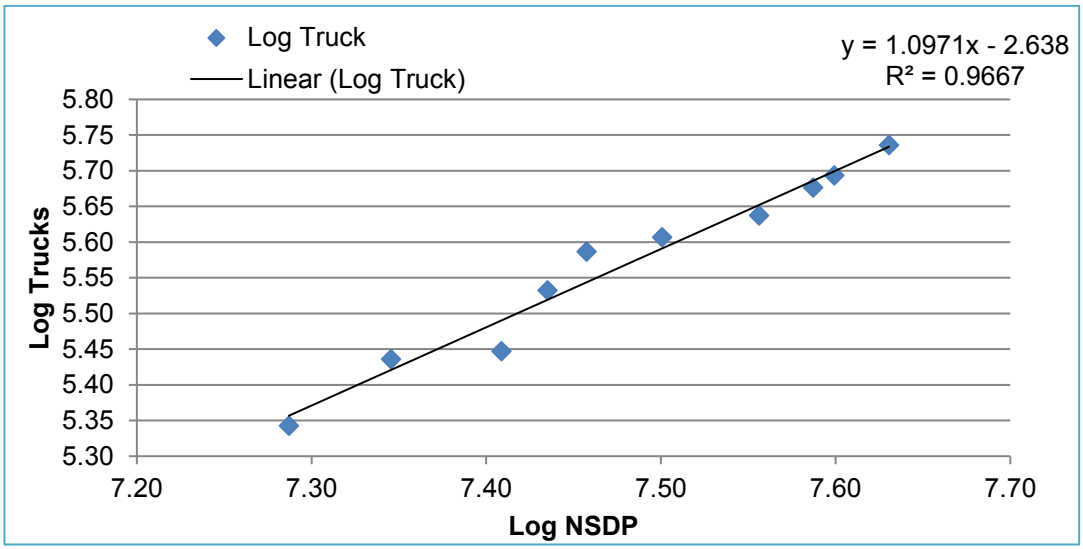

Figure 5-3 : Regression and Elasticity NSDP vs. Goods Traffic – extrapolation

Using the regression analysis above, we have arrived at the elasticity of traffic demand for each class of vehicle to a given change in relevant economic indicators. Average traffic growth of a vehicle class is multiplied by the corresponding elasticity coefficient to arrive at traffic growth. R^2 is statistical measure of how close the data are to the fitted regression line. It varies from 0 to 1. Higher the value of R^2 more representative is the regression model of data.

The results of these analyses for the good fit as reflected by R^2 values are presented in the Table below

Table 5-4 : Summary Regression Analysis

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient (y)	Average Growth	Growth Elastic Model
Tamil Nadu	Car/Jeep	PCI	y = 1.3408x - -0.227	R² = 0.9691	1.3408	8.52%	11.43%
	Bus	Population	y = 11.3505x - -84.0434	R² = 0.962	11.3505	0.70%	7.98%
	Truck	NSDP	y = 1.0971x - -2.638	R² = 0.9667	1.0971	7.62%	8.36%

While the economic model for predicting growth is a good tool, other local, regional, national factors such as proposed developments etc. should also be considered before finalizing growth factors. These factors are discussed in subsequent sections.

Concessionaire has carried out a sample survey of component of share of various states in traffic on project road. The study was done recently in March-16 at toll plaza. Survey was done for both side traffic and approximate sample size was about 90% of the total volume. Following table provides summary of the same

Table 5-5 : Component Share of Various States in Project Traffic

State / Vehicle	Car	Bus	LCV	Truck	MAV
Tamil Nadu	92.0%	89.7%	95.2%	95.0%	95.2%
Kerala	2.8%	0.8%	2.6%	0.6%	2.3%
Karnataka	0.6%	0.5%	0.6%	0.3%	1.3%
Andhra Pradesh	0.2%	0.0%	0.5%	0.3%	0.7%
Puducherry	2.4%	8.1%	0.8%	0.3%	0.3%
Rest of India	2.0%	0.9%	0.2%	3.5%	0.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

It is observed from above that in all categories of vehicles, Tamil Nadu share is about 90% traffic share. Other states have very little share in it. Hence in economic model

of growth projection, only Tamil Nadu model is considered. Same is discussed in subsequent sections.

5.4 Analysis of Historic Traffic Data

Historic traffic data forms useful information for any highway project. It provides useful information for establishing past trend of growth. Project stretch of Trichy to Dindigul has been commissioned and it under tolled operation January 2012. Thus only 2-3 years historic reliable data is available. Following tables provide trend of historic growth at toll plaza locations.

Table 5-6 : Past Traffic Trends at toll plaza @ Km 382.850

Type of Vehicle	Year 2012-13	Year 2015-16	Overall Growth %
Car	2674	3155	5.67%
LCV	890	861	-1.07%
Bus/Truck	1426	1173	-6.31%
MAV	485	399	-6.31%

It can be observed that commercial traffic has shown negative growth in part 2-3 years. SH-71A which connects Manapparai to NH-45B provides a good alternate connectivity for Madurai bound traffic. The section of SHA-71A was poor before and has been improved to two lane in 2013. Part of traffic which was using project road to reach Madurai may have been diverted to this route. SH-71A has poor geometry and passes through built up areas and has limited capacity to handle traffic. In such case, it is envisaged traffic has by now stabilized in network and further diversion is not anticipated.

As recommended by **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways** "*This (historic growth) for short term projects but for long term projections it would be erroneous for assume that the past rate of growth would prevail for long time in future. Economic conditions are bound to change over long period and it would be necessary to modify the rate of growth accordingly*".

It is thus clear that while developing a futuristic growth projections for highway projects, long terms factors like growth of economy and upcoming developments in

area have greater impact than past trends. Considering above, both historic trend and economic factors (elasticity) have been considered suitably to work out recommended growth rate of traffic on project corridor.

5.5 Other Factors Influencing Growth

There are many factors which have impact on traffic growth. As discussed previously these factors can be economic, social, educational, and industrial.

Potentiality of such factors for project highway is discussed as under.

ECONOMY

After witnessing a slowdown during 2008-09, the economy recovered in 2009-10, and a very high growth rate of GDP was recorded in 2010. Following figure depicts growth of GDP in India during the period.

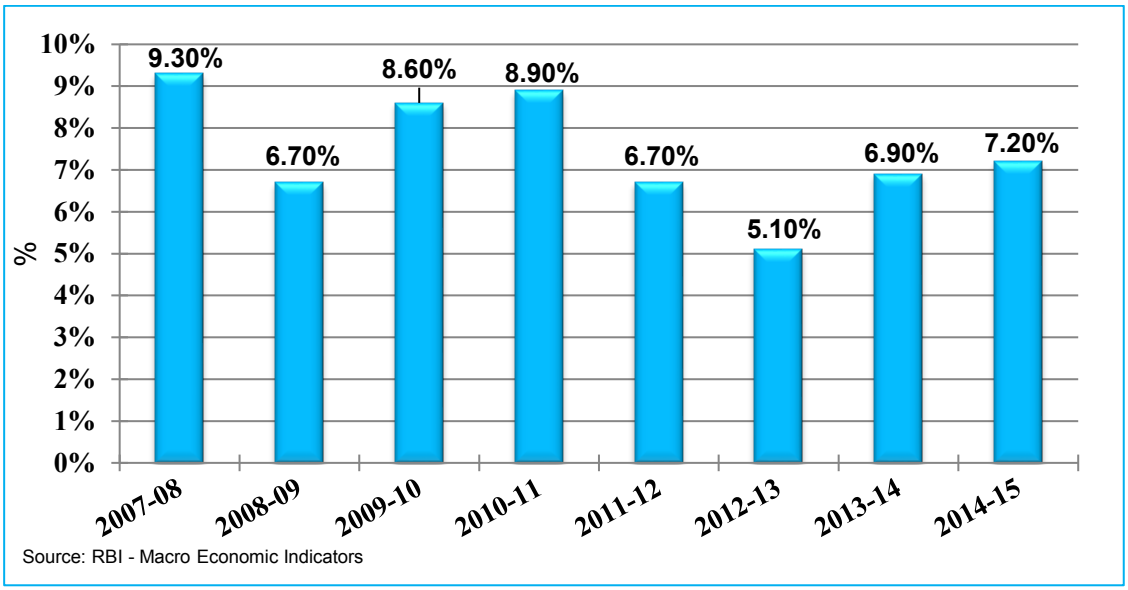

Figure 5-4 : Growth of GDP in India

After recording an all impressive growth of 8.9% in 2011, GDP declined between FY11 and FY14. GDP growth in 2014-2015 was pegged at 7.2% and is expected to be in the range of 7-8% going forward.

5.6 Developments Along and Around the Project Corridor & State

5.6.1 Developments around Trichy Area

- Tiruchirappalli District is located along the Kaveri River in Tamil Nadu, India. It is the fourth largest municipal corporation and the fourth largest urban agglomeration in the state. The main town in Tiruchirappalli District is the city of Tiruchirappalli, also known as Trichy. The presence

of a large number of energy equipment manufacturing units in and around the city has earned it the title of "Energy Equipment and Fabrication Capital of India". Major Industries in the district are as follows

- Bharat Heavy Electricals Limited, BHEL
- Boiler Manufacturing Industries
- Ordnance Factory Tiruchirappalli
- Cement Factories
- Light and heavy engineering
- Leather Tanneries (E. I. Leather)
- Food processing Industries
- Sugar Mills
- (Traditional) Cigar Making (village) Industries
- IT/BPO
- Manufacturing of Synthetic Stones for Jewelry

- Chinnalapatti, which is located 11 kilometers from Dindigul on the Madurai-Dindigul road is known for its hand loom industry.
- Trichy city is an important educational centre in the state of Tamil Nadu, and houses nationally recognised institutions such as the Indian Institute of Management (IIMT), Indian Institute of Information Technology (IIIT) and National Institute of Technology (NITT)
- Trichy is a major road and railway hub in the state, the city is served by an international airport which operates flights to Southeast Asia and the Middle East.
- **Bharat Heavy Electricals Limited (BHEL)** - A high-pressure boiler manufacturing plant (HPBP) was set up by Bharat Heavy Electricals Limited (BHEL), India's largest public sector engineering company, in May 1965. This was followed by a seamless steel tube plant (SSTP) and a boiler auxiliaries plant. In 2010, the Tiruchirappalli unit of the company contributed to nearly 30 per cent of its total sales, making it the largest of all units. As of 2011, the Tiruchirappalli division employed about 10,000 people, and is supported by a number of ancillary industries producing almost 250,000 tonnes (250,000,000 kg) of fabricated materials. These ancillary units together with BHEL contribute nearly 60 per cent of India's steel fabrication, earning the city the title, "Energy equipment and fabrication capital of India"

- **Golden Rock Railway Workshop** - is one of the three mechanical railway workshops serving the southern zone of the Indian Railways. It is called as Central Workshop, Golden Rock. This repair workshop is basically a "Mechanical Workshop" which comes under the control of the Mechanical Department of the Indian Railways. The total area of this workshop is around 200 acres (0.81 km^2), out of which 26 acres (110,000 m^2) is covered under roof. At present 6,091 employees are working in this workshop. This workshop is primarily engaged in the activities of DSL Loco POH, heritage steam locomotive POH, coaching stock maintenance and wagon manufacturing and other sundry activities.
- **Ordnance Factory Tiruchirappalli (OFT)** is a defence company based in Tiruchirappalli, Tamil Nadu, functioning under the Ordnance Factories Board of the Ministry of Defence, Government of India. OFT started its production with 9 mm carbines and now manufactures arms ranging from 5.56 mm rifles to rocket launchers, shell launchers, grenade launchers, aviation armament, naval armament, tank armament, anti-aircraft guns, autocannons, automatic rifles, sniper rifles. It also started Heavy Alloy Penetrator Project (HAPP) facility; the latter was set up in the late 1980s and comprises a flexible manufacturing system (FMS)—the first of its kind in India
- **Trichy Distilleries and Chemicals Limited (TDCL)** - was established at Senthaneerpuram in the former Golden Rock municipality in 1966 The Trichy Distilleries and Chemicals Limited manufactures rectified spirit, acetaldehyde, acetic acid, acetic anhydride and ethyl acetate. It is one of the biggest private sector distilleries in Tamil Nadu and produced 13.5 megalitres (3.0 million imperial gallons) of spirit alcohol between December 2005 and November 2006.
- **The ELCOT IT Park** - The city's first IT park—commissioned at a cost of ₹600 million (equivalent to ₹940 million or US$14 million in 2016) was inaugurated in December 2010. Set up by the Electronics Corporation of Tamil Nadu, the park occupies an area of 59.74 hectares (147.6 acres) and constitutes a Special Economic Zone. As of December 2010, the Tiruchirappalli region annually exports around ₹262.1 million (equivalent to ₹410 million or US$6.1 million in 2016) of software.

- **Synthetic Gem Industry** - From the late 1980s, a synthetic gem industry was developed in the city; the gemstones are cut and polished in Tiruchirappalli district and in Pudukottai district. In 1990, the Indian government launched a scheme to increase employment by boosting the production of American diamonds and training local artisans in semi-automated machinery and technology. The local gem industry was reportedly generating annual revenues of ₹100 million (equivalent to ₹420 million or US$6.2 million in 2016) by the mid-1990s.

5.6.2 Developments around Dindigul Area

- **Dindigul** is a city in the South Indian state of Tamil Nadu. It is the administrative headquarters of the Dindigul district. Dindigul has several historical monuments, the Rock Fort being the most prominent. Industries in Dindigul include Lock making, leather, textile spinning, administrative services, agricultural trading, banking, agricultural machinery and educational services.
- Locks and steel safes are manufactured in Dindigul and operated as a co-operative sector. Locks manufactured in Dindigul are sold in national and international markets. The Tamil Nadu State Council for Science and Technology, through its research officers wing, has filed geographical indication for Dindigul locks
- Silk, muslin and blanket manufacturing is common in Dindigul. The city has the second largest textile spindling capacity in the State.

Chinnalapatti silk, a brand of silk saree is produced out of Chinnalapatti located 11 km (6.8 mi) from the city.

- Dindigul was an important centre of trade in tobacco and manufacture of cigars. A favorite cigar of Winston Churchill called Churut, the 'Light of Asia', was produced in Dindigul. The tobacco industry is one of the main sources of employment for the inhabitants of Dindigul. The central government has a research center for tobacco in Vedasandur. This is one of the two centers in India. In modern times, it has the largest trading centre in the state for chewing tobacco and scented betel nuts. Well-known brands of scented chewing tobacco like Angu Vilas, Roja Supari etc. operate out of the city and sent to various places in the state and outside.
- Dindigul is also one of the leading leather producers and suppliers in the state.

5.7 Recommended Growth Rates of Traffic

Based on the above analysis and after giving due consideration to the entire listed factors, overall growth rates are recommended for each category of vehicle. Rate of growth is moderated considering overall regional trend. Growth of Multi-Axle is kept slightly higher as trend of technological advances in logistic industry favors multi-axle over 2/3 axle carriage. It is also expected that as the economy moves from developing to developed, rate of growth diminishes. Same growth rate is not sustainable for long. It is established practice to stepdown future growth rates at interval of 5 years.

Impact of other important factors affecting growth, as discussed, is taken as under.

- Historical data of project stretch available for short duration only. It has also been discussed that the diversion of traffic due to alternate connectivity is stabilized. Considering above, 10% and 90% weightage is assigned for past trend economic model growth for working out growth projections.
- Only Tamil Nadu elastic model of economic growth in considered since traffic from other state is minimal.
- Due to technological advances in the logistics industry greater preference is now given to Multi Axle (MAV) over conventional 2/3 Axle truck. To accommodate this in the growth projections, growth rate of MAV is stepped down in future years by a lesser offset as compared to that of Car, LCV and

Bus truck. Additionally, the analyzed growth for MAV is boosted up by 1% to account for this phenomenon.

- Lifting of mining ban in Tamil Nadu by a Supreme Court Order in 2015 would also impact positively on traffic growth on corridor.

Growth rates are recommended for three scenarios for sensitivity analysis namely **Optimistic, Pessimistic** and **Most Likely** with a positive and negative variation 0.5% from Most Likely case.

Table 5-7 : Recommended Growth Rates Optimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.40%	10.40%	9.15%	7.65%	6.15%
Mini Bus /LCV	8.00%	7.00%	5.50%	4.00%	2.50%
Truck / Bus	7.10%	6.10%	4.60%	3.10%	1.60%
Multi Axle	8.40%	7.90%	6.90%	5.90%	4.90%

Table 5-8 : Recommended Growth Rates Pessimistic

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.40%	9.40%	8.15%	6.65%	5.15%
Mini Bus /LCV	7.00%	6.00%	4.50%	3.00%	1.50%
Truck / Bus	6.10%	5.10%	3.60%	2.10%	0.60%
Multi Axle	7.40%	6.90%	5.90%	4.90%	3.90%

Table 5-9 : Recommended Growth Rates Most Likely

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.90%	9.90%	8.65%	7.15%	5.65%
Mini Bus /LCV	7.50%	6.50%	5.00%	3.50%	2.00%
Truck / Bus	6.60%	5.60%	4.10%	2.60%	1.10%
Multi Axle	7.90%	7.40%	6.40%	5.40%	4.40%

CHAPTER 6

TRAFFIC FORECAST

6.1 Traffic Projections

Growth rates recommended in previous section of report are used to arrive at traffic projections for future years. Toll plaza wise futuristic traffic projection is given in tables below.

These projections have been done for following three cases of growth

1. Optimistic Scenario
2. Pessimistic Scenario
3. Most Likely Scenario

Table 6-1 : Total Tollable Traffic @ Toll Plaza 1- 382.850 KM

(Optimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	3522	930	1256	432	**6140**	**10784**
2017-18	3924	1005	1345	468	**6742**	**11745**
2018-19	4371	1085	1441	507	**7404**	**12794**
2019-20	4869	1172	1543	550	**8134**	**13943**
2020-21	5374	1254	1638	593	**8859**	**15071**
2021-22	5933	1342	1737	640	**9652**	**16294**
2022-23	6550	1436	1843	690	**10519**	**17622**
2023-24	7231	1536	1955	744	**11466**	**19060**
2024-25	7983	1644	2074	802	**12503**	**20624**
2025-26	8713	1734	2170	857	**13474**	**22055**
2026-27	9511	1829	2269	916	**14525**	**23591**
2027-28	10382	1929	2373	979	**15663**	**25244**
2028-29	11332	2035	2482	1046	**16895**	**27021**
2029-30	12369	2147	2596	1117	**18229**	**28931**
2030-31	13316	2233	2676	1183	**19408**	**30583**
2031-32	14334	2323	2759	1253	**20669**	**32342**
2032-33	15430	2416	2845	1327	**22018**	**34214**
2033-34	16611	2513	2934	1405	**23463**	**36207**
2034-35	17882	2613	3026	1488	**25009**	**38330**
2035-36	18982	2679	3075	1561	**26297**	**40049**
2036-37	20150	2747	3124	1638	**27659**	**41861**
2037-38	21390	2816	3174	1718	**29098**	**43765**

Table 6-2 : Total Tollable Traffic @ Toll Plaza 1- 382.850 KM
(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	3490	922	1244	428	**6084**	**10684**
2017-18	3853	987	1321	459	**6620**	**11531**
2018-19	4254	1056	1402	493	**7205**	**12449**
2019-20	4696	1130	1488	529	**7843**	**13440**
2020-21	5137	1198	1565	565	**8465**	**14395**
2021-22	5620	1271	1645	604	**9140**	**15423**
2022-23	6147	1347	1729	645	**9868**	**16523**
2023-24	6725	1428	1818	689	**10660**	**17712**
2024-25	7357	1513	1910	736	**11516**	**18985**
2025-26	7956	1581	1979	779	**12295**	**20112**
2026-27	8604	1652	2050	825	**13131**	**21313**
2027-28	9304	1727	2124	873	**14028**	**22593**
2028-29	10063	1805	2201	924	**14993**	**23961**
2029-30	10883	1886	2281	978	**16028**	**25420**
2030-31	11608	1942	2329	1026	**16905**	**26618**
2031-32	12380	2000	2378	1076	**17834**	**27881**
2032-33	13203	2061	2428	1129	**18821**	**29218**
2033-34	14082	2123	2480	1184	**19869**	**30630**
2034-35	15018	2187	2532	1242	**20979**	**32117**
2035-36	15791	2220	2547	1290	**21848**	**33232**
2036-37	16604	2254	2562	1340	**22760**	**34399**
2037-38	17458	2288	2577	1392	**23715**	**35618**

Traffic projections for Most Likely scenario are given as under

Table 6-3 : Total Tollable Traffic @ Toll Plaza 1- 382.850 KM
(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	3506	926	1250	430	**6112**	**10734**
2017-18	3889	996	1332	464	**6681**	**11638**
2018-19	4313	1071	1421	501	**7306**	**12626**
2019-20	4784	1151	1514	541	**7990**	**13696**
2020-21	5258	1226	1599	581	**8664**	**14737**
2021-22	5778	1306	1688	624	**9396**	**15860**
2022-23	6349	1391	1783	670	**10193**	**17074**
2023-24	6978	1481	1882	720	**11061**	**18387**
2024-25	7669	1577	1988	773	**12007**	**19807**
2025-26	8332	1656	2069	823	**12880**	**21085**
2026-27	9052	1739	2154	876	**13821**	**22453**
2027-28	9836	1826	2243	932	**14837**	**23919**
2028-29	10688	1918	2335	992	**15933**	**25490**
2029-30	11613	2013	2431	1055	**17112**	**27168**
2030-31	12443	2084	2495	1112	**18134**	**28587**
2031-32	13333	2157	2560	1172	**19222**	**30088**
2032-33	14287	2233	2627	1235	**20382**	**31680**
2033-34	15309	2311	2696	1302	**21618**	**33370**
2034-35	16404	2392	2766	1372	**22934**	**35156**
2035-36	17331	2440	2796	1432	**23999**	**36553**
2036-37	18310	2489	2826	1495	**25120**	**38019**
2037-38	19344	2538	2857	1561	**26300**	**39558**

CHAPTER 7
FORECAST OF TOLL REVENUE

7.1 General

This chapter presents the tolling rate calculations, categories and toll revenue of the project.

