



GMLR

Goregaon Mulund Link Road



PROJECT TEAM



Bikash Muduli
BIM-Coordinator



Shriram Saljoshi
Estimation & Costing
Engineer



Deepam Chandak
Finance Engineer



Sai Manikanta
Estimation & Costing
Engineer



Uthpal K.V.
Contract Engineer

NEED OF THE PROJECT

- ❑ The population of Mumbai is approximately 20 million.
- ❑ Vehicle count close to 3 Million.
- ❑ Registered vehicle per day 500 nos.
- ❑ Housing and infrastructure is developing very rapidly to accommodate all those citizens and vehicle.
- ❑ Present road network is nearly 2000 km.



TRAFFIC CONGESTION IN JVLR & GHODBUNDER



JVLR

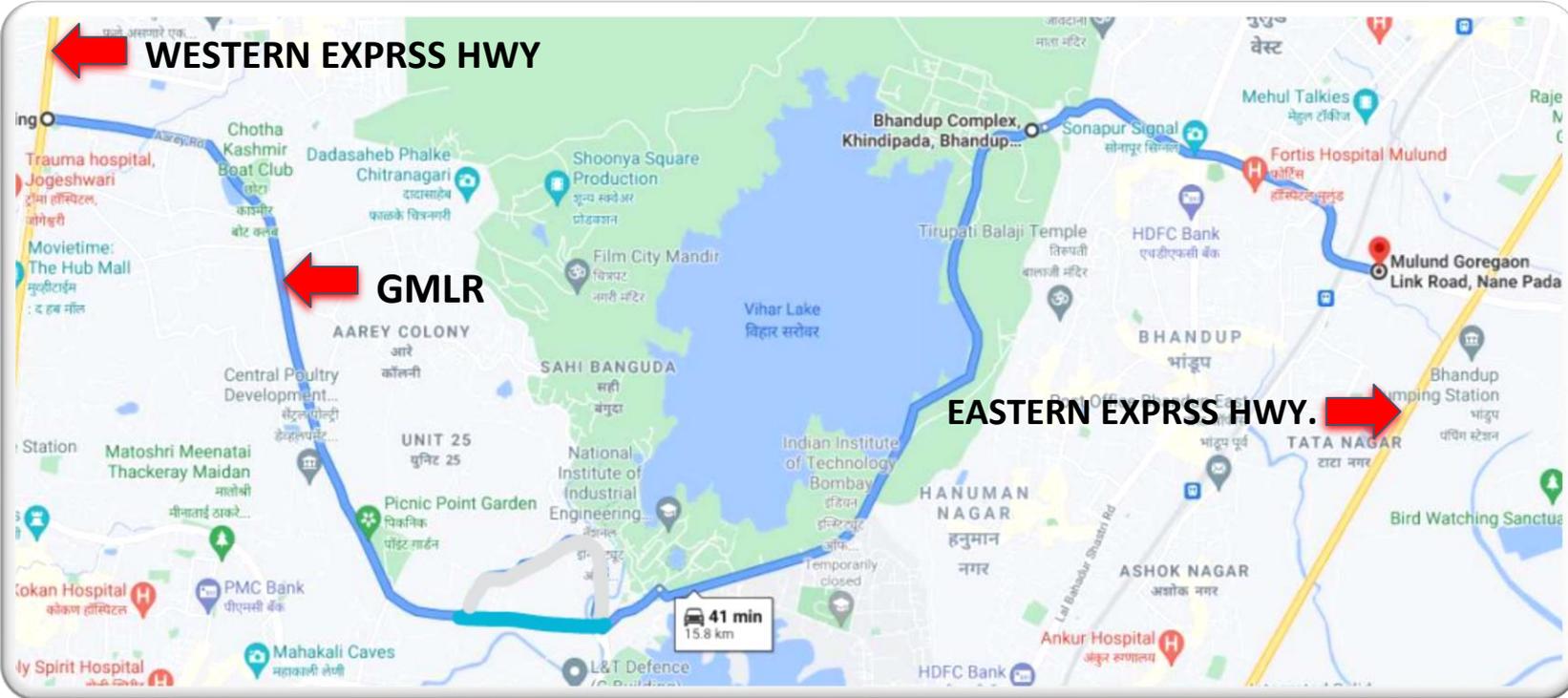


GHODBUNDER

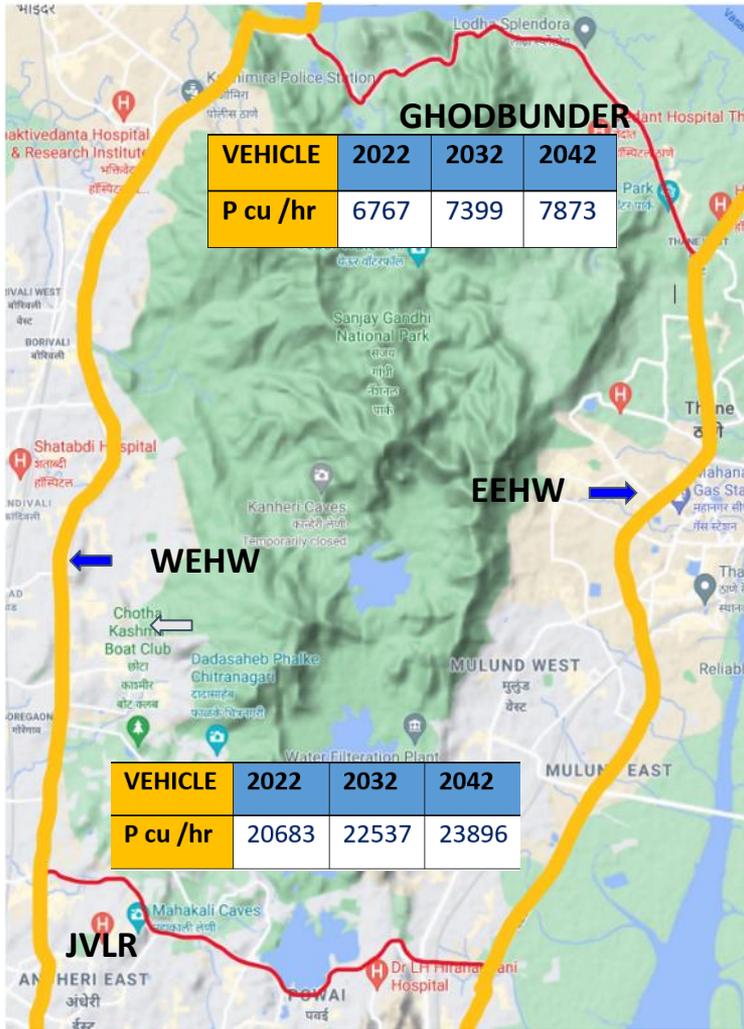


- Saturation level
- Speed 11 to 20 km/h
- Congestion
- Environmental impact
- Noise pollution
- CO₂/CO

PROPOSED GOREGAON MULUND LINK ROAD (GMLR)

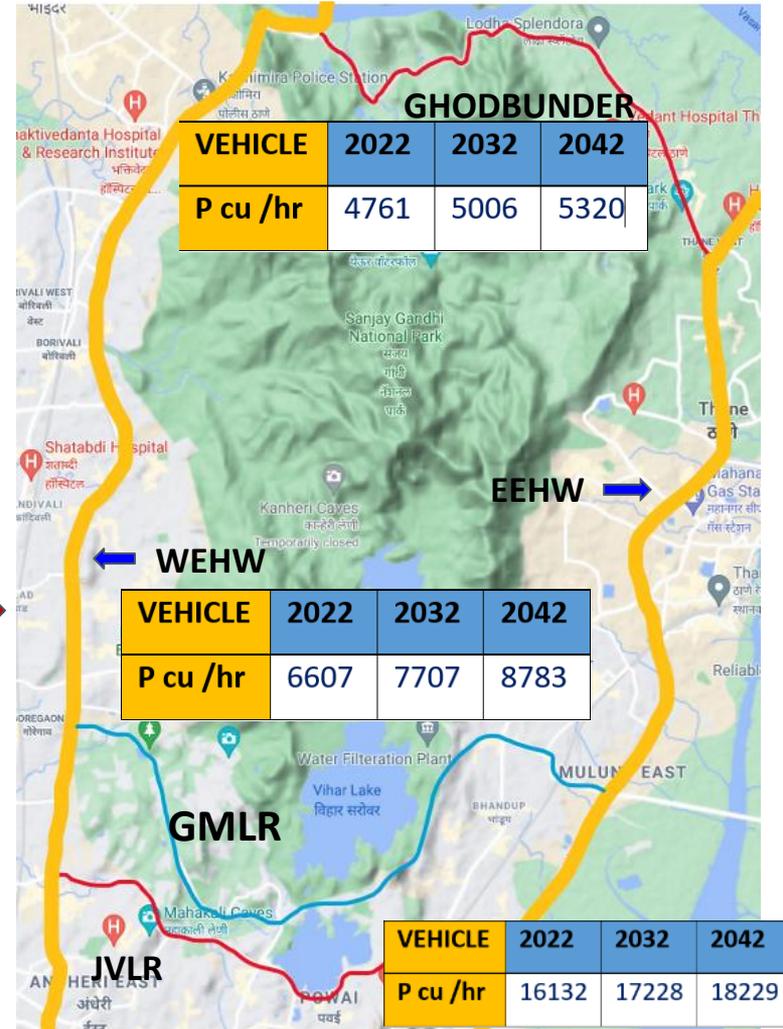


TRAFFIC SCENARIO



← **BEFORE**

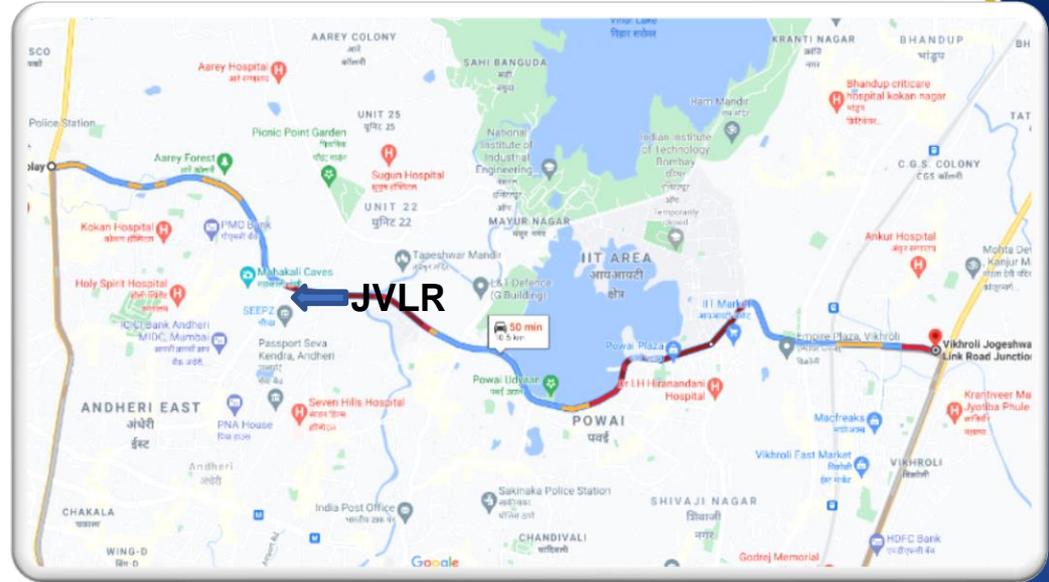
AFTER →



CURRENT TRAFFIC SCENARIO

Details	JVLR
Length (km)	10.5
Average speed (km/hr)	13
Time required (mins)	42-45
(PCU)	1,65,000

