

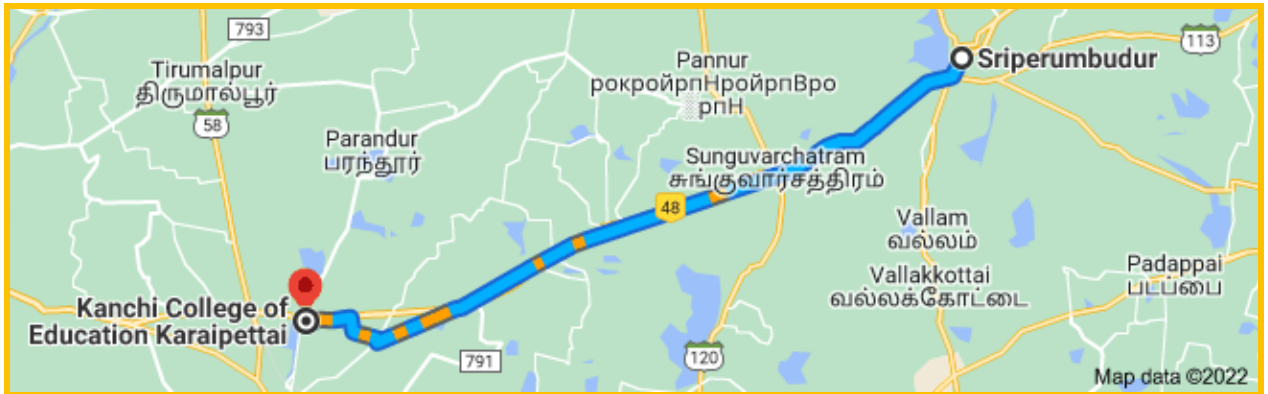


# NATIONAL HIGHWAY AUTHORITY OF INDIA

Project Implementation Unit – Kancheepuram

## TRAFFIC REPORT

Sriperumbudur – Karapettai Section of NH-48  
Chainage: 37/000 – 71/005



DEPARTMENT OF CIVIL ENGINEERING  
SRI VENKATESWARA COLLEGE OF ENGINEERING  
Pennalur, Sriperumbudur – 602 117

September - 2022

**SRI VENKATESWARA COLLEGE OF ENGINEERING**  
(An Autonomous Institution; Affiliated to Anna University, Chennai -600 025)

**ANNA UNIVERSITY, CHENNAI – 600 025**

## **BONAFIDE CERTIFICATE**

This is to certify that this 'Traffic Report' for Sriperumbudur to Karapettai – Section of National Highway No. 48 is a bonafide work done by the following B.E. Civil Engineering (final year) students as part of MoU signed between **National Highway Authority of India** (NHAI), PIU-Kancheepuram and **Sri Venkateswara College of Engineering (SVCE)**, Sriperumbudur under the ambit of **Institutional Social Responsibility (ISR)**.

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## 1. INTRODUCTION

### 1.1 Importance of National Highways

National Highways (NH) are main highways running through the length and breadth of India, connecting major ports, foreign highways, capitals of large states, and large industrial and tourist centres including roads required for strategic movements for the defence of India. It was specified that national highways should be the frame on which the entire road communication should be based and that these highways may not necessarily be of same specification, but they must give an uninterrupted road communication throughout the country and should connect the entire road network.

### 1.2 About National Highway No. 48

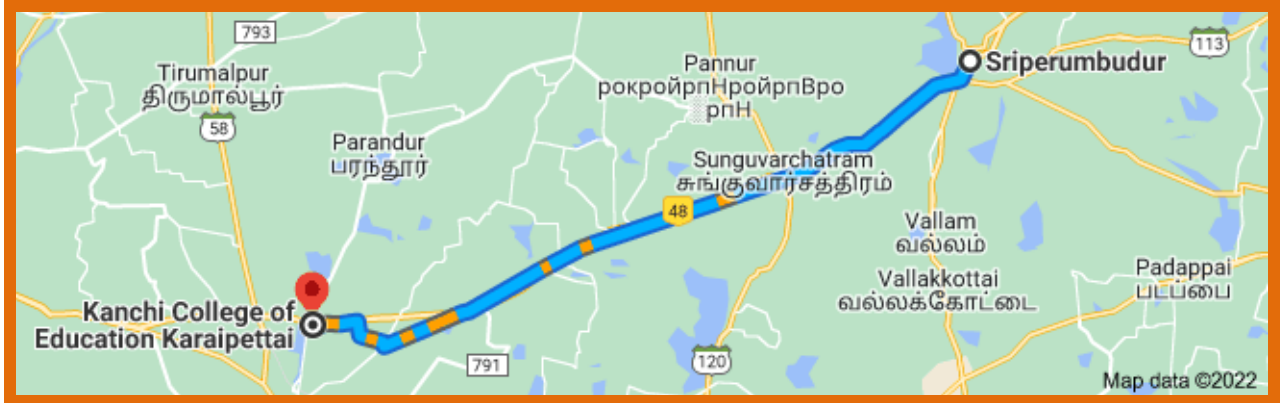
National Highway 48 (NH – 48) is a National Highway of India that starts at Delhi and terminates at Chennai traversing through seven states of India. It has a total length of 2,807 km (1,744 miles). NH – 48 passes through the states of Delhi, Haryana, Rajasthan, Gujarat, Maharashtra, Karnataka and Tamil Nadu. Map showing NH – 48 is presented in **Figure 1-1**.