7.2 Discount Categories

Fee schedule of agreement of Trichy - Dindigul section of NH-45 is based on old toll policy. As per the Toll Notification (Schedule G) the following discounts have been considered:

1. Monthly Pass: For frequent user's monthly pass would be issued at fee 30 time the single journey fee. There are other local monthly passes for car /Jeep/ Van category I and II and school bus @ Rs.150, Rs.300 and Rs.1000 respectively.
2. Multiple Journeys (for Return Trip): Will be charged at 1.5 times single journey.
3. Single Journey: Full single journey toll would be charged to this category of vehicles who are infrequent travelers or whose frequency does not yield any discount from the above categories.
4. There are several categories of local discounts.
    a) Local Bus / truck and LCV (within 20 km) will be charged @ Rs. 25 and 15 respectively. Rate will be constant throughout concession period

Building of inflation and escalation of rate based on WPI are done as per toll notification (Schedule G) as given under.

$$\text{Base Fee} \times \frac{\text{WPI-B}}{\text{WPI-A}} \times \text{length of the said section.}$$

Where

- WPI-A = is the Wholesale Price Index of June, 1997 (131.4).
- WPI-B = is the Average Wholesale Price Index for the year ending March, 31st preceding the fee revision date.

7.3 Estimation of Toll Rates

As per the applicable MORTH notification and Schedule G of contract agreement, the following Base rate of fee for the categories mentioned in the table stands true in the National Highways Fee Rules applicable for contract.

Table 7-1 : Base Toll Rates 1997-98

Type of Vehicle	Base Rate of Fee / Km (in Rs.)
Car, Jeep, Van or Jeep	0.40
Light Commercial Vehicle, (LCV)	0.70
Bus or Truck (2 Axle)	1.40
MAV (> 2 axle)	2.25

Factor of inflation / growth has been incorporated as per Schedule G. WPI are available up to 2015-16. Following graph provides projection of rate of inflation (WPI) in India. Data has been taken from Office of Economic Advisor web site (www.eaindustry.nic.in)

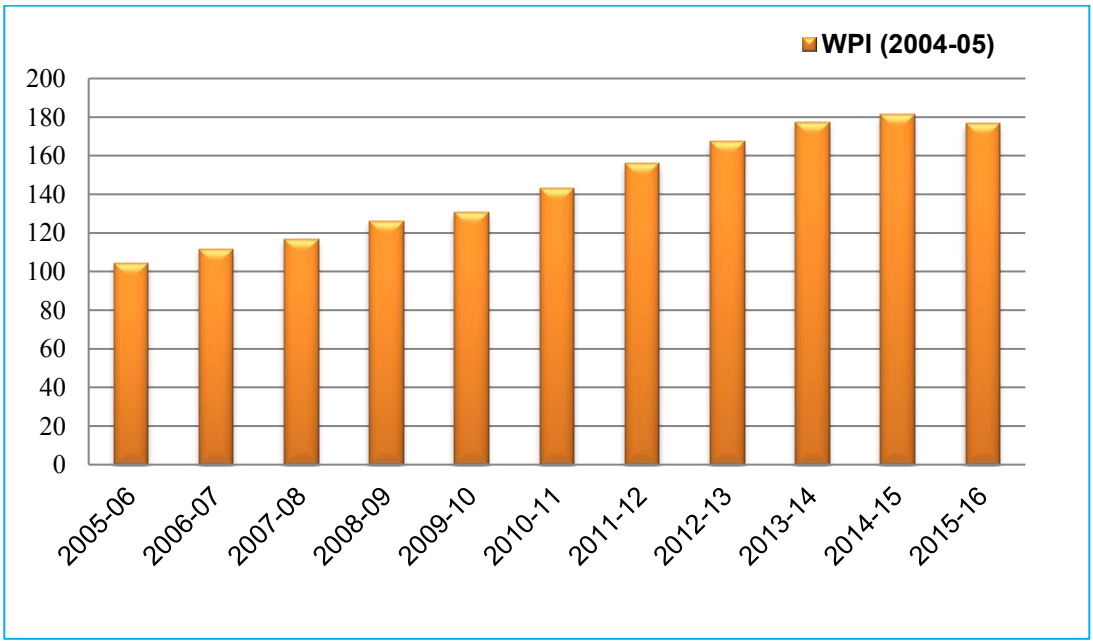

Figure 7-1 : Historical Rate of WPI Inflation in India

Average inflation in WPI in last 10 years is 5.5%. Taking future trends of economy into account following average WPI inflation is used for projections of toll rates

- Up to Year 2018 - 4.0%
- 2019-21 - 5.0%
- 2022-26 - 4.0%
- 2027-31 - 3.0%
- 2032-40 - 2.0%

Toll rates are calculated as per guidelines provided in schedule G for the concession period and are given below.

Total project length as per agreement is 88.273. Presently 1 km length of project road is balance for want of land acquisition. Hence at present tollable length of project is 87.273.

Thus, worked out rates for various categories of vehicle and discounts are given as under

Table 7-2 : Toll Rates for Single Journey @ Toll Plaza 1- 382.850 KM

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car - LCO	LCV - LTO	Truck/Bus - LTO
2016-17	90	155	310	495	15	15	25
2017-18	90	160	320	515	15	15	25
2018-19	95	165	335	535	15	15	25
2019-20	100	175	350	560	15	15	25
2020-21	105	185	365	590	15	15	25
2021-22	110	195	385	620	15	15	25
2022-23	115	200	400	645	15	15	25
2023-24	120	210	415	670	15	15	25
2024-25	125	215	435	695	15	15	25
2025-26	130	225	450	725	15	15	25
2026-27	135	235	470	755	15	15	25
2027-28	140	240	485	775	15	15	25
2028-29	140	250	495	800	15	15	25
2029-30	145	255	510	825	15	15	25
2030-31	150	265	530	850	15	15	25
2031-32	155	270	545	875	15	15	25
2032-33	160	275	555	890	15	15	25
2033-34	160	285	565	910	15	15	25
2034-35	165	290	575	925	15	15	25
2035-36	170	295	590	945	15	15	25
2036-37	170	300	600	965	15	15	25
2037-38	175	305	610	985	15	15	25

Table 7-3 : Toll Rates for Multiple Journeys @ Toll Plaza 1- 382.850 KM

Year	Car	Mini Bus /LCV	Truck/ Bus	Multi Axle
2016-17	130	230	460	740
2017-18	135	240	480	770
2018-19	145	250	500	800
2019-20	150	260	525	840
2020-21	155	275	550	885
2021-22	165	290	580	930
2022-23	170	300	600	965
2023-24	180	315	625	1005
2024-25	185	325	650	1045
2025-26	195	340	675	1085
2026-27	200	350	705	1130
2027-28	205	360	725	1165
2028-29	215	375	745	1200
2029-30	220	385	770	1235
2030-31	225	395	790	1270
2031-32	235	410	815	1310
2032-33	240	415	830	1335
2033-34	240	425	850	1365
2034-35	245	430	865	1390
2035-36	250	440	880	1420
2036-37	255	450	900	1445
2037-38	260	460	920	1475

Table 7-4 : Toll Rates for Monthly Pass @ Toll Plaza 1- 382.850 KM

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car - LT1	Car - LT2	School Bus
2016-17	2635	4615	9230	14835	150	300	1000
2017-18	2745	4800	9600	15430	150	300	1000
2018-19	2855	4990	9985	16045	150	300	1000
2019-20	2995	5240	10485	16850	150	300	1000
2020-21	3145	5505	11005	17690	150	300	1000
2021-22	3300	5780	11560	18575	150	300	1000
2022-23	3435	6010	12020	19320	150	300	1000
2023-24	3570	6250	12500	20090	150	300	1000
2024-25	3715	6500	13000	20895	150	300	1000
2025-26	3865	6760	13520	21730	150	300	1000
2026-27	4020	7030	14060	22600	150	300	1000
2027-28	4140	7240	14485	23275	150	300	1000
2028-29	4260	7460	14920	23975	150	300	1000
2029-30	4390	7685	15365	24695	150	300	1000
2030-31	4520	7915	15825	25435	150	300	1000
2031-32	4660	8150	16300	26200	150	300	1000
2032-33	4750	8315	16625	26720	150	300	1000
2033-34	4845	8480	16960	27255	150	300	1000
2034-35	4945	8650	17300	27800	150	300	1000
2035-36	5040	8825	17645	28360	150	300	1000
2036-37	5140	9000	18000	28925	150	300	1000
2037-38	5245	9180	18360	29505	150	300	1000

7.4 Toll Revenue

As indicated earlier, toll revenue on the Project Road has been calculated under in all three scenarios. The estimates of toll revenue under ***Optimistic***, ***Pessimistic*** and ***Most Likely*** growth scenarios are presented in the following section.

7.5 Toll Revenue at all toll plazas under Scenarios

Toll Revenue estimates under most likely scenario at each of the toll plaza up to 2037-38 (Expected End of Concession Period) starting from the year 2016-17 are shown in tables below.

Overloading of commercial vehicles is a known phenomenon on Indian roads. Currents project witnessed instances of overloading. These vehicles can be charge at extra higher rate as per contract to discourage overloading. A sample study done at Hosur Krishnagiri section of NH-7 by concessionaire shows that at present overloading charges can be translated to about 7% extra revenue. For next 2-3 years, this trend may continue at same % then it would gradually diminish over a period of say 8-10 years. Same phenomenon can be expected to occur at project stretch. Following table provides expected component of revenue from overloading

Table 7-5 : Toll Revenue Optimistic Scenario (Rs. Crores)

Year	Expected Revenue from Overloading
2016-17	7%
2017-18	7%
2018-19	7%
2019-20	5%
2020-21	5%
2021-22	4%
2022-23	4%
2023-24	3%
2024-25	3%
2025-26	2%
2026-27	2%
2027-28	1%
2028-29	1%

Toll revenue projections, excluding revenue from overloading, are given in following tables.

Table 7-6 : Toll Revenue Optimistic Scenario (Rs. Crores)

Year	Toll at Plaza 382.850	Total
2016-17	34.19	**34.19**
2017-18	38.44	**38.44**
2018-19	43.74	**43.74**
2019-20	49.78	**49.78**
2020-21	56.27	**56.27**
2021-22	64.20	**64.20**
2022-23	71.84	**71.84**
2023-24	81.33	**81.33**
2024-25	90.44	**90.44**
2025-26	101.03	**101.03**
2026-27	111.93	**111.93**
2027-28	123.64	**123.64**
2028-29	135.30	**135.30**
2029-30	148.44	**148.44**
2030-31	161.33	**161.33**
2031-32	176.61	**176.61**
2032-33	190.49	**190.49**
2033-34	204.66	**204.66**
2034-35	219.00	**219.00**
2035-36	234.87	**234.87**
2036-37	248.24	**248.24**
2037-38	266.07	**266.07**

Table 7-7 : Toll Revenue Pessimistic Scenario (Rs. Crores)

Year	Toll at Plaza 382.850	Total
2016-17	33.71	**33.71**
2017-18	37.56	**37.56**
2018-19	42.34	**42.34**
2019-20	47.72	**47.72**
2020-21	53.42	**53.42**
2021-22	60.39	**60.39**
2022-23	66.99	**66.99**
2023-24	75.15	**75.15**
2024-25	82.77	**82.77**
2025-26	91.58	**91.58**
2026-27	100.52	**100.52**
2027-28	110.02	**110.02**
2028-29	119.27	**119.27**
2029-30	129.64	**129.64**
2030-31	139.57	**139.57**
2031-32	151.35	**151.35**
2032-33	161.69	**161.69**
2033-34	172.10	**172.10**
2034-35	182.40	**182.40**
2035-36	193.69	**193.69**
2036-37	202.75	**202.75**
2037-38	215.27	**215.27**

Table 7-8 : Toll Revenue Most Likely Scenario (Rs. Crores)

Year	Toll at Plaza 382.850	Total
2016-17	33.96	**33.96**
2017-18	38.03	**38.03**
2018-19	43.08	**43.08**
2019-20	48.82	**48.82**
2020-21	54.93	**54.93**
2021-22	62.38	**62.38**
2022-23	69.51	**69.51**
2023-24	78.31	**78.31**
2024-25	86.65	**86.65**
2025-26	96.34	**96.34**
2026-27	106.26	**106.26**
2027-28	116.87	**116.87**
2028-29	127.29	**127.29**
2029-30	138.98	**138.98**
2030-31	150.35	**150.35**
2031-32	163.80	**163.80**
2032-33	175.81	**175.81**
2033-34	188.00	**188.00**
2034-35	200.21	**200.21**
2035-36	213.67	**213.67**
2036-37	224.74	**224.74**
2037-38	239.73	**239.73**

CHAPTER 8
OPERATION & MAINTENANCE COST

8.1 General

While traffic and toll rates account income of project. Capital cost of construction and O & M cost form part of expenses. Health of any highway project considerably depends on pattern of its O&M cost. For this purpose, major O&M elements such as civil infrastructure, toll system and manpower's, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analyzed. As per condition of contract periodic repair and maintenance on project road is to be done on every 5 years' interval. Same is considered while developing cots of operation and maintenance.

8.2 Major Elements of maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

8.3 Project Details

Following are project parameters which would contribute towards cost of operation and maintenance.

Table 8-1 : Project Parameters for O & M

Item	Parameter	Quantity	Unit
Length of Road	KM	87.27	KM
Main Carriageway	Paved Area	1594180	SQM
Service Road	Paved Area	87934	SQM
Bus bays	Paved Area	16905	SQM
Truck Lay bye	Paved Area	1463	SQM
Structure		**12306**	SQM
Major Bridge	Area	12306	SQM
Minor Bridge	Area	0	SQM
Flyover	Area	0	SQM
RCC Crash Barrier	Length	2344	RMT
Metal Beam Crash Barrier	Length	17655	RMT
Guard Post	Nos	35309	No.
Kerb Detail	Length	176546	RMT

Operation and maintenance cost of project depends number of factors like quality of construction, response of maintenance team to early damage, local climate (rain etc.).

8.4 Operation & Maintenance Cost

Following are project parameters which would contribute towards cost of operation and maintenance.

Future cost of operation and maintenance is estimate on engineering judgment and experience basis. Keeping all above factors in view, following can be basis of working out cost of operation and maintenance for project corridor from Trichy to Dindigul on NH-45 in state of Tamil Nadu.

b) **Annual Regular Maintenance** – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll plaza maintenance, Toll collection, other services like medical help and rescue operations etc.

c) **Periodic Maintenance** – This will be done on periodic basis say every 5 years. It will consist of overlaying of wearing course and painting and marking. Some pavement strengthening is also anticipated in few sections. Ministry in its Specifications for Road & Bridge Works (5th Revision) has included Micro Surfacing as surface sealing and renewal treatment. NHAI has also issued

instruction to use Micro Surfacing for periodic renewal course vide letter dated 15th November 2016. In light of above, Micro Surfacing is considered as overlay course in 45% of the project stretch. For balance 55% normal asphalt course is considered. Also, from practicality of construction and traffic operation on project road, Major Maintenance and Repair (MMR) work is spread over a period of 2 years without escalation. Toll operation on project road commenced in year 2012. Considering 5 years MMR cycle, next cycle of MMR is expected in year 2017-18.

Cost for above operations is taken on prevailing rates. Following tables provides year cost of Regular Operation and Maintenance and Major Maintenance and Repair

Table 8-2 : Year wise Details of Regular Operation & Maintenance Cost

Year	Total Regular O & M Expenditure (Rs. Crores) Current Price	Escalation Factor	Total Regular O & M Expenditure (Rs. Crores) with escalation
2016-17	6.16	1.04	6.40
2017-18	6.16	1.08	6.66
2018-19	6.16	1.14	6.99
2019-20	6.16	1.19	7.34
2020-21	6.16	1.25	7.71
2021-22	6.16	1.30	8.02
2022-23	6.16	1.35	8.34
2023-24	6.16	1.41	8.67
2024-25	6.16	1.46	9.02
2025-26	6.16	1.51	9.29
2026-27	6.16	1.55	9.57
2027-28	6.16	1.60	9.86
2028-29	6.16	1.65	10.15
2029-30	6.16	1.70	10.46
2030-31	6.16	1.73	10.66
2031-32	6.16	1.77	10.88
2032-33	6.16	1.80	11.10
2033-34	6.16	1.84	11.32
2034-35	6.16	1.87	11.54
2035-36	6.16	1.91	11.77
2036-37	6.16	1.95	12.01
2037-38	6.16	1.99	12.25

Table 8-3 : Year wise Details of Major Maintenance & Repair (MMR) Cost

Year	Total Length of Project Road (Km)	No. of Lanes	Total Lane Km	Normal Overlay Lane Km Length (55% of the total)	Micro Surfacing Lane Km Length (45% of the total)	Rate of Normal Overlay Per Km Per Lane (Rs. Cr.)	Rate of Micro Surfacing Overlay Per Km Per Lane (Rs. Cr.)	Total Cost of Major Maintenance & Repair Current Price	Escalation Factor	Total Cost of Major Maintenance & Repair at Escalated Price
2016-17	87.27	4	349.09							
2017-18	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.04	20.06
2018-19	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.04	20.06
2019-20	87.27	4	349.09							
2020-21	87.27	4	349.09							
2021-22	87.27	4	349.09							
2022-23	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.30	25.12
2023-24	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.30	25.12
2024-25	87.27	4	349.09							
2025-26	87.27	4	349.09							
2026-27	87.27	4	349.09							
2027-28	87.27	4	349.09							
2028-29	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.60	30.87
2029-30	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.60	30.87
2030-31	87.27	4	349.09							
2031-32	87.27	4	349.09							
2032-33	87.27	4	349.09							
2033-34	87.27	4	349.09							
2034-35	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.84	35.45
2035-36	87.27	4	349.09	96.00	78.55	0.16	0.05	19.29	1.84	35.45
2036-37	87.27	4	349.09							

Following graph depicts Year wise operation and maintenance cost illustratively. Higher cost columns represent periodic & special Repair years.