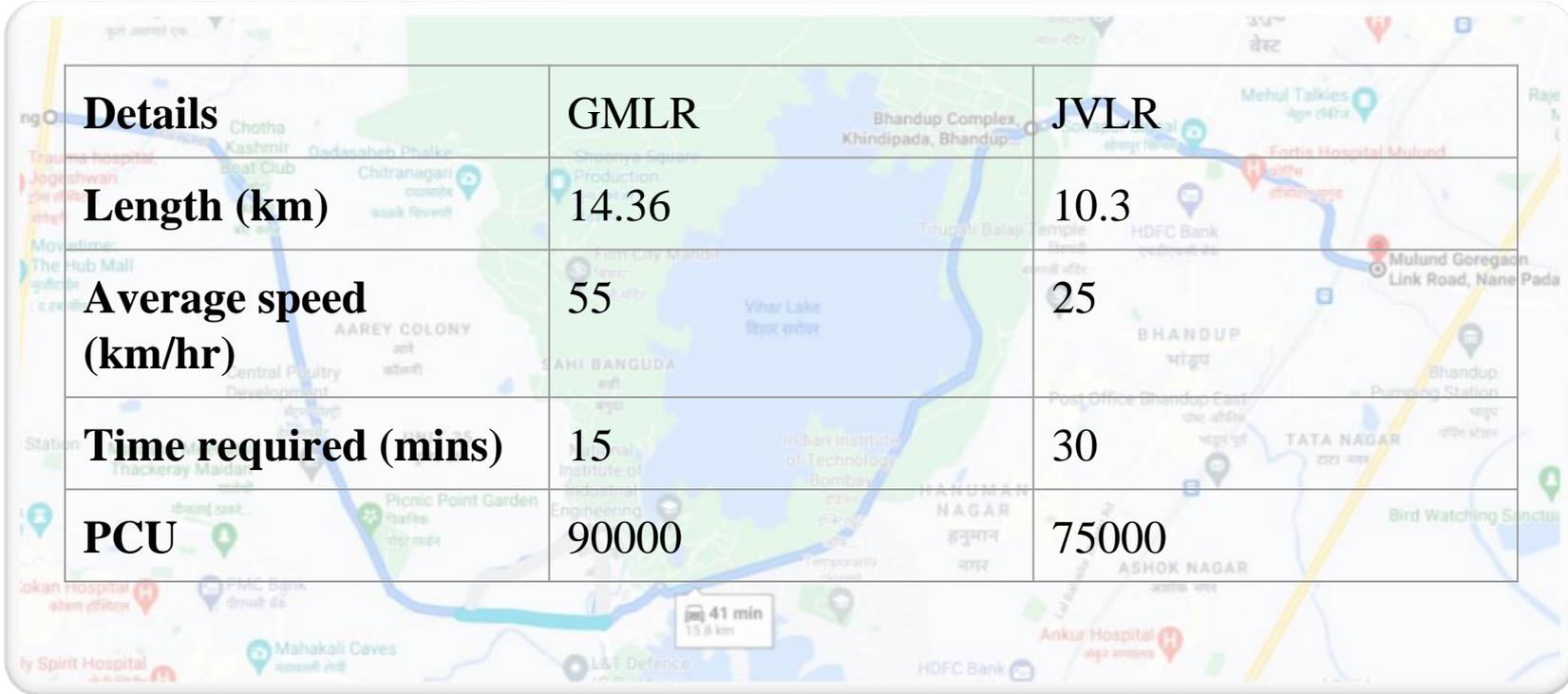
PCU 6875/hr



REF: OD survey from Comprehensive Mobility Plan Prepared by MCGM

As per IRC 106, 1990, clause no 8.2, Table 2, for six lane two way urban arterial road, the road capacity in terms of design service volumes is 5400 PCUs per hour. The traffic volumes on all the existing link roads have surpassed the design volumes resulting in deteriorated level of service.

TRAFFIC SCENARIO AFTER GMLR IS CONSTRUCTED

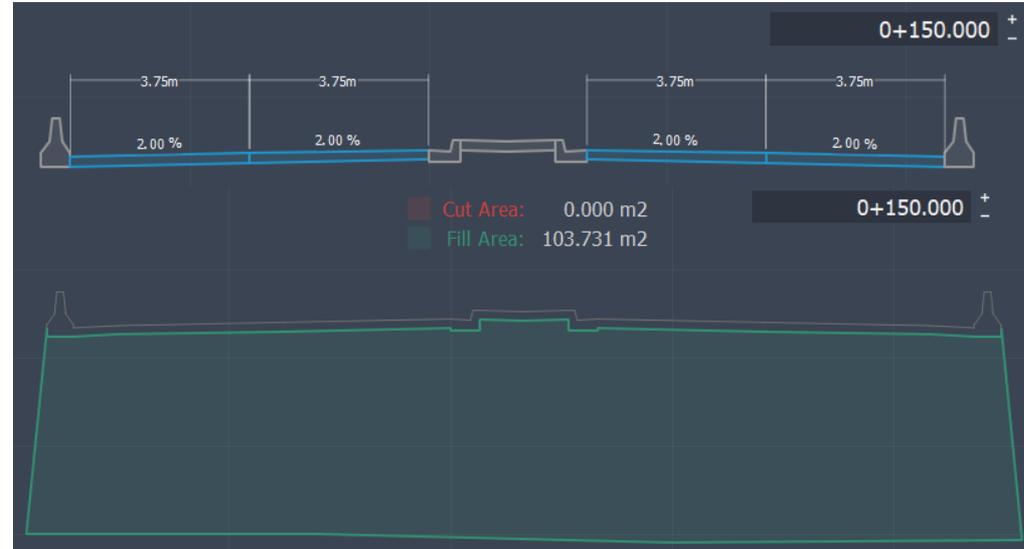
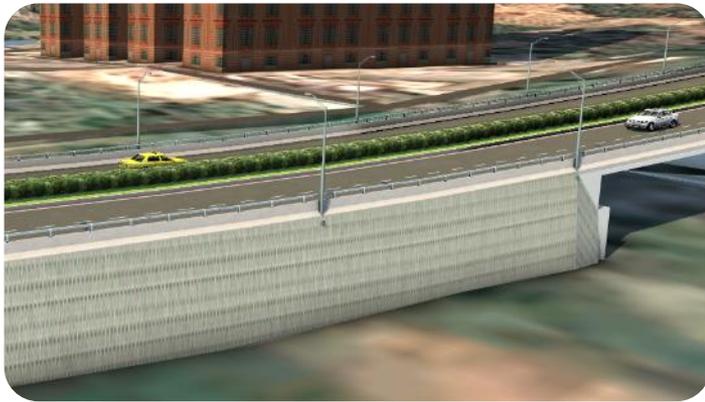