**Fig. 1.1 Alignment of National Highway No. 48**

### 1.3 Sriperumbudur – Karapettai Section (Km 37+000 to Km 71+005)

Sriperumbudur – Karapettai Section is a part of Chennai – Bengaluru industrial corridor and also a part of Golden Quadrilateral, Chennai – Mumbai – Delhi Corridor. It starts at Chennai passes through many industries and educational institutions. The map showing Sriperumbudur – Karapettai section is presented in Figure 1.2. The 34 km project road between Sriperumbudur and Karaipettai will be widened to six lane divided road with two lane service lanes on either side by **S A Infrastructure Private Limited**.



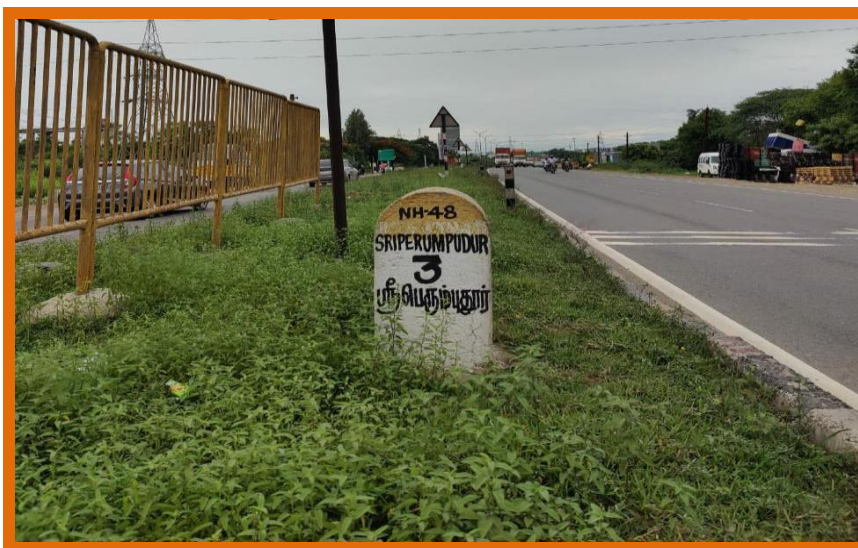
**Fig. 1.2 Map of Sriperumbudur – Karapettai Section**

## 2. SITE APPRECIATION

Based on the site visit following salient features of the project road are observed:

### 2.1 Start and end Points

Project road starts at Sriperumbudur and ends at Karapettai. Start and end points of the project road are shown below:



**Fig. 2.1 Starting Point of the Project Road (Sriperumbudur, km 37+000)**





**Fig. 2.2 End Point of the Project Road (Karapettai, km 71+005)**

### **2.2 Existing Toll Plaza Location**

A toll plaza is located on project road at Nemili (near Sriperumbudur) and is operated by NHAI. The detail of the toll plaza is presented in Table 2.1.

**Table 2.1 Toll Plaza Location**

<b>S. No.</b>	<b>Toll Plaza Name</b>	<b>Chainage</b>
1	Nemili Toll Plaza	37+500



**Fig. 2.3 Nemili Toll Plaza near Sriperumbudur**

### 2.3 Major Settlements

Major settlements such as Sriperumbudur, Sunguvarchatram etc. are located along the project road. These settlements influence project road as major trip generation/attraction points. Chainages of the major settlements are given in **Table 2.2**.

**Table 2.2 List of major Settlements**

S. No.	Name of the Settlement	Chainage
1	Sriperumbudur	39+200
2	Pondhur	45+500
3	Mambakkam	46+500
4	Sunguvarchatram	48+500
5	Santhavellore	51+500
6	Neervalur	59+500
7	Vedal	63+500
8	Enathur	66+700
9	Chettiyarpettai	69+700
10	Ponnerikarai	70+000



**Fig. 2.4 Major Settlements**

### 2.4 Major Junctions

The details of Major Junction located along project road are presented in **Table 2.3**.