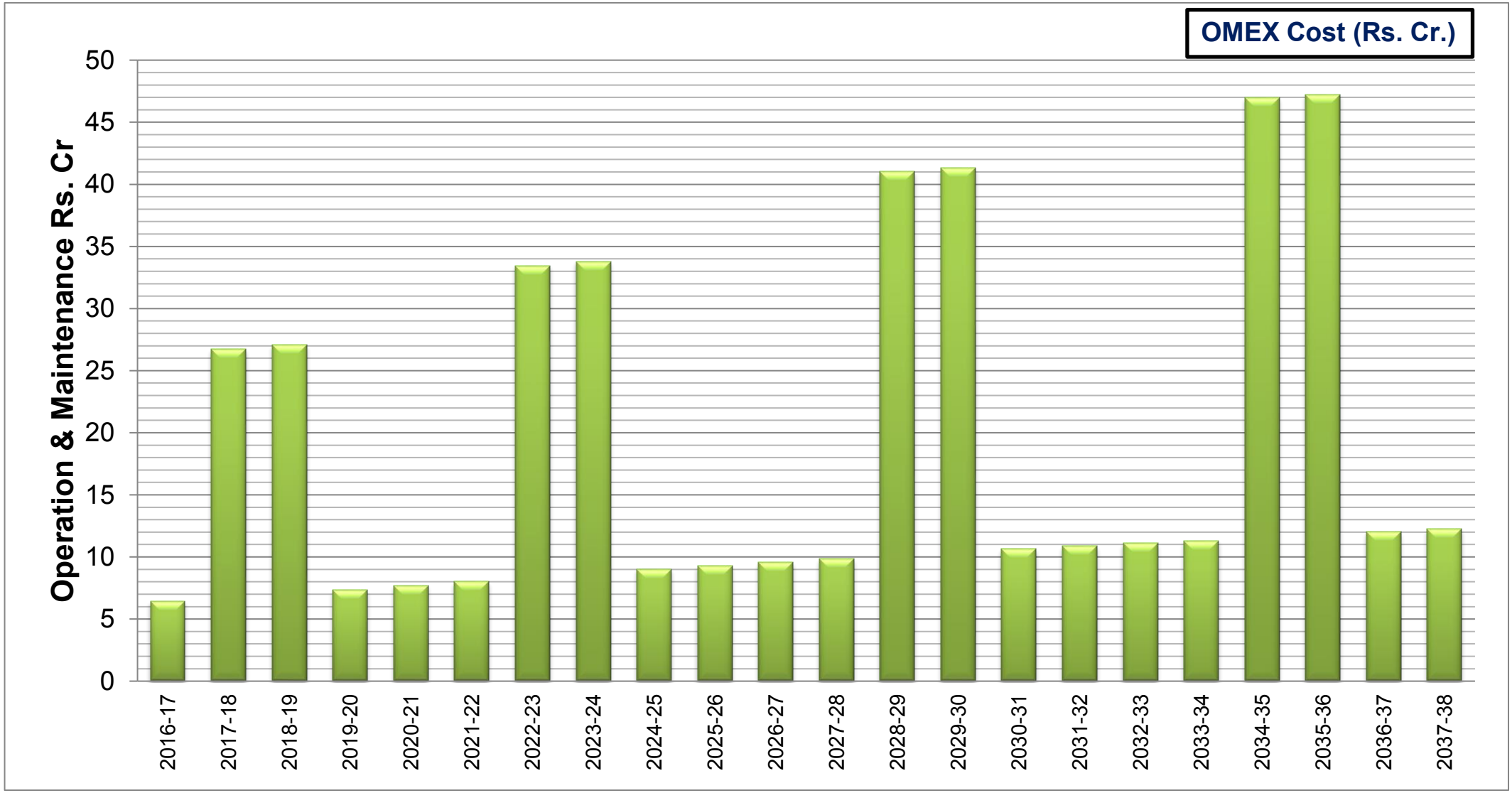

Figure 8-1 : Year wise Operation & Maintenance Cost

CHAPTER 9
CONCLUSION & RECOMMENDATIONS

9.1 Conclusion & Recommendations

Project stretch of Trichy to Dindigul section of NH-45 in state of Tamil Nadu from km 333.000 to km 421.273 is presently a four lane road. The road is in sound condition and serves healthy traffic volumes. There are many upcoming projects in area which are proposed to boost economic growth of area and add value to development of the region. All the developments considered in the Report have the potential to have a positive impact to traffic flow on project. Following can considered as major outcome of study

a) There is a healthy volume of tollable traffic running on project

b) Project corridor has the potential to witness traffic growth @ 7-8% annually in near future due to various development in area and overall development of economy

c) Project corridor does not have risk of traffic leakage due to lack of competing roads of comparable quality

d) Project infrastructure is in good condition and its maintenance costs are feasible for the successful operation of the toll road

Based on above it can be considered a stable healthy project from traffic and revenue point of view.

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TRICHY - KARUR (KM 135.800 to KM 218.000) SECTION OF NH-67 IN THE STATE OF TAMIL NADU

TOLL REVENUE AND O&M COST PROJECTION REPORT (FINAL)

DEC. 2016

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DEC 2016

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ABBREVIATIONS

AADT	-	Annual Average Daily Traffic	**NHAI**	-	National Highway Authority of India
BOT	-	Build Operate Transfer	**NHDP**	-	National Highways Development Project
CAGR	-	Compound Annual Growth Rate	**NSDP**	-	Net State Domestic Product
CTV	-	Classified traffic volume	**O&M**	-	Operation & Maintenance
DBFOT	-	Design, Build, Finance, Operate & Transfer	**PCDP**	-	Per Capita Domestic Product
EME	-	Earth Moving Equipment	**PCI**	-	Per Capita Income
GDP	-	Gross Domestic Product	**PCU**	-	Passenger Car Unit
GSDP	-	Gross State Domestic Product	**PSC**	-	Pre-stressed Concrete
HCM	-	Heavy Construction Machinery	**RCC**	-	Reinforced cement concrete
HCV	-	Heavy Commercial Vehicle	**RHS**	-	Right Hand Side
HTMS	-	Highway Traffic Management System	**SH**	-	State Highway
IRC	-	Indian Road Congress	**TP**	-	Toll Plaza
IRR	-	Internal Rate of Return	**WPI**	-	Wholesale Price Index
LCV	-	Light Commercial Vehicle	**SIR**	-	Special Investment Region
LHS	-	Left Hand Side	**c.**	-	Circa
LGV	-	Light Goods Vehicle	**ROB**	-	Railway Over Bridge
MAV	-	Multi Axle Vehicle	**MDR**	-	Major District Road
MORTH	-	Ministry of Road Transport and Highways	**ODR**	-	Other District Road
NH	-	National Highway	**CA**	-	Concession Agreement
PCC	-	Plain Cement Concrete	**RMT**	-	Running Meter
CR	-	Coarse Rubble			

CHAPTER 1
INTRODUCTION

1.1 Background

The Government of India has approved 4 laning of 4000 Kms length of National Highways on BOT basis under NHDP Phase IIIA and entrusted implementation of the programme to the NHAI.

The project under consideration, Trichy – Karur Section of NH-67 from Km 135.80 to Km 218.000is one such road project NHAI intended to implement on a BOT basis in the DBFOT format. Project has concession period of 30 years. Toll operation started on project from 22nd February 2014. The Project has been commissioned and is currently in the operation / maintenance phase.

1.2 Objective of the Study

M/s Reliance Infrastructure InvIT Fund has engaged GMD Consultants to assess the future traffic and toll potential of project along with related operation & maintenance expenditure involved.

This report named as "***Toll Revenue and O&M Cost Projection Report***" mainly focuses on traffic and O&M aspects of the project. Other parameters like competing road, area developments etc. have been considered from a traffic development point of view.

1.2.1 Scope of Services

The broad scope of work covered in the assignment is as follows

a) Analysis of Traffic Growth

b) Toll Rate Growth

c) Revenue Forecasting

d) Operation and Maintenance Cost Projections

The Concessionaire has provided basic traffic data and other project details based on which the above analysis has been carried out.

CHAPTER 2
PROJECT DETAILS

2.1 Project Corridor

NH-67 starts from Nagapattinam in the state of Tamil Nadu and traverses through Thanjavur, Trichy and Karur towns before ending at Coimbatore in the state of Tamil Nadu itself. The project corridor is a segment of NH - 67 starts from Trichy (Km 135.800) and ends at Karur (Km 218.000) crossing NH-7 on North-South corridor. This section has a high traffic density connecting western Tamil Nadu to the eastern coastal regions of the state and is also along the corridor that connects Coimbatore to the important location in east such as Trichy, Kumbakonam, Thanjavur and Nagapattinam.

Project road stretch from Km 154.400 to Km 218.000 was completed. Stretch of Trichy Bypass from Km 0.000 to Km 17.305 and from Km 153.230 to Km 154.400 could not be completed as required land for widening was not made available. Thus, in November 2013 a supplementary agreement was executed between NHAI and Concessionaire in which total length of 18.475 Km (Trichy Bypass and stretch from KM 153.230 to Km 154.400) was delinked from project for COD purpose. 2.28 Km length of Lalapet ROB was added to project length. Thus, total length of project road is 63.628 Km for which COD is awarded.

Figure 2.1 to 2.3 shows the location of the project corridor at country/state/district levels respectively.

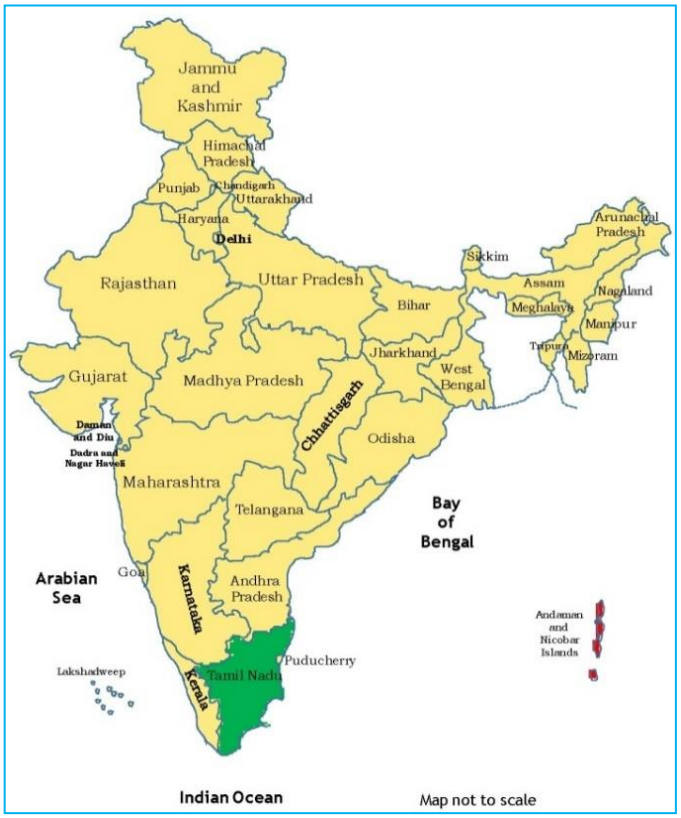

Figure 2-1 : Index Map of Project Highway - Country Level

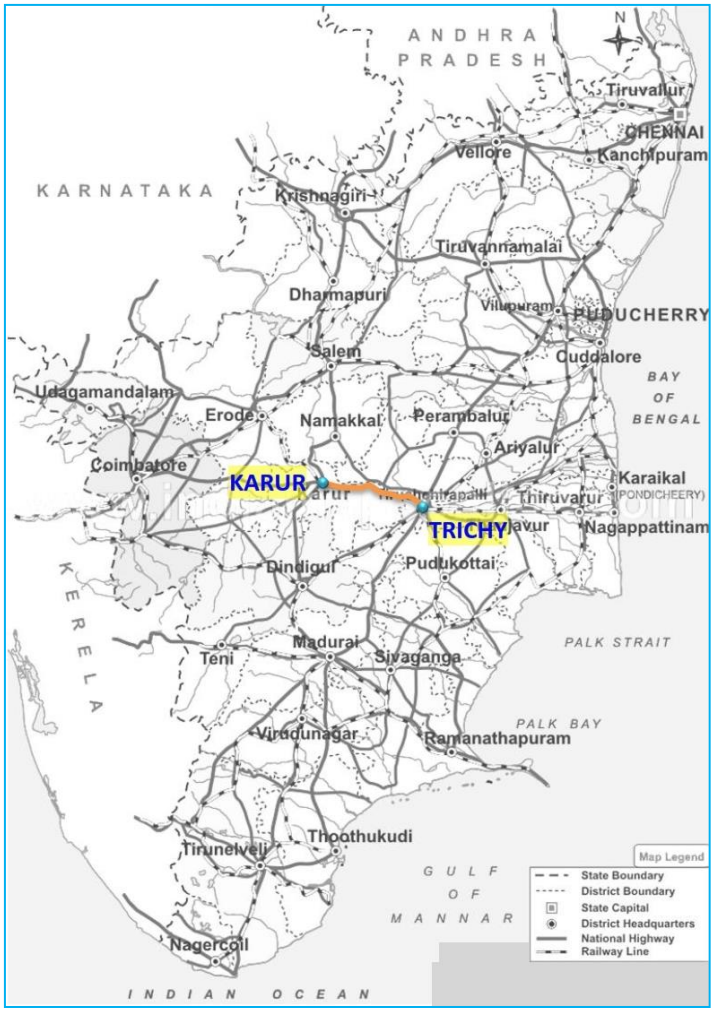

Figure 2-2 : Index Map of Project Highway - State Level

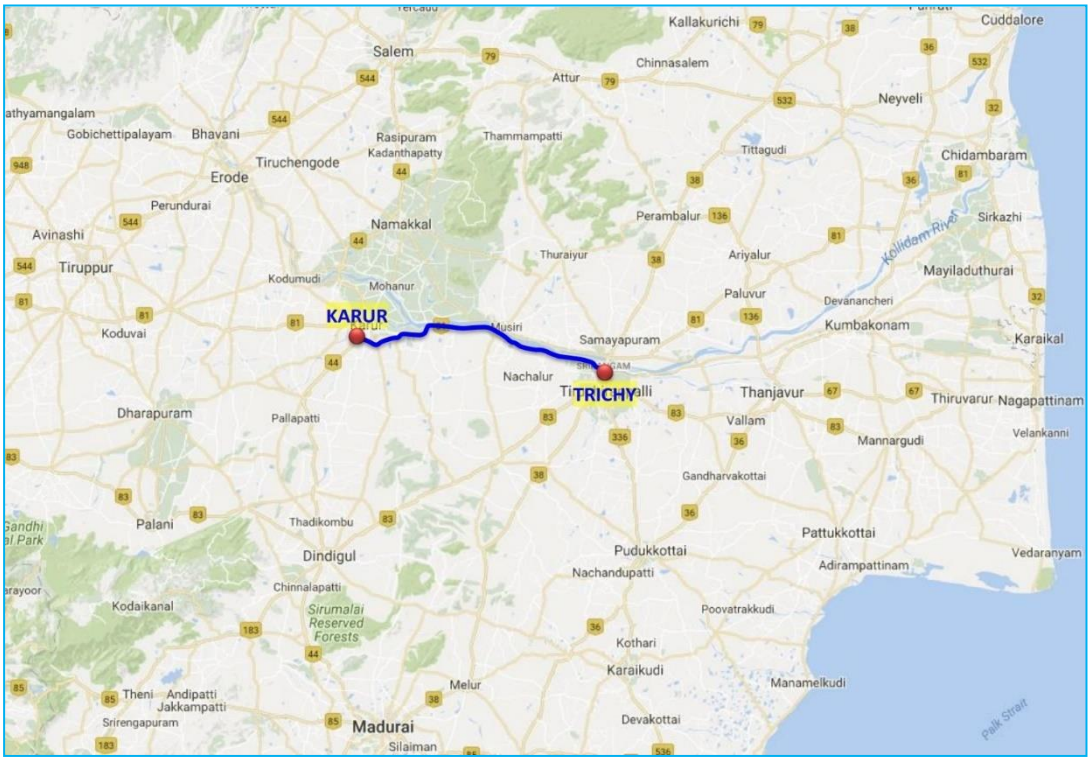

Figure 2-3 : Location Map of the Project Road

2.2 Corridor Description

The project corridor starts from Trichy (Km 135.800) and ends at Karur (Km 218.000). It works as east-west connector between NH-45B and NH-7.

The Project road runs in Trichy and Karur districts passing through five taluks namely, Trichy, Srirangam, Kulithalai, Krishnarayapuram and Karur. The road stretch runs very close to Cauvery River for length of 26 Kms and follows its southern bank.

The project corridor traverses through a flat terrain of mostly agricultural belt except some built-up area. In Km 135.800 to 142.000, it runs through heavily built up area including Trichy town which needs to be bypassed. The stretch from Km 169.000 to Km 178.000 is located in semi-urban area of Kulithalai town thus is bypassed. The road stretch from Km 178.000 to Km 183.000 runs parallel to Cauvery River and follows its southern bank. In Km 183.000 to Km 185.000, it runs through heavily built up area of Lalapet town. Lastly the stretch from Km 203.000 to 218.000 passes through Semi-urban area of Karur and Gandhigraman thus is bypassed.

The project corridor alignment traverses through plain terrain throughout its entire length.

2.3 Salient Features

The salient features of the project corridor are as given below;

- Total Length of Project = 82.200 Kms
- Major Bridges = 05 Nos.
- Minor Bridges = 12 Nos.
- Flyovers & ROB's = 06 Nos.
- Culverts = 95 Nos.
- Vehicular Underpass = 08 Nos.
- Pedestrian Under passes = 01 Nos.
- Major Intersections = 06 Nos.
- Service Road = 22.220 Kms.
- Bus Bays = 23 Nos.
- Truck Lay Byes = 02 Nos.
- Toll Plaza Complex = 02 Nos.

The details of the structures are given below.

2.3.1 Major Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-1 : List of Major Bridges

Sr. No.	Chainage (km)	Span Arrangement (m)	Total width of Super Structure (m)
1	7.785	4 x 25	11
2	10.860	4 x 25	11
3	10.985	4 x 25	11
4	14.150	4 x 25	11
5	165.534	3 x 25	11

2.3.2 Minor Bridges

The list of Major Bridges along the project corridor is as given below

Table 2-2 : List of Minor Bridges

Sr. No.	Chainage (km)	Span Arrangement (m)	Total width of Super Structure (m)
1	0.947	1 x 16	11
2	1.220	1 x 25	11
3	4.590	1 x 16	11
4	155.984	2 x 25	11
5	161.808	1 x 9	11
6	165.615	1 x 35	11
7	194.189	1 x 18	11
8	194.441	1 x 18	11
9	201.100	1 x 9	24
10	201.295	1 x 9	24
11	201.666	1 x 9	24
12	201.953	1 x 18	24

2.3.3 Flyovers & ROB's

The list of flyovers & ROB's along the project corridor is as given below

Table 2-3 : List of Flyovers & ROB's along Project Corridor

Sr. No.	Chainage (km)	Span Arrangement (m)	Total width of Super Structure (m)	Type of Sub Structure and Foundation	Remarks
1	0.000	1x 40	20.50	RCC Pier	Flyover
2	153.230	15 x 30	20.50	RCC Pier	Flyover
3	212.385 (on SH-74)	5 x 30	10.25	RCC Pier	Flyover
4	1.757	1 x 30	10.25	RCC Pier	ROB
5	17.260	1 x 30	20.5	RCC Pier	ROB
6	210.988	1 x 30	20.5	RCC Pier	ROB

2.4 Project Corridor Illustration

Following photographs illustrate project section along the corridor

Figure 2-4 : Photographs showing Project Corridor

CHAPTER 3
TRAFFIC SURVEYS AND ANALYSIS

3.1 Traffic Surveys

During the course of our work we have collected required information for project corridor to understand the general traffic and travel characteristics on the corridor.

The following traffic data has been collected for project.

- Classified traffic volume counts at toll plaza location on Trichy - Karur section of NH-67 for base year 2015-16
- Local Component of traffic
- Component of Return Journey
- Component of Monthly Pass Journey

The main objective of the traffic data analysis is to:

- Determine the existing traffic movement characteristics of project
- Establish base year traffic
- Identification of travel patterns and modal split of project traffic
- Deriving growth factors for traffic forecasting
- Estimation of corridor traffic including traffic diversion if any
- Preparation of revenue model and projection of revenue as per toll policy for various scenarios

Project can be divided into single homogenous sections from traffic point of view.

- Trichy - Karur

Table 3-1 below lists provides details of locations from where traffic details have been collected.

Table 3-1 : Traffic Data Details

Sr. No.	Location	CTV	Single Journey Traffic	Multiple Journey	Monthly Pass	Local Traffic
1	Km 157.500 Thirupparaithurai Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016
2	Km 198.500 Manavasi Toll Plaza	AADT for Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016	For Year 2015-2016

The locations of each of the traffic survey are illustrated in Figure 3-1.

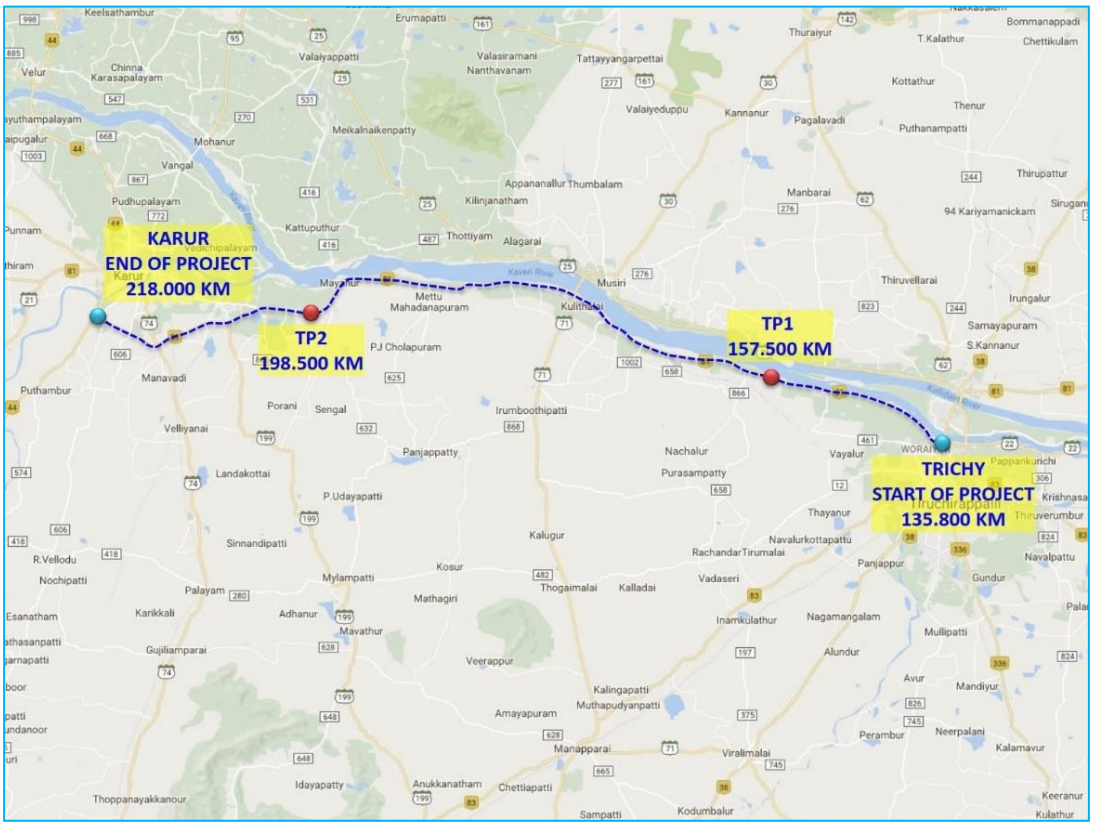

Figure 3-1 : Toll Plaza Locations

3.2 Classified Traffic Volume Count

The objective of conducting a Classified Traffic Volume Count is to understand the traffic flow pattern including modal split on a roadway. The Classified Traffic Volume Count survey has been provided by concessionaire of project highway from actual traffic data gathered at toll plaza locations based on monthly data shared with NHAI. These locations are indicated in ***Figure 3-1*** and listed in ***Table 3-1***.

