

Operation & Maintenance Report- FY2027

**4-Laning of Gagalheri–Saharapur–
Yamunanagar (UP/Haryana Border)
section of NH-73 from Km 35.400 to
Km 86.855 in the State of Uttar
Pradesh under NHDP-IV on Hybrid
Annuity Mode (PKG-II) : GSY**

**SAMARTH INFRAENGG Technocrats
Private Limited**



May 2026

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LIST OF ABBREVIATIONS AND SYMBOLS

AADT	-Average Annual Daily Traffic
AE	-Authority Engineer
AMC	-Annual Maintenance Contract
ATMS	-Advanced Traffic Management System
BC	-Bituminous Concrete
BOQ	-Bill of Quantities
BOT	-Build, Operate & Transfer
CA	-Concession Agreement
CBR	-California Bearing Ratio
CCB	-Concrete Crash Barrier
CCR	-Cement Concrete Railing
COD	-Commercial Operation Date
COS	-Change of scope
CPI	-Consumer Price Index
CUP	-Cattle Underpass
CVC	-Classified Volume Count
CVPD	-Commercial Vehicles per Day
DBM	-Dense Bituminous Concrete
DPR	-Detailed Project Report
ECB	-Emergency Call Box
EPC	-Engineering, Procurement and Construction
ESI	- Employees' State Insurance
FDD	-Filed Dry Density
FOB	-Foot Over Bridge
FRL	-Finished Road Level
FSI	-Free Swell Index
FWD	-Falling Weight Deflectometer
FY	-Financial Year
GOI	- Government of India
GR	-Growth Rates
GS	-Grade Separated
GSB	-Granular Sub Base
GST	-Goods and Services Tax
HCPT	-Half cell Potential Test
HPC	-Hume Pipe Culvert
HR	- Human Resources
HTMS	-Highway Traffic Management Systems

IE	-Independent Engineer
IRC	- Indian Roads Congress
IRC SP	- Indian Roads Congress Special Publications
IRI	-International Roughness Index
Km	-kilometer
LHS	-Left Hand Side
LL	-Liquid Limit
LS	-Lumpsum
m	-Meter
MBIU	-Mobile Bridge Inspection Unit
MCB	-Metal Beam Crash Barrier
MCS	-Micro Surfacing
MCW	-Main Carriageway
MDD	-Maximum Dry Density
MHR	-Metallic Hand Rail
MJB	-Major Bridge
mm	-Millimeter
MM	-Major Maintenance
MNB	-Minor Bridge
MoRTH	- Ministry of Road Transport & Highways
Mpa	-Mega Pascal
MR	-Resilient Modulus
MSA	-Million Standard Axle
NDT	-Non-Destructive Testing
NHAI	- National Highways Authority of India
NSV	-Network survey Vehicle
O&M	- Operation and Maintenance
OL	-Overlay
PF	-Provident Fund
PGR	-Pedestrian Guard Rail
PI	-Plasticity Index
PL	-Plastic Limit
PM	-Periodic Maintenance
PUP	-Pedestrian Underpass
R&R	-Repair and Rehabilitation
RCC	-Reinforced Cement Concrete
RE Wall	-Reinforced Earth Wall
RHS	-Right Hand Side
RHT	-Rebound Hammer Test

RM	-Routine Maintenance
ROB	-Road Over Bridge
RPO	-Route Patrol Officer
RUB	-Road Under Bridge
SDBC	-Semi-Dense Bituminous Concrete
SPV	-Special Purpose Vehicle
SR	-Service Road
SWB	-Static Weigh Bridge
TCS	-Typical cross Section
TDRT	-Transient Dynamic Response test
TMS	-Toll Management System
UI	-Unevenness Index
UPVT	-Ultra Pulse Velocity test
VDF	-Vehicle Damage Factor
VG	-Viscosity Grade
VUP	-Vehicular Underpass
WBM	-Water Bound Macadam
WMM	-Wet Mix Macadam
WPI	-Wholesale Price Index

Operation & Maintenance Report, FY2027 -GSY

1.1 INTRODUCTION

The Government of India had entrusted to the Authority (National Highways Authority of India, **NHAI**) the development, maintenance and management of National Highway No.73 including the section from km 35.400 to km 85.855 (approx. 51.455 km). The Authority had resolved to augment the existing road from km 33.000 to km 71.640 on the Gagalheri-Saharanpur-Yamunanagar section of National Highway No.73 (hereinafter called the "NH 6") in the State of Uttarakhand/Uttar Pradesh by Four-Laning there of (the "Project") on design, build, operate and transfer (the "DBOT Annuity" or "Hybrid Annuity") basis under NHDP Phase IV, which shall be partly financed by the Concessionaire who shall recover its investment and costs through payments to be made by the Authority, in accordance with the terms and conditions to be set forth in a concession agreement.

The Authority had accordingly invited the bid proposals and upon the evaluation of received bids, the Authority has awarded the Project to M/s **MBL Infrastructures Ltd.** Consequent to this, M/s **MBL Infrastructures Ltd.** formed a Special Purpose Vehicle (SPV) in the name of M/s **MBL(GSY) Road Limited**, (Concessionaire) for implementation/execution of the project. Further, recently the name of the Concessionaire has been changed to M/s **NXT-INFRA GSY Highways Limited** with effect from Dt. 09.11.2023.

Concessionaire could not achieve the Financial Close within the stipulated time and has submitted a proposal for induction of **Welspun Enterprise Ltd** (Welspun") as a "Sponsor" of the project and subsequent to detailed deliberations, Authority approved for acquisition of 49% equity in the project company by Welspun.

After delinking certain 2-lane works on RHS, km 49+187 to km 49+750 (ROB portion) and km 58+666 to km 59+126 (ROB portion) and other few items, the Concessionaire has achieved PCOD for the remaining length of project on 31.10.2020. To process the PCOD, NHAI has made 2nd supplementary agreement on 01.10.2020 with no claims from damages from either party to complete this delinked works within 90-days of issuance of PCOD. Finally, Completion Certificate obtained on 10.02.2022. This project road is acquired by M/s **Actis GP LLP** and is presently under Operation and Maintenance phase.

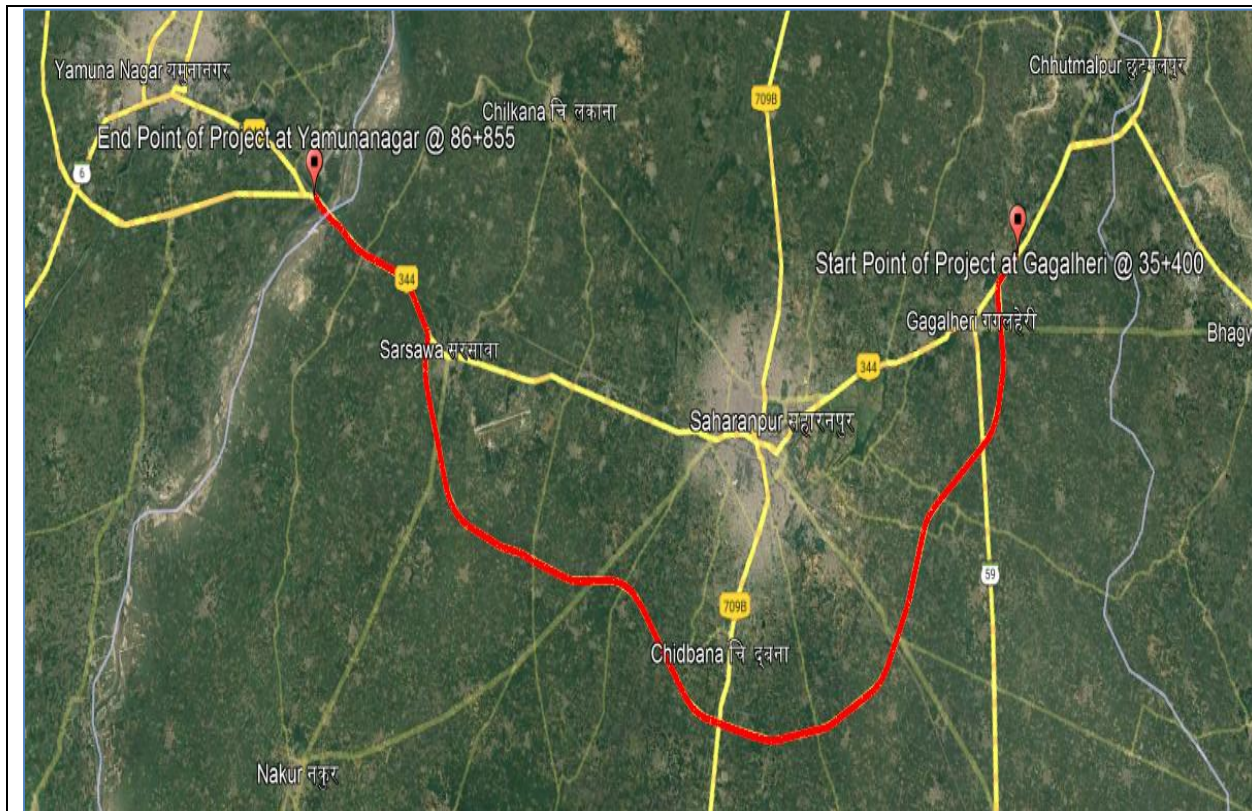
Nxt Infra Trust is a registered Indian infrastructure investment trust which has invested in road infrastructure assets in India with an initial portfolio for six Project SPVs. The Trust is sponsored by Actis Highway Infra - Limited (the "Sponsor"), part of the Actis Group, which is a global investor in sustainable infrastructure.

