

# Traffic Survey Report

**Project Name**

**Report**

**Date**

*Submitted to:*

**CLIENT**

Submitted by

# Project Name

## Documents Submittal and Contents Amendment Record

S. No:	Revision	Description	Date	Sign
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## ABBREVIATIONS

Abbreviation	Description
ADT	Average Daily Traffic
AADT	Annual Average Daily Traffic
GOI	Government of India
GQ	Golden Quadrilateral
HCV	Heavy Commercial Vehicle
IRC	Indian Roads Congress
LCV	Light Commercial Vehicle
LGV	Light Goods Vehicle
LOS	Level of Service
MAV	Multi-axle Vehicle (used to mean a vehicle with 4 axles to 6 axles)
MCV	Medium Commercial Vehicle
Mini LGV	Tata Ace and Mahindra Small Commercial Vehicle
MORTH	Ministry of Road Transport and Highways
<b>NHAI</b>	<b>National Highways Authority of India</b>
OSV	Over-sized Vehicles
PCU	Passenger Car Unit
PIA	Project Influence Area
SCF	Seasonal Correction Factor

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# MAIN VOLUME

(Project Name)

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**Chapter 1**  
**INTRODUCTION**

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## CHAPTER 1. INTRODUCTION

### 1.1 Background

National Highways Authority of India (NHAI) is responsible for the development, maintenance and management of National Highways entrusted to it. For this NHAI intends to know the actual toll traffic (PCUs) and Annual Potential (Toll) Collection (APC) plying on National Highway Sections.

Apropos the above, NHAI has called for proposals from interested and eligible companies for providing consulting services for Traffic Survey using Video based ATCC Systems to work out Volume of Traffic and Annual Potential Collection.

Based on the proposal submitted, NHAI had empanelled) for providing consulting services for counting traffic and estimating APC.

In this regard, NHAI mandated to carry out Traffic Survey using Video based ATCC Systems on the Project Highway to work out Volume of Traffic and Annual Potential Collection at Toll Plaza on NH in the State of.

This Report (Report) presents details on:

- (i) Project Road and Traffic Surveys carried out,
- (ii) Toll Traffic, and
- (iii) Annual Potential Collection.

### 1.2 Objective of the Assignment

The objective of this assignment is to estimate toll traffic through Video based ATCC and estimate Annual Potential Collection at the Toll Plaza on NH in the State of.

### 1.3 Report Structure

This report (Traffic Report) contains three chapters, including the present chapter as Introduction.

**Chapter 2** introduces the Project Road with location of the toll plaza.

**Chapter 3** provides information on (i) actual toll traffic, (ii) toll traffic received from toll plaza reports, and (iii) annual potential collection.

## Chapter 2

### PROJECT ROAD AND TOLL PLAZA LOCATION

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## CHAPTER 2. PROJECT ROAD AND TRAFFIC SURVEY LOCATIONS

### 2.1 General

National Highway (NH) starts at and ends at and is km long. The following map presents the alignment of NH.

#### Figure 2-1: Alignment of

As shown in the above figure, NH connects cities such as etc.

### 2.2 Toll Plaza and Traffic Survey Location

As stated earlier, has been mandated (through letter dated) to carry out traffic survey by video based ATCC at Toll Plaza on NH.

The toll plaza is located at km on NH. The following figure presents the location of Toll Plaza onNH.

#### Figure 2-2: Location of

The following table summarises toll plaza details.

**Table 2.1: Details of the**

S. No:	Description	Details
1	Toll Plaza Name and location details	
2	Name of the Concessionaire/ Contractor	
3	Project Stretch	
4	Effective length (km) of Project Highway for toll collection	
5	Agreement Date	
6	Toll fee commencement date	
7	Agreement Period (Concession Period if the Project is under a Concession)	
8	Number of Lanes on Project Highway	
9	Number of toll lanes at the Plaza	
10	Number of operational toll booth on Plaza	
11	Toll Fee Notification ref.	
12	Toll Fee Revision	

