

Part-II Category Specific

Project: Diversion of 4.7732 Hectare Reserve Forest Land for upgradation of Kalavad-Jamnagar section (PKG-II) of NH-927D in the State of Gujarat from 2 lane to four lane

TRAFFIC DATA

ATTACHED HEREWITH

Place: Rajkot



Executive Engineer
National Highway Division
RAJKOT.

TRAFFIC SURVEY AND ANALYSIS

Table 4.1: Traffic Survey Locations

S. No.	Location			Type of Survey	Duration (days)	Date
	No.	km	Name			
1	1	Km 4+700	Towards Dwarka & Morbi	TMC – 01	1 (24 hrs)	14-07-2015 to 15-07-2015
2	2	Km 10+000	Near Vijarkhi	CVC – 01	7 (24 hrs)	05-07-2015 to 12-07-2015
3				OD – 01	1 (24 hrs)	08-07-2015 to 09-07-2015
4				AXL – 01	2 (12 hrs)	07-07-2015 & 08-07-2015
5	3	Km 11+300	Towards Aliyapada	TMC – 02	1 (24 hrs)	14-07-2015 to 15-07-2015
6	4	Km 45+900	Towards Phalla	TMC – 03	1 (24 hrs)	13-07-2015 to 14-07-2015
7	5	Km 46+500	Towards Rajkot	TMC – 04	1 (24 hrs)	13-07-2015 to 14-07-2015

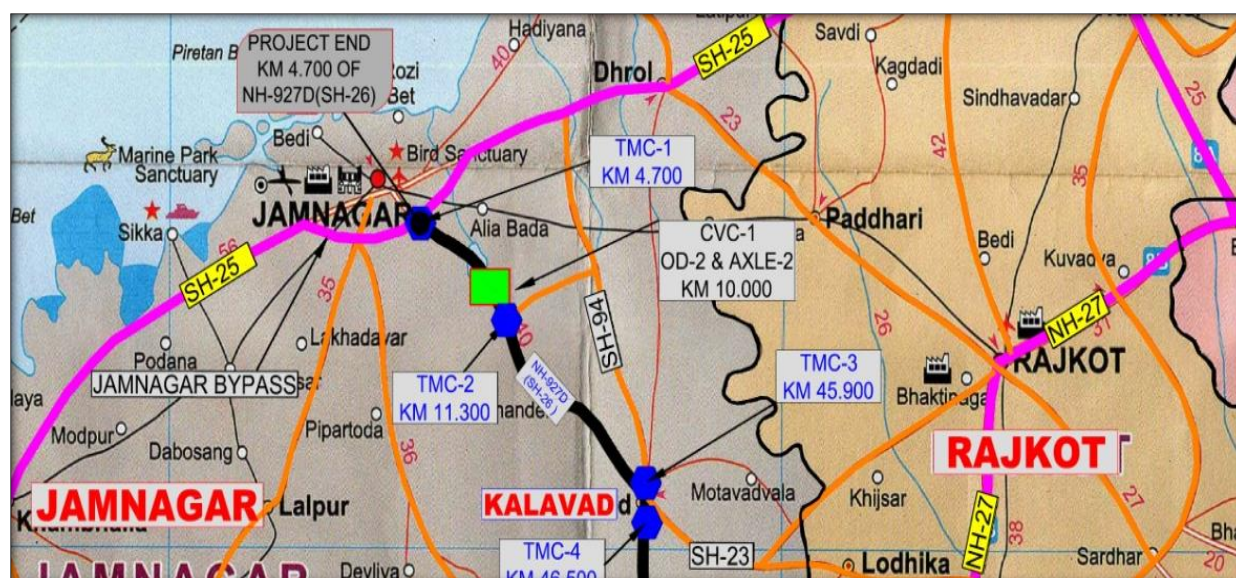


Figure 4.1: Traffic Survey Locations

Table 4.2: Average Daily Traffic (ADT)

Categories	Km 10+000 ADT (Both Direction)	
	Vehicles	PCU
2 Wheeler	4,098	2,049
3 Wheeler	617	617
Passenger Car	1,720	1,720
Mini LCV	381	381
Mini Bus	44	66
Standard Bus	227	681
LCV - 4 Tyre	67	101
LCV - 6 Tyre	178	267
2-Axle	379	1,137
3-Axle	435	1,305
MAV (4 to 6)	299	1,346
OSV (7++ Axle)	10	46
HCM/EME	14	63
Tractors-With Trailer	129	581
Tractors-Without Trailer	23	35
Bi-Cycle	46	24
Cycle-Rickshaw	1	2
Animal-Drawn	14	84
Hand-Drawn	1	3
Exempted Vehicle	29	29
Total Commercial Traffic	1,653	5,012
Total Tollable Traffic	3,754	7,113
Total Traffic	8,712	10,537

Table 4.3: Traffic Composition

Categories	Km 10+000	
	Vehicles	%
2 Wheeler	4,098	47.04%
3 Wheeler	617	7.08%
Passenger Car	1,720	19.74%
Mini LCV	381	4.37%