Actis GP LLP Ltd has engaged M/s **Samarth Infra-engg Technocrats** to undertake due-diligence study for self-assessment and/or for its Concessioning Authority and/ or for InvIT purpose and/ or for its present/ future investors/ lenders whom this Report will be presented as Vendors Technical Due Diligence Report.

This report is the updated Due diligence report incorporating the improvements and developments and then to evaluate the asset condition and work out O&M Cost, Major Maintenance cost and additional facilities cost/improvement works of the project during the Concession period.

1.2 PROJECT AT GLANCE

The project corridor has rigid pavement in the entire length with 7.0m wide carriageway plus 1.5m paved shoulder on each side. In approach locations 10.5m wide carriageway plus 1.5m paved shoulder on each side. The project corridor generally runs in Plain terrain. The land use along the project road is mostly built-up areas. It passes through villages like Gagalheri, kailashpur, Mahipura, Saharanpur, Ismailpur, Sarsawa, etc. In general, road embankments are in the range of 1.0m-2.0m height. Embankments higher than 2.0m are observed mainly in the approaches of CD structures and Underpass locations



Photographs showing the various corridors of the project road are presented below:



Following Table highlights the total project at a glance:

Table 1: Chronology of Project Milestones

S No.	Description	Date
1.	Date of Signing the Concession Agreement	27.05.2016
2.	Appointment Date	27.01.2018(Revised)
3.	Scheduled Project completion (730 Days from Appointed date)	26-01.2020 (as per CA)
4.	Revised Schedule Project completion	31.10.2020
5.	Date of issue of Provisional Completion Certificate, PCOD	31.10.2020
6.	Date of Issue of Final Completion Certificate	10.02.2022
7.	Scheduled End of Concession	25.01.2035 (as per CA)
8.	Revised Scheduled End of Concession	30.10.2035

1.3 SCOPE OF SERVICES

The main objective of the study is to review the current status of project corridor including details pertaining to its construction and maintenance and to provide requisite technical due diligence for said project.

The scope of services as defined in the “terms of reference” for consultants is as below:

- Updating the inventory of Highway & Structures based on latest improvements in the project based on the discussions and data provided by project managers.
- Reviewing and updating the immediate repair works cost based on discussion with site team
- Revising the MMR based on any latest field investigation reports provided by client
- Preparation of detailed O&M & MMR cost estimate as per latest labour wages and material rates
- Preparation of detailed project report for each project

Scope includes submission of project wise Annual Valuation Report including the revision of such reports based on discussion with your team.

1.4 REVIEW OF CONCESSION AGREEMENT

1. Concession Parties and date of execution of Agreement: NHAI referred as “Authority” entered in to Agreement with M/s **MBL(GSY) Road Limited** referred as “Concessionaire” on 27.05.2016
2. Appointed Date, Commercial Operation Date (Article 3 & 4, Article 12): As the Concession Agreement was signed on 31 Mar 2016, with the 1st settlement agreement made on 19th Jan 2018. With no penalties on either party, appointed date issued by Authority on 27 Jan 2018. Accordingly, construction period is 730 days from Appointed date, and Concession period is 15 years from COD.
3. Concession Period (Clause 3): This includes Construction Period of 730 days and Operation Period of 15 years commencing from COD. As the Appointed Date is declared on 27.01.2018, considering 730days as Construction period, the scheduled construction completion date is 26.01.2020. In the 2nd Supplementary Agreement dated 01 OCT 2020, scheduled project completion has been extended to the actual date of provisional certificate after excluding the delinked items without levy of any damages and penalties from NHAI. Accordingly, PCOD achieved on date, i.e., on 31.10.2020. Thus, considering 15yrs from COD, end of concession period is 30.10.2035 (scheduled date 25.01.2035). Further, final completion achieved on 10.02.2022.
4. Obligations of Concessionaire & Authority (Article 5 & 6): The Concessionaire and Authority have fulfilled most of the obligations.
5. Representation and warranties (Article 7): The Concessionaire shall at no time undertake any change of ownership except in accordance with Clause 5.3. Concessionaire has submitted a proposal for induction of Welspun Enterprise Ltd (Welspun”) as a sponsor of the project and subsequent to detailed deliberations, Authority approved for acquisition of 49% equity in the project company by Welspun.
6. Release of Performance Security (Article-9.3): The performance security bank guarantee (PSBG) is Rs 59.2 Cr. Details of release back the Performance guarantee to the Concessionaire from the Authority is not known.
7. Right of Way (Article 10): If the Authority is unable to provide the remaining site within 180 days from the Appointed Date, the remaining Site of the Project Highway shall be removed from the scope of the work under the provision of Change of Scope. Right of Way is granted within 180 (one hundred and eighty) days of the Appointed Date shall be completed on or before the Scheduled Completion Date.
8. Construction of the Project (Schedule-G, Article12): Construction period 730 days from the appointed date i.e., schedule date of completion is on 26th Jan 2020. In the Supplementary Agreement dated 01 OCT 2020, scheduled project completion has been extended to the actual date of provisional certificate after excluding the delinked items without levy of any damages and penalties from NHAI. Hence, PCOD achieved date on 31th OCT 2020, shall be considered as revised Schedule completion date.

Milestone	Completion days	Schedule date	Actual achieved	Delay/(early) days	% Total Capital Cost (TCC) / Physical progress in %
MS-I	214	29/08/2018	30/06/2018	(60 days)	20% of TCC / 20% Physical Progress

MS-II	334	27/12/2018	22/12/2018	(5 days)	35% of TCC / 35% Physical Progress
MS-III	548	29/07/2019	31/08/2019	33 days	75% of TCC / 75% Physical Progress
MS-IV	730	27/01/2020	10/02/2022	745 days	100% of TCC / 100% Physical Progress

9. Monitoring of Construction (Article 13): The Concessionaire shall, perform all the tests as per Schedule-I, with the instructions of the Independent Engineer. Half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by Authority to the Concessionaire.
10. Completion Certificate/ Provisional Certificate (Article-14): Independent Engineer may, upon request of Concessionaire, issue a provisional certificate for completion of 100% construction site, which made available to the Concessionaire up to 146 days from Appointed Date. Provisional certificate should have list of outstanding items in the punch list. These shall be completed within 90 days from issue of Provisional certificate. Authority shall recover damages for any delay in completion as per clause 14.4.1.