Categories of vehicles for tolling and toll rates (user fee) that are being charged as per the toll notification are as given below:

**Table 2.2: Categories of Toll Vehicles and Fee Structure**

S. N.	Type of Vehicle	User Fee (Rs.)				
		One-way Pass	Daily Pass	Monthly Pass	Local Commercial Pass (registered in district of the toll plaza)	Monthly Pass for Local Passenger vehicles
1	Car/Jeep/Van/Light Motor Vehicle					
2	Light Commercial Vehicle/Light Good Vehicle/Minibus					
3	Bus/Truck (Two axles)					
4	Three- axle Commercial Vehicles					
5	Heavy Construction Machinery (HCM) or Earth Moving Equipment (EME) or Multi Axle Vehicle (MAV) (four to six axles)					
6	Oversized Vehicles (seven and more Axles)					

For counting classified traffic through Video-based ATCC, videography has been carried out near the toll plaza location.

The methodology considered for traffic surveys is given in the following section.

### 2.3 Methodology for Traffic Survey

The method of videography has been used. Videography has been used to capture both directions traffic for seven continuous days with the high resolution infra red camera. The video captured has been processed at the laboratory for classifying the vehicles (through an image processing software) based on the categories in intervals of one hour. The software used for classifying vehicles bounds different category vehicles with different color boxes and also saves thumbnails of classified vehicles. For cross checking counts, an automatic traffic counter is used to count traffic automatically at site. This enables review of vehicle count as well as classification at a later date – without counting the vehicles again.

For ready referrence a sample of screen shots (thumbnails) of post processing is shown below.