The background of the table is a map of the Bhandup area in Mumbai. A blue line represents the GMLR (Gandhinagar-Mulund Link Road) route, and a red line represents the JVLR (Jogeshwari-Vihar Link Road) route. The map shows various landmarks, including Bhandup Complex, Vihar Lake, and several residential colonies like Aarey Colony and Hanuman Nagar.

Details	GMLR	JVLR
Length (km)	14.36	10.3
Average speed (km/hr)	55	25
Time required (mins)	15	30
PCU	90000	75000

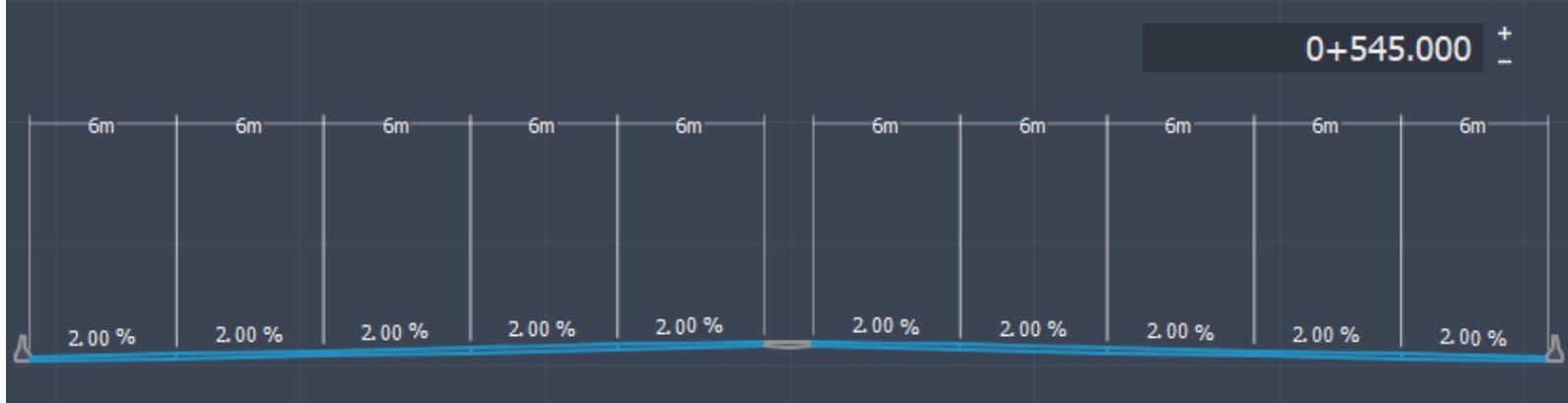
TYPICAL SECTIONAL DETAILS OF ROAD

No. of lanes	2 + 2
Width of Carriageway	7.5 m (each)
Width of Crash Barrier	0.5 m
Width of Median	1.2 m



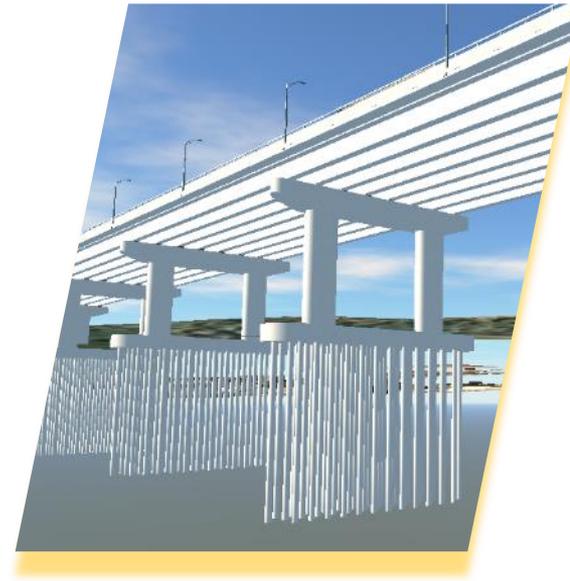
Section of Ramp at Aarey Road

SECTIONAL DETAIL AT TOLLGATE



DETAILS OF FLYOVER

DESCRIPTION	DETAILS
No. of lanes	2 + 2
Width of Carriageway	7.5 m (each)
Total no. of Spans	401
No. of Piers	400
Standard Span Lengths(Mtr)	35



PILE CAP	
DESCRIPTION	DETAILS (mtr)
Length	5
Width	22
Depth	1.5

PILE	
DESCRIPTION	DETAILS (mtr)
Length	15
Diameter	0.5

LIST OF AFFECTED STRUCTURES

TYPE OF STRUCTURES	NUMBERS
Residential	182
Commercial	85
Religious (Church + Temple)	02
TOTAL	269



LIST OF AFFECTED TREES

DESCRIPTION	NO OF TREES
To be Pruned	310
To be Transplanted	454
Trees saved in median of at grade road & skirting	88
To be retained	272
To be cut	1100
Total affected trees	2224