**Table 2.3 List of major Junctions**

S. No.	Junction	Chainage
1	Sriperumbudur Entry Junction	39+200
2	Sriperumbudur Exit Junction	41+000

S. No.	Junction	Chainage
3	Oragadam Junction	42+100
4	Kancheepuram Junction	70+000



**Fig. 2.5 Sriperumbudur Entry/ Exit Junctions**



**Fig. 2.6 Kancheepuram Junction**

**Fig. 2.7 Oragadam Junction**

## 2.5 Lane Configuration

Project road predominantly constitutes four lane divided road in all sections. Six lane divided road plus two lane service roads on both side is under construction. Split-up of lane configuration is given in **Table 2.4**.

**Table 2.4 Lane Configuration**

Lane Configuration	Existing Chainage		Length (Km)
	From	To	
4-Lane Divided	37+000	71+015	34.015
<b>Total length</b>			<b>34.015</b>



**Fig. 2.8 Lane Configuration**

### 2.6 Bridges and Flyover Locations

Seven minor bridges and eleven flyovers (under construction) are located along the project road. The details are presented in **Table 2.5**.

**Table 2.5 List of Flyovers / Bridges**

S. No.	Existing Chainage	Bridge/Flyover
1	39+300	Minor Bridge
2	55+500	Minor Bridge
3	56+500	Minor Bridge
4	56+600	Minor Bridge
5	57+500	Minor Bridge
6	61+500	Minor Bridge
7	67+500	Minor Bridge
8	45+100	Flyover
9	46+500	Flyover
10	48+500	Flyover
11	51+500	Flyover
12	55+500	Flyover
13	60+500	Flyover
14	63+100	Flyover
15	65+500	Flyover
16	66+500	Flyover
17	68+500	Flyover
18	69+500	Flyover



**Fig. 2.9 Flyovers @ 56+500**



**Fig. 2.10 Flyover @ 63+100**

### 2.7 Accident Prone Zones

There are few accident prone zones (observed from information sign boards) along the project road. A list of such locations is presented in **Table 2.6**.

**Table 2.6 Accident Prone Zones**

Sl. No.	Existing Chainage	
	From	To
1.	38+900	39+900
2.	43+000	44+000
3.	48+400	49+400
4.	69+100	70+100



**Fig. 2.11 Accident Prone Zones**

### 2.8 Miscellaneous Features



**Fig. 2.12 Saint Gobain Industry @ 47+700**



**Fig. 2.13 SIPCOT @ 48+100**

### 3. TRAFFIC SURVEY AND ANALYSES

Classified Volume Count Study was conducted to comprehend and analyse the existing traffic volume and pattern on the project road.

Details of these traffic surveys such as schedule, location of survey points and results are discussed in this chapter.

#### 3.1 Traffic Survey Location and Schedule

Traffic survey schedule is presented in **Table 3.1** and the survey locations are shown in a line diagram (**Figure 3.1**).

**Table 3.1 Traffic Survey Schedule**

Sl. No.	Type of Survey	Existing Chainage	Location	Schedule	Duration
<b>Classified Volume Count (CVC) Survey</b>					
CVC1	5 Day CVC	Km 37+500	Nemili	25.07.22 – 30.07.22	10:00 am – 1:00 pm