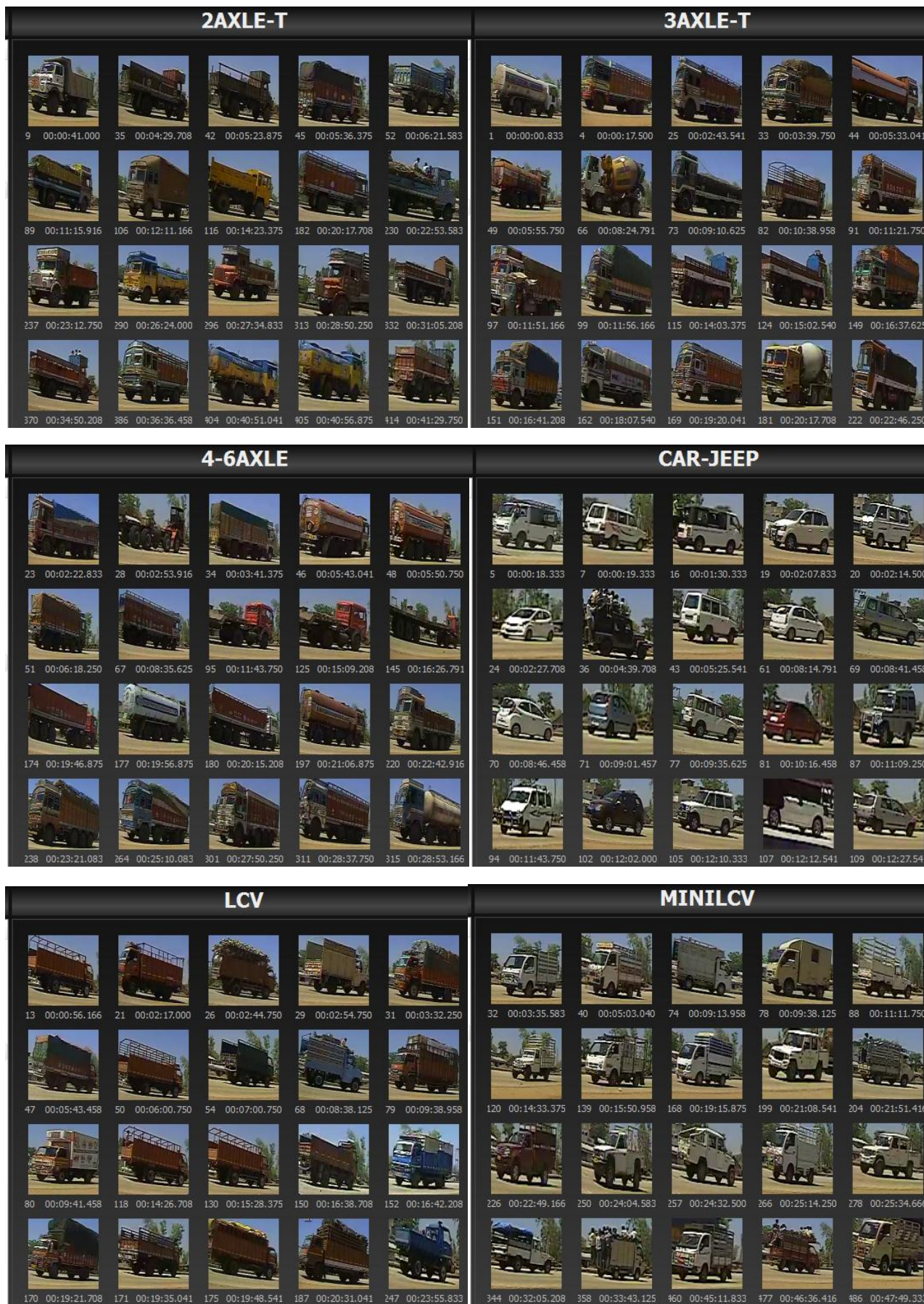


Figure 2-3: Thumbnails from Post Processed Video

Table below presents the classification considered for counting the traffic. The table also presents PCU Factors (based on IRC<sup>1</sup>:64, 1990) to be considered later in the estimation of traffic intensity in PCUs.

**Table 2.3: Classification Considered for Counting Traffic**

S. No:	Vehicle Category		PCU Factors
1	Car, Jeep and Van		1
2	Two Wheeler		0.5
3	Auto Rickshaw		1
4	Buses	Minibus	1.5
5		Government Bus	3
6		Private Bus	3
7	Goods Vehicles	Mini LGV	1
8		LGV	1.5
9		2- axle Truck	3
10		3-axle Truck	3
11		MAV up to 6-axles	4.5
12		Oversized Vehicles (MAV more than 6-axles)	4.5
13	Heavy Machinery & Earth Moving Equipment		4.5
14	Tractors	Without Trailer	1.5
15		With Trailer	4.5
16	Slow Moving Vehicles	Cycle	0.5
17		Cycle Rickshaw	2
18		Animal Drawn Cart	6
19	Exempted Vehicles	Exempted Car	1
20		Minibus/Ambulance	1.5
21		Bus	3
22		LGV	1.5
23		Truck	3

As given in the above table, the classification considered is quite comprehensive and covers all types of vehicles that can be seen on Indian roads.

## 2.4 Survey Schedule

The surveys were conducted on the following dates.

**Table 2.4: Schedule of Traffic Surveys**

S. No.	Location Name	Survey Dates
--------	---------------	--------------

6/5/2014 \_\_\_\_\_

<sup>1</sup> Indian Roads Congress code on *Guidelines for Capacity of Roads in Rural Area*

S. No.	Location Name	Survey Dates



**Chapter 3**

**TOLL TRAFFIC AND ANNUAL POTENTIAL COLLECTION**

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## **CHAPTER 3. TOLL TRAFFIC AND ANNUAL POTENTIAL COLLECTION**

### **3.1 General**

This chapter describes findings from analysis of traffic dataat.

### **3.2 Analysis of Volume Count Data**

The findings from the analysis of classified traffic volume observed at the count location are given in this section. Analysis of classified volume counts has been carried out for:

- ADT (Average Daily Traffic)
- Seasonal Variation
- AADT (Annual Average Daily Traffic)

#### **3.2.1 Average Daily Traffic**

As given in the previous chapter, traffic volume was counted continuously for seven days, at the toll plaza location from 00 hours on.

Following table present detailed summaries of daily counts and ADT of the total traffic (both directions traffic, including non-tollable traffic) at the count location. For day wise and direction wise hourly counts one may refer to Annexure 3.1.