The vehicles can broadly be classified into fast moving / motorized and slow moving / non-motorized vehicles, which can be further classified into specific categories of vehicles. The groupings of vehicles are further segregated to capture the tollable vehicle categories specifically and toll exempted vehicles are counted separately. The detailed vehicle classification system as per IRC: 64-1990 is given in ***Table 3-2***.

Table 3-2 : Vehicle Classification System

Vehicle Type	
Auto Rickshaw	
Passenger Car	Car, Jeep, Taxi & Van (Old / new technology)
Bus	Mini Bus
	Standard Bus
Truck	Light Goods Vehicle (LCV)
	2 – Axle Truck
	3 Axle Truck (HCV)
	Multi Axle Truck (4-6 Axle)
	Oversized Vehicles (7 or more axles)
Other Vehicles	Agriculture Tractor, Tractor & Trailer

Source - IRC: 64 – 1990

However, since project highway is currently under toll operation, the data collected is corresponding to category of tollable vehicles. Following are the type of vehicles as per concession agreement.

- Car / Jeep / Van
- LCV
- Truck / Bus
- Multi Axle (MAV)
- Oversize Vehicle

3.3 Traffic Characteristic

Toll revenue of project highway does not solely depend on traffic volume. There are certain characteristics of traffic which have substantial potential to affect toll collection. Component of local traffic, component of passenger and commercial traffic, portion of

return journey traffic, % of monthly pass traffic are some of such characteristics of traffic. These will be discussed in subsequent sections of report.

3.3.1 Traffic Data

Project concessionaire has provided Traffic data for base year 2015-16 as under at the toll plaza locations -

Table 3-3 : Traffic Data at Toll Plaza Km 157.500

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted
1	CAR	4241
2	LCV	961
3	Truck/Bus	1639
4	Multi Axle	685
	Total	**7526**

Table 3-4 : Traffic Data at Toll Plaza Km 198.500

Sr. No	Type of Vehicle	Annual Average Daily Traffic (Nos.) including exempted)
1	CAR	3914
2	LCV	1017
3	Truck/Bus	5271
4	Multi Axle	2109
	Total	**12311**

This data was then bifurcated to various components like through local, monthly, return journey etc. category for analysis. Same is discussed in detail in following section.

The table below sets forth the tollable traffic count by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-5 : Historical Tollable Traffic

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY15 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	104,652	1,263,195	1,348,357	703,427	757,528	7%
LCV (2)	38,461	345,389	345,604	181,787	182,646	0%
Bus/Truck (3)	135,894	1,370,631	1,396,311	751,633	745,805	2%
Multi-axle (4)	60,885	506,933	566,201	291,446	303, 027	12%
Total	339,892	3,486,148	3,656,474	1,928,293	1,989,006	5%

* Toll operations started in Feb 2014

** Toll operations suspended for 16 days due to floods in Dec 2015

Notes:

(1) Car comprises private cars, taxis and vans.

(2) LCV comprises light commercial vehicles and minibuses.

(3) Bus/Truck comprises trucks with two axles and buses.

(4) Multi-axle comprises vehicles with more than two axles.

(5) As this Project commenced tolling in February 2014, CAGR from FY14 to FY16 will not be an appropriate comparison.

The tollable annual average daily traffic for the project increased to 24,582 PCUs in 2016 from 23,445 PCUs in 2014, representing a CAGR of 10%. The table below sets forth the tollable annual average daily traffic by category of vehicles for the financial years 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-6 : Historical AADT at Toll Plaza

Category	For the FY ended March 31			For the Six Months Ended September 30		CAGR FY15 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	2,908	3,461	3,852	3,844	4,139	11%
LCV (2)	1,068	946	987	993	998	4%
Bus/Truck (3)	3,775	3,755	3,989	4,107	4,075	6%
Multi-axle (4)	1,691	1,389	1,618	1,593	1,656	16%
Total	9,441	9,551	10,447	10,537	10,869	9%
Total PCUs	23,445	22,396	24,582	24,822	25,314	10%

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

On average for the three financial years ended 2014, 2015 and 2016, cars, LCVs, buses and trucks and multi-axle vehicles accounted for, in terms of the TK Project's total traffic mix, 37%,10%,38% and 15% of tollable traffic, respectively. In the financial year 2016, cars, LCVs, buses and trucks and multi-axle vehicles represented, in terms of the project's total traffic mix, 37%, 10%, 38%, and 15% of tollable traffic for the project, respectively.

Toll fees charged and gross monthly toll revenues

For the Fiscal Year 2014, TK recognised construction income related to the construction of roads. From Fiscal Year 2015, substantially all of TK's operating revenues are derived from the tolls that it is entitled to collect.] The following table sets forth the toll fees charged for the TK Project's by category of vehicles for the financial year 2014, 2015 and 2016 and the six months ended September 30, 2015 and 2016:

Table 3-7 : Historical Toll Revenue at Toll Plaza

Category	(in Rs. Crores) For the FY ended March 31			(in Rs. Crores) For the Six Months Ended September 30		CAGR FY15 –FY16 (%)
	2014	2015	2016*	2015	2016	
Car (1)	0.52	6.52	7.19	3.72	4.04	10%
LCV (2)	0.31	2.95	3.09	1.60	1.63	5%
Bus/Truck (3)	2.27	21.37	22.69	12.00	12.10	6%
Multi-axle (4)	1.73	15.20	17.67	9.09	9.34	16%
Total	4.83	46.04	50.64	26.42	27.11	10%

Notes:

(1) Car comprises private cars, taxis and vans.
(2) LCV comprises light commercial vehicles and minibuses.
(3) Bus/Truck comprises trucks with two axles and buses.
(4) Multi-axle comprises vehicles with more than two axles.

The following table sets forth the gross monthly toll revenues received from the project for the periods indicated:

Table 3-8 : Gross Monthly Toll Revenue at Toll Plaza

Month	2016 (Rs. in Crores)
April	4.60
May	4.21
June	4.69
July	4.75
August	4.55
September	4.47

3.4 Data Analysis

3.4.1 Analysis of Traffic Volume Count

Understanding the character of existing traffic forms the basis of traffic forecast. The various vehicle types having different sizes and characteristics can be converted into a single unit called Passenger Car Unit (PCU). Passenger Car equivalents for various vehicles are adopted based on recommendations of Indian Road Congress prescribed in "IRC-64-1990: Guidelines for Capacity of Roads in Rural areas". The adopted passenger car unit values (PCU) are presented in table below

Table 3-9 : PCU Factors Adopted for Study

Vehicle Type	PCUs
Car	1.0
Mini Bus	1.5
Standard Bus	3.0
LCV/LGV	1.5
2 Axle Truck	3.0
3 – 6 Axle Truck	4.5
MAV	4.5
Auto Rickshaw/	1.0
Van/Tempo	1.0
Agriculture Tractor with Trailer	4.5
Agriculture Tractor without Trailer	1.5

Source: IRC: 64-1990

Traffic volume at each toll plaza was converted to PCU and same is presented as under. Higher PCU index indicated higher share of larger (commercial) vehicles

Table 3-10 : Traffic in PCU at Project Stretch

Toll Plaza Location	Traffic No	PCU	PCU Index
Thirupparaithurai Toll Plaza Km 157.500	7526	13683	1.82
Manavasi Toll Plaza Km 198.500	12311	30743	2.50

It can be observed from above that project traffic has PCU index about 2.5 at toll plaza (@198.500 Km) which is near Karur. It indicates strong domination of commercial traffic at this location. At other toll plaza (Km 157.500) PCU index is 1.8 which indicates dominance of passenger vehicles at this location.

3.4.2 Components of Traffic

As discussed previously, components of traffic volume play an important role in determining project revenue. A larger component of commercial traffic with higher axle configuration adds to project revenue positively. Similarly, a larger component of local traffic affects the project revenue potential negatively.

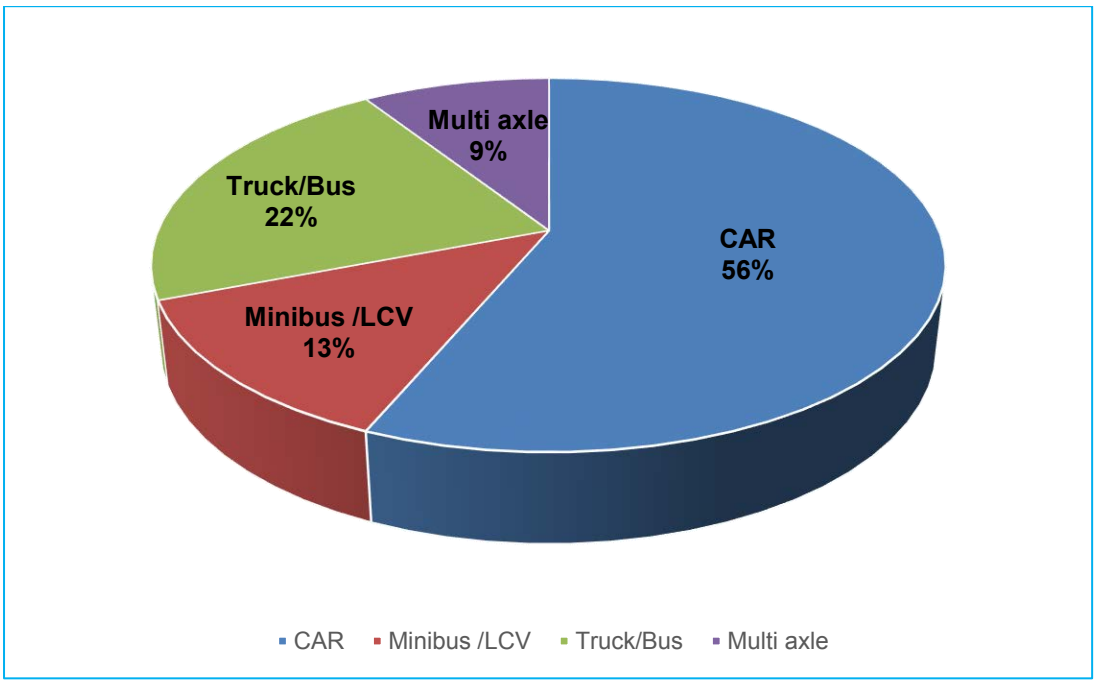

Figure 3-2 : Modal Split of Traffic at Toll Plaza Km 157.500

It is observed that car traffic forms 567% of total traffic at toll plaza location Km 157.500. Share of LCV and bus / truck was 13% and 221% respectively. Multi axle consists of 9% of total traffic. Over all about 35% of traffic is commercial in nature.

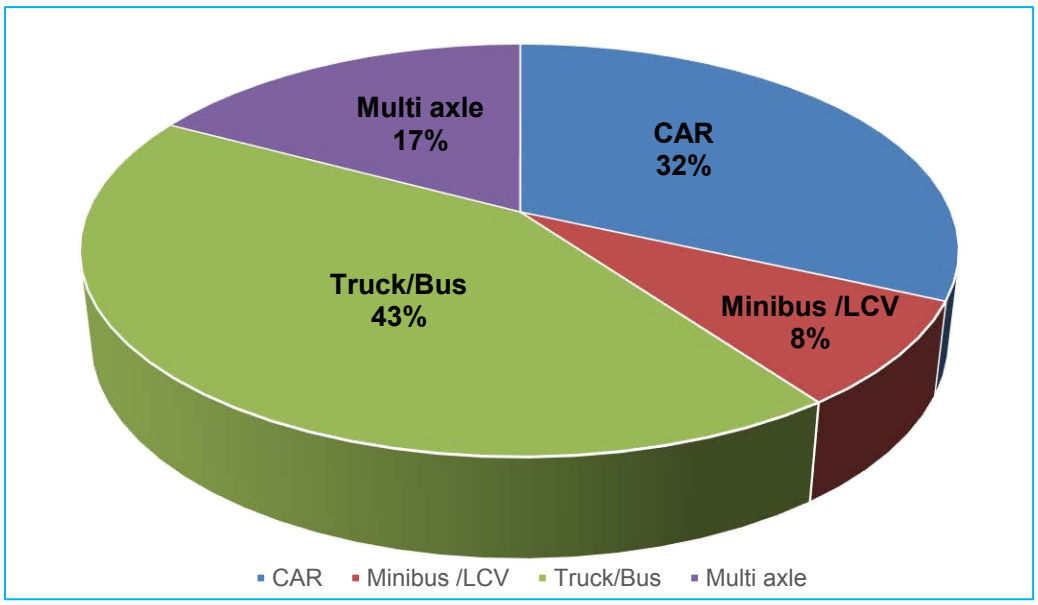

Figure 3-3 : Modal Split of Traffic at Toll Plaza Km 198.500

At toll plaza Km 198.500 which is near Karur multi axle traffic is 17% of the total traffic. Truck/ Bus share 43% of total volume while car traffic is only 32%.

Another important bifurcation of traffic is components of traffic with respect to various type of toll ticketing like

1. Single Journey
2. Multi Journey
3. Monthly Pass (Local and General)

Following table provides numbers of vehicle falling in each of above category on base year 2015-16

Table 3-11 : Journey type bifurcation at Toll Plaza 157.000

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	40.5%	57.9%	0.2%	1.5%	100.0%
Minibus /LCV	27.2%	70.1%	0.0%	2.8%	100.0%
Truck/Bus	24.4%	30.7%	0.0%	45.0%	100.0%
Multi axle	53.1%	44.7%	0.0%	2.2%	100.0%

Table 3-12 : Journey type bifurcation at Toll Plaza 198.500

Type	Single Journey	Return Journey	Monthly Pass Local	Monthly Pass	Total
Car	42.2%	56.5%	0.2%	1.1%	100.0%
Minibus /LCV	29.8%	66.1%	0.0%	4.2%	100.0%
Truck/Bus	14.2%	71.7%	0.0%	14.2%	100.0%
Multi axle	57.4%	41.5%	0.0%	1.1%	100.0%

Following figure illustrate component of each type of journey in graphics for better understanding.

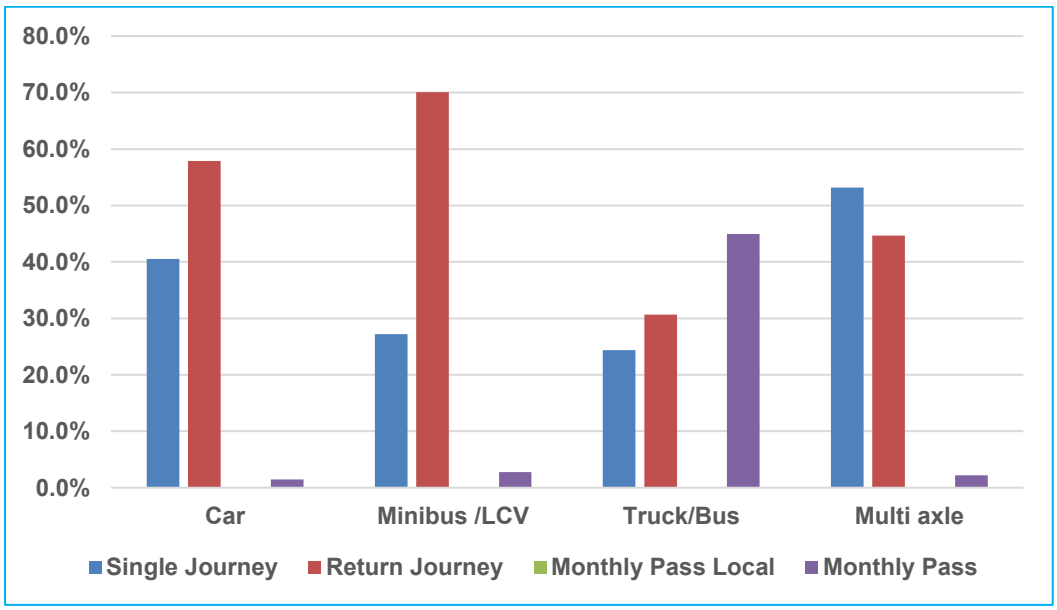

Figure 3-4 : Journey Type Bifurcation at Toll Plaza Km 157.500

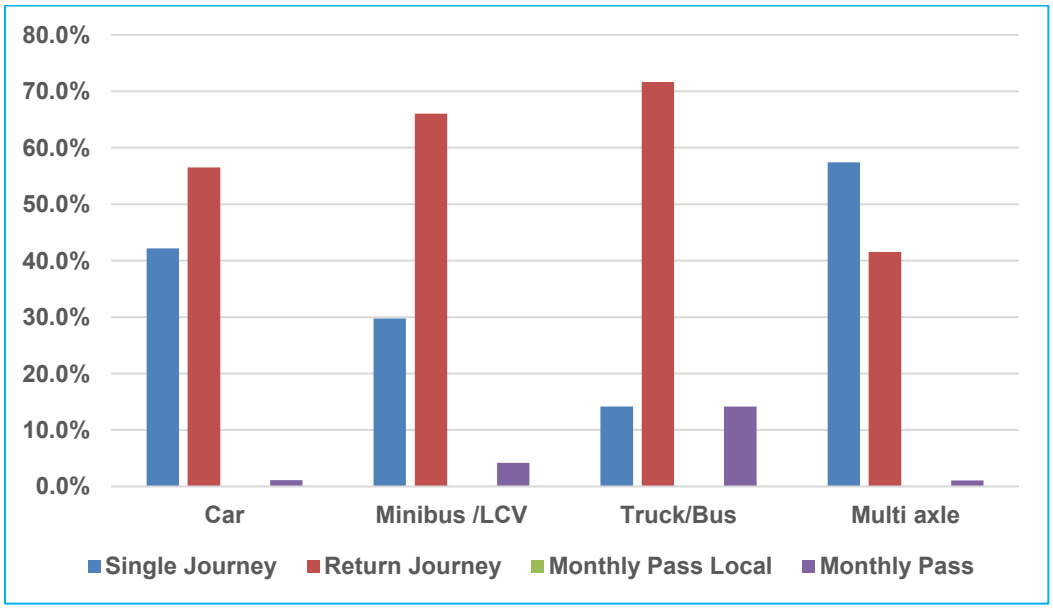

Figure 3-5 : Journey Type Bifurcation at Toll Plaza Km 198.500

It can be observed that at both locations, except MAV, all categories of vehicles have larger share of return pass. Multi axle have higher share of single journey. This indicate very strong presence of localized commercial transport magnets. Over all return journeys component at Toll Plaza 198.500 is higher than that Toll plaza at KM 157.500, being 62% in comparison to 53% of total journey. Sand mining along river Cauvery can be one of the reason such high return journeys share of commercial vehicles.

3.4.3 Seasonal Variation in Traffic

Traffic on highway does not remain uniform throughout the year. Festivals, rains etc. are factors for such variation. Seasonal variation of traffic was worked out from the data available. Following figures depict monthly variation of AADT at toll plaza locations.