IE has issued the Provisional Certificate for the remaining length of project on 31st October 2020 after delinking the unfinished works. To process the PCOD, NHAI has made 2nd supplementary agreement on 01.10.2020 with no claims from damages from either party to complete this delinked works within 90-days of issuance of PCOD. Finally, Completion Certificate obtained on 10.02.2022.
11. Change of Scope (Article 16): Any additional works and services which are not included in scope of project shall be addressed in Change of Scope Notice. The costs thereof shall be expended by concessionaire and reimbursed by Authority with an advance payment of 20% of agreed COS cost.
12. Reduction of Scope (Article 16.6): if Concessionaire fails to complete the construction works on Force Majeure or for reasons attributable to Authority or under right-of-way clause 10.3.1. On direction of Authority, IE shall assess the civil cost for reduced scope as per Clause 16.6.1. Thus, revised Bid Project Cost shall be calculated. Accordingly, O&M cost shall be reduced or increase in proportion to reduction or increase in the length of the Project Highway.
13. Operation & Maintenance (Article 17): Concessionaire to maintain project road as per Schedule-K requirements. The roughness value exceeding 2750mm/km in a stretch of 1km should be rectified with 180-days.
14. Safety requirements (Article 18): All costs and expenses arising related to safety requirement shall be borne by Concessionaire as per scope of the project. If any not forming the scope shall be as per Article 16, change of scope.
15. Remuneration to Independent Engineer (Article 21.3): As per Schedule-M, one- half of remuneration towards the cost and expenses of the Independent Engineer during the development and construction period shall be borne by Concessionaire by do not exceeding 3% of the BPC. Payment in excess of 3% shall borne entirely by Authority. All the payments made to Independent Engineer during O&M period shall be borne equally by Authority and Concessionaire.
16. Financial Close (Article 22.1): Concessionaire to achieve Financial close within 150 days from date of the agreement. In the event of delay, further extension not exceeding 120days, subject to payment of damages to the Authority in the sum calculated at a rate of 0.05% of Performance

security for each day of delay. Beyond this further 95 days shall be allowed with 0.1% of Performance security for each day of delay.

Financial Close in this project happened on 29.11.2017 with no penalties, as ROW under Project is not provided as per CA.

17. Bid Project Cost (Article-23): The cost of construction of the project (BPC) is Rs.1184 Cr. and will be adjusted for the price index multiple. 40% of this Cost shall be payable to Concessionaire during Construction period in 5 installments of 8% each with adjusted price index multiple. Clarification sought from the Concessionaire about the total amount received against the receivable amount in the consolidated format.

The remaining 60% of Bid Project Cost, adjusted for Price Index multiple, shall be payable in 30 biannual installments commencing from 180th day of COD with the percentage payments as suggested in the table 23.6.3 along with the interest as per 23.6.4.

The first year O&M Bid cost 10 Cr. and any expenses in excess of O&M payments shall be borne by Concessionaire. O&M payments due payable to the Concessionaire shall be paid in 2 equal biannual installments and disbursed by the Authority together with corresponding installments of Annuity payments.

18. Mobilization Advance (Article 23.8): Upon request from Concessionaire, 10% of Bid Project Cost shall be paid by Authority. This shall be repaid by Concessionaire with Bank interest compounded annually in 4 equal installments from each payment made by Authority to Concessionaire.

Concessionaire has availed this facility, Status of repayment to the Authority to be clarified.

19. Insurance (Article 26): The Concessionaire has been fulfilling this obligation.

20. Force Majeure (Article 28): As per Clause 28.6.2, at any time after the Appointed Date, if any Force Majeure Event occurs before COD, the Concession Period and the dates set forth in the Project Completion Schedule shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or (b) after COD, the Concessionaire shall be entitled to receive Annuity payments plus interest due and payable under this Agreement.

21. Compensation for Breach of Agreement (Article 29): The Concessionaire has made no correspondence on this.

22. Suspension of Concessionaire Rights (Article 30): There was no necessity of any invocation of this clause.

23. Termination (Article 31): There was no necessity of any invocation of this clause

24. Defects and liability after termination (Article 33): There was no necessity of any invocation of this clause.

25. Change in Law (Article 35): As a result of Change in Law, if Concessionaire suffers an increase in cost or reduction in the net after-tax return subject to higher of 1 Cr or 2% of Total Annuity payments in any accounting year, Concessionaire may notify Authority to amend the agreement so as to place Concessionaire in same financial position as before the Change in Law.

26. Dispute resolution (Article 38): Any dispute not resolved amicably by conciliation, arbitration shall be held in accordance with rules of Society for Affordable Redressal of Disputes (SAROD), New Delhi or such other rules in-line with Arbitration and Conciliation Act, 1996. Place of such arbitration shall be the Delhi and the language of arbitration proceedings shall be English. There are no disputes referred so far under the article 38.

1.5 REVIEW OF PAVEMENT DESIGN

✓ Manual of Specification and Standards

The Schedule B, Clause 4.8 says Rigid pavement shall be provided on entire project length and at all toll plaza locations, bus bays, truck laybys and wayside amenities location. Flexible pavement shall be provided on service road/slip road sections. The minimum thickness for PQC is 300mm and DLC is 150mm. However, Schedule D suggests that Four-Laning with paved shoulders of the Project Highway shall conform to Manual of Specifications and Standards for Four-Laning of Highways through PPP IRC: SP:84-2014.

A) Rigid Pavement:

Clause 5.3.1 of IRC SP: 84-2014 stipulate that the new pavement shall be designed in accordance with the IRC: 58 Guidelines for the Design of Plain Jointed Rigid Pavements for Highways.

Clause 5.4.2 (i) of IRC SP: 84-2014 stipulates that the rigid pavement shall be designed for a minimum design period of 30 years. Stage Construction shall not be permitted.

Clause 5.4.2 (ii) of IRC SP: 84-2014 specifies that the Pavement Quality Concrete (PQC) shall rest over Dry lean Concrete (DLC) sub base of 150mm thickness.

Clause 5.4.2 (iii) of IRC SP: 84-2014 specifies that “A separation membrane shall be used between the PQC & DLC as per Clause 602.5 of MORTH Specifications”.

Clause 5.4.2 (iv) of IRC SP: 84-2014 specifies that the DLC shall meet the minimum cement and comprehensive strength requirement as prescribed in IRC: SP: 49. The DLC shall extend beyond the PQC (including that in shoulder, if any) by 0.75m on either side.

Clause 5.4.2 (v) of IRC SP: 84-2014 specifies that Below DLC layer, a properly designed drainage layer Granular Sub Base (GSB) of 150mm thickness shall be provided throughout the road width. It shall be designed to obtain a drainage coefficient of not less than 30m per day.

B) Flexible Pavement:

Clause 5.3.1 of IRC SP: 84-2014 stipulate that the new pavement shall be designed in accordance with the IRC: 37 Guidelines for the Design of Flexible Pavement.

Clause 5.4.1 (i) of IRC SP: 84-2014 stipulates that the flexible pavement shall be designed for a minimum design period of 15 years or operation period, whichever is more. **Stage Construction will be permissible subject to the requirements specified in para (ii) below.**

Clause 5.4.1 (ii) of IRC SP: 84-2014 specifies that “Alternative strategies or combination of initial design, strengthening and maintenance can be developed by the Concessionaire to provide the

specified level of pavement performance over the operation period subject to satisfying the following minimum design requirements”.

Clause 5.4.1 (ii) (a) indicates that, the thickness of sub-base and base of pavement section is designed for a minimum design period of 15 years or the operation period, whichever is more and the **initial bituminous surfacing for a minimum design period of 10 years**.

Clause 5.4.1 (ii-(b)) indicates that, the pavement shall be strengthened by bituminous overlay as and when required to extend the pavement life to full operation period. The thickness of bituminous overlay shall be determined on the basis of relevant IRC codes, IRC:81.