**Table 3.1: Total Traffic at Toll Plazaon**

The following tables present direction wise toll traffic at the count location.

**Table 3.2: Total Traffic at Toll Plaza in on in Direction**

Date	Day	Passenger Vehicles				Goods Vehicles							Total Tollable	
		Car / Jeep / Taxi	Bus			Mini LGV (Tata ACE)	LGV	2-axle Truck	3-axle Truck	MAV Up to 6- axles	MAV more than 6-axles	HCV	Vehicles	PCUs
			Minibus	Pvt Bus	Govt Bus									
1	2	3	4	5	6	7	8	9	10	11				

Date	Day	Passenger Vehicles				Goods Vehicles						Total Tollable		

Table 3.3: Total Traffic at in Direction

Date	Day	Passenger Vehicles				Goods Vehicles						Total Tollable		
		Car / Jeep / Taxi	Bus			Mini LGV (Tata ACE)	LGV	2-axle Truck	3-axle Truck	MAV Up to 6- axles	MAV more than 6-axles	HCV	Vehicles	PCUs
			Minibus	Pvt Bus	Govt Bus									
1	2	3	4	5	6	7	8	9	10	11				



**Table 3.4: Total Traffic at (Both Directions)**

Date	Day	Passenger Vehicles				Goods Vehicles						Total Tollable		
		Car / Jeep / Taxi	Bus			Mini LGV (Tata ACE)	LGV	2-axle Truck	3-axle Truck	MAV Up to 6-axles	MAV more than 6-axles	HCV	Vehicles	PCUs
			Minibus	Pvt Bus	Govt Bus									
1	2	3	4	5	6	7	8	9	10	11				

The above traffic has been clubbed into the toll categories as per the applicable toll notification for this toll plaza. The following table presents this traffic.

**Table 3.5: Total Traffic at as per Vehicle Categories in Toll Notification**

Date	Day	Car / Jeep / Van / LMV	LCV/ LGV/ Minibus	Truck/ Bus (Two Axles)	Three-axle commercial vehicles	HCM/ EME/ MAV (four to six axles)	OSV (seven or more axles)	Total Tollable Vehicles	Total Tollable PCUs
		1	2	3	4	5	6		

### 3.2.2 Seasonal Variation

The traffic surveys for the study are carried out for 7-days only. The 7-day traffic is considered as representative sample (Average Daily Traffic) (ADT) for the month. The traffic plying on the road is function of socio-economic activities in the project influence area. To have a realistic picture of traffic over the year, the ADT obtained from 7-day traffic count should be converted to Average Annual Daily traffic (AADT). AADT is estimated as a product of ADT and Seasonal Correction Factor (SCF). The seasonal correction factors are generally derived from the secondary data such as monthly-traffic data on the Project Road, monthly revenue collection on the project highway, monthly fuel sales (as proxy to traffic variation) on the project road etc.

Traffic data is available for one full Financial Year. Therefore, monthly traffic data is used to calculate the seasonal correction factors for the traffic plying on this section.

Following table presents monthly traffic data and seasonal correction factors.