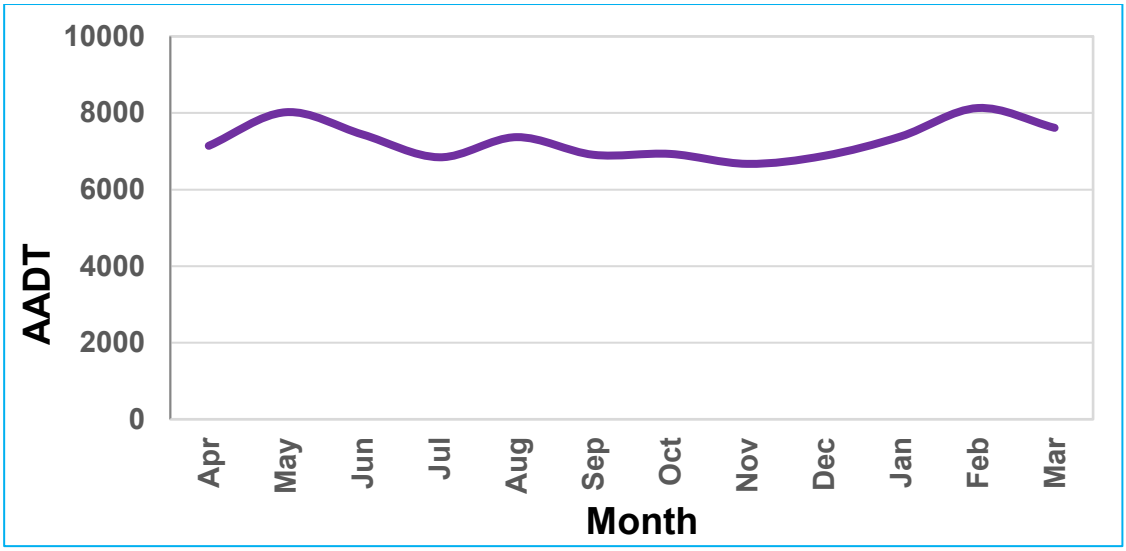

Figure 3-6 : Seasonal Variation of Traffic at Project Highway at Km 157.500

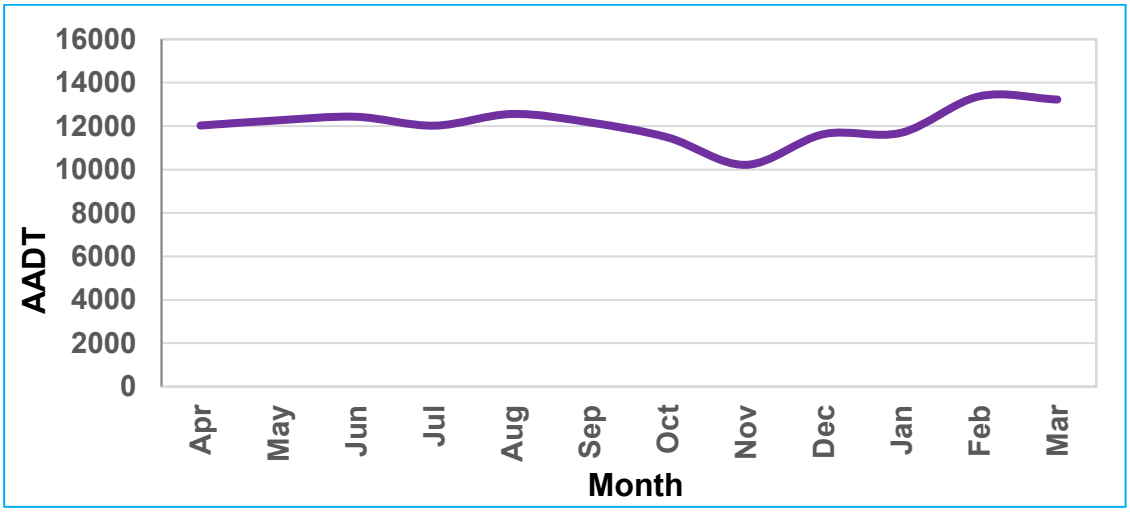

Figure 3-7 : Seasonal Variation of Traffic at Project Highway at Km 198.500

It may be observed that traffic volume reduces from September to November in rainy season and then again pics up after November in harvest season. Maximum Season correction factor varies between 0.90 to 1.05.

3.5 Secondary Data Collection

There are several other factors which have substantial impact on traffic pattern and growth on any project corridor. Following are some of such important factors

- Industrial development around project corridor and its catchment
- Educational infrastructure along project corridor
- Demographic pattern
- Urban area development
- Tourism potential
- Upcoming major infrastructural or industrial projects
- Special industry in project corridor
- Overall trends of economic growth local as well as national / regional

Hence in addition to traffic details on project site, secondary data was also collected from the various sources. Typical secondary data includes the following:

1. Vehicle registration data of regional and national level.
2. Economic Data
    a) GDP
    b) NSDP
    c) Population Growth
    d) Per Capita Income growth
    e) Industrial Growth
    f) Special Industry Potential
    g) Regional and National development vision / plan
    h) Any other relevant data
3. Competing road network.

We have collected and utilized such underlying data in the study to estimate the growth and risk factors for traffic along the project corridor.

CHAPTER 4
INFLUENCE ZONE TRANSPORT NETWORK ANALYSIS

4.1 Introduction

Highway corridors behave like integrated circuit network and more often than not every road is connected to various networks having different origin and destinations. Traffic running on these networks behave like fluid and flows on network on alignment of least friction.

Following Factors can be considered as major contributors to friction on transportation network

- Travel Speed / Travel Time,
- Geometric deficiencies,
- Configuration of road,
- Riding comfort,
- Traffic delays,
- Length of road,
- Built up passing through,
- Terrain,
- Facilities

Following set of urban origin and destination have been selected for this analysis

- Trichy to Karur

Following figures depict competing road network of above pair of origin & destinations

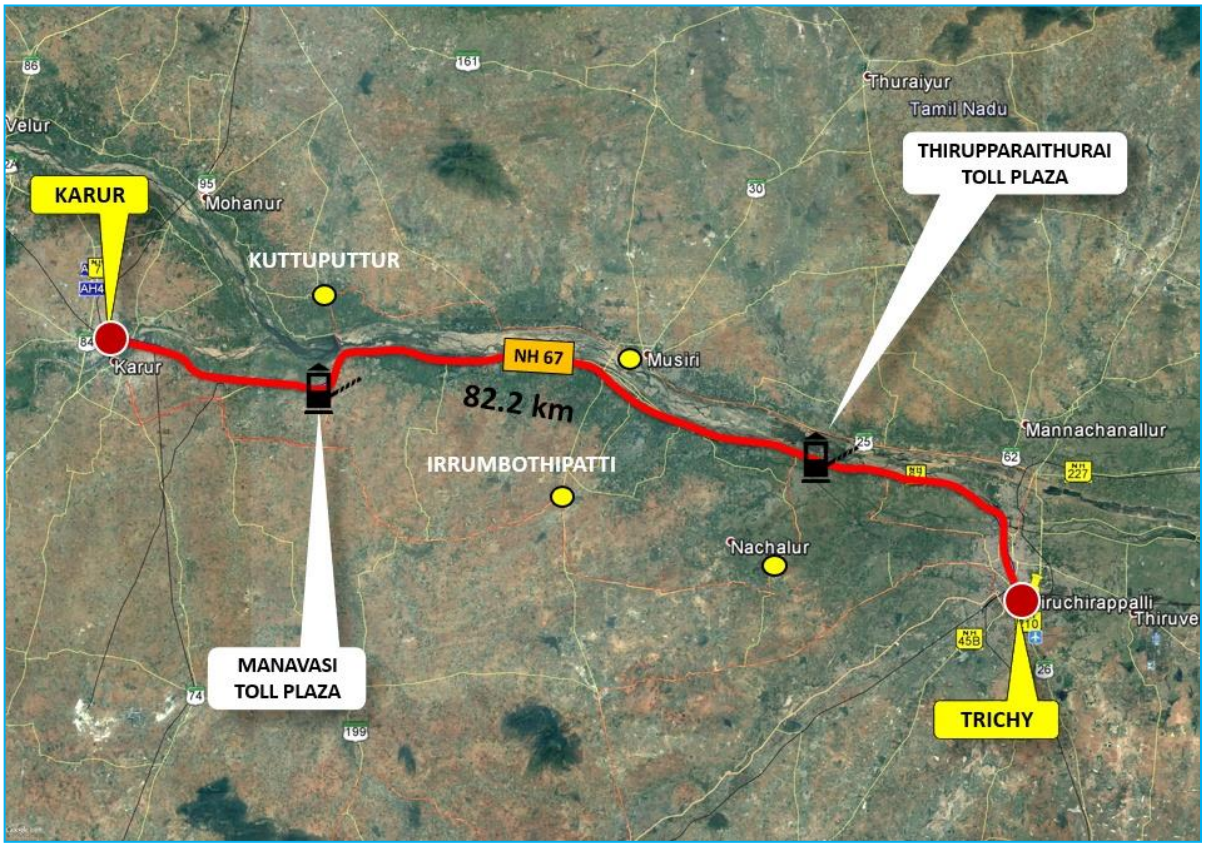

Figure 4-1 : Project Alignment Trichy to Karur

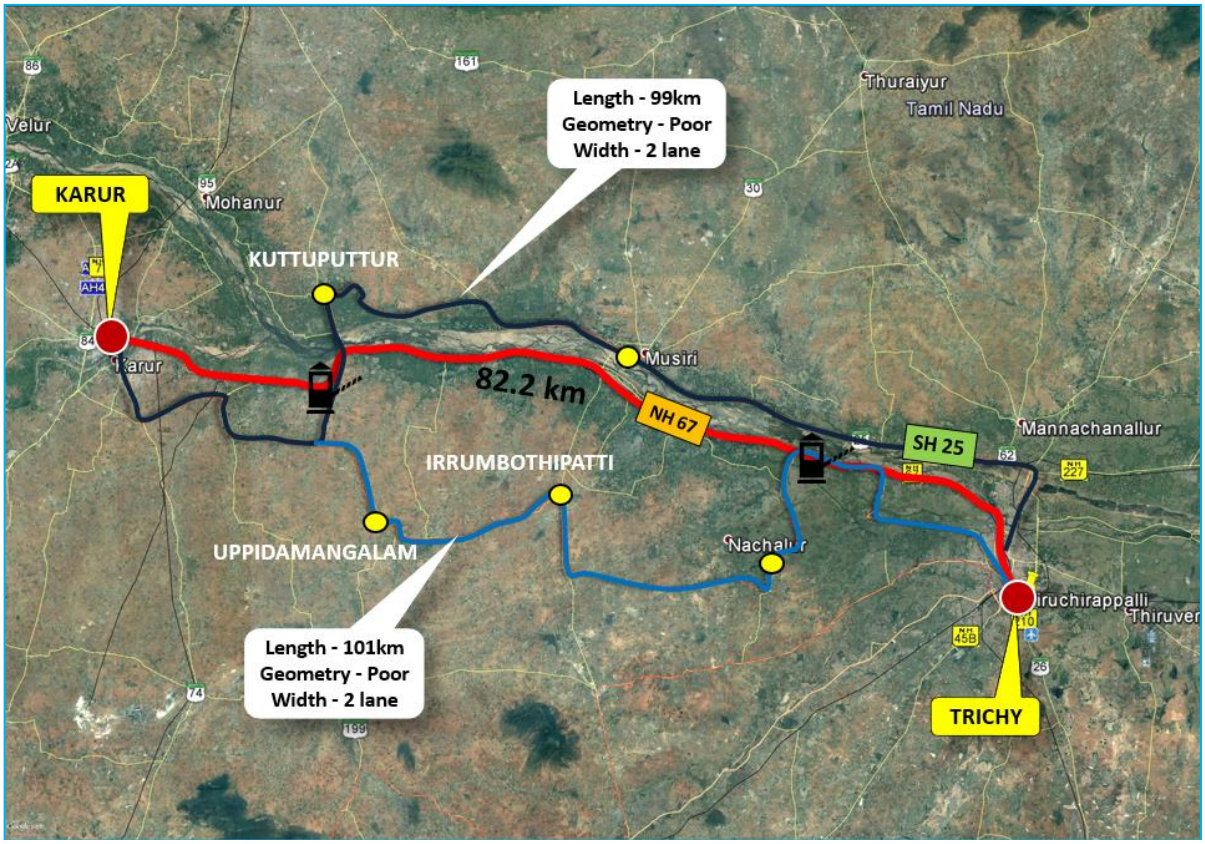

Figure 4-2 : Competing Roads Trichy to Karur

It can be observed that the project highway is the spine of the corridor between Trichy to Karur. There are several local roads and state highways which if integrated can form a competing road network. However most of these roads run across project corridor covering much longer distances for the same pairs of origin and destination as compared to project highway. Moreover, the geometry and quality of road is inferior as compared to project section of NH-67, adding to travel time and consequently the costs. These have sharp turns, bottlenecks and patches of damaged pavement. The following table provides quantity cum quality analysis of competing roads.

Table 4-1 : Competing Roads Details

Sr. No	Route Details	Designation	Length (Km)	Avg. Speed (KMPH)	Time Taken (Min)	Observations
1	Trichy to Karur competing road (SH-25- Kuttuputtur Road) on North side	Competing Road	99	40	149	Competing roads of poor geometry and lesser widths, passes through villages. Shifting of traffic from NH-67 not expected
	Trichy to Karur via Project Road NH-67	**Project Road**	**82.2**	**70**	**70**	
	Trichy to Karur competing road (Nachalur-Irrumbothipatti-Uppidamangalam Road) on South side	Competing Road	101	40	152	

As can be observed from table above, the point regarding significant time saving and consequently cost savings for traffic which align to the project highway is reaffirmed. Time and fuel saving is a major criterion for selection of routes. Under these circumstances, it is not envisaged that commercial or passenger traffic would switch to competing roads from the project road. Further, it may be noted that since the project highway has already been commissioned and has a tolling history, the current traffic traversing the project corridor already factors in traffic diversion (if any) that may have taken place.

CHAPTER 5
GROWTH OF TRAFFIC ON PROJECT HIGHWAY

5.1 Introduction

Traffic growth is a function of the interplay of a number of contributory factors such as National economy, Government policy, socio-economic conditions of the people, and changes in land uses along the project corridor precincts etc. As these factors have several uncertainties associated with them, forecasts of traffic are dependent on the forecasts of factors such as population, gross domestic product (GDP), vehicle ownership, per capita income (PCI), agricultural output, fuel consumption etc. Future pattern of change in these factors can be estimated with only a reasonable degree of accuracy and hence the resultant traffic forecast levels may not be precise.

Traffic growth forecast for project corridor Trichy - Karur section of NH-67 has been carried out taking above factors in to consideration. "**IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**" is established best practice and has been used for traffic growth forecast.

5.2 Trend Analysis

One of the methods of estimation of future rate of traffic growth is to assume the same rate of growth as experienced in the past. However, it may be noted that major influencing factors which reflect Economic conditions such as GDP, agricultural output, industrial output, national policies etc. are susceptible to change over a longer period of time and necessary adjustments need to be made to past trends to account for these changes.

Thus, we have considered the Elasticity model of growth projection which is one of the most widely acceptable methods for traffic forecast and is recommended in **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways**.

In this method, past trends of any vehicular data are paired with an economic indicator and a regression analysis is done to yield the economic model of growth. Growth of vehicular traffic varies for different type of vehicle. It is a proven fact that growth patterns for passenger and goods vehicles are different. Traffic growth on any highway typically depends on several economic parameters. The most important and direct parameters are given as under

- Per Capita Income
- Net State Domestic Product (NSDP)
- Population

It is observed that the ownership of a car is more closely related to affordability hence per capita is the index which closely fits with growth of car traffic among other criteria. In similar fashion, following pairs of vehicle type and independent variable can be established for elasticity modeling of growth.

- Car / Jeep – Par Capita Income
- Bus / Minibus – Population
- Trucks / Heavy / Goods Vehicle – NSDP
- Time series data of vehicle (both passenger and goods) Registered in the state of Tamil Nadu is used as the base data for analysis of growth

5.3 Estimation of Traffic Demand Elasticity

Elasticity of traffic demand is defined as the rate at which traffic intensity varies due to change in the corresponding indicator selected. Hence, in order to estimate the elasticity of traffic demand, it is necessary to establish the relationship between the growth in number of given category of vehicle with one of the economic variables considered, such as NSDP, per capita income and population growth. Latest available data for vehicle registration, per capita income, NSDP and population is used in analysis.

As per IRC: 108-1996 the model for estimating elasticity index for the project corridor is of the following form and is as given below:

$$Log\ (P) = k \times Log\ (EI) + A$$

Where,

P = *Number of Vehicles (Mode wise)*

EI = *Economic Indicator*

A = *Regression constant*

k = *Elasticity coefficient (Regression coefficient)*

The elasticity for car and bus (passenger vehicles) is calculated based on Population and Per Capita Domestic Product (PCDP) and the elasticity for trucks is calculated based on the Net State Domestic Product (NSDP).

Following tables and graphs depict regression and elasticity of growth model.

Table 5-1 : Per Capita Income Vs Car

Year	PCI	Car	Log PCI	Log Car	PCI Growth	Average Growth
2004	30062	657339	4.48	5.82		
2005	34126	714978	4.53	5.85	14%	
2006	39166	787085	4.59	5.90	15%	
2007	41314	871917	4.62	5.94	5%	
2008	43193	967310	4.64	5.99	5%	
2009	47394	1080445	4.68	6.03	10%	
2010	53507	1230492	4.73	6.09	13%	
2011	57093	1385143	4.76	6.14	7%	
2012	58360	1549950	4.77	6.19	2%	
2013	62361	1709528	4.79	6.23	7%	8.5%

Regression analysis of same is given in figure below

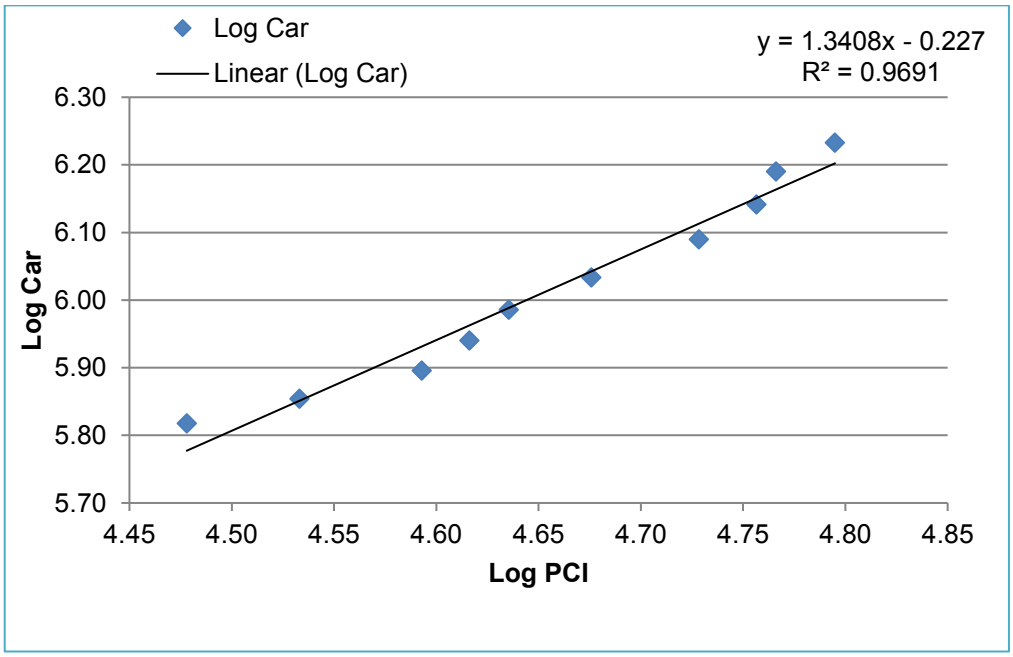

Figure 5-1 : Regression and Elasticity PCI vs. Car – Extrapolation

Table 5-2 : Population Vs Bus

Year	Population	Buses	Log Pop	Log Bus	Pop Growth	Average Growth
2004	64096000	37937	7.81	4.58		
2005	64623000	42109	7.81	4.62	0.8%	
2006	65135000	42999	7.81	4.63	0.8%	
2007	65629000	47765	7.82	4.68	0.8%	
2008	66106000	52617	7.82	4.72	0.7%	
2009	66566000	56338	7.82	4.75	0.7%	
2010	67012000	59240	7.83	4.77	0.7%	
2011	67444000	62725	7.83	4.80	0.6%	
2012	67862000	68096	7.83	4.83	0.6%	
2013	68265000	84488	7.83	4.93	0.6%	0.70%

Regression analysis of same is given in figure below

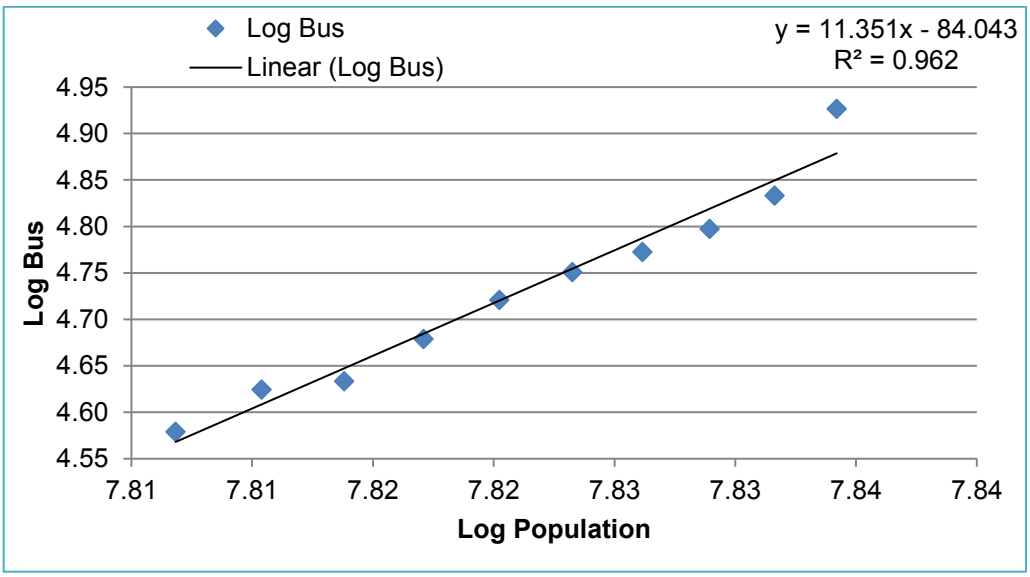

Figure 5-2 : Regression and Elasticity Population vs. Bus – Extrapolation

Elasticity of goods traffic has been worked out by regression analysis with NSDP. Following table represents the data and details.