Clause 5.5.5 indicates that, the design traffic in case of Service Road shall be 10 MSA. The crust composition shall be provided accordingly.

Clause 5.9.6 (i) of IRC SP: 84-2014 stipulate the thickness of the bituminous overlay shall be determined on the basis of FWD Technique and the design traffic as per the procedure outlined in IRC: 81 as also from structural numbers of existing pavement layers.

Clause 5.9.6 (ii) of the same manual also stipulates that the initial **strengthening shall be done for a minimum design period of 10 years**. Subsequent strengthening to extend the pavement to full operation period shall be implemented at the end of initial design period or earlier, in case of any structural distress in the pavement or if the surface roughness exceeds the value specified in Schedule-K of the CA.

Clause 5.9.6 (iv) of the same Section stipulate that the thickness of Bituminous Overlay for pavement strengthening shall not be less than 50 mm Bituminous concrete, after attending to the requirements of profile corrective course”.

✓ **The Review of Pavement Design Report**

As per section 5 of Schedule B, the scope of Pavement improvement for the project road includes:

- a) Pavement design shall be carried out in accordance with IRC: SP-84-2014 four lane manual, IRC 37-2012 and IRC 58:2015
- b) The existing road shall be reconstructed as Rigid Pavement and Flexible Pavement in Service Road/ Slip Road.
- c) Flexible Pavement shall be designed for a minimum period of 15 years excluding construction period.
- d) Rigid Pavement shall be designed for a minimum period of 30 years.

✓ **Adopted ADT**

The design of Pavement is based on the data provided by the Traffic report.

ADT adopted for design of Pavement as per Traffic Report is presented below

Type of Vehicle	ADT at Km 35.400	ADT at Km 81.500
Mini Bus	35	56
Bus	599	269
LCV	603	638
2A Truck	739	1160
3A Truck	423	1278
MAV	226	899

✓ **New Construction of Rigid Pavement**

Design of New construction was carried out in accordance with IRC 58-2015. The pavement layer for new construction has been designed for 30-year design traffic for the PQC layers. The Pavement layer thickness proposed for new construction is as

Length (Km)	Pavement Layer	Design Period (Years)	Pavement Thickness as Per Design (mm)	Adopted as Per Schedule(mm)
51.455	Pavement Quality Concrete (PQC)	30	210	300
	Dry Lean Concrete (DLC)		150	150
	Granular Sub Base (GSB)		150	150
	Subgrade		500	500

✓ **New Construction of Flexible Pavement**

There is no thickness for each layer of flexible pavement is given in the pavement design report. However, it is mentioned in the report to adopt 10 msa, 15-year design life and suggested 10% CBR.

1.6 MAINTENANCE REQUIREMENTS:

Concessionaire shall undertake maintenance requirements as per Schedule-K of CA, below is the requirement

S. No	Description	Length (Km)	Lanes	Applicable Schedule for O&M	Maximum Roughness Allowed
1	GSY	51.455	4LPS	Schedule-K	2750 mm/Km

As per Manual, IRC SP:84-2014:

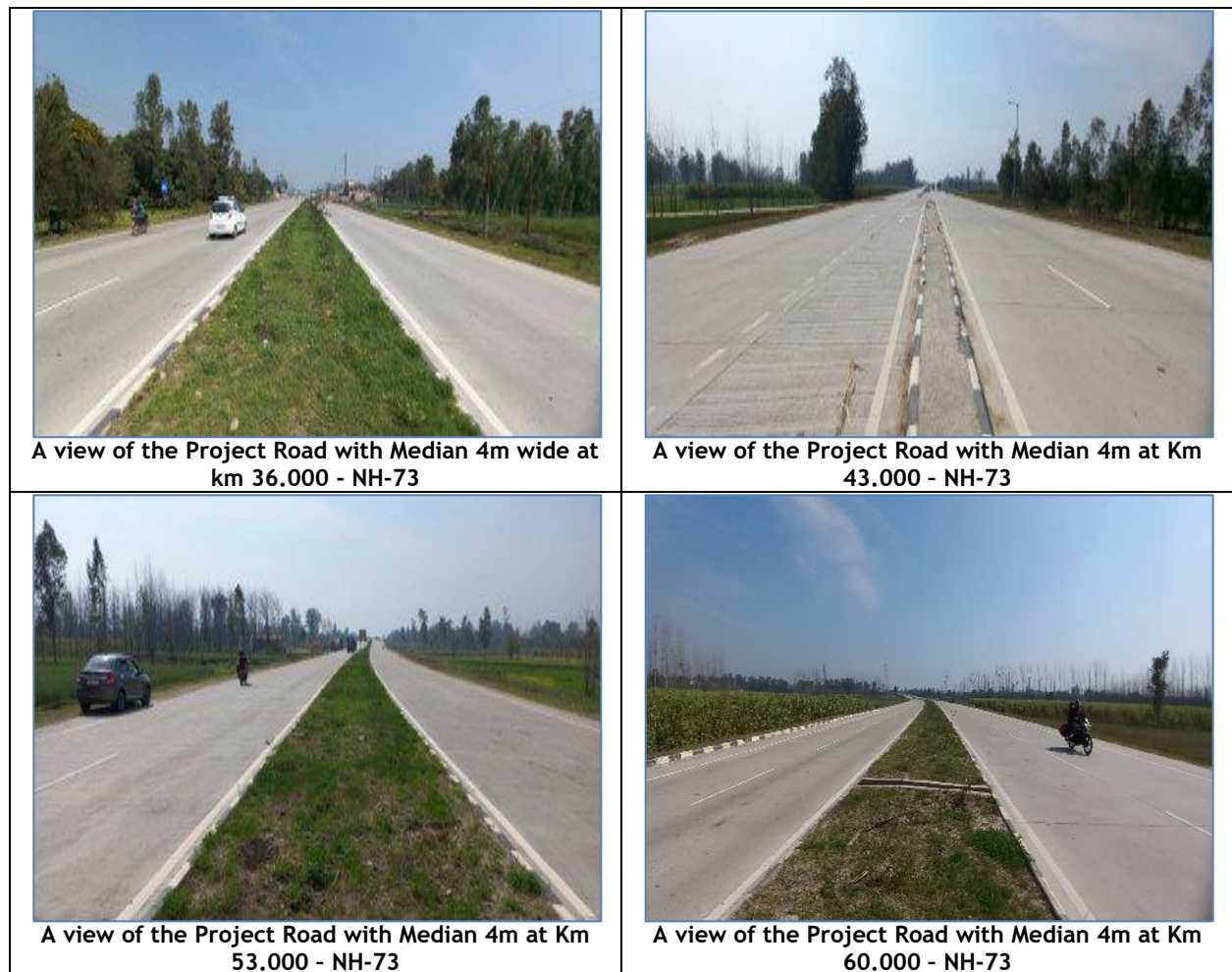
S. No	Description	Length (Km)	Lanes	Maximum allowable deflection	Frequency of Roughness Test	Frequency of FWD Test
1	GSY	51.455	4LPS	1.2mm	Twice a Year	In every 5 Years

- No specific Handing Over (Divestment) requirements are mentioned under CA. It shall be same as Schedule-K

1.7 ROAD INVENTORY

The project corridor has rigid pavement in the entire length with 7.0m wide carriageway plus 1.5m paved shoulder on each side. In approach locations 10.5m wide carriageway plus 1.5m paved shoulder on each side. The project corridor generally runs in Plain terrain. The land use along the project road is mostly built-up areas. It passes through villages like Gagalheri, kailashpur, Mahipura, Saharanpur, Ismailpur, Sarsawa, etc. In general, road embankments are in the range of 1.0m-2.0m height. Embankments higher than 2.0m are observed mainly in the approaches of CD structures and Underpass locations.