**Table 3.6: Toll Traffic and Seasonal Correction Factors at**

Month	Monthly Traffic						Daily Traffic						Seasonal Correction Factors					
	2-axle			3-axle			2-axle			3-axle			2-axle			3-axle		
	Car	LGV	Truck	Truck	MAV	OSV	Car	LGV	Truck	Truck	MAV	OSV	Car	LGV	Truck	Truck	MAV	OSV
April '13	22181	8529	10358	16316	7584	80	739	284	345	544	253	3	1.00	1.56	1.26	0.87	1.06	4.32
May'13	23606	10478	10687	17202	9647	81	761	338	345	555	311	3	0.97	1.31	1.27	0.85	0.86	4.41
June'13	18866	9852	8944	17573	10188	82	629	328	298	586	340	3	1.18	1.35	1.46	0.81	0.79	4.21
July'13	14603	8834	8761	15419	9342	61	471	285	283	497	301	2	1.57	1.56	1.54	0.95	0.89	5.85
August'13	15388	9358	9172	15446	9443	75	496	302	296	498	305	2	1.49	1.47	1.48	0.95	0.88	4.76
September'13	19055	12851	11984	17424	9123	329	635	428	399	581	304	11	1.17	1.04	1.09	0.81	0.88	1.05
October'13	28648	18402	16093	20691	8783	713	924	594	519	667	283	23	0.80	0.75	0.84	0.71	0.94	0.50
November'13	26292	17249	17141	13482	8821	732	876	575	571	449	294	24	0.85	0.77	0.76	1.05	0.91	0.47
December'13	24290	17404	19549	12186	8746	692	784	561	631	393	282	22	0.95	0.79	0.69	1.20	0.95	0.52
January'14	24668	16364	17991	11561	8218	661	796	528	580	373	265	21	0.93	0.84	0.75	1.27	1.01	0.54
February'14	25621	16023	14368	7957	4018	339	915	572	513	284	144	12	0.81	0.78	0.85	1.66	1.86	0.95
March'14	27026	16387	14168	7710	3941	363	872	529	457	249	127	12	0.85	0.84	0.96	1.90	2.10	0.98

The above mentioned seasonal correction factors were used to calculate AADT.



### 3.2.3 AADT

AADT calculated for the location is presented below.

Table 3.7: AADT for Toll Plaza in on NH

Type of Ticket	Car / Jeep / Van / LMV	LCV/ LGV/ Minibus	Truck/ Bus (Two Axles)	Three-axle commercial vehicles	HCM/ EME/ MAV (four to six axles)	OSV (seven or more axles)
AADT						

### 3.3 Toll Traffic from Plaza Reports

For calculation of APC, the traffic presented needs to be segmented into various categories such as single journey, return journey traffic, etc. To arrive at percentage of traffic in each segment, we requested NHAH to provide us full segmented traffic data from Toll Plaza Reports. In this regard, full segmented data from 2014 were used. Summary of this data is given in the following table.

Table 3.8: Traffic Data from

Type of Ticket	Car / Jeep / Van / LMV	LCV/ LGV/ Minibus	Truck/ Bus (Two Axles)	Three-axle commercial vehicles	HCM/ EME/ MAV (four to six axles)	OSV (seven or more axles)
Single Entry						
Multiple Entry						
Reuse of Multiple Entry						
Monthly Pass						
Monthly Pass Reuse						
Monthly Pass for Local Passenger Vehicles						
Local District Registered						
Exempt						
<b>Grand Total</b>						

Table 3.9: Segmentation of Traffic Data

Type of Ticket	Car / Jeep / Van / LMV	LCV/ LGV/ Minibus	Truck/ Bus (Two Axles)	Three-axle commercial vehicles	HCM/ EME/ MAV (four to six axles)	OSV (seven or more axles)
Single Entry						
Multiple Entry						
Reuse of Multiple Entry						
Monthly Pass						
Monthly Pass Reuse						
Monthly Pass for Local Passenger Vehicles						
Local District Registered						
Exempt						
<b>Grand Total</b>						

This segmentation has been used to estimate Annual Potential Collection (APC). Since Monthly Traffic Reuse data was not available, it is assumed that traffic buying monthly pass from toll plaza, make 50 trips for the month in which they have bought monthly passes.

### 3.4 Annual Potential Collection

Annual potential toll collection has been estimated based on the AADT, seasonal variation and traffic segmentation by ticket type (presented in previous table) as per the plaza reports. The following table presents annual potential collection.