Table 5-3 : Goods Traffic Vs NSDP

Year	NSDP	Trucks	Log NDSP	Log Truck	NSDP Growth	Average Growth (5 Year)
2004	19364500	220016	7.29	5.34		
2005	22158800	272756	7.35	5.44	14%	
2006	25628600	279984	7.41	5.45	16%	
2007	27234000	340542	7.44	5.53	6%	
2008	28674400	385948	7.46	5.59	5%	
2009	31676000	404326	7.50	5.61	10%	
2010	35996100	433814	7.56	5.64	14%	
2011	38650800	474226	7.59	5.68	7%	
2012	39747100	493564	7.60	5.69	3%	
2013	42718200	544201	7.63	5.74	7%	7.62%

Following figure depict regression analysis and extrapolation.

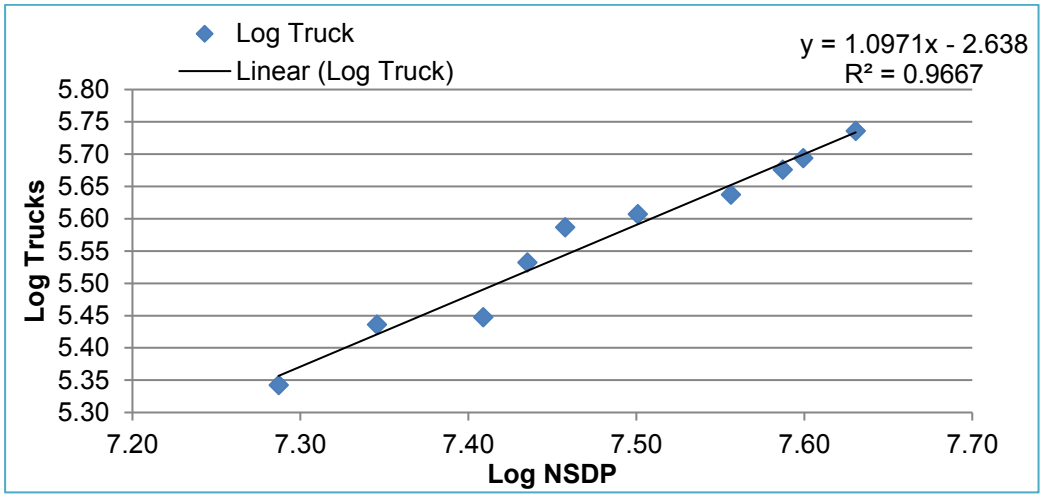

Figure 5-3 : Regression and Elasticity NSDP vs. Goods Traffic – extrapolation

Using the regression analysis above, we have arrived at the elasticity of traffic demand for each class of vehicle to a given change in relevant economic indicators. Average traffic growth of a vehicle class is multiplied by the corresponding elasticity coefficient to arrive at traffic growth. R^2 is statistical measure of how close the data are to the fitted regression line. It varies from 0 to 1. Higher the value of R^2 more representative is the regression model of data.

The results of these analyses for the good fit as reflected by R^2 values are presented in the Table below

Table 5-4 : Summary Regression Analysis - Tamil Nadu

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient (y)	Average Growth	Growth Elastic Model
Tamil Nadu	Car/Jeep	PCI	y = 1.3408x - -0.227	R^2 = 0.9691	1.3408	8.52%	11.43%
	Bus	Population	y = 11.3505x - -84.0434	R^2 = 0.962	11.3505	0.70%	7.98%
	Truck	NSDP	y = 1.0971x - -2.638	R^2 = 0.9667	1.0971	7.62%	8.36%

While the economic model for predicting growth is a good tool, other local, regional, national factors such as proposed developments etc. should also be considered before finalizing growth factors. These factors are discussed in subsequent sections.

The concessionaire has carried out a sample survey in July 2013 on a sample size of 25% of the vehicles to analyse the share of traffic from various states on the project road. Following table provides summary of the same.

Table 5-5 : Component Share of Various States in Project Traffic

State Name	Cars	Mini Bus	Bus	LCV	2AT	3AT	MAV
TN	97.10%	95.60%	97.00%	97.00%	93.30%	87.10%	87.10%
Karnataka	2.60%	4.40%	2.40%	2.50%	5.20%	5.50%	7.40%
Andhra Pradesh	0.30%	0.00%	0.60%	0.10%	0.50%	1.40%	1.50%
Kerala	0.00%	0.00%	0.00%	0.10%	0.50%	3.40%	0.70%
Rest of India	0.00%	0.00%	0.00%	0.30%	0.50%	2.60%	3.30%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

It is observed that Tamil Nadu share in traffic is over 90% in all categories of vehicles except 3 Axle and MAV.

In such case, it would be necessary to factor in Karnataka's growth for the purpose of projecting the growth of 3 Axle and MAV category of vehicles. A regression model

for Karnataka traffic growth was prepared for period from 2005-06 to 2014-15. Summary of same is given in following table.

Table 5-6 : Summary Regression Analysis - Karnataka

State	Vehicle Category	Independent Variable	Regression Equation	R Square	Elasticity Coefficient	Average IV Growth (5yrs)	Growth Elastic Model	Remarks
Karnataka	Car/Jeep	PCI	y = 1.1164x - 2.7365	R^2 = 0.9969	0.8535	14.30%	12.20%	Excellent Regression
	Bus	Population	y = 1.8755x - 10.293	R^2 = 0.956	7.197	1.05%	7.54%	Excellent Regression
	Truck	NSDP	y = 1.1164x - 2.7365	R^2 = 0.8539	1.42	6.53%	9.27%	Good Regression

5.4 Analysis of Historic Traffic Data

Historic traffic data forms useful information for any highway project. It provides useful information for establishing past trend of growth. Project stretch of Trichy to Karur has been commissioned and it under tolled operation February 2014. Thus only 2-year historic reliable data is available. Following table represents the historical traffic details at both toll plazas.

Table 5-7 : Historic Traffic Details at Toll Plaza Km 157.000

Type of Vehicle	Year 2014-15	Year 2015-16	Overall Growth % (CAGR)
Car	3617	4057	**12.16%**
LCV	896	952	**6.25%**
Bus/Truck	1611	1627	**0.97%**
MAV	636	685	**7.58%**

Table 5-8 : Historic Traffic Details at Toll Plaza Km 198.500

Type of Vehicle	Year 2014-15	Year 2015-16	Overall Growth
Car	3379	3745	11%
LCV	973	1006	3%
Bus/Truck	4881	5230	7%
MAV	1784	2108	18%

Since the data available is short period, it would be difficult to establish assign very high weightage to this for future growth projections.

As recommended by **IRC: 108-1996-Guidelines for Traffic Prediction on Rural Highways** "*This (historic growth) for short term projects but for long term projections it would be erroneous for assume that the past rate of growth would prevail for long time in future. Economic conditions are bound to change over long period and it would be necessary to modify the rate of growth accordingly*".

It is thus clear that while developing a futuristic growth projections for highway projects, long terms factors like growth of economy and upcoming developments in area have greater impact than past trends. Considering above, both historic trend and economic factors (elasticity) have been considered suitably to work out recommended growth rate of traffic on project corridor.

5.5 Other Factors Influencing Growth

There are many factors which have impact on traffic growth. As discussed previously these factors can be economic, social, educational, and industrial.

Potentiality of such factors for project highway is discussed as under.

ECONOMY

After witnessing a slowdown during 2008-09, the economy recovered in 2009-10, and a very high growth rate of GDP was recorded in 2010. Following figure depicts growth of GDP in India during the period.

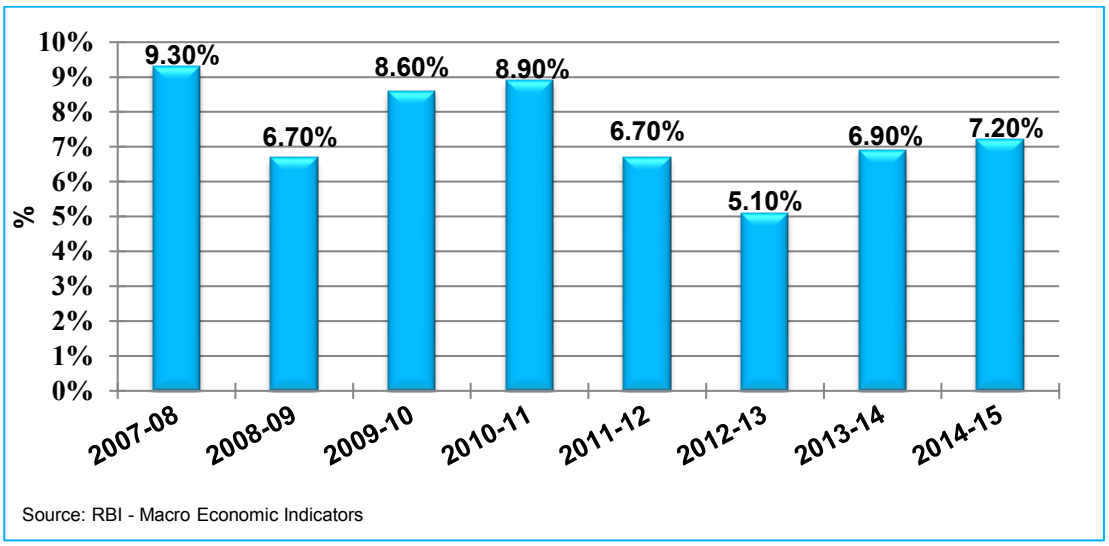

Figure 5-4 : Growth of GDP in India

After recording an all impressive growth of 8.9% in 2011, GDP declined between FY11 and FY14. GDP growth in 2014-2015 was pegged at 7.2% and is expected to be in the range of 7-8% going forward.

5.6 Developments Along and Around the Project Corridor & State

5.6.1 Developments around Trichy Area

- Tiruchirappalli District is located along the Kaveri River in Tamil Nadu, India. It is the fourth largest municipal corporation and the fourth largest urban agglomeration in the state. The main town in Tiruchirappalli District is the city of Tiruchirappalli, also known as Trichy. The presence of a large number of energy equipment manufacturing units in and around the city has earned it the title of "Energy Equipment and Fabrication Capital of India". Major Industries in the district are as follows
    - Bharat Heavy Electricals Limited, BHEL
    - Boiler Manufacturing Industries
    - Ordnance Factory Tiruchirappalli
    - Cement Factories
    - Light and heavy engineering
    - Leather Tanneries (E. I. Leather)
    - Food processing Industries
    - Sugar Mills
    - (Traditional) Cigar Making (village) Industries
    - IT/BPO
    - Manufacturing of Synthetic Stones for Jewelry
- Trichy city is an important educational centre in the state of Tamil Nadu, and houses nationally recognised institutions such as the Indian Institute of Management (IIMT), Indian Institute of Information Technology (IIIT) and National Institute of Technology (NITT)
- Trichy is a major road and railway hub in the state, the city is served by an international airport which operates flights to Southeast Asia and the Middle East.
- **Bharat Heavy Electricals Limited (BHEL)** - A high-pressure boiler manufacturing plant (HPBP) was set up by Bharat Heavy Electricals Limited (BHEL), India's largest public sector engineering company, in

May 1965. This was followed by a seamless steel tube plant (SSTP) and a boiler auxiliaries plant. In 2010, the Tiruchirappalli unit of the company contributed to nearly 30 per cent of its total sales, making it the largest of all units. As of 2011, the Tiruchirappalli division employed about 10,000 people, and is supported by a number of ancillary industries producing almost 250,000 tonnes (250,000,000 kg) of fabricated materials. These ancillary units together with BHEL contribute nearly 60 per cent of India's steel fabrication, earning the city the title, "Energy equipment and fabrication capital of India"

- **Golden Rock Railway Workshop** - is one of the three mechanical railway workshops serving the southern zone of the Indian Railways. It is called as Central Workshop, Golden Rock. This repair workshop is basically a "Mechanical Workshop" which comes under the control of the Mechanical Department of the Indian Railways. The total area of this workshop is around 200 acres (0.81 km^2), out of which 26 acres (110,000 m^2) is covered under roof. At present 6,091 employees are working in this workshop. This workshop is primarily engaged in the activities of DSL Loco POH, heritage steam locomotive POH, coaching stock maintenance and wagon manufacturing and other sundry activities.
- **Ordnance Factory Tiruchirappalli (OFT)** is a defence company based in Tiruchirappalli, Tamil Nadu, functioning under the Ordnance Factories Board of the Ministry of Defence, Government of India. OFT started its production with 9 mm carbines and now manufactures arms ranging from 5.56 mm rifles to rocket launchers, shell launchers, grenade launchers, aviation armament, naval armament, tank armament, anti-aircraft guns, autocannons, automatic rifles, sniper rifles. It also started Heavy Alloy Penetrator Project (HAPP) facility; the latter was set up in the late 1980s and comprises a flexible manufacturing system (FMS)—the first of its kind in India
- **Trichy Distilleries and Chemicals Limited (TDCL)** - was established at Senthaneerpuram in the former Golden Rock municipality in 1966 The Trichy Distilleries and Chemicals Limited manufactures rectified spirit, acetaldehyde, acetic acid, acetic anhydride and ethyl acetate. It is one of the biggest private sector distilleries in Tamil Nadu and produced

13.5 megalitres (3.0 million imperial gallons) of spirit alcohol between December 2005 and November 2006.

- **The ELCOT IT Park** - The city's first IT park—commissioned at a cost of ₹600 million (equivalent to ₹940 million or US$14 million in 2016) was inaugurated in December 2010. Set up by the Electronics Corporation of Tamil Nadu, the park occupies an area of 59.74 hectares (147.6 acres) and constitutes a Special Economic Zone. As of December 2010, the Tiruchirappalli region annually exports around ₹262.1 million (equivalent to ₹410 million or US$6.1 million in 2016) of software.

- **Synthetic Gem Industry** - From the late 1980s, a synthetic gem industry was developed in the city; the gemstones are cut and polished in Tiruchirappalli district and in Pudukottai district. In 1990, the Indian government launched a scheme to increase employment by boosting the production of American diamonds and training local artisans in semi-automated machinery and technology. The local gem industry was reportedly generating annual revenues of ₹100 million (equivalent to ₹420 million or US$6.2 million in 2016) by the mid-1990s.

5.6.2 Developments around Karur Area

- Karur is the district located "HEART" of Tamil Nadu. i.e. Karur is centre of Tamil Nadu and equally distance to all around Tamil Nadu districts & quick reach by Road ways.

- Karur is a hub for bus body building industries. Most of the South Indian private bus bodies are built in Karur. The total business turnover from building bus coaches is estimated to be around ₹1000 crore per annum. There are more than 50 companies that build coaches in Karur.

- Karur is a major home textile centre and has five major product groups - bed linens, kitchen linens, toilet linens, table linens and wall hangings. The town generates around ₹6000 crores in foreign exchange through direct and indirect exports. Allied industries like ginning and spinning mills, dyeing factories and weaving employ around 300,000 people in and around Karur. Hand-loom Exports from Karur began on a modest scale with just 15 exporters in 1975.

  Set up under the scheme for Integrated Textile Parks, the ₹130 crores Karur Textile Park Limited (KTPL) is rated the premier facility of its kind in the country for its technical and ancillary facilities.

- About 60% of mosquito nets in India are manufactured in Karur. About 2000 units are engaged in making High-density polyethylene (HDPE) mono filament yarn and associated products and employ about 50,000 people.

- Bharat Petroleum Corporation in a joint venture with Petronet CCK has installed a pipeline facility from Cochin BPCL to Karur BPCL to transport petroleum products. The petroleum products received at the BPCL-Karur terminal is supplied to more than 20 districts of Tamil Nadu through container trucks.

- Tamil Nadu News Print and Papers Ltd., better known as TNPL the country's largest non-wood based paper maker was established in the early 80's at Pugalur near Karur. It is acknowledged as the world leader in the technology for manufacture of newsprint from bagasse which became operational from January 1996. The production of news print and paper have been raised from 90000 tonnes to 180000 tonnes per annum.

  TNPL produces 230,000 tons of Printing & writing paper and consumes 1 million tons of bagasse every year.

- Chettinad Cement Corporation Ltd was formed 1962 to cater to growing demands of cement in the country. The manufacturing unit located at

Puliyur, Karur District, in Tamil Nadu commenced production in April 1968. Apart from cement, the Chettinad House is today engaged in activities as diverse as granite, engineering, silica, garnet, information technology, steel & textile trading, horse breeding, plantations, shipping, transportation, stevedoring, clearing and forwarding and logistics having a combined turnover of Rs. 8500 million.

5.7 Recommended Growth Rates of Traffic

Based on the above analysis and after giving due consideration to the entire listed factors, overall growth rates are recommended for each category of vehicle. Rate of growth is moderated considering overall regional trend. It is also expected that as the economy moves from developing to developed, rate of growth diminishes. Same growth rate is not sustainable for long. It is established practice to stepdown future growth rates at interval of 5 years.

Impact of other important factors affecting growth is taken as under.

- A weightage of 10% and 90% is assigned to past trends and growth by elastic model respectively. At toll plaza @ Km 157.000 growth of MAV is abnormally high and hence has been ignored.
- For car and LCV category only Tamil Nadu elastic model growth rates were considered, while in case of truck and MAV categories, 95% and 90% weightages respectively were given to Tamil Nadu elastic model growth rate, and the balance 5% and 10% respectively to Karnataka elastic growth model
- Due to technological advances in the logistics industry greater preference is now given to Multi Axle (MAV) over conventional 2/3 Axle truck. To accommodate this in the growth projections, growth rate of MAV is stepped down in future years by a lesser offset as compared to that of Car, LCV and Bus truck

Lifting of ban on mining by a Supreme Court order in 2015 in state would also add to traffic growth on project corridor since sand mining is an important activity along project road.

Growth rates are recommended for three scenarios for sensitivity analysis namely **Optimistic, Pessimistic** and **Most Likely** with a positive and negative variation 0.5% from Most Likely case. Recommended growth rates at toll plaza locations is given under.

Table 5-9 : Recommended Growth Rates Optimistic at Toll Plaza Km 157.500

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	12.10%	11.10%	9.85%	8.35%	6.85%
Mini Bus /LCV	8.70%	7.70%	6.20%	4.70%	3.20%
Truck / Bus	7.80%	6.80%	5.30%	3.80%	2.30%
Multi Axle	8.90%	8.40%	7.40%	6.40%	5.40%

Table 5-10 : Recommended Growth Rates Optimistic at Toll Plaza Km 198.500

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.90%	10.90%	9.65%	8.15%	6.65%
Mini Bus /LCV	8.40%	7.40%	5.90%	4.40%	2.90%
Truck / Bus	8.40%	7.40%	5.90%	4.40%	2.90%
Multi Axle	9.00%	8.50%	7.50%	6.50%	5.50%

Table 5-11 : Recommended Growth Rates Pessimistic at Toll Plaza Km 157.500

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.10%	10.10%	8.85%	7.35%	5.85%
Mini Bus /LCV	7.70%	6.70%	5.20%	3.70%	2.20%
Truck / Bus	6.80%	5.80%	4.30%	2.80%	1.30%
Multi Axle	7.90%	7.40%	6.40%	5.40%	4.40%

Table 5-12 : Recommended Growth Rates Pessimistic at Toll Plaza Km 198.500

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	10.90%	9.90%	8.65%	7.15%	5.65%
Mini Bus /LCV	7.40%	6.40%	4.90%	3.40%	1.90%
Truck / Bus	7.40%	6.40%	4.90%	3.40%	1.90%
Multi Axle	8.00%	7.50%	6.50%	5.50%	4.50%

Table 5-13 : Recommended Growth Rates Most Likely at Toll Plaza Km 157.500

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.60%	10.60%	9.35%	7.85%	6.35%
Mini Bus /LCV	8.20%	7.20%	5.70%	4.20%	2.70%
Truck / Bus	7.30%	6.30%	4.80%	3.30%	1.80%
Multi Axle	8.40%	7.90%	6.90%	5.90%	4.90%

Table 5-14 : Recommended Growth Rates Most Likely at Toll Plaza Km 198.500

Year/ Vehicle Type	Up to 2020	2020-25	2025-30	2030-35	2035-40
CAR	11.40%	10.40%	9.15%	7.65%	6.15%
Mini Bus /LCV	7.90%	6.90%	5.40%	3.90%	2.40%
Truck / Bus	7.90%	6.90%	5.40%	3.90%	2.40%
Multi Axle	8.50%	8.00%	7.00%	6.00%	5.00%

CHAPTER 6

TRAFFIC FORECAST

6.1 Traffic Projections

Growth rates recommended in previous section of report are used to arrive at traffic projections for future years. Toll plaza wise futuristic traffic projection is given in tables below.