Ref: MMRDA survey

GMLR PROJECT VIEWS



GMLR PROJECT VIEWS



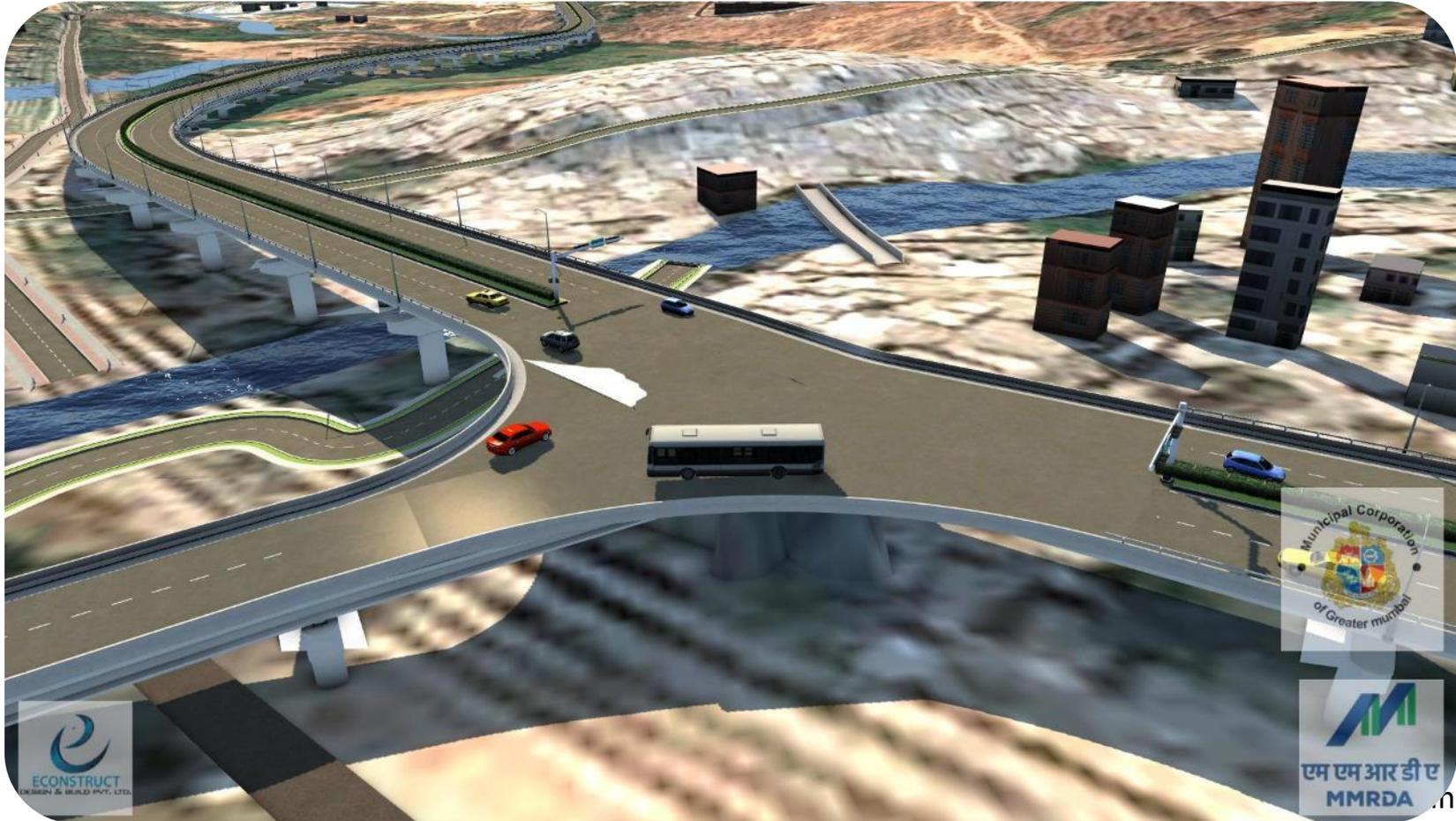
Toll gate at Aarey Road

GMLR PROJECT VIEWS



Sonapur ROB