**Table 3.10: Annual Potential Collection at**

S. N.	Type of Vehicle	7-days Traffic (Number of Vehicles)	Rate (Rs.)	Amount (Rs.)
<b>A.</b>	<b>Fee Paying Traffic (Single Journey)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (A)</b>			
<b>B.</b>	<b>Fee Paying Traffic (Daily Pass)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (B)</b>			
<b>C.</b>	<b>Fee Paying Traffic (Local Commercial Vehicles registered within the district where plaza is located)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (C)</b>			
<b>D.</b>	<b>Fee Paying Traffic (Monthly Pass)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			

S. N.	Type of Vehicle	7-days Traffic (Number of Vehicles)	Rate (Rs.)	Amount (Rs.)
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (D)</b>			
<b>E.</b>	<b>Fee Paying Traffic (Local Monthly Pass)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (D)</b>			
<b>F.</b>	<b>Monthly Pass Reuse</b>			
	1. Car/Jeep/Van/Light Motor Vehicle (Local personal vehicles)			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (F)</b>			
<b>G.</b>	<b>Daily Pass Reuse</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (G)</b>			
<b>H.</b>	<b>Exempt Vehicles</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			

S. N.	Type of Vehicle	7-days Traffic (Number of Vehicles)	Rate (Rs.)	Amount (Rs.)
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (H)</b>			

(a) Average Daily Collection :

(b) Annualized expected Collection :

(c) Effect of Seasonal Variation (+/-) :

(Please refer Annexure 3.3 for details)

(d) Total Collection (b+c) :

(e) Add Effect of Traffic Growth @ 5% (on d) :

(f) Net expected Collection (d+e) :

(g) Less Administration Charges :

(Please refer Annexure 3.2 for details)

(h) Net Expected Potential Collection (f-g) :

(i) Less Contractor's Profit @ 5% (on h) :

(j) Final Annual Potential Collection (h-i) :

Say

Crores

**Signature of Authorized Representative**

For all the similar studies, traffic growth rate is assumed to be 5%. In this study the counts being recent, the traffic growth rates have been moderated to 2.5%.

# ANNEXURES

(Project Name)

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**Annexure 3.1**  
**DETAILED COUNTS**

---

**DIRECTION:**



**DIRECTION:**



**Annexure 3.2**

**ADMINISTRATIVE EXPENSES**

---

# Administrative Expenses of the Plaza

## 1. Plaza Description (Assumptions):

Length of Project	57.4		
<b>Plaza Details</b>	<b>No.</b>		
Number of Toll Plazas	1		
Toll lanes in Toll Plaza 1	10		
Toll lanes in Toll Plaza 2			
Toll lanes in Toll Plaza 3			
Toll lanes in Toll Plaza 4			
Toll lanes in Toll Plaza 5			
Toll lanes in Toll Plaza 6			
Toll lanes in Toll Plaza 7			
Toll lanes in Toll Plaza 8			
Toll lanes in Toll Plaza 9			
Toll lanes in Toll Plaza 10			
<b>Project Office (Concessionaire)</b>	<b>No.</b>	<b>Salaries, in Rs.</b>	<b>Comment</b>
GM O&M			1 Per Project
DGM O&M			1 Per Project
DGM F&A			1 Per Project
Assistant F&A			2 Per Project
Office Assistant			2 Per Project
<b>Toll Plaza</b>			<b>Comment</b>
Plaza Managers			1 Per Toll Plaza
System Auditor			1 per Toll Plaza Per Shift
Plaza Supervisor			1 per Toll Plaza Per Shift
Lane Asst.			1 per lane Per Plaza Per Shift
Point of Sale Operator			1 per Toll Plaza Per Shift
Cashiers			1 per Toll Plaza Per Shift + 1 additional for leaves
Toll Collectors			1 per Toll Plaza Per Lane Per Shift
Extra Toll Collectors per Toll Lane			
Office Attendants			2 per Toll Plaza during Day + 1 During Night
<b>Systems Management</b>			<b>Comment</b>
Head ITS			1 Per Project
ITS Engineers-Software & Hardware			1 per Toll Plaza Per Shift
Electrical Engineer			1 Per Toll Plaza
Technician			1 Per Toll Plaza
Electrician			1 per Toll Plaza Per Shift
<b>Security</b>			<b>Comment</b>
Assignment Manager			1 Per Toll Plaza
Supervisor			1 per Toll Plaza Per Shift
Security Guard			1 per Two lane Per Plaza Per Shift