These projections have been done for following three cases of growth

1. Optimistic Scenario
2. Pessimistic Scenario
3. Most Likely Scenario

Table 6-1 : Total Tollable Traffic at Toll Plaza Km 157.500

(Optimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4555	1035	1753	745	**8088**	**14977**
2017-18	5106	1125	1889	811	**8931**	**16396**
2018-19	5724	1224	2036	883	**9867**	**17960**
2019-20	6416	1331	2195	962	**10904**	**19681**
2020-21	7127	1434	2344	1043	**11948**	**21394**
2021-22	7917	1544	2504	1131	**13096**	**23265**
2022-23	8796	1662	2674	1225	**14357**	**25298**
2023-24	9771	1791	2856	1328	**15746**	**27525**
2024-25	10856	1929	3050	1439	**17274**	**29953**
2025-26	11925	2048	3212	1546	**18731**	**32220**
2026-27	13100	2175	3382	1660	**20317**	**34666**
2027-28	14391	2310	3562	1783	**22046**	**37316**
2028-29	15808	2453	3751	1915	**23927**	**40177**
2029-30	17365	2605	3949	2056	**25975**	**43266**
2030-31	18815	2727	4098	2188	**27828**	**46009**
2031-32	20386	2856	4254	2328	**29824**	**48946**
2032-33	22089	2990	4416	2477	**31972**	**52087**
2033-34	23934	3130	4584	2635	**34283**	**55444**
2034-35	25932	3277	4758	2804	**36771**	**59038**
2035-36	27709	3381	4868	2955	**38913**	**62063**
2036-37	29607	3489	4979	3114	**41189**	**65259**
2037-38	31634	3600	5093	3282	**43609**	**68643**

Table 6-2 : Total Tollable Traffic at Toll Plaza Km 198.500

(Optimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4198	1092	5670	2298	**13258**	**33526**
2017-18	4698	1184	6146	2505	**14533**	**36559**
2018-19	5257	1284	6662	2730	**15933**	**39867**
2019-20	5882	1392	7221	2976	**17471**	**43481**
2020-21	6523	1495	7756	3229	**19003**	**47063**
2021-22	7234	1606	8329	3504	**20673**	**50943**
2022-23	8022	1724	8945	3802	**22493**	**55149**
2023-24	8896	1851	9607	4124	**24478**	**59705**
2024-25	9866	1988	10318	4475	**26647**	**64655**
2025-26	10819	2105	10926	4811	**28661**	**69178**
2026-27	11864	2229	11570	5172	**30835**	**74029**
2027-28	13009	2361	12253	5560	**33183**	**79236**
2028-29	14264	2500	12975	5977	**35716**	**84817**
2029-30	15641	2647	13741	6425	**38454**	**90810**
2030-31	16916	2764	14346	6843	**40869**	**96029**
2031-32	18295	2885	14976	7288	**43444**	**101560**
2032-33	19785	3012	15634	7762	**46193**	**107431**
2033-34	21398	3144	16322	8267	**49131**	**113669**
2034-35	23142	3282	17041	8804	**52269**	**120290**
2035-36	24682	3377	17535	9288	**54882**	**125714**
2036-37	26324	3475	18043	9799	**57641**	**131413**
2037-38	28075	3576	18566	10338	**60555**	**137402**

Table 6-3 : Total Tollable Traffic at Toll Plaza Km 157.500

(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4515	1024	1737	739	**8015**	**14843**
2017-18	5016	1102	1855	797	**8770**	**16102**
2018-19	5573	1187	1982	859	**9601**	**17475**
2019-20	6192	1278	2117	926	**10513**	**18969**
2020-21	6817	1363	2240	994	**11414**	**20428**
2021-22	7505	1454	2370	1067	**12396**	**22005**
2022-23	8263	1551	2508	1146	**13468**	**23716**
2023-24	9097	1655	2653	1231	**14636**	**25565**
2024-25	10015	1766	2807	1322	**15910**	**27567**
2025-26	10901	1857	2927	1407	**17092**	**29375**
2026-27	11865	1954	3054	1497	**18370**	**31317**
2027-28	12916	2056	3185	1593	**19750**	**33397**
2028-29	14060	2163	3322	1695	**21240**	**35626**
2029-30	15304	2276	3465	1804	**22849**	**38019**
2030-31	16429	2360	3563	1902	**24254**	**40057**
2031-32	17636	2447	3663	2005	**25751**	**42215**
2032-33	18932	2538	3765	2113	**27348**	**44500**
2033-34	20323	2632	3870	2227	**29052**	**46925**
2034-35	21817	2729	3978	2347	**30871**	**49498**
2035-36	23093	2789	4030	2450	**32362**	**51541**
2036-37	24444	2851	4083	2557	**33935**	**53687**
2037-38	25874	2914	4136	2669	**35593**	**55939**

Table 6-4 : Total Tollable Traffic at Toll Plaza Km 198.500

(Pessimistic Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4160	1081	5617	2276	**13134**	**33211**
2017-18	4613	1161	6033	2459	**14266**	**35887**
2018-19	5116	1248	6479	2656	**15499**	**38779**
2019-20	5673	1341	6959	2868	**16841**	**41907**
2020-21	6234	1428	7404	3083	**18149**	**44938**
2021-22	6851	1519	7878	3314	**19562**	**48193**
2022-23	7529	1616	8381	3563	**21089**	**51689**
2023-24	8273	1719	8917	3831	**22740**	**55449**
2024-25	9092	1830	9488	4118	**24528**	**59491**
2025-26	9879	1920	9953	4386	**26138**	**63061**
2026-27	10734	2014	10441	4671	**27860**	**66855**
2027-28	11662	2112	10953	4974	**29701**	**70884**
2028-29	12671	2215	11490	5297	**31673**	**75171**
2029-30	13768	2324	12054	5642	**33788**	**79740**
2030-31	14752	2403	12464	5952	**35571**	**83522**
2031-32	15807	2484	12888	6279	**37458**	**87500**
2032-33	16938	2569	13326	6624	**39457**	**91687**
2033-34	18149	2657	13779	6988	**41573**	**96092**
2034-35	19447	2748	14247	7373	**43815**	**100734**
2035-36	20546	2800	14517	7705	**45568**	**104270**
2036-37	21707	2853	14793	8052	**47405**	**107959**
2037-38	22934	2907	15074	8414	**49329**	**111801**

Traffic projections for Most Likely scenario are given as under

Table 6-5 : Total Tollable Traffic at Toll Plaza Km 157.500

(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4535	1030	1745	741	**8051**	**14906**
2017-18	5062	1114	1872	803	**8851**	**16246**
2018-19	5650	1206	2008	870	**9734**	**17712**
2019-20	6305	1305	2155	944	**10709**	**19323**
2020-21	6974	1400	2291	1019	**11684**	**20914**
2021-22	7713	1500	2435	1100	**12748**	**22637**
2022-23	8530	1608	2588	1187	**13913**	**24508**
2023-24	9433	1723	2751	1281	**15188**	**26540**
2024-25	10433	1848	2924	1382	**16587**	**28751**
2025-26	11408	1954	3064	1478	**17904**	**30785**
2026-27	12474	2065	3211	1580	**19330**	**32969**
2027-28	13640	2182	3365	1689	**20876**	**35320**
2028-29	14915	2307	3527	1805	**22554**	**37852**
2029-30	16310	2439	3696	1930	**24375**	**40581**
2030-31	17590	2542	3818	2044	**25994**	**42955**
2031-32	18970	2649	3945	2165	**27729**	**45486**
2032-33	20459	2760	4076	2293	**29588**	**48181**
2033-34	22065	2876	4210	2428	**31579**	**51045**
2034-35	23797	2997	4349	2571	**33714**	**54100**
2035-36	25308	3078	4427	2697	**35510**	**56603**
2036-37	26915	3161	4506	2829	**37411**	**59239**
2037-38	28623	3246	4587	2968	**39424**	**62021**

Table 6-6 : Total Tollable Traffic at Toll Plaza Km 198.500

(Most Likely Growth Scenario)

Year	CAR	LCV	Truck/ Bus	Multi Axle (>2axle)	Total No.	Total PCU including Exempted
2016-17	4179	1085	5643	2286	**13193**	**33360**
2017-18	4655	1172	6088	2481	**14396**	**36212**
2018-19	5186	1265	6569	2692	**15712**	**39312**
2019-20	5777	1365	7088	2920	**17150**	**42676**
2020-21	6378	1459	7577	3153	**18567**	**45973**
2021-22	7041	1559	8100	3406	**20106**	**49537**
2022-23	7773	1666	8659	3678	**21776**	**53378**
2023-24	8581	1781	9257	3972	**23591**	**57527**
2024-25	9473	1904	9896	4289	**25562**	**62004**
2025-26	10340	2007	10431	4589	**27367**	**66033**
2026-27	11286	2115	10995	4909	**29305**	**70330**
2027-28	12320	2229	11589	5253	**31391**	**74927**
2028-29	13448	2349	12216	5621	**33634**	**79839**
2029-30	14679	2476	12876	6015	**36046**	**85086**
2030-31	15803	2573	13378	6376	**38130**	**89549**
2031-32	17012	2673	13900	6759	**40344**	**94265**
2032-33	18314	2777	14443	7165	**42699**	**99251**
2033-34	19715	2885	15007	7595	**45202**	**104518**
2034-35	21223	2998	15592	8051	**47864**	**110085**
2035-36	22529	3070	15966	8453	**50018**	**114498**
2036-37	23914	3144	16349	8876	**52283**	**119118**
2037-38	25384	3220	16742	9320	**54666**	**123955**

CHAPTER 7
FORECAST OF TOLL REVENUE

7.1 General

This chapter presents the tolling rate calculations, categories and toll revenue of the project.

7.2 Discount Categories

Fee schedule of agreement of Trichy - Kaur section of NH-67 is based on old toll policy. As per the Toll Notification (Schedule G) the following discounts have been considered:

1. Monthly Pass: For frequent user's monthly pass would be issued at fee 30 time the single journey fee. There are other local monthly passes for car /Jeep/ Van category I and II and school bus @ Rs.150, Rs.300 and Rs.1000 respectively.
2. Multiple Journeys (for Return Trip): Will be charged at 1.5 times single journey.
3. Single Journey: Full single journey toll would be charged to this category of vehicles who are infrequent travelers or whose frequency does not yield any discount from the above categories.
4. There are several categories of local discounts.
    a) Local Bus / truck and LCV (within 20 km) will be charged @ Rs. 25 and 15 respectively. Rate will be constant throughout concession period

Building of inflation and escalation of rate based on WPI are done as per toll notification (Schedule G) as given under.

$$\text{Base Fee} \times \frac{\text{WPI-B}}{\text{WPI-A}} \times \text{length of the said section.}$$

Where

- WPI-A = is the Wholesale Price Index of June, 1997 (131.4).
- WPI-B = is the Average Wholesale Price Index for the year ending March, 31st preceding the fee revision date.

7.3 Estimation of Toll Rates

As per the applicable MORTH notification and Schedule G of contract agreement, the following Base rate of fee for the categories mentioned in the table stands true in the National Highways Fee Rules applicable for contract.

Table 7-1 : Base Toll Rates 1997-98

Type of Vehicle	Base Rate of Fee / Km (in Rs.)
Car, Jeep, Van or Jeep	0.40
Light Commercial Vehicle, (LCV)	0.70
Bus or Truck (2 Axle)	1.40
MAV (> 2 axle)	2.25

Factor of inflation / growth has been incorporated as per Schedule G. WPI are available up to 2015-16. Following graph provides projection of rate of inflation (WPI) in India. Data has been taken from Office of Economic Advisor web site (www.eaindustry.nic.in)

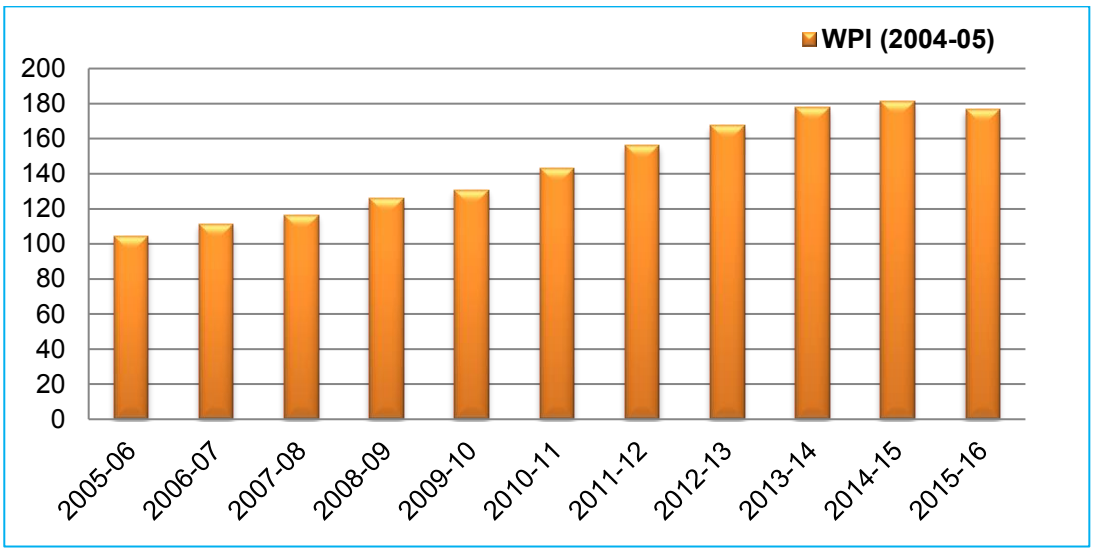

Figure 7-1 : Historical Rate of WPI Inflation in India

Average inflation in WPI in last 10 years is 5.5%. Same is considered for projection of WPI up to year 2020. After year 2020 average inflation in WPI is reduced progressively in block of 5 years. Following average WPI inflation is used for projections of toll rates

- Up to Year 2018 - 4.0%
- 2019-21 - 5.0%
- 2022-26 - 4.0%
- 2027-31 - 3.0%
- 2032-40 - 2.0%

Toll rates are calculated as per guidelines provided in schedule G for the concession period and are given below.

Total project length as per agreement is 79.823. A length of 18.475 Km has been delinked from project and 2.28 Km length for Lalapet ROB is added in project length for toll operation. Hence at present tollable length of project is 63.628. Tollable length at toll plaza at Km 157.500 and Km 198.500 is 22.576 Km and 41.052 Km respectively.

Thus, worked out rates for various categories of vehicle and discounts are given as under for both toll plazas.

Table 7-2 : Toll Rates for Single Journey at Toll Plaza Km 157.500

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car - LCO	LCV - LTO	Truck/ Bus - LTO
2016-17	25	40	80	130	15	15	25
2017-18	25	40	85	135	15	15	25
2018-19	25	45	85	140	15	15	25
2019-20	25	45	90	145	15	15	25
2020-21	25	45	95	155	15	15	25
2021-22	30	50	100	160	15	15	25
2022-23	30	50	105	165	15	15	25
2023-24	30	55	110	175	15	15	25
2024-25	30	55	110	180	15	15	25
2025-26	35	60	115	185	15	15	25
2026-27	35	60	120	195	15	15	25
2027-28	35	60	125	200	15	15	25
2028-29	35	65	130	205	15	15	25
2029-30	40	65	130	215	15	15	25
2030-31	40	70	135	220	15	15	25
2031-32	40	70	140	225	15	15	25
2032-33	40	70	145	230	15	15	25
2033-34	40	75	145	235	15	15	25
2034-35	45	75	150	240	15	15	25
2035-36	45	75	150	245	15	15	25
2036-37	45	80	155	250	15	15	25
2037-38	45	80	160	255	15	15	25

Table 7-3 : Toll Rates for Single Journey at Toll Plaza Km 198.500

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car - LCO	LCV - LTO	Truck/ Bus - LTO
2016-17	40	70	145	235	15	15	25
2017-18	45	75	150	240	15	15	25
2018-19	45	80	155	250	15	15	25
2019-20	45	80	165	265	15	15	25
2020-21	50	85	175	275	15	15	25
2021-22	50	90	180	290	15	15	25
2022-23	55	95	190	305	15	15	25
2023-24	55	100	195	315	15	15	25
2024-25	60	100	205	330	15	15	25
2025-26	60	105	210	340	15	15	25
2026-27	65	110	220	355	15	15	25
2027-28	65	115	225	365	15	15	25
2028-29	65	115	235	375	15	15	25
2029-30	70	120	240	385	15	15	25
2030-31	70	125	250	400	15	15	25
2031-32	75	130	255	410	15	15	25
2032-33	75	130	260	420	15	15	25
2033-34	75	135	265	425	15	15	25
2034-35	75	135	270	435	15	15	25
2035-36	80	140	275	445	15	15	25
2036-37	80	140	280	455	15	15	25
2037-38	80	145	290	465	15	15	25

Table 7-4 : Toll Rates for Multiple Journeys at Toll Plaza Km 157.500

Year	Car	Mini Bus /LCV	Truck/ Bus	Multi Axle
2016-17	35	60	120	190
2017-18	35	60	125	200
2018-19	35	65	130	210
2019-20	40	70	135	220
2020-21	40	70	140	230
2021-22	45	75	150	240
2022-23	45	80	155	250
2023-24	45	80	160	260
2024-25	50	85	170	270
2025-26	50	85	175	280
2026-27	50	90	180	290
2027-28	55	95	185	300
2028-29	55	95	195	310
2029-30	55	100	200	320
2030-31	60	100	205	330
2031-32	60	105	210	340
2032-33	60	110	215	345
2033-34	65	110	220	355
2034-35	65	110	225	360
2035-36	65	115	230	365
2036-37	65	115	235	375
2037-38	70	120	235	380
2038-39	70	120	240	390
2039-40	70	125	245	395

Table 7-5 : Toll Rates for Multiple Journeys at Toll Plaza Km 198.500

Year	Car	Mini Bus /LCV	Truck/ Bus	Multi Axle
2016-17	60	110	215	350
2017-18	65	115	225	365
2018-19	65	115	235	375
2019-20	70	125	245	395
2020-21	75	130	260	415
2021-22	80	135	270	435
2022-23	80	140	285	455
2023-24	85	145	295	475
2024-25	85	155	305	490
2025-26	90	160	320	510
2026-27	95	165	330	530
2027-28	95	170	340	545
2028-29	100	175	350	565
2029-30	105	180	360	580
2030-31	105	185	370	600
2031-32	110	190	385	615
2032-33	110	195	390	630
2033-34	115	200	400	640
2034-35	115	205	405	655
2035-36	120	205	415	665
2036-37	120	210	425	680
2037-38	125	215	430	695
2038-39	125	220	440	710
2039-40	130	225	450	720

Table 7-6 : Toll Rates for Monthly Pass at Toll Plaza Km 157.500

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car – LT1	Car – LT2	School Bus
2016-17	680	1195	2390	3840	150	300	1000
2017-18	710	1240	2485	3990	150	300	1000
2018-19	740	1290	2585	4150	150	300	1000
2019-20	775	1355	2710	4360	150	300	1000
2020-21	815	1425	2845	4575	150	300	1000
2021-22	855	1495	2990	4805	150	300	1000
2022-23	890	1555	3110	4995	150	300	1000
2023-24	925	1615	3235	5195	150	300	1000
2024-25	960	1680	3365	5405	150	300	1000
2025-26	1000	1750	3500	5620	150	300	1000
2026-27	1040	1820	3635	5845	150	300	1000
2027-28	1070	1875	3745	6020	150	300	1000
2028-29	1105	1930	3860	6200	150	300	1000
2029-30	1135	1985	3975	6390	150	300	1000
2030-31	1170	2045	4095	6580	150	300	1000
2031-32	1205	2110	4215	6775	150	300	1000
2032-33	1230	2150	4300	6915	150	300	1000
2033-34	1255	2195	4385	7050	150	300	1000
2034-35	1280	2235	4475	7190	150	300	1000
2035-36	1305	2280	4565	7335	150	300	1000
2036-37	1330	2330	4655	7480	150	300	1000
2037-38	1355	2375	4750	7630	150	300	1000

Table 7-7 : Toll Rates for Monthly Pass at Toll Plaza Km 198.500

Year	Car/Jeep/ Van	LCV	Truck/ Bus	Multi Axle (> 2 axle)	Car – LT1	Car – LT2	School Bus
2016-17	1240	2170	4340	6980	150	300	1000
2017-18	1290	2260	4515	7255	150	300	1000
2018-19	1340	2350	4695	7550	150	300	1000
2019-20	1410	2465	4930	7925	150	300	1000
2020-21	1480	2590	5180	8320	150	300	1000
2021-22	1555	2720	5435	8735	150	300	1000
2022-23	1615	2825	5655	9085	150	300	1000
2023-24	1680	2940	5880	9450	150	300	1000
2024-25	1745	3060	6115	9830	150	300	1000
2025-26	1815	3180	6360	10220	150	300	1000
2026-27	1890	3305	6615	10630	150	300	1000
2027-28	1945	3405	6815	10950	150	300	1000
2028-29	2005	3510	7015	11280	150	300	1000
2029-30	2065	3615	7230	11615	150	300	1000
2030-31	2125	3720	7445	11965	150	300	1000
2031-32	2190	3835	7670	12325	150	300	1000
2032-33	2235	3910	7820	12570	150	300	1000
2033-34	2280	3990	7980	12820	150	300	1000
2034-35	2325	4070	8135	13080	150	300	1000
2035-36	2370	4150	8300	13340	150	300	1000
2036-37	2420	4235	8465	13605	150	300	1000
2037-38	2465	4320	8635	13880	150	300	1000

7.4 Toll Revenue

As indicated earlier, toll revenue on the Project Road has been calculated under in all three scenarios. The estimates of toll revenue under ***Optimistic***, ***Pessimistic*** and ***Most Likely*** growth scenarios are presented in the following section.

7.5 Toll Revenue at all toll plazas under Scenarios

Toll Revenue estimates under most likely scenario at each of the toll plaza up to 2037-38 (Expected End of Concession Period) starting from the year 2016-17 are shown in tables below.