**Fig. 3.1 CVC Survey Location**

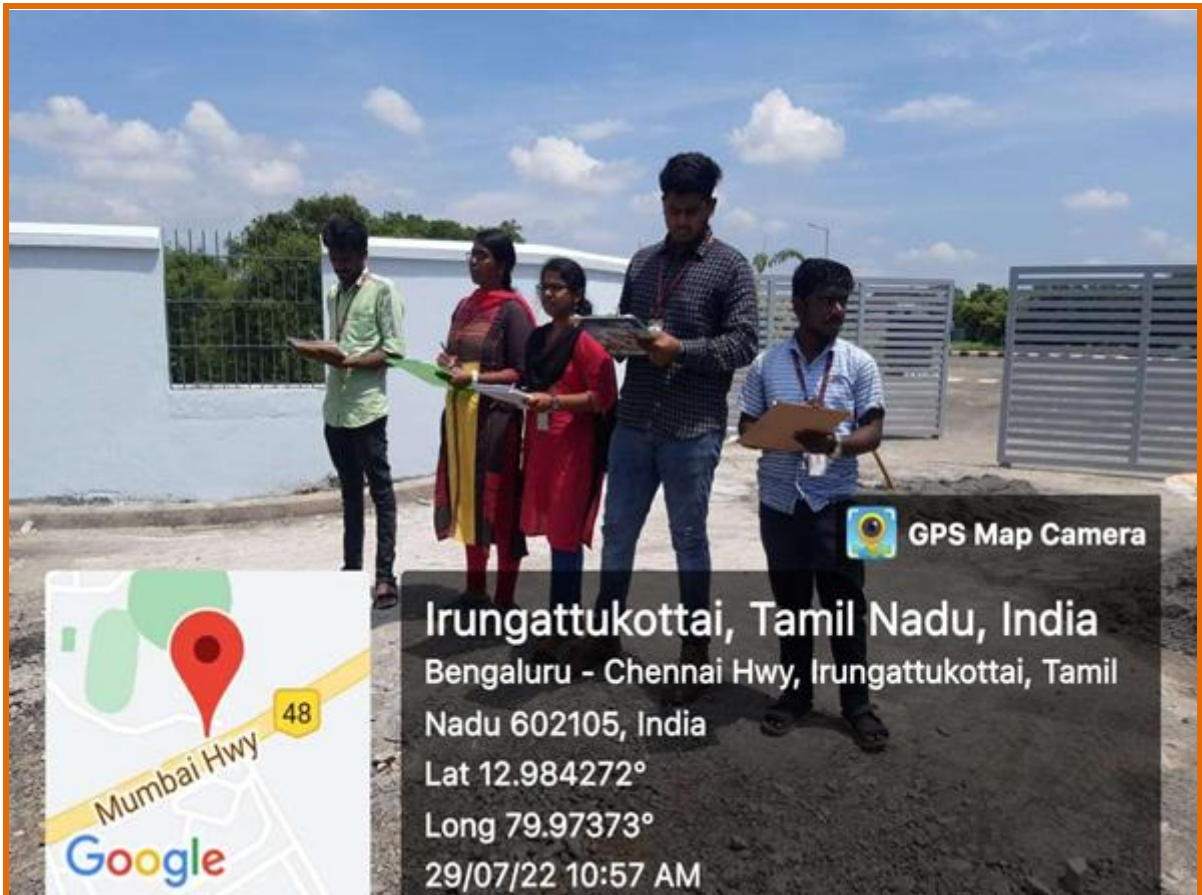
### 3.2 Passenger Car Units (PCUs)

Different type vehicles with wide range of physical and traffic characteristics ply on Indian roads. A way of accounting the interaction of various kinds of vehicles is to express the capacity of roads in terms of a common unit, generally identified as the 'Passenger Car Unit (PCU)'. Tentative equivalent factors for conversion of different types of vehicles into equivalent PCU based on their relative interference value are given in **Table 3.2**.

**Table 3.2 Recommended PCU Factors for Various Types of Vehicles on Rural Roads**

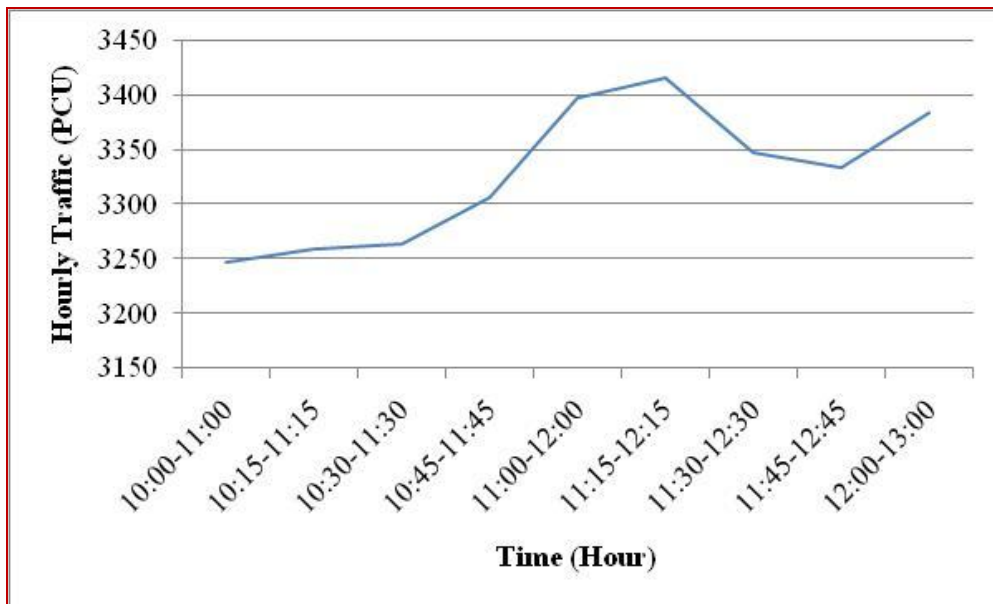
S. No.	Vehicle Type	Equivalency Factor
1.	Motor Cycle or Scooter	0.50
2.	Passenger Car, Pick-up Van or Auto-rickshaw	1.00
3.	Agricultural Tractor, Light Commercial Vehicles	1.50
4.	Truck or Bus	3.00
5.	Truck-trailer, Agriculture Tractor-trailer	4.50
6.	Cycle	0.50
7.	Cycle-rickshaw	2.00
8.	Hand cart	3.00
9.	Horse-drawn Vehicle	4.00
10.	Bullock cart	8.00