**Project Name**

Gunman			2 per Toll Plaza Per Shift + 1 additional for leaves
<b>Operations</b>			<b>Comment</b>
Driver			1 Vehicle Per Plaza
<b>Toll Plaza Maintenance</b>			<b>Comment</b>
Sweeper			4 Per Plaza
<b>Vehicles</b>			

Cars/Jeeps per project for operations on toll plaza

**Misc Expenses, in Rs.**

Cost of Diesel per Litre

Operational Cost

Lighting

Generator Expenses per month

Number of hours of operation

Diesel Consumption per hour (litres)

Diesel Rate (Rs./Litre)

Communications Charges

Misc Expenses

Contingencies (as percent of total expenditure)

**2. Plaza Expenses:**

Operating Expenses		Quantity	Rates or Expenses (Rs./Month)	Amount (Rs. lac/Yr.)
1	Office and Administration			
	1.1 GM O&M			
	1.2 DGM O&M			
	1.3 DGM F&A			
	1.4 Assistant F&A			
	1.5 Office Assistant			
2	Toll Plaza			
	2.1 Plaza Managers			
	2.2 System Auditor			
	2.3 Plaza Supervisor			
	2.4 Lane Asst.			
	2.5 Point of Sale Operator			
	2.6 Cashiers			
	2.7 Toll Collectors			
	2.9 Office Attendants			
3	Systems Management			
	3.1 Head ITS			
	3.2 ITS Engineers-Software & Hardware			
	3.3 Electrical Engineer			

	3.4	Technician			
	3.5	Electrician			
4.0	Security				
	4.1	Assignment Manager			
	4.2	Supervisor			
	4.4	Security Guard			
	4.5	Gunman			
5	Operations				
	5.2	Driver			
6	Toll Plaza Maintenance				
	6.1	Sweeper			
7	Vehicles				
	7.1	Cars/Jeeps per project for operations on toll plaza			
	7.7	Operational Cost			
8	Lighting				
9	Generators at Toll Plazas				
10	Communications Charges				
11	Misc Expenses				
12	Contingencies				
TOTAL EXPENDITURES					

Say

Lacs per year  
Lacs per year

**Annexure 3.3**

**APC WITH SEASONAL CORRECTION FACTORS**

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## APC with SCFs at Toll Plaza

S. N.	Type of Vehicle	7-days Traffic (Number of Vehicles)	Rate (Rs.)	Amount (Rs.)
<b>A.</b>	<b>Fee Paying Traffic (Single Journey)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (A)</b>			
<b>B.</b>	<b>Fee Paying Traffic (Daily Pass)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (B)</b>			
<b>C.</b>	<b>Fee Paying Traffic (Local Commercial Vehicles registered within the district where plaza is located)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (C)</b>			
<b>D.</b>	<b>Fee Paying Traffic (Monthly Pass)</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (D)</b>			
<b>E.</b>	<b>Fee Paying Traffic (Local Monthly Pass)</b>			



S. N.	Type of Vehicle	7-days Traffic (Number of Vehicles)	Rate (Rs.)	Amount (Rs.)
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (D)</b>			
<b>F.</b>	<b>Monthly Pass Reuse</b>			
	1. Car/Jeep/Van/Light Motor Vehicle (Local personal vehicles)			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (F)</b>			
<b>G.</b>	<b>Daily Pass Reuse</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (G)</b>			
<b>H.</b>	<b>Exempt Vehicles</b>			
	1. Car/Jeep/Van/Light Motor Vehicle			
	2. Light Commercial Vehicle/Light Good Vehicle or Mini Bus			
	3. Bus/Truck (Two Axles)			
	4. Three Axle Commercial Vehicles			
	5. Heavy Construction Machinery (HCM)/Earth Moving Equipment (EME)/Multi Axle Vehicles (MAV) (Four to Six Axles)			
	6. Oversized Vehicles (Seven or More Axles)			
	<b>Total (H)</b>			

(a) Average Daily Collection :

(b) Annualized expected Collection :