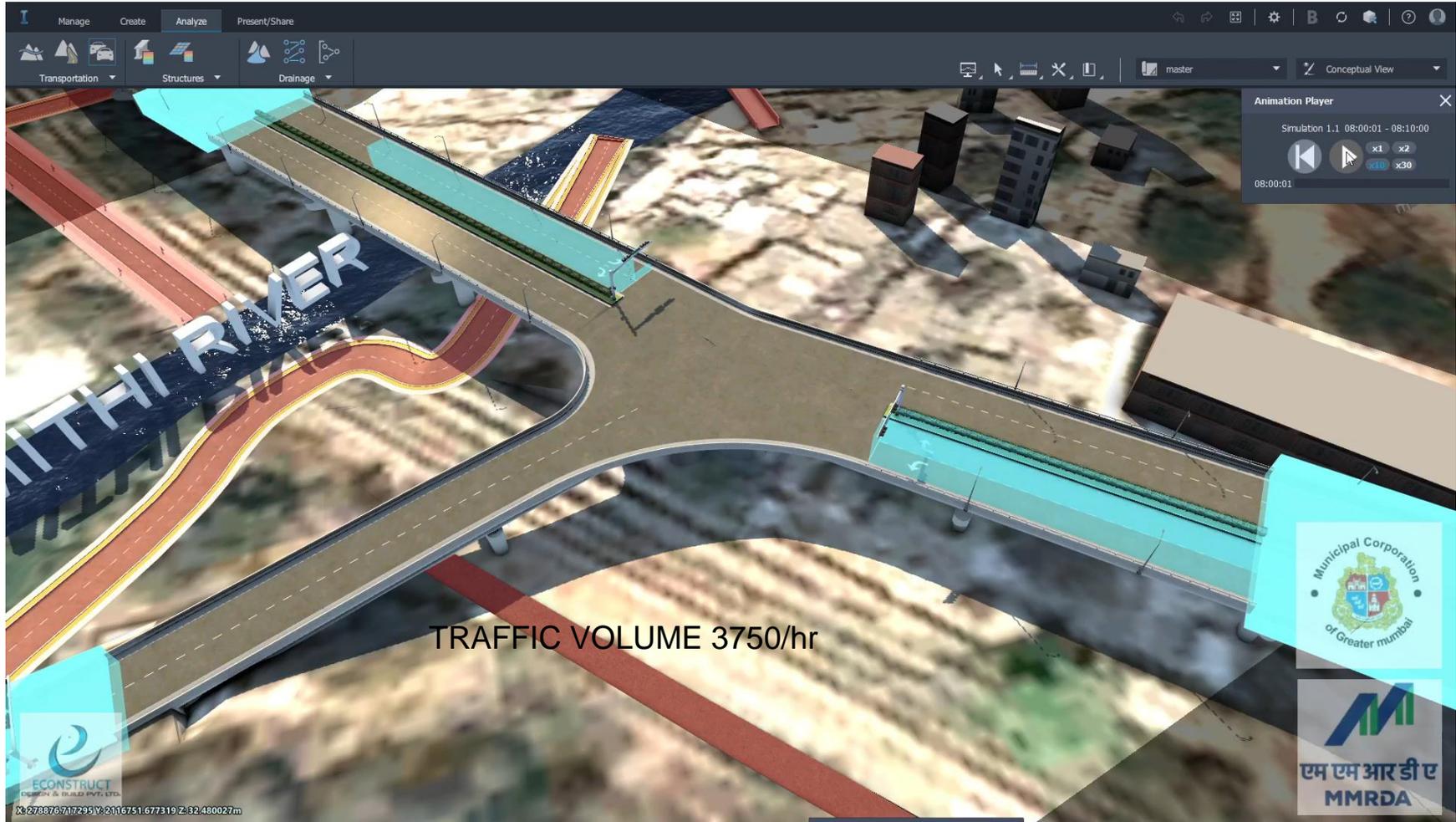
GMLR PROJECT VIEWS



an interscn.

MMRDA

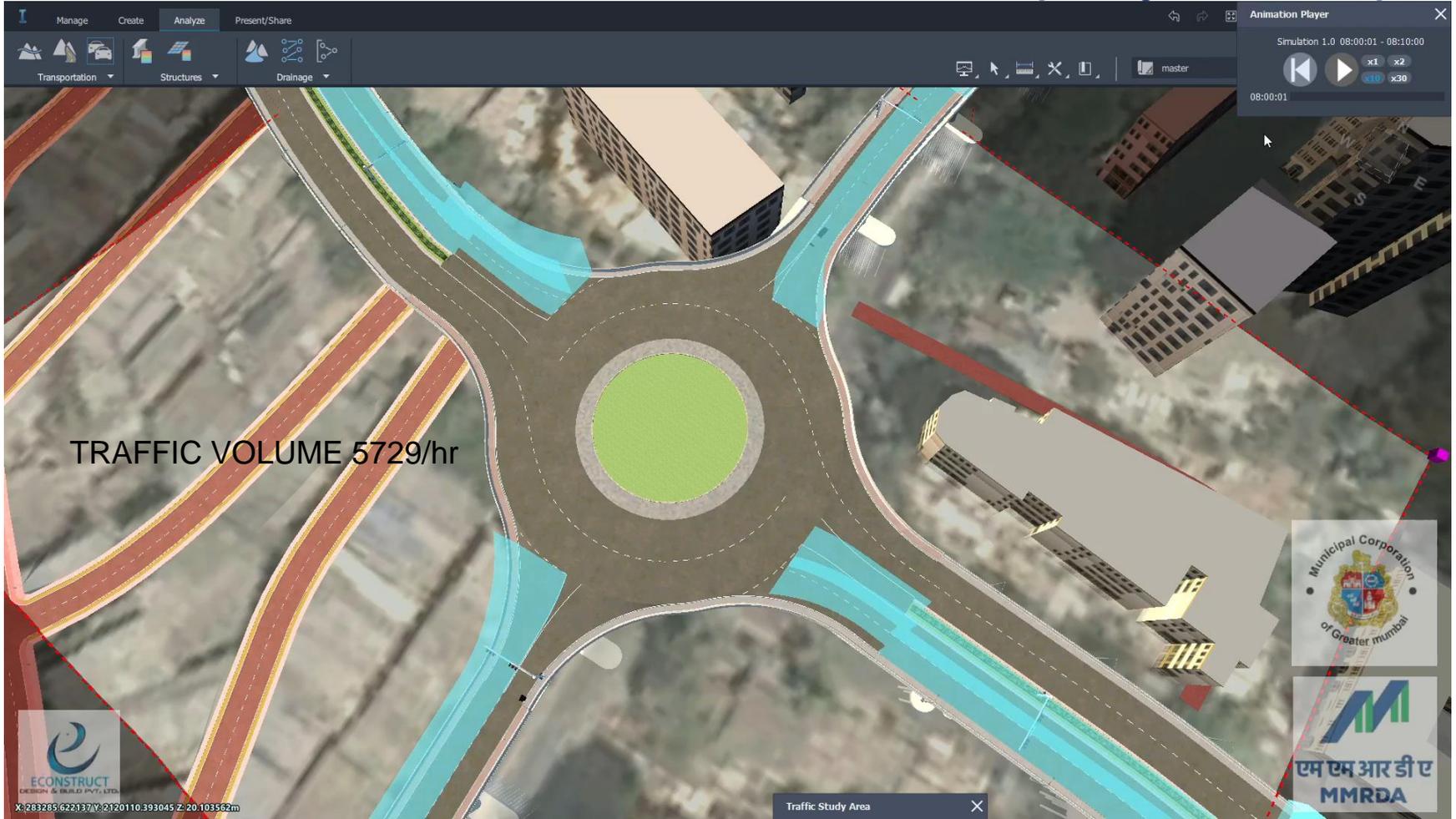
TRAFFIC SIMULATION AT SAKIVIHAR (At present)