Typical View of Project Road is shown below:





A view of the Project Road with Median 4m at Km 65.000 - NH-73



A view of the Project Road with Median 4m at Km 70.000 - NH-73

The Project Road has 2 Major junctions and 4 Minor junctions. Photographs showing junctions locations are presented below:



Major Junction @ km 36.288 RHS - NH-73



Major Junction @ km 79.682 RHS - NH-73

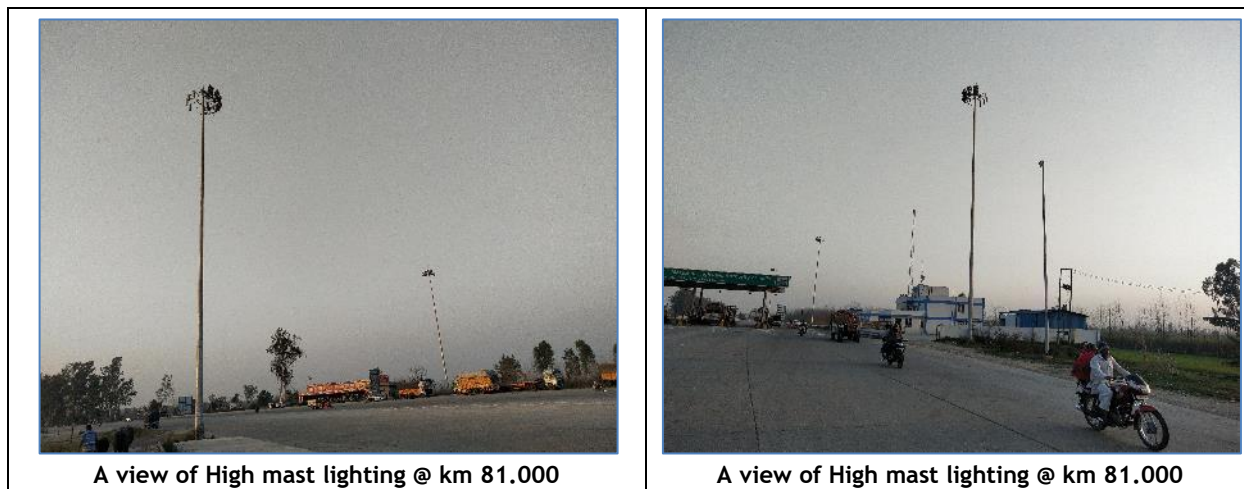


Minor Junction @ km 79.838 LHS - NH-73



Minor Junction @ km 80.325 RHS - NH-73

About 19 numbers of High mast lighting is observed along the project road. Mostly they are located at Junctions and Toll Plaza locations. Few photos showing High mast lighting are presented below:

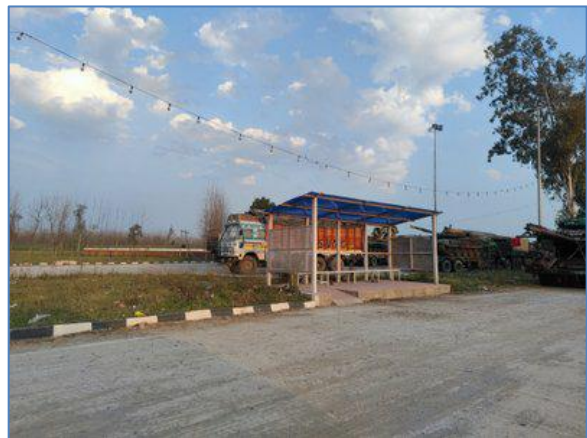


All together the Project Road has about 11 Bus Bay with Bus shelters, 2 Bus bays on Main carriageway and 2 Bus Shelter on Service Road. Few photos taken at the Bus Bays and Bus Shelter are presented below:





Bus Bay with Shelter near km 57.570 RHS - NH-72A



Bus Bay with Shelter near km 80.000 RHS - NH-73

The Project Road has 3 nos. of Truck lay byes. In which, 2 Truck lay byes are provided with Rest Areas. All Truck lay byes have been provided with Rigid pavement. Toilet Blocks and Single arm lightings has been provided.

Few photos depicting the truck lay bye portion are presented below:



Truck lay bye cum rest area @ Km 79.950 -LHS @ NH-73



Truck lay bye cum rest area @ Km 80.000 RHS @ NH-73



Truck lay bye near km 85.050 RHS - NH-73

The Project Road has One Toll Plaza (8+8) at km 81+300. Rigid pavement exists at the toll plaza and in tapering portions. It has 8 ETC lanes on each side. Eight high mast lights are provided at toll plaza. Double arm lighting also provided in the approaches of the toll plazas.



A view of Toll Plaza near km 81.000 (Sarsawa)



Admin Building at km.81.000

Service road/slip roads of varying carriageway width of 5.5m to 7m have been observed along the Project Corridor. Service road/slip roads have been constructed for most of the length of the project corridor except at few locations. Photos depicting the service road pavement surface type, Condition and the other associated features like drain, pedestrian guard rails and metal Beam crash barriers on the separator are presented below. Few photos taken at service road locations are presented below:



Service Road @ km 35.400 LHS - NH73



Service Road @ km 46.200 LHS - NH73



Service Road @ km 58.320 RHS - NH-73



Service Road @ km 65.400 LHS - NH-73

1.8 ROAD WORKS

The Road inventory and structure inventory data for the Project stretch are highlighted in following table.

Table 2: Detailed Inventory

S No.	Particulars	Length/ Nos.	As per Site
1	Start Chainage (Km)	Km.	35.400
2	End chainage (Km)	Km.	86.855
3	Length of the Project Corridor	Kms	51.455
4	Service Road / Slip Road	Kms	18.22
5	Bypass Length	Kms	0
6	Toll Plaza	No.	1
7	No. of Lanes (Both side)	No.	16
8	ROBs	No.	3
9	RUB's	No.	0
10	Interchange /Grade Separators	No.	0
11	Flyovers	No.	1
12	Uni Directional Flyovers	No.	0
13	Over Passes	No.	0
14	VUPs	No.	10
15	LVUP's	No.	10
16	PUP's/CUP's	No.	8
17	Major Bridges	No.	3
18	Minor Bridges	No.	9
19	Culverts (Pipe)	No.	69
20	Culvert (Slab/Box)	No.	20
21	Major Junctions	No.	2
22	Minor junctions	No.	4
23	High Embankments	Kms	33.590
24	Partial RCC Wall with Embankment	Kms	0.29
25	RE Blocks/PANELS	Kms	7.36
26	Partial RE Wall with Grouting	Kms	1.520
27	Bus Bays with Shelter	No.	11
28	Bus Bays	No.	2
29	Bus Shelters	No.	2
30	Truck Lay bye	No.	3

S No.	Particulars	Length/ Nos.	As per Site
31	Rest Areas	No.	3
32	High Mast Lights	No.	19
33	Highway Lighting (length only)	Kms	8.17
34	Single Arm Lightings	No.	136
35	Double Arm Lightings	No.	191
36	Solar Blinkers	No.	16
37	RCC Cover Drain	Kms	8.87
38	RCC Open Lined Drain	Kms	0
39	Median Cuts	No.	667
40	Chutes	No.	745
41	Median Opening	No.	7
42	Median kerb Damages	m	146
43	Median Plantation Functional	Kms	46.285
44	Median Plantation Functional	Kms	0.52
45	Road Markings	Sqm	46640
46	W-Beam Safety Barriers	Kms	34.070
47	Rigid Concrete Barriers	Kms	14.83
48	Concrete Railing	Kms	2.68
49	Pedestrian Guard Rails	Kms	1.65
50	Delineators	No.	167
51	Kilometer Stones	No.	99
52	Hectometer Stones	No.	306
53	Road Signs	No.	460
54	Gantry Sign Boards	No.	7
55	Cantilever Sign Boards	No.	5
56	Varying Message Signs (VMS)	No.	2
57	Emergency Call Box	No.	8
58	Advanced Traffic Management System (ATMS)	Kms	51.455
59	Anti-Glare	No.	655

1.9 STRUCTURES

List of Structures found during the inventory surveys along the corridor are as follows:

Table 3: Summary of Major Structures

S. No	Type of Str	No. of Str			Total No. of Str's	Total No. of Locations
		LHS	RHS	BHS		
1	ROB	3	3	0	6	3.00
2	MJB	3	3	0	6	3.00
3	MNB	10	10	0	20	9.00
4	Flyover	1	1	0	2	1.00
5	VUP	10	10	0	20	10.00
6	LVUP	10	10	0	20	10.00
7	CUP	8	8	0	16	8.00

Table 4: Details of Major CD & Other Structures along Project Road

S No.	Chainage (Km)	Type of Structure	Side	Str on	Age of Str	Span Arrangement (m)	Deck Width (m)
1	37+492	MNB (IOCL)	LHS	MCW	New	1 x 8.25	15
2	37+493	MNB (IOCL)	RHS	MCW	New	1 x 8.25	15
3	37+875	VUP	LHS	MCW	New	1 x 12	14.5
4	37+875	VUP	RHS	MCW	New	1 x 12	14.5
5	38+876	CUP	LHS	MCW	New	1 x 8.5	14.5
6	38+876	CUP	RHS	MCW	New	1 x 8.5	14.5
7	41+129	LVUP	LHS	MCW	New	1 x 10.5	14.5
8	41+129	LVUP	RHS	MCW	New	1 x 10.5	14.5
9	41+844	Flyover	LHS	MCW	New	2 x 36.921	14.5
10	41+844	Flyover	RHS	MCW	New	2 x 36.921	14.5
11	43+619	LVUP	LHS	MCW	New	1 x 10.5	14.5
12	43+619	LVUP	RHS	MCW	New	1 x 10.5	14.5
13	44+450	CUP	LHS	MCW	New	1 x 8.5	17.5
14	44+450	CUP	RHS	MCW	New	1 x 8.5	17.5
15	44+684	ROB	LHS	MCW	New	1 x 31.5 + 1 x 24.607 + 1 x 23.87 + 1 x 45 + 1 x 33.7 + 1 x 24.607 + 1 x 31.5	12.5
16	44+684	ROB	RHS	MCW	New	1 x 31 + 1 x 24.607 + 1 x 23.87 + 1 x 45 + 1 x 19.9 + 1 x 24.607 + 1 x 31.5	12.5
17	45+770	VUP	LHS	MCW	New	1 x 12	14.5
18	45+770	VUP	RHS	MCW	New	1 x 12	14.5
19	46+614	CUP	LHS	MCW	New	1 x 8.5	14.5
20	46+614	CUP	RHS	MCW	New	1 x 8.5	14.5
21	48+065	LVUP	LHS	MCW	New	1 x 10.5	14.5
22	48+065	LVUP	RHS	MCW	New	1 x 10.5	14.5
23	49+457	ROB	LHS	MCW	New	14 x 40	12.5
24	49+457	ROB	RHS	MCW	New	14 x 40	12.5
25	51+589	MJB	LHS	MCW	New	6 x 36.7	12.5

S No.	Chainage (Km)	Type of Structure	Side	Str on	Age of Str	Span Arrangement (m)	Deck Width (m)
26	51+589	MJB	RHS	MCW	New	6 x 36.7	12.5
27	52+820	VUP	LHS	MCW	New	1 x 12	14.5
28	52+820	VUP	RHS	MCW	New	1 x 12	14.5
29	53+647	LVUP	LHS	MCW	New	1 x 10.5	14.5
30	53+647	LVUP	RHS	MCW	New	1 x 10.5	14.5
31	53+974	MNB	LHS	MCW	New	2 x 30	12.5
32	53+974	MNB	RHS	MCW	New	2 x 30	12.5
33	54+149	VUP	LHS	MCW	New	1 x 12	14.5
34	54+149	VUP	RHS	MCW	New	1 x 12	14.5
35	54+985	LVUP	LHS	MCW	New	1 x 10.5	14.5
36	54+985	LVUP	RHS	MCW	New	1 x 10.5	14.5
37	55+825	VUP	LHS	MCW	New	1 x 12	14.5
38	55+825	VUP	RHS	MCW	New	1 x 12	14.5
39	57+074	CUP	LHS	MCW	New	1 x 8.5	14.5
40	57+074	CUP	RHS	MCW	New	1 x 8.5	14.5
41	58+143	LVUP	LHS	MCW	New	1 x 10.5	14.5
42	58+143	LVUP	RHS	MCW	New	1 x 10.5	14.5
43	58+935	ROB	LHS	MCW	New	2 x 32 + 4 x 36 + 5 x 40 + 1 x 52	12.5
44	58+935	ROB	RHS	MCW	New	2 x 32 + 4 x 36 + 5 x 40 + 1 x 52	12.5
45	59+207	CUP	LHS	MCW	New	1 x 4.53	14.5
46	59+207	CUP	RHS	MCW	New	1 x 4.53	14.5
47	60+730	CUP	LHS	MCW	New	1 x 8.5	14.5
48	60+730	CUP	RHS	MCW	New	1 x 8.5	14.5
49	62+185	VUP	LHS	MCW	New	1 x 12	14.5
50	62+185	VUP	RHS	MCW	New	1 x 12	14.5
51	63+070	MJB	LHS	MCW	New	2 x 40	12.5
52	63+070	MJB	RHS	MCW	New	2 x 40	12.5
53	65+047	LVUP	LHS	MCW	New	1 x 10.5	14.5
54	65+047	LVUP	RHS	MCW	New	1 x 10.5	14.5
55	65+548	MNB	LHS	MCW	New	2 x 7.5	14
56	65+548	MNB	RHS	MCW	New	2 x 7.5	14
57	65+548	MNB	LHS	SR	New	1 x 6	8.5
58	66+484	VUP	LHS	MCW	New	1 x 27.214	14.5
59	66+484	VUP	RHS	MCW	New	1 x 27.214	14.5
60	67+427	LVUP	LHS	MCW	New	1 x 10.5	14.5
61	67+427	LVUP	RHS	MCW	New	1 x 10.5	14.5
62	67+604	MNB	LHS	MCW	New	1 x 15	14.5
63	67+604	MNB	RHS	MCW	New	1 x 15	14.5
64	69+416	CUP	LHS	MCW	New	1 x 8.5	14.5
65	69+416	CUP	RHS	MCW	New	1 x 8.5	14.5
66	69+954	MNB	LHS	MCW	New	1 x 15	12.5
67	69+954	MNB	RHS	MCW	New	1 x 15	12.5
68	71+170	VUP	LHS	MCW	New	1 x 12	14.5
69	71+170	VUP	RHS	MCW	New	1 x 12	14.5
70	72+809	CUP	LHS	MCW	New	1 x 8.5	14.5
71	72+809	CUP	RHS	MCW	New	1 x 8.5	14.5
72	74+194	MNB	LHS	MCW	New	1 x 10	12.5
73	74+194	MNB	RHS	MCW	New	1 x 10	12.5
74	75+110	MNB (IOCL)	LHS	MCW	New	1 x 8.25	11

S No.	Chainage (Km)	Type of Structure	Side	Str on	Age of Str	Span Arrangement (m)	Deck Width (m)
75	75+110	MNB (IOCL)	RHS	MCW	New	1 x 8.25	11
76	75+110	MNB (IOCL)	RHS	SR	New	1 x 8.25	8.5
77	75+856	VUP	LHS	MCW	New	1 x 29	14.5
78	75+856	VUP	RHS	MCW	New	1 x 29	14.5
79	77+519	LVUP	LHS	MCW	New	1 x 10.5	14.5
80	77+519	LVUP	RHS	MCW	New	1 x 10.5	14.5
81	78+139	VUP	LHS	MCW	New	1 x 12	14.5
82	78+139	VUP	RHS	MCW	New	1 x 12	14.5
83	78+713	LVUP	LHS	MCW	New	1 x 10.5	14.5
84	78+713	LVUP	RHS	MCW	New	1 x 10.5	14.5
85	79+320	MNB	LHS	MCW	New	1 x 15	13
86	79+320	MNB	RHS	MCW	New	1 x 15	13
87	80+599	MNB	LHS	MCW	New	2 x 16	12.5
88	80+599	MNB	RHS	MCW	New	2 x 16	12.5
89	85+849	MJB	LHS	MCW	New	16 x 30	12.5
90	85+849	MJB	RHS	MCW	Old	16 x 30	12.5

1.10 COSTING

Cost Component for various items and activities have been worked out by considering the Best Industry practice and most appropriate methods. Detailed quantities for work items have been estimated based on the details presented in previous chapters for various heads.