**Fig. 3.2 CVC Survey done by the Students**

Based on the 3-hour traffic count, hourly variation of traffic is estimated and presented below:



**Fig. 3.3 Hourly Variation of Traffic**

From the hourly variation of traffic curve, it is observed that the maximum hourly traffic is 3415 PCU which falls during 11:15 am – 12:15 pm.



### 3.2 Average Daily Traffic (ADT)

Since the above traffic data is insufficient to calculate Average Daily Traffic (ADT) and subsequently Annual Average Daily Traffic (AADT), traffic data from NHAI was collected for a period of 7×24 hours and ADT was estimated as given below:

**Table 3.3 Average Daily Traffic**

Vehicle Type	Traffic Volume on							Average No.	
	22-Feb (Tue)	23-Feb (Wed)	24-Feb (Thu)	25-Feb (Fri)	26-Feb (Sat)	27-Feb (Sun)	28-Feb (Mon)	Vehicles	PCU
Car	12,115	13,722	13,026	13,248	16,628	16,766	13,885	14,199	14,199
LCV	4,506	4,671	4,647	4,546	4,976	2,739	4,464	4,364	6,546
Bus	3,911	3,824	3,886	3,927	4,312	2,943	3,900	3,815	11,444
2-Axle Truck	5	17	1	2	7	2	6	6	18
3-Axle Truck	1,455	1,419	1,512	1,435	1,816	1,100	1,489	1,461	4,383
HCM	2,961	3,181	3,244	3,266	3,461	2,712	2,844	3,096	13,930
Oversized Vehicles	5	5	5	5	12	5	6	6	28
<b>Total</b>	<b>24,958</b>	<b>26,839</b>	<b>26,321</b>	<b>26,429</b>	<b>31,212</b>	<b>26,267</b>	<b>26,564</b>	<b>26,946</b>	<b>50,547</b>

### 3.3 Annual Average Daily Traffic (AADT)

For calculating AADT, seasonal correction factor is assumed to be **1.10**. Based on the assumed seasonal correction factor, AADT was estimated and the same given below:

**Table 3.4 Annual Average Daily Traffic**

Vehicle Type	Average No.	
	Vehicles	PCU
Car	15,619	15,619
LCV	4,800	7,200
Bus	4,197	12,591
2-Axle Truck	7	21
3-Axle Truck	1,607	4,821
HCM	3,406	15,327
Oversized Vehicles	7	32
<b>Total</b>	<b>29,643</b>	<b>55,611</b>

## 4. TRAFFIC FORECASTING

### 4.1 Socio - Economic Profile

From the map of the project corridor, it was observed that **Tamil Nadu** is the major influencing state. **Karnataka, Andhra Pradesh and Maharashtra (Mumbai)**

states also have significant influence on traffic in the project corridor other than Tamil Nādu. Hence the socio-economic data of all the above states are collected and presented below:

**Table 4.1 Share of NSDP and Growth Trends of Influencing States**

Financial year	Tamil Nadu		Karnataka		Andhra Pradesh		Maharashtra	
	NSDP	% Growth	NSDP	% Growth	NSDP	% Growth	NSDP	% Growth
2020-21	10,11,927	-	8,70,209	-	5,12,923	-	NA	-
2019-20	9,97,768	1.4	8,92,772	-2.5	5,25,267	-2.4	16,17,968	
2018-19	9,47,106	5.3	8,46,501	5.5	4,89,140	7.4	15,41,359	5.0
2017-18	8,89,005	6.5	7,98,901	6.0	4,69,758	4.1	14,61,062	5.5
2016-17	8,24,823	7.8	7,54,816	5.8	4,25,081	10.5	13,88,894	5.2
2015-16	7,73,946	6.6	6,73,936	12.0	3,98,844	6.6	12,66,715	9.6
2014-15	7,13,001	8.5	6,06,799	11.1	3,59,511	10.9	11,78,551	7.5
2013-14	6,75,124	5.6	5,77,482	5.1	3,28,710	9.4	11,12,364	6.0
2012-13	6,42,593	5.1	5,28,642	9.2	3,11,720	5.5	10,45,151	6.4
2011-12	6,16,015	4.3		5.5	3,10,347	0.4		5.5
<b>Average Growth Rate</b>		<b>5.7</b>		<b>6.4</b>		<b>5.8</b>		<b>5.6</b>