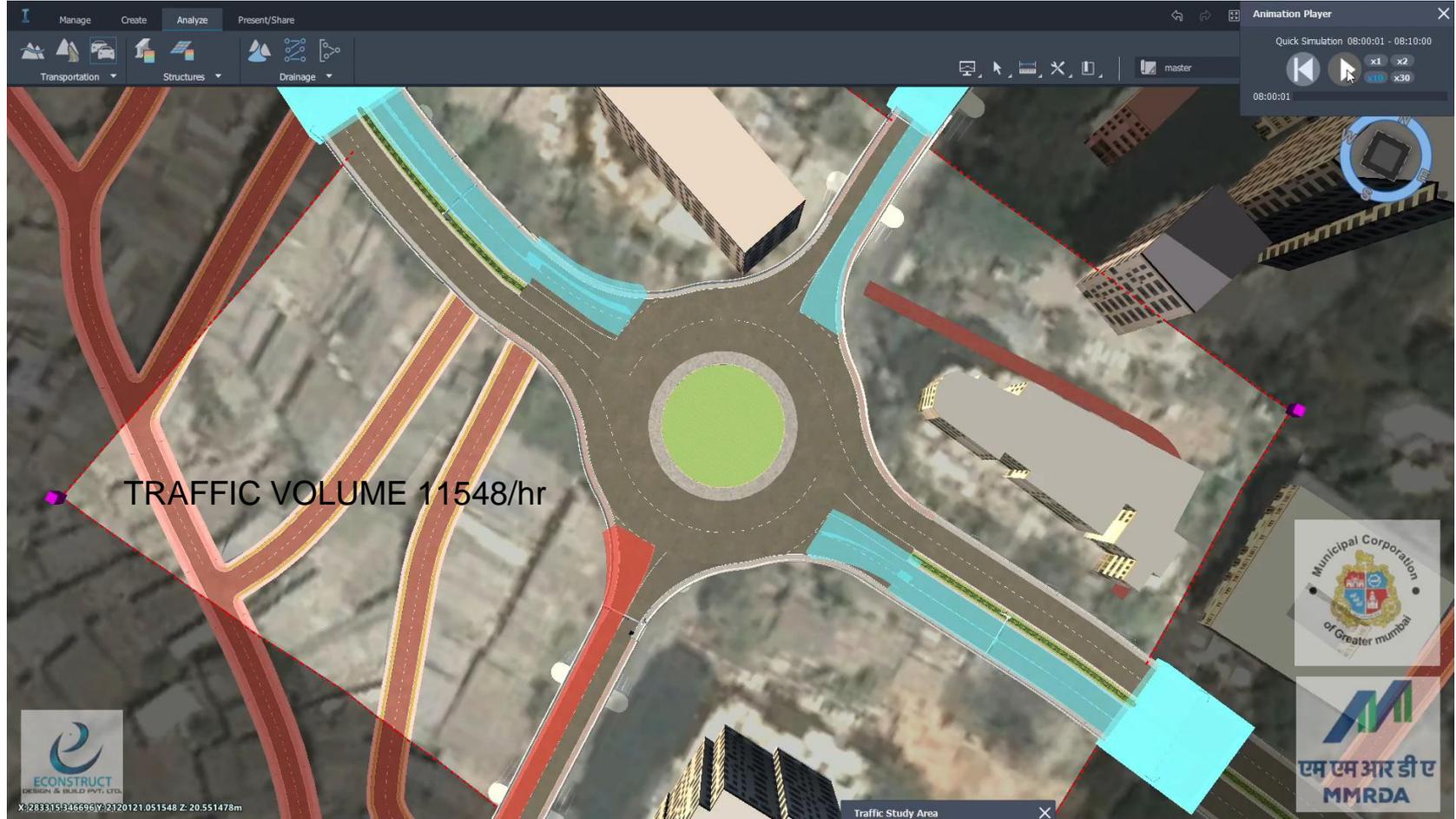
TRAFFIC SIMULATION AT SAKIVIHAR (2032)



TRAFFIC SIMULATION AT SONAPUR (At present)



TRAFFIC SIMULATION AT SONAPUR (2032)



Bill Of Quantities

Bill Of Quantities for Bridge Construction

Sl.No.	ITEMS	Quantity	Unit	Rate	Amount
1)	Earthwork				
1.1	Roadway excavation necessary for construction of roadway including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all leads and lifts upto 1000 m complete as per technical specification				
a	Ordinary soil / Hard soil	17880.1	cum	₹ 241.00	₹ 43,09,111.33
b	Loosening and re-compacting the original ground/ sub-grade up to the required depths as directed by the Engineer and as per Technical Specifications	108140	cum	₹ 300.00	₹ 3,24,41,940.00
2)	BASE AND SURFACE COURSES (BITUMINOUS)				
a	Providing and laying BC 1 course over concrete slab having thickness of 70mm	168000			
b	Bitumen	21137	TN	₹ 41,200.00	₹ 87,08,44,400.00
c	20mm aggregate	55440	cm	₹ 1,785.71	₹ 9,89,99,762.40
d	10mm aggregate	25200	cm	₹ 1,357.14	₹ 3,41,99,928.00
e	6mm aggregate	16800	cm	₹ 714.20	₹ 1,19,98,560.00
f	crusher Dust	70560	cm	₹ 770.00	₹ 5,43,31,200.00
3)	BRIDGES				
A	Precast				
a	Providing & casting precast girder beam for flyover with shuttering with M40 grade concrete.	63068	cm	₹ 10,000.00	₹ 63,06,80,000.00
B	Sub-Structure				
	Providing & laying Reinforced Cement Concrete in sub-structure including form work but excluding the cost of reinforcement complete as per drg. and Technical specifications sections				
a	M-40 grade	176768		₹ 10,000.00	₹ 1,76,76,80,000.00
C	Bearing				
a	Supply & fixing of bearings complete as per drg. and Technical specifications section	350	nos	₹ 3,000.00	₹ 10,50,000.00