Overloading of commercial vehicles is a known phenomenon on Indian roads. Currents project witnessed instances of overloading. These vehicles can be charge at extra higher rate as per contract to discourage overloading. A sample study done at Hosur Krishnagiri section of NH-7 by concessionaire shows that at present overloading charges can be translated to about 7% extra revenue. For next 2-3 years, this trend may continue at same % then it would gradually diminish over a period of say 8-10 years. Following table provides expected component of revenue from overloading.

Table 7-8 : Expected Overloading Revenue

Year	Expected Revenue from Overloading
2016-17	7%
2017-18	7%
2018-19	7%
2019-20	5%
2020-21	5%
2021-22	4%
2022-23	4%
2023-24	3%
2024-25	3%
2025-26	2%
2026-27	2%
2027-28	1%
2028-29	1%

Toll revenue projections, excluding revenue from overloading, are given in following tables.

Table 7-9 : Toll Revenue Optimistic Scenario (Rs. Crores)

Year	Thirupparaithurai Toll Plaza Km 157.500	Manavasi Toll Plaza Km 198.500	Total
2016-17	11.86	49.83	**61.69**
2017-18	13.37	56.94	**70.31**
2018-19	15.04	64.04	**79.08**
2019-20	17.31	73.20	**90.51**
2020-21	19.35	83.52	**102.87**
2021-22	22.92	94.52	**117.43**
2022-23	25.51	107.29	**132.80**
2023-24	28.62	120.52	**149.14**
2024-25	32.13	134.50	**166.63**
2025-26	36.34	149.74	**186.08**
2026-27	40.03	166.74	**206.77**
2027-28	44.86	183.35	**228.21**
2028-29	49.18	201.68	**250.87**
2029-30	55.04	222.01	**277.04**
2030-31	60.43	240.89	**301.32**
2031-32	65.54	264.51	**330.05**
2032-33	70.57	283.71	**354.27**
2033-34	77.52	307.03	**384.55**
2034-35	84.58	326.80	**411.39**
2035-36	90.09	351.93	**442.02**
2036-37	95.79	373.84	**469.63**
2037-38	103.84	400.02	**503.86**

Table 7-10 : Toll Revenue Pessimistic Scenario (Rs. Crores)

Year	Thirupparaithurai Toll Plaza Km 157.500	Manavasi Toll Plaza Km 198.500	Total
2016-17	11.70	49.12	**60.82**
2017-18	13.07	55.61	**68.68**
2018-19	14.56	61.97	**76.54**
2019-20	16.61	70.18	**86.79**
2020-21	18.39	79.34	**97.73**
2021-22	21.58	88.96	**110.54**
2022-23	23.80	100.07	**123.87**
2023-24	26.45	111.38	**137.83**
2024-25	29.42	123.14	**152.56**
2025-26	32.97	135.81	**168.78**
2026-27	35.97	149.79	**185.77**
2027-28	39.94	163.16	**203.10**
2028-29	43.38	177.82	**221.20**
2029-30	48.10	193.92	**242.02**
2030-31	52.33	208.42	**260.75**
2031-32	56.23	226.72	**282.95**
2032-33	59.98	240.88	**300.85**
2033-34	65.26	258.22	**323.48**
2034-35	70.54	272.24	**342.79**
2035-36	74.42	290.41	**364.83**
2036-37	78.37	305.54	**383.92**
2037-38	84.16	323.85	**408.01**

Table 7-11 : Toll Revenue Most Likely Scenario (Rs. Crores)

Year	Thirupparaithurai Toll Plaza Km 157.500	Manavasi Toll Plaza Km 198.500	Total
2016-17	11.79	49.47	**61.25**
2017-18	13.23	56.27	**69.49**
2018-19	14.81	62.99	**77.81**
2019-20	16.98	71.66	**88.64**
2020-21	18.89	81.38	**100.26**
2021-22	22.26	91.66	**113.92**
2022-23	24.67	103.57	**128.24**
2023-24	27.55	115.80	**143.36**
2024-25	30.80	128.61	**159.42**
2025-26	34.68	142.51	**177.19**
2026-27	38.01	157.94	**195.95**
2027-28	42.40	172.85	**215.25**
2028-29	46.26	189.27	**235.53**
2029-30	51.53	207.37	**258.90**
2030-31	56.31	223.97	**280.28**
2031-32	60.79	244.80	**305.58**
2032-33	65.14	261.31	**326.45**
2033-34	71.21	281.46	**352.67**
2034-35	77.32	298.16	**375.48**
2035-36	81.96	319.57	**401.52**
2036-37	86.72	337.85	**424.57**
2037-38	93.57	359.80	**453.37**

CHAPTER 8
OPERATION & MAINTENANCE COST

8.1 General

While traffic and toll rates account income of project. Capital cost of construction and O & M cost form part of expenses. Health of any highway project considerably depends on pattern of its O&M cost. For these purpose, major O&M elements such as civil infrastructure, toll system and manpower's, safety, rescue, medical, civil maintenance, periodic and regular maintenance of infrastructure etc. have been analyzed. As per condition of contract, major maintenance including overlay of wearing course would be done at interval of 5 years. Same is considered while developing cost of maintenance and repair.

8.2 Major Elements of maintenance

Following are the major elements which build maintenance cost of any highway project

- Civil Infrastructure
- Toll Plaza
- Toll Operation
- HTMS
- Lighting
- Administration

8.3 Project Details

Following are project parameters which would contribute towards cost of operation and maintenance.

Table 8-1 : Project Parameters for O & M

Item	Parameter	Quantity	Unit
Length of Road	KM	63.628	KM
Main Carriageway	Paved Area	821494.8	SQM
Service Road	Paved Area	161095	SQM
Bus Bays	Paved Area	3675	SQM
Truck Lay Bye	Paved Area	2925	SQM
Structure		**12306**	SQM
Major Bridge	Area	12306	SQM
Minor Bridge	Area	0	SQM
Flyover	Area	0	SQM
RCC Crash Barrier	Length	2344	RMT
Metal Beam Crash Barrier	Length	12726	RMT
Guard Post	Nos	25451	Nos
Kerb Detail	Length	127256	RMT

Operation and maintenance cost of project depends number of factors like quality of construction, response of maintenance team to early damage, local climate (rain etc.).

8.4 Operation & Maintenance Cost

Following are project parameters which would contribute towards cost of operation and maintenance.

Future cost of operation and maintenance is estimate on engineering judgment and experience basis. Keeping all above factors in view, following can be basis of working out cost of operation and maintenance for project corridor from Trichy to Karur on NH-67 in state of Tamil Nadu.

b) **Annual Regular Maintenance** – Covering pothole repair, shoulder and slope repair, drain cleaning, median maintenance, Crash barrier, toll plaza maintenance, Toll collection, other services like medical help and rescue operations etc.

c) **Periodic Maintenance (Major Maintenance & Repair)**– This will be done on periodic basis say every 5 years. It will consist of overlaying of wearing course and painting and marking. Ministry in its Specifications for Road & Bridge Works (5th Revision) has included Micro Surfacing as surface sealing and renewal treatment. NHAI has also issued instruction to use Micro Surfacing for periodic renewal course vide letter dated 15th November 2016. In light of above,

Micro Surfacing is considered as overlay course in 45% of the project stretch. For balance 55% normal asphalt course is considered. Also, from practicality of construction and traffic operation on project road, Major Maintenance and Repair (MMR) work is spread over a period of 2 years. Toll operation on project road commenced in year 2013-14. Hence first cycle of MMR is expected in year 2018-19.

Cost for above operations is taken on prevailing rates.

Following tables provides year cost of Regular Operation and Maintenance and Major Maintenance and Repair.

Table 8-2 : Year wise Details of Regular Operation & Maintenance Cost

Year	Total Regular O & M Expenditure (Rs. Crores) Current Price	Escalation Factor	Total Regular O & M Expenditure (Rs. Crores) with Escalation
2016-17	8.15	1.04	8.48
2017-18	8.15	1.08	8.82
2018-19	8.15	1.14	9.26
2019-20	8.15	1.19	9.72
2020-21	8.15	1.25	10.21
2021-22	8.15	1.30	10.61
2022-23	8.15	1.35	11.04
2023-24	8.15	1.41	11.48
2024-25	8.15	1.46	11.94
2025-26	8.15	1.51	12.30
2026-27	8.15	1.55	12.67
2027-28	8.15	1.60	13.05
2028-29	8.15	1.65	13.44
2029-30	8.15	1.70	13.84
2030-31	8.15	1.73	14.12
2031-32	8.15	1.77	14.40
2032-33	8.15	1.80	14.69
2033-34	8.15	1.84	14.98
2034-35	8.15	1.87	15.28
2035-36	8.15	1.91	15.59
2036-37	8.15	1.95	15.90

Cost of Major Maintenance and Repair is given in the table below

Table 8-3 : Year wise Details of Major Maintenance & Repair (MMR) Cost

Year	Total Length of Project Road (Km)	No. of Lanes	Total Lane Km	Normal Overlay Lane Km Length (55% of the total)	Micro Surfacing Lane Km Length (45% of the total)	Rate of Normal Overlay Per Km Per Lane (Rs. Cr.)	Rate of Micro Surfacing Overlay Per Km Per Lane (Rs. Cr.)	Total Cost of Major Maintenance & Repair Current Price	Escalation Factor	Total Cost of Major Maintenance & Repair at Escalated Price
2016-17	61.00	23 Km 4 Lane and 38 km 2 lane	168.00							
2017-18	61.00		168.00							
2018-19	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.08	10.04
2019-20	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.08	10.04
2020-21	61.00		168.00							
2021-22	61.00		168.00							
2022-23	61.00		168.00							
2023-24	61.00		168.00							
2024-25	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.41	13.07
2025-26	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.41	13.07
2026-27	61.00		168.00							
2027-28	61.00		168.00							
2028-29	61.00		168.00							
2029-30	61.00		168.00							
2030-31	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.70	15.76
2031-32	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.70	15.76
2032-33	61.00		168.00							
2033-34	61.00		168.00							
2034-35	61.00		168.00							
2035-36	61.00		168.00							
2036-37	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.91	17.75
2037-38	61.00		168.00	46.2	37.8	0.16	0.05	9.28	1.91	17.75

Following graph depicts Year wise operation and maintenance cost illustratively. Higher cost columns represent periodic & special Repair years.

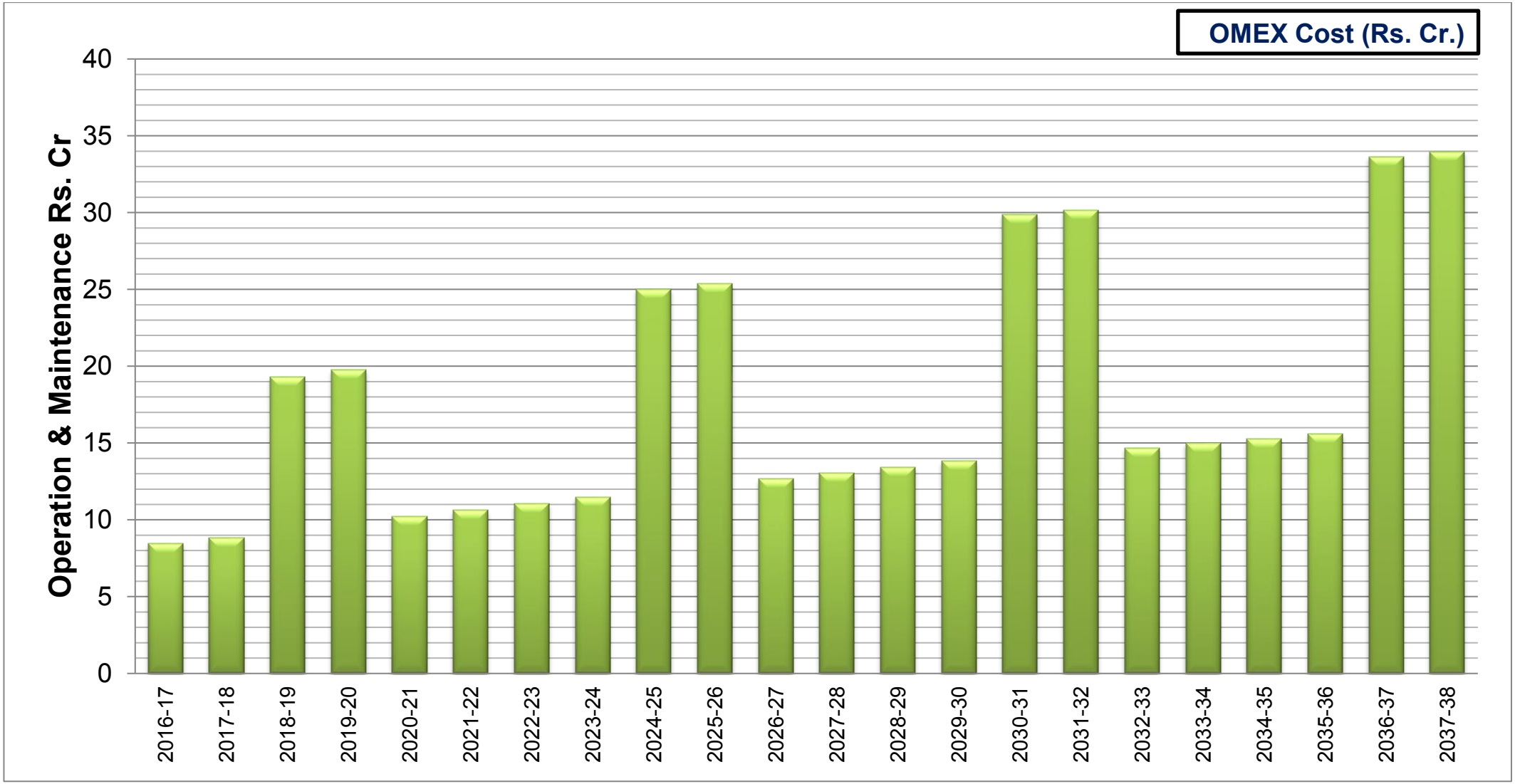

Figure 8-1 : Year wise Operation & Maintenance Cost

CHAPTER 9
CONCLUSION & RECOMMENDATIONS

9.1 Conclusion & Recommendations

Project stretch of Trichy to Karur section of NH-67 in state of Tamil Nadu from km 135.800 to km 218.000 is presently a four lane road. The road is in sound condition and serves healthy traffic volumes. There are many upcoming projects in area which are proposed to boost economic growth of area and add value to development of the region. All the developments considered in the Report have the potential to have a positive impact to traffic flow on project. Following can considered as major outcome of study

a) There is a healthy volume of tollable traffic running on project

b) Project corridor has the potential to witness traffic growth @ 7-8% annually in near future due to various development in area and overall development of economy

c) Project corridor does not have risk of traffic leakage due to lack of competing roads of comparable quality

d) Project infrastructure is in good condition and its maintenance costs are feasible for the successful operation of the toll road

Based on above it can be considered a stable healthy project from traffic and revenue point of view.

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ANNEX D:
AIFM DIRECTIVE DISCLOSURES

In accordance with the AIFM Directive, the Investment Manager must disclose certain prescribed information to prospective investors because it is intended that the Offer Document will be used to market Units to professional investors in Member States of the EEA in accordance with Article 42 of the AIFM Directive. The following table indicates where the required information is located within this Draft Offer Document or sets out the required information, to the extent applicable.

Information to be disclosed	**Article**	**Reference in Draft Offer Document**
General Fund Information		
Investment strategy and objectives of the AIF	Art 23(1)(a)	Section IV 'About the Trust – Background and Structure of the Trust' Section IV 'About the Trust – The Trust's Business'
Information on where master AIF is established and where the underlying funds are established	Art 23(1)(a)	Section IV 'About the Trust – Background and Structure of the Trust'
Type of assets in which the AIF may invest and the techniques it may employ and all associated risks	Art 23(1)(a)	Section I 'General – Definitions and Abbreviations' (*Infrastructure Assets; Initial Road Assets; Trust Assets*) Section IV 'About the Trust – The Trust's Business'
Applicable investment restrictions	Art 23(1)(a)	Section I 'General' (*Infrastructure Assets; Initial Road Assets; Trust Assets*) Section IV 'About the Trust – Background and Structure of the Trust' Section IV 'About the Trust – The Trust's Business'
Circumstances in which the AIF may use leverage, the types and sources of leverage permitted and the associated risks, restrictions on using leverage and any collateral and asset reuse arrangements	Art 23(1)(a)	Section II 'Risk Factors' (*No 27; No 73*) Section IV 'About the Trust – The Trust's Business' (*Competitive Strengths - Low leverage upon Listing, providing debt capacity to finance future growth*) Section IV 'About the Trust – Leverage' The Investment Manager, as the alternative investment fund manager of the Trust for the purposes of the AIFM Directive (an "AIFM"), is a non-EEA AIFM and not authorised under the AIFM Directive by any EEA national competent authority and therefore not required to set a maximum level of leverage in respect of the Trust.
Maximum level of leverage which the AIFM is entitled to employ on behalf of the AIF	Art 23(1)(a)	Section II 'Risk Factors' (*No 27; No 73*) Section IV 'About the Trust – The Trust's Business' (*Competitive Strengths - Low leverage upon Listing, providing debt capacity to finance future growth*)

		Section IV 'About the Trust – Leverage' The Investment Manager, as the alternative investment fund manager of the Trust for the purposes of the AIFM Directive (an "AIFM"), is a non-EEA AIFM and not authorised under the AIFM Directive by any EEA national competent authority and therefore not required to set a maximum level of leverage in respect of the Trust.
Procedures by which the AIF may change its investment strategy or investment policy, or both	Art 23(1)(b)	Section I 'General' (*Infrastructure Assets; Initial Road Assets; Trust Assets*) Section IV 'About the Trust – Background and Structure of the Trust' Section IV 'About the Trust – The Trust's Business'
Description of the main legal implications of the contractual relationship entered into for the purpose of investment, including information on jurisdiction, on the applicable law and on the existence or not of any legal instruments providing for the recognition and enforcement of judgments in the territory where the AIF is established	Art 23(1)(c)	Section II 'Risk Factors' (*No 12; No 77*) Section IV 'About the Trust – Summary of the Concession Agreements'
Identity of the AIFM, the AIF's depositary, auditor and any other service providers and description of their duties and the investors' rights	Art 23(1)(d)	Section III 'Introduction – General Information' Section IV 'About the Trust – Auditors' Section IV 'About the Trust – Valuers' Section V 'Parties to the Trust – The Sponsor Section V 'Parties to the Trust – The Investment Manager' Section V 'Parties to the Trust – The Project Manager' Section V 'Parties to the Trust – The Trustee'
Description of how the AIFM is protected against potential professional liability risks	Art 23(1)(e)	Not applicable
Description of any delegated management functions by the AIFM and of any safe-keeping function delegated by the depositary, the identification of the delegate and any conflicts of interest that may arise from such delegations	Art 23(1)(f)	Section V 'Parties to the Trust – The Project Manager'
Description of the AIF's valuation procedure and of the pricing methodology for valuing assets	Art 23(1)(g)	Section IV 'About the Trust – Valuation' Section IV 'About the Trust – Valuers'

Description of the AIF's liquidity risk management	Art 23(1)(h)	Section VI – 'Financial Information – Financial Statements – Note 29 – Financial risk management'
Description of all fees, charges and expenses and of the maximum amounts thereof which are directly or indirectly borne by investors	Art 23(1)(i)	Section III 'Introduction – Terms of the Issue' (*Brief details of the fees and expenses charged or chargeable to the Trust*) Section IV 'About the Trust – Background and structure of the Trust' (*Fees and Expenses*)
Description of how the AIFM ensures a fair treatment of investors and a description of any preferential treatment or the right to obtain preferential treatment obtained by any investor	Art 23(1)(j)	The Company will endeavour to treat all investors fairly although they are, as non-EEA AIFMs, not required to do so by the AIFM Directive. Section IV 'About the Trust – Related Party Transactions'
Latest annual report	Art 23(1)(k)	Not applicable (at this date, no annual report has been issued in respect of the Trust).
Procedure and conditions for the issue and sale of Units	Art 23(1)(l)	Section III 'Introduction – The Issue' Section III 'Introduction – Terms of the Issue' Section III 'Introduction – Basis of Issue Price' Section IV 'About the Trust – Rights of Unitholders'
Latest net asset value of the AIF or the latest market price of the unit or share of the AIF	Art 23(1)(m), Art 19(3)	Section III 'Introduction – The Issue' (*Basic Issue Price – Valuation provided by the Valuers*) Annex A – Valuation Report
Historical performance of the AIF, where available	Art 23(1)(n)	Section VI 'Financial Information' and 'Management's Discussion and Analysis of Financial Condition and Results of Operations'
The identity of the prime broker and a description of any material arrangements of the AIF with its prime brokers and the way the conflicts of interest in relation thereto are managed and the provision in the contract with the depositary on the possibility of transfer and re-use of AIF assets, and information about any transfer of liability to the prime broker that may exist	Art 23(1)(o)	Not applicable.
Description of how any changes to liquidity or leverage provisions of the AIF will be disclosed to investors	Art 23(1)(p)	The information required will be set out in annual reports and notices issued by the Trust and

		notifications issued by the stock exchanges in India and SEBI.
Any arrangement made by the depositary to contractually discharge itself of liability and any changes with respect to depositary liability	Art 23(2)	Not applicable.