Source: RBI Statistics

**Table 4.2 Population Growth Rate of Influencing States**

Year	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra
2001	6,24,05,679	5,28,50,562	7,62,10,007	96,752,247
2011	7,21,47,030	6,10,95,297	8,45,80,777	112,372,972
<b>% Growth</b>	<b>1.56</b>	<b>1.56</b>	<b>1.09</b>	<b>1.51</b>

Source: Population Census of India

**Table 4.3 Per-capita Income of Influence States**

Year	Per Capita Income (Rs.)				Growth Rate (%)			
	TN	KA	AP	MAH	TN	KA	AP	MAH
2020-21	1,50,990	1,49,825	1,10,453					
2019-20	1,49,329	1,54,861	1,13,927	1,52,566	1.1	-3.3	-3.0	2.13
2018-19	1,41,844	1,48,690	1,07,286	1,47,097	5.3	4.2	6.2	3.7
2017-18	1,33,029	1,41,229	1,03,177	1,39,958	6.6	5.3	4.0	5.1
2016-17	1,23,206	1,31,186	94,115	1,33,686	8.0	7.7	9.6	4.7
2015-16	1,15,875	1,16,813	88,609	1,22,889	6.3	12.3	6.2	8.8
2014-15	1,07,117	1,05,697	79,174	1,15,058	8.2	10.5	11.9	6.8
2013-14	1,02,191	1,01,858	72,254	1,09,597	4.8	3.8	9.6	5.0
2012-13	97,257	94,375	68,865	1,04,008	5.1	7.9	4.9	5.4
2011-12	93,112	90,263	69,000	99,597	4.5	4.6	-0.2	4.4
<b>Average</b>					<b>5.5</b>	<b>5.9</b>	<b>5.5</b>	<b>4.9</b>

**4.2 India – Economic Growth Trend**

Indian Economy has grown 5% on a compound annual average basis from 2011-12 to 2021-22. The past growth trends of India's GDP are presented in **Table .**

**Table 4.4 Growth Rate of Indian GDP (2004-05 prices)**

Financial Year	Gross Domestic Product	% Growth
2021 – 22	1,47,35,515	
2020 – 21	1,35,58,473	7.99
2019 – 20	1,45,15,958	-7.06
2018 – 19	1,40,03,316	3.53
2017 – 18	1,31,44,582	6.13
2016 – 17	1,23,08,193	6.36
2015 – 16	1,13,69,493	7.63
2014 – 15	1,05,27,674	7.40
2013 – 14	98,01,370	6.90
2012 – 13	92,13,017	6.00
2011 – 12	87,36,329	5.17
<b>Average Growth</b>		<b>5.01</b>

Source: Reserve Bank of India

### 4.3 Estimation of Traffic Growth Rate

Growth rates were estimated separately based on different components like NSDP, State-wise influence. The final base year growth rates for both commercial and passenger traffic has been arrived by giving different weightages to each of these components.

#### 4.3.1 Growth Rate Based on NSDP and State Influence Factors (Elasticity Method)

Goods traffic growth rate was predicted based on past growth trend in Net State Domestic Product (NSDP) of the influencing states as well future growth prospects. Since the project road passes through Karnataka and Tamil Nadu States, the influence of the two states was considered. Based on O-D data, it was observed that Andhra Pradesh and Maharashtra (Mumbai) also have significant influence on the project corridor. Therefore, influence of those zones is also considered to arrive at growth rates separately for each mode – LCV, 3A, HCM and Oversized Vehicles. Though 2A truck traffic was growing negatively, the growth rates were assumed uniformly as 5% (*since the code doesn't support less than 5%*). Elasticity of 1.1 for commercial truck traffic was considered as recommended by Asian Development Bank (ADB) for Traffic projection in India. Based on the above discussion, the location wise goods traffic growth rates for base year (2012) are estimated separately for LCV, 3A, 2A, HCM and Oversized Vehicles traffic. In future years, the growth rate is expected to reduce gradually therefore, the growth rate is assumed to decrease by 10% every 5 years up to 2025 and uniform thereafter (2026-32). Sample calculation of growth rates for LCV, 3A, 2A, HCM and Oversized Vehicles traffic at Km 37+800 is presented in **Table 4.5, Table 4.6, Table 4.7, Table 4.8, Table 4.9, Table 4.10, Table 4.11** respectively. Mode-wise growth rates for all study location is estimated and presented in **Table 4.12**.