The gist of the cost components considered are presented below:

- Immediate Repair's Cost
- Routine Maintenance Cost
- Incident Management Cost
- Periodic Maintenance Cost
- Operations Cost
- Year by Year total O&M Costs

1.10.1 RATE ANALYSIS

Detailed rate analysis has been carried out based on MORTH guidelines to arrive at the unit rates of various items. Material rates and their leads from the project corridor are considered as per the material investigations done on the project road. Summary of unit rates arrived at are presented in table below:

Table 5: Summary of Unit Rates (Excluding GST)

S No	Type of Material	Units	Source	Average Lead in Kms	Market Rates (Rs) - including lead
1	Aggregate				
a)	40 mm	Cum	Crusher	17.82	1,005
b)	20 mm	Cum	Crusher	17.82	1,063
c)	12 mm	Cum	Crusher	17.82	1,102
d)	6 mm	Cum	Crusher	17.82	1,050
e)	Dust	Cum	Crusher	17.82	1,132
2	Gravel/Moorum				
	Embankment	Cum	Borrows Area	3.60	18
	Subgrade	Cum	Borrows Area	3.60	18
3	Other Major Material				
	Bitumen 60/70	MT	Mathura	378.00	42,737
	Bitumen 80/100	MT	Mathura	378.00	42,053
	CRMB	MT	Mathura	378.00	39,190
	Emulsion	MT	Mathura	378.00	52,646
	Steel	MT	Outlet	44.00	53,198
	HTS Strands	MT	Yamuna Nagar	44.00	75,198
	Cement	MT	Yamuna Nagar	44.00	7,498
	Structural Steel	MT	Yamuna Nagar	44.00	76,098
	VG-40 (for FY27)	MT	Mathura	378.00	88,519
	VG-40 (for FY28 onwards)	MT	Mathura	378.00	52,489

Table 6: Summary of Major Rates (Excluding GST)

S No	Activities	Unit	Rate (Rs) per Unit	Remarks
1	BC (for FY27)	Cum	16,737	VG-40
	BC (for FY28 onwards)	Cum	11,293	VG-40
2	Tack Coat	Sqm	15	
3	DBM	Cum	10,239	VG-40
4	PC	Sqm	40	
5	WMM	Cum	2,186	
6	GSB	Cum	1,824	
7	Embankment	Cum	205	
8	Subgrade	Cum	245	
9	Shoulder Filling	Cum	245	
10	Thermoplastic Paint	Sqm	452	
11	Road Studs	Nos	196	
12	DLC	Cum	5,022	
13	PQC	Cum	9,824	
14	RE panel	Sqm	4,035	
15	M-15	Cum	8,451	
16	M-20	Cum	8,687	
17	M-25	Cum	9,265	
18	M-30	Cum	9,280	
19	M-35	Cum	10,257	
20	M-40	Cum	11,637	
21	M-45	Cum	11,908	
22	M-50	Cum	13,652	
23	Reinforcement steel	MT	74,941	
24	1.2m Dia. pile	Rm	14,486	
25	HT strands	MT	1,31,691	

Note:

- 1) For Major Maintenance in FY27, the prevailing market rate of bitumen has been considered. However, for the remaining concession period from FY28 onwards, FY25 rates have been adopted and escalated at 5% per annum for a period of 2 years, considering that the cost estimates are presented at FY27 base-year prices.
- 2) Labour: Central Minimum Wages as on April'2026 for "C Area" Category of construction workers Rates

1.10.2 IMMEDIATE REPAIRS COSTS

Costs associated with immediate repairs are estimated based on the detailed asset inventory and condition assessment surveys, Pavement condition and structural condition assessment surveys. Items which are not executed as part of scope or in damaged condition have been considered for immediate costs as a part of 1-year capex. Following items are mainly considered for immediate costs:

- Scope which is not executed
- Road work items
- Bridge Work Items
- Pavement Rehabilitation works
- Structural Rehabilitation works
- Drainage Works
- Slope Protection works
- Safety Works

Presently, there are no immediate requirement costs anticipated for FY2027.

1.10.3 ROUTINE MAINTENANCE & INCIDENT MANAGEMENT COSTS

Routine maintenance costs include general maintenance costs of road elements, bridge elements and road furniture and appurtenances. This can be mainly divided into two parts as:

- ✓ General Maintenance of Works
- ✓ Repairs to Highway & Bridge Elements

General Routine Maintenance

General Routine Maintenance of Roads generally include following items:

- Cleaning of Project facilities
- Structures cleaning,
- Cleaning of ROW
- Cleaning and Maintenance of Toll Plaza
- Unlined Drain Maintenance
- Lined Drain Maintenance
- Maintenance of Highway Lighting at Toll Plaza and other project locations
- Median Plantation maintenance & Avenue plantation maintenance:
- Maintenance of Road Furniture
- Maintenance of Road Safety Items

The above items are estimated by considering the detailed break-up of following items:

- Manpower including Managers/Labour etc
- Vehicles for Labour Transport/Water Tankers/Sweeping Machines Etc
- Resources/Equipment's such as grass cutters, tools, jet sprayers, hydraulic trimmers etc

Repairs to Highway & Bridge Works

Repairs to highway and bridge works have been estimated based on the assumed quantities (Percentage basis) of execution for every year.

These items include the following:

1	Providing treatment for sealing of road surface / isolated cracks at scattered locations
	i) covered with 6.7 mm size stone chipping @ 0.1 cum/ 10 sqm.
	ii) covered with dry coarse sand passing through 2.36 mm sieve and retained on 180-micron sieve @ 0.03 cum/10 sqm heated to 600 C
	iii) filling discrete cracks with slow curing bitumen emulsion as per Technical Specification Clause 3004.3.3
2	Providing treatment to bleeding bituminous surface at scattered locations
3	Providing localized repair to rutted portion and edge breaking of bituminous surface
4	Providing treatment and repair to pot-holes and patch work
5	Providing and laying dense bituminous macadam using bitumen grade VG 40 complete as per Technical Specification Clause 507
6	Providing and laying bituminous concrete (asphaltic concrete)
	(a) Using bitumen (VG-40) as per IRC: SP: 53
7	Road Roughness survey
8	Turfing on embankment slopes and at all other Project Facilities
9	Providing repair to stone pitching/apron at scattered locations
10	Rain Cuts Maintenance: Restoration of rain cuts soil, moorum, gravel or a mixture of these
11	Providing and laying apron/ stone pitching on slopes of guide bunds/ road embankment / other location
12	Providing and laying stone aggregate filter material (150 mm compacted thickness) underneath pitching
13	Unlined drain
14	Filling in median island with approved materials with all leads and lifts complete as per TS Clause No. 407
15	Replacing damaged / broken railing with new pre-cast / cast-in-situ, concrete railing to match with existing design and pattern.
24	Carrying out repair to road signs including strengthening resetting or otherwise repairing signs and delineators
	a) Road sign board mounted on single post
	b) Road sign board mounted on double post
	c) Overhead/ Gantry Sign boards
	d) Delineator
25	Supplying and fixing at site retro-reflectorized type sign boards/signs
	90cm Equilateral triangle
	60cm circular
	90 cm circular
	90cm high octagon
	80cm x 60cm rectangle
	Chevron signs 60cm x 45cm
	Place identification signs (Fig 15.7 of IRC 67)
	Providing and fixing Object Markers
	Providing and fixing of retro-reflectorized Route Marker signs (size 450mm x 600mm)
26	Hazard Marker Sign:
	a) size 90 x 30 cm