Bill Of Quantities

C	Bearing				
a	Supply & fixing of bearings complete as per drg. and Technical specifications section	350	nos	₹ 3,000.00	₹ 10,50,000.00
D	Super Structure				
	Providing & laying Reinforced Cement Concrete in super-structure including form work but excluding the cost of reinforcement complete as per drg. and Technical specifications sections				
a	M-40 grade	98094	cm	₹ 6,000.00	₹ 58,85,64,000.00
b	Providing cement concrete crash barrier in M-50 grade including safety kerb,	13229.7	cm	₹ 11,500.00	₹ 15,21,41,550.00
	providing kerb in both side of road	5583	cm	₹ 5,000.00	₹ 2,79,15,000.00
c	Guard rail(MTR)200mm	32000	mtr	₹ 2,500.00	₹ 8,00,00,000.00
E	Reinforcement				
a	Supplying, placing and fixing TMT Fe 500 bar reinforcement complete as per drg. and Technical specifications.	17751	TN	₹ 65,000.00	₹ 1,15,38,15,000.00
5)	Drainage & Protection Work				
5.1	PVC Pipe of 200mm dia	35000	mtr	₹ 723.00	₹ 2,53,05,000.00
6)	Traffic Signage				
6.1	Street Lights	1757	no.	₹ 18,500.00	₹ 3,25,04,500.00
6.2	Informatory sign boards in rectangular shape	15	no.	₹ 1,350.00	₹ 20,250.00
6.3	Road marking paint	128000	mtr	₹ 60.00	₹ 76,80,000.00
7)	Equipment				
7.1	Barrier	565	no.	₹ 185.00	₹ 1,04,525.00
7.2	Traffic Barrel	10	no.	₹ 280.00	₹ 2,800.00
7.3	Traffic Light	9	no.	₹ 1,995.00	₹ 17,955.00
8)	TOLL GATE				
8.1	Cost of construction	2	no.		₹ 2,00,00,000.00

COST OF CONSTRUCTION

Add Contingencies @ 4%

Add cost for fees of consultancy services at 2%

Total cost

₹ 5,59,46,05,481.73

₹ 22,33,84,219.00

₹ 11,16,92,109.00

₹ 5,92,96,81,809.73

TOLL COLLECTION AND COST RECOVERY

TOLL COLLECTION						
	GOREGAON TO MULUND			MULUND TO GOREGAON		
	TOLL (IN RS.)	NO. OF VEHICLES (PCU/Day)	TOLL COLLECTION (PER DAY)	TOLL (IN RS.)	NO. OF VEHICLES (PCU/Day)	TOLL COLLECTION (PER DAY)
Car/Jeep/Van	₹ 30.00	33230	₹ 9,96,900.00	₹ 30.00	21271	₹ 6,38,130.00
LCV	₹ 35.00	2000	₹ 70,000.00	₹ 35.00	2000	₹ 70,000.00
BUS/TRUCK	₹ 40.00	2000	₹ 80,000.00	₹ 40.00	2000	₹ 80,000.00
3 AXLE	₹ 60.00	1500	₹ 90,000.00	₹ 60.00	1500	₹ 90,000.00
4 TO 6 AXLE	₹ 80.00	1000	₹ 80,000.00	₹ 80.00	1000	₹ 80,000.00
7 OR MORE AXLE	₹ 100.00	500	₹ 50,000.00	₹ 100.00	500	₹ 50,000.00
TOTAL		40230	₹ 13,66,900.00		28271	₹ 10,08,130.00

TOTAL TOLL COLLECTION	PER DAY	₹ 23,75,030.00	
	PER MONTH	₹ 7,12,50,900.00	
	PER YEAR	₹ 85,50,10,800.00	
TOTAL PROJECT COST	RS.	₹ 5,92,96,81,809.00	592.96 cr
PROJECT COST RECOVERY	IN YEARS	6.94	

TOLL COLLECTION FOR MAINTENANCE

TOLL COLLECTION						
	GOREGAON TO MULUND			MULUND TO GOREGAON		
	TOLL (IN RS.)	NO. OF VEHICLES (PCU/Day)	TOLL COLLECTION (PER DAY)	TOLL (IN RS.)	NO. OF VEHICLES (PCU/Day)	TOLL COLLECTION (PER DAY)
Car/Jeep/Van	₹ 12.00	33230	₹ 3,98,760.00	₹ 12.00	21271	₹ 2,55,252.00
LCV	₹ 14.00	2000	₹ 28,000.00	₹ 14.00	2000	₹ 28,000.00
BUS/TRUCK	₹ 16.00	2000	₹ 32,000.00	₹ 16.00	2000	₹ 32,000.00
3 AXLE	₹ 24.00	1500	₹ 36,000.00	₹ 24.00	1500	₹ 36,000.00
4 TO 6 AXLE	₹ 32.00	1000	₹ 32,000.00	₹ 32.00	1000	₹ 32,000.00
7 OR MORE AXLE	₹ 40.00	500	₹ 20,000.00	₹ 40.00	500	₹ 20,000.00
TOTAL		40230	₹ 5,46,760.00		28271	₹ 4,03,252.00

TOTAL TOLL COLLECTION	PER DAY	₹ 9,50,012.00
	PER MONTH	₹ 2,85,00,360.00
	PER YEAR	₹ 34,20,04,320.00