**Table 4.5 Estimation of Growth Rates for LCV at Km 37+800**

Influencing State	Influence Factor (%)	Growth Trend in NSDP
Tamil Nadu	80	5.69%
Karnataka	15	6.4%
Andhra Pradesh	5	5.82%
Maharashtra	0	5.63%
Weighted NSDP		<b>5.803%</b>
Elasticity		<b>1.1</b>
Growth Rate (Weighted NSDP x Elasticity)		<b>6.38%</b>

**Table 4.6 Estimation of Growth Rates for 2A Truck at Km 37+800**

Influencing State	Influence Factor (%)	Growth Trend in NSDP
Tamil Nadu	90	5.69%
Karnataka	10	6.4%
Andhra Pradesh	0	5.82%
Maharashtra	0	5.63%
Weighted NSDP		<b>5.76%</b>
Elasticity		<b>1.1</b>
Growth Rate (Weighted NSDP x Elasticity) *		<b>6.33%</b>

\*Assumed uniformly 5%

**Table 4.7 Estimation of Growth Rates for 3A Truck at Km 37+800**

Influencing State	Influence Factor (%)	Growth Trend in NSDP
Tamil Nadu	75	5.69%
Karnataka	10	6.4%
Andhra Pradesh	10	5.82%
Maharashtra	5	5.63%
Weighted NSDP		<b>5.77%</b>
Elasticity		<b>1.1</b>
Growth Rate (Weighted NSDP x Elasticity)		<b>6.34%</b>

**Table 4.8 Estimation of Growth Rates for HCM at Km 37+800**

Influencing State	Influence Factor (%)	Growth Trend in NSDP
Tamil Nadu	75	5.69%
Karnataka	10	6.4%
Andhra Pradesh	10	5.82%
Maharashtra	5	5.63%
Weighted NSDP		<b>5.80%</b>
Elasticity		<b>1.1</b>
Growth Rate (Weighted NSDP x Elasticity)		<b>6.38%</b>

**Table 4.9 Estimation of Growth Rates for Oversized Vehicles at Km 37+800**

Influencing State	Influence Factor (%)	Growth Trend in NSDP
Tamil Nadu	60	5.69%
Karnataka	15	6.4%
Andhra Pradesh	10	5.82%

Influencing State	Influence Factor (%)	Growth Trend in NSDP
Maharashtra	15	5.63%
Weighted NSDP		<b>5.87%</b>
Elasticity		<b>1.1</b>
Growth Rate (Weighted NSDP x Elasticity)		<b>6.45%</b>

Methodology for estimation of growth rates for Passenger traffic is also similar to above, only change being, the population and per capita income data were taken as indicators that influence the growth instead of NSDP. Elasticity of 1.6 for car traffic and 1.2 for bus traffic was considered as recommended by ADB for Traffic projection in India. Based on the above assumptions, location wise growth rates for passenger vehicles (Car & Bus) were estimated. Sample calculation of growth rates for Car & Bus at Km 37+800 are presented below:

**Table 4.10 Estimation of Growth Rates for Car at Km 37+800**

Influence State	Influence Factor (%)	Growth Trend in Population (%)	Growth Trend in Per Capita Income (%)	Combined Growth Trend of Indices (80:20)
Tamil Nadu	90	<b>1.56</b>	<b>5.53</b>	4.74%
Karnataka	10	<b>1.56</b>	<b>5.88</b>	5.43%
Andhra Pradesh	0	<b>1.09</b>	<b>5.47</b>	0%
Maharashtra	0	<b>1.51</b>	<b>4.88</b>	0%
Weighted NSDP				<b>4.81%</b>
Elasticity as recommended by ADB for Traffic projection in India				<b>1.6</b>
Growth Rate (Weighted NSDP X Elasticity)				<b>7.9%</b>

**Table 4.11 Estimation of Growth Rates for Bus at Km 37+800**

Influence State	Influence Factor (%)	Growth Trend in Population (%)	Growth Trend in Per Capita Income (%)	Combined Growth Trend of Indices (20:80)
Tamil Nadu	95	<b>1.56</b>	<b>5.53</b>	2.36%
Karnataka	5	<b>1.56</b>	<b>5.88</b>	2.42%
Andhra Pradesh	0	<b>1.09</b>	<b>5.47</b>	0%
Maharashtra	0	<b>1.51</b>	<b>4.88</b>	0%
Weighted NSDP				<b>2.36%</b>
Elasticity as recommended by ADB for Traffic projection in India				<b>1.2</b>

Growth Rate (Weighted NSDP X Elasticity)	<b>2.83%</b>
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Similarly, growth rates were estimated at other proposed toll plaza locations (weightages given for past growth rate also) and recommended growth rates are presented in the next section.