	b) size 30cm triangular side cluster of red reflectors (screen printed)
27	Cats Eyes/Raised pavement marker (NMC Nails Less)
28	Painting two coats on old surface after minor repairs to give an even and smooth surface and printing letters and figures with synthetic enamel paint
	a) Hectometer stones
	b) Kilometer Stone
	c) 5 Kilometer stone
	d) Boundary stone
	e) Guard stone
29	Providing painting lettering and fixing of distance measurement stones including dismantling of old damaged/ broken ones, confirming to TS Clause 804
	a) Hectometer stones
	b) Kilometer Stone
	c) 5 Kilometer stone
	d) Boundary stone
	e) Guard stone
30	Providing and fixing road delineators conforming to TS Clause No. 805 as directed by the Engineer.
31	Repainting the kerb stones and separation barrier with first quality synthetic enamel paint of approved brand
32	Painting all types of pavement markings including lines, dashes, arrows etc. on roads as per relevant IRC/MOST standards after cleaning the surface complete in all respects as directed by the Engineer.
	a) Hot applied Thermoplastic compound
	(i) Lane / Centre Line / Edge Line
	(ii) Direction Arrows
	(iii) Diagonal Chevrons Markings
33	Supplying and laying cast-in-situ cement concrete kerb without channel section
	a) by Manual/machine including formwork
34	Major repair / replacement of metal beam crash barrier (W profile guard rails)
35	Providing and fixing chain link/ welded mesh fencing / square bars fencing
36	Dismantling the old damaged chain link/welded mesh / square bars fencing and replacing it with new chain link/ welded mesh/square bars fencing
37	Provision of rumble strips
38	Shoulder Maintenance:
39	synthetic enamel paint of approved brand on metal pedestrian guard rail
40	Dismantling of wearing course

B. Structures

1. Wearing coat comprising of 50 mm thick BC.
2. Cleaning and adding rubber sealant near expansion joints.
3. Modular Expansion joints.
4. Replacement of Damaged Concrete Railing all complete as per technical specifications and as directed by the Engineer
5. Provision of an RCC crash barrier (0.35sqm cross sectional area) constructed with M-40 grade concrete including reinforcement
6. Cleaning of rocker & roller bearing using high pressure water jet, free from rust scales, re-setting & greasing the bearings using graphite grease including cost of materials, labour etc., complete.
7. POT PTF Bearings greasing and maintaining (sand plastering).

8. Elastomeric Bearings and maintaining.
9. Cutting of groove of 15 mm x 15 mm along crack and sealing the same with epoxy putty including cost of material, labour etc.
10. Carrying out 50 to 60 mm thick shotcreting using a mix proportion of 1:2:2 (cement: sand:6 mm down aggregate) added with Polypropylene fibers at a dosage rate of 125 gms/bag of cement including cost of labour, material, scaffolding, equipment etc. complete.
11. Repair of Floor Aprons, pitching and other protection works
12. Cleaning of Drainage Spouts
13. M-25 Concrete

Incident Management Cost

Incident Management & Safety items include the following:

- ✓ ATMS control room operations,
- ✓ Regular patrolling & reaching accident/incident site,
- ✓ providing relief to injured persons including taking them to nearest hospital and attending to the safety requirements at the location (putting cones, safely guide & manage the traffic using signs, safety barricades, etc.),
- ✓ removal of accident /breakdown vehicles, removing of dead animals/birds lying on the highway and loading, unloading, transportation & disposal of surplus material left over by accidental vehicle or otherwise lying on road (on carriageway) and
- ✓ Encroachment prevention & removal with all lead & lifts complete with proper communication equipment,
- ✓ consumables, materials, suitable Towing vehicles, Ambulance, patrolling vehicles and manpower like drivers, helpers, para-medical staff, labours including deployment of crane and all works shall be done as per requirement and as directed by Client representative and as per Relevant Specifications as applicable.

1.10.4 OPERATIONS COSTS

Cost towards Operations include the following:

- Electricity Bill of lighting
- Toll Plaza Operation cost
- Operation and management costs of rest areas and lay byes
- SPV Costs
- Survey Costs
- Insurance
- IE for O&M period
- Administrative Cost

Following table depicts the cost of operations for the project:

Table 7: Summary of 1st year O&M cost

S No	Description	Amount in Lakhs.
SPV - Expenditure		
1	SPV staff	86.66
2	Highway lighting - Power Charges	70.82
3	Highway lighting - Maintenance charges	7.08
4	Tolling and HTMS AMC/ Spare Parts	35.72
5	Surveys & Investigations (BBD, Roughness)	4.86
6	IE fees	36.00
7	Insurance Charges	52.48
8	Audit Charges	11.56
9	LIE Fee	69.00
10	Admin cost - Board Meeting Expenses, valuation etc.	
Agency - Expenditure		-
11	Toll Operation - Agency	-
12	Route patrolling	132.97
13	Cost towards Periodic Vehicle replacement	
14	TAP & MAP	-
15	Routine maintenance	233.25
16	Repair of Road - BOQ Items	219.53
17	Repair of Structures	28.46
1st year O&M cost in Lakhs (including GST)		988.39

Note: The cost is inclusive of GST@18% without escalation and the amount is in Lakhs considering FY27 rates.

1.10.5 PERIODIC MAINTENANCE COSTS

Cost towards major maintenance include following:

- ✓ Cost of Periodic maintenance of Pavement based on Finalized MM schedule
- ✓ Cost of Periodic Maintenance of Structures
- ✓ Cost of Periodic replacement of ATMS and Toll Equipment's & Software

Following table includes the cost of Major Maintenance works for the project:

Table 8: Summary of Periodic Maintenance Costs

Year	Functional +Structural overlay MCW+ S/R	Major Maintenance of Rigid Pavement	Replacement of ATMS	Replacement of TMS	Structure specified repairs
2026-2027	255.38	846.51	196.40	277.77	101.75
2027-2028	202.76	447.88	-	-	-
2028-2029	202.76	447.88	-	-	-
2029-2030	146.42	-	-	-	-
2030-2031	-	-	-	-	-
2031-2032	-	-	-	277.77	-
2032-2033	292.84	-	-	-	-
2033-2034	473.56	1,791.50	196.40	-	790.35
2034-2035	-	-	-	-	-
2035-2036	146.42	-	-	277.77	-
TOTAL	1,720.14	3,533.76	392.79	833.30	892.10

Note: The cost is inclusive of GST@18% without escalation and the amount is in Lakhs considering FY27 rates.

1.10.6 TOTAL OPERATION & MAINTENANCE COSTS

Year on year operation cost is summation of following:

- ✓ Immediate Costs
- ✓ Routine Maintenance & Incident Management
- ✓ Periodic Maintenance
- ✓ Operations Cost

Following table presents the summary of Operations & Maintenance cost for the project

Table 9: Summary Total cost

Year	SUMMARY OF VARIOUS EXPENSES in Rs. Lakhs				
	Immediate Repair's Cost	Toll Collection Expenses	Routine Maintenance + Incident management	Periodic Maintenance (Functional +Struc. Overlay+ Toll collection system)	Total Cost
2026-2027	-	-	996.60	1,677.80	2,674.39
2027-2028	-	-	982.44	650.64	1,633.07
2028-2029	-	-	982.44	650.64	1,633.07
2029-2030	-	-	996.60	146.42	1,143.02
2030-2031	-	-	989.72	-	989.72
2031-2032	-	-	1,026.10	277.77	1,303.87
2032-2033	-	-	982.44	292.84	1,275.28
2033-2034	-	-	982.44	3,251.81	4,234.25
2034-2035	-	-	996.60	-	996.60
2035-2036	-	-	616.17	424.19	1,040.36
Total Cost:	-	-	9,551.55	7,372.09	16,923.64

Note: The cost is inclusive of GST@18% without escalation and the amount is in Lakhs considering FY27 rates.