#### 4.3.2 Recommended Growth Rate

Based on the above discussion the growth rates for base year (2022) were estimated on following assumptions and presented in **Table 4.12**.

- Car/Bus – Using Per Capita Income (PCI) and population
- LCV/2-Axle/3-Axle/HCM/Oversized Vehicles – Using NSDP of the influencing states
- For estimating the final growth rates, weightages were given for past growth rates.

**Table 4.12 Recommended Growth Rates in Percentages (%)**

Vehicle Type	Km 37+800 (Nemili Toll Plaza)		
	2022-2027	2028-2032	2033-2037
<b>Car</b>	7.9	6.74	5.77
<b>Bus</b>	2.83	2.59	2.12
<b>LCV</b>	6.38	5.80	5.22
<b>2 Axle</b>	6.33	5.76	5.18
<b>3 Axle</b>	6.34	5.77	5.19
<b>HCM</b>	6.38	5.80	5.22
<b>Oversized Vehicles</b>	6.45	5.87	5.28

#### 4.4 Traffic Forecasting

With the above estimated growth rates, traffic for the next 15 years were estimated and shown below:

**Table 4.13 Traffic Forecast (2022 – 2037)**

Year	Car	Bus	LCV	2-Axle	3-Axle	HCM	Oversized Vehicles	Vehicles	PCU
2022	15,619	4,197	4,800	7	1,607	3,406	7	29,643	<b>58,021</b>
2023	16,853	4,316	5,106	7	1,709	3,623	7	31,622	<b>61,510</b>
2024	18,184	4,438	5,432	8	1,817	3,854	8	33,742	<b>65,228</b>
2025	19,621	4,564	5,779	8	1,932	4,100	8	36,013	<b>69,190</b>
2026	21,171	4,693	6,147	9	2,055	4,362	9	38,446	<b>73,413</b>
2027	22,843	4,825	6,539	10	2,185	4,640	10	41,053	<b>77,915</b>
2028	24,383	4,950	6,919	10	2,311	4,909	10	43,493	<b>82,182</b>
2029	26,026	5,079	7,320	11	2,445	5,194	11	46,085	<b>86,697</b>
2030	27,781	5,210	7,745	11	2,586	5,495	11	48,839	<b>91,478</b>

Year	Car	Bus	LCV	2-Axle	3-Axle	HCM	Oversized Vehicles	Vehicles	PCU
2031	29,653	5,345	8,194	12	2,735	5,814	12	51,765	<b>96,540</b>
2032	31,652	5,484	8,669	13	2,893	6,151	13	54,874	<b>1,01,900</b>
2033	33,478	5,600	9,122	13	3,043	6,472	13	57,741	<b>1,06,879</b>
2034	35,410	5,719	9,598	14	3,201	6,810	14	60,765	<b>1,12,117</b>
2035	37,453	5,840	10,099	15	3,367	7,166	15	63,954	<b>1,17,628</b>
2036	39,614	5,964	10,626	15	3,542	7,540	16	67,316	<b>1,23,427</b>
2037	41,900	6,090	11,180	16	3,725	7,933	16	70,862	<b>1,29,528</b>

## 5. CONCLUSIONS

From the above traffic study, following conclusions were arrived:

- The 34 km project road between Sriperumbudur and Karaipettai will be widened to six lane divided road with two lane service roads on either side by SA Infrastructure Private Limited.
- From the hourly variation of traffic curve, it is observed that the maximum hourly traffic is 3,415 PCU which falls during 11:15 am – 12:15 pm.
- Total number of vehicles is expected in the year 2037 at Nemili toll plaza will be 70,862 (i.e., 1,29,528 PCUs)

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## ANNEXURE – I



**Sri Venkateswara College of Engineering-Sriperumbudur**  
**Department of Civil Engineering**  
**NHAI INTERNSHIP**  
**Classified Volume Count Survey**



Date:		Name	
Location	Sriperumbudur Toll Plaza	Vehicle Type	

Time	Count	Time	Count
10:00-10:15 AM		11:30- 11:45 AM	
10:15-10:30 AM		11:45- 12:00 noon	
10:30-10:45 AM		12:00- 12:15 PM	
10:45-11:00 AM		12:15- 12:30 PM	
11:00-11:15 AM		12:30- 12:45 PM	
11:15-11:30 AM		12:45-1:00 PM	

**Note:** Count must be made for each 15 min. ( $12 \times 15 = 180$  min. i.e. 3 hrs)