Categories	Km 10+000	
	Vehicles	%
Mini Bus	44	0.51%
Standard Bus	227	2.61%
LCV - 4 Tyre	67	0.77%
LCV - 6 Tyre	178	2.04%
2-Axle	379	4.35%
3-Axle	435	4.99%
MAV & Above	323	3.71%
Others	181	2.08%
Slow Moving Vehicles	62	0.71%
Total Traffic	8,712	100%

Table 4.4: Directional Distribution of Total & Tollable Traffic (%)

S. No.	Location	UP Direction (Dhoraji-Jamnagar)	DN Direction (Jamnagar-Dhoraji)
1	Km 10+000	Total Traffic – 52% Tollable Traffic – 53%	Total Traffic – 48% Tollable Traffic – 47%

Table 4.5: Annual Average Daily Traffic (AADT)

Categories	Km 10+000 AADT (Both Direction)	
	Vehicles	PCU
2 Wheeler	4,098	2,049
3 Wheeler	617	617
Passenger Car	1,720	1,720
Mini LCV	381	381
Mini Bus	44	66
Standard Bus	227	681
LCV - 4 Tyre	67	101
LCV - 6 Tyre	178	267
2-Axle	379	1,137
3-Axle	435	1,305

Categories	Km 10+000 AADT (Both Direction)	
	Vehicles	PCU
MAV (4 to 6)	299	1,346
OSV (7++ Axle)	10	46
HCM/EME	14	63
Tractors-With Trailer	129	581
Tractors-Without Trailer	23	35
Bi-Cycle	46	24
Cycle-Rickshaw	1	2
Animal-Drawn	14	84
Hand-Drawn	1	3
Exempted Vehicle	29	29
Total Commercial Traffic	1,653	5,012
Total Tollable Traffic	3,754	7,113
Total Traffic	8,712	10,537

Table 4.6: Total & Peak Hour Traffic Volume at all the major intersections

S. No.	Location	Type of Junction	Category	Total Traffic			Peak Hour Volume			Peak Hour
				Slow	Fast	Total	Slow	Fast	Total	
1	Km 4+700	4 Arm Junction SH-25	Vehicles	163	19472	19635	12	1577	1589	09:00-10:00
			PCU	146	33686	33832	7	2198	2205	
2	Km 11+300	3 Arm Junction	Vehicles	86	6816	6902	29	656	685	19:00-20:00
			PCU	72	8409	8481	26	733	759	
3	Km 45+900	3 Arm Junction SH-94	Vehicles	443	11252	11695	35	1001	1036	10:00-11:00
			PCU	258	10682	10940	21	817	838	
4			Vehicles	1052	20602	21654	56	1689	1745	

	Km 46+500	3 Arm Junction SH-23	PCU	684	18021	18705	33	1357	1390	09:00- 10:00
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Table 4.7: Cross Road Traffic at all the major intersections (in PCU)

S. No.	Location	Type of Junction	Cross Road	Cross Road Traffic (in PCU's)		
				Slow	Fast	Total
1	Km 4+700	4 Arm Junction SH-25	Along Jamnagar	69	11638	11707
			Along Rajkot Road	92	18399	18491
			Along Dwarka Road	30	23275	23305
2	Km 11+300	3 Arm Junction	Along Aliyapada Road	45	1469	1514
3	Km 45+900	3 Arm Junction SH-94	Along Falla Road	112	2906	3018
4	Km 46+500	3 Arm Junction SH-23	Along Rajkot Road	269	9261	9530

Table 4.8: % Sample for OD Survey

Category	Total Traffic	Sample	% Sample
km 10+000			
Car	488	1720	28.37%
Standard Bus	70	227	30.84%
LCV	57	245	23.27%
2 Axle	201	379	53.03%
3 Axle	132	435	30.34%
MAV	72	309	23.30%

Table 4.9: Mode wise Distribution of Trips (%) at km 10+000

Zones	Car	Standard Bus	LCV	2T	3T	MAV
Dhoraji-Jamnagar	94.77%	86.43%	97.37%	95.77%	89.77%	81.25%
Gujarat	5.23%	13.57%	2.63%	3.73%	9.09%	15.97%
Rajasthan	0.00%	0.00%	0.00%	0.00%	0.38%	2.08%
Madhya Pradesh	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Maharashtra	0.00%	0.00%	0.00%	0.25%	0.00%	0.00%
Rest of India	0.00%	0.00%	0.00%	0.25%	0.76%	0.69%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 4.10: Major Commodities at km 10+000

Commodity Type	LCV	2 Axle	3 Axle	MAV
Dhoraji to Jamnagar				
Empty	83.32%	64.29%	63.51%	80.77%
Perishable Products	4.17%	0.00%	0.00%	1.92%
Food Products	4.17%	3.57%	4.05%	0.00%
Building Materials	0.00%	0.00%	4.05%	7.69%
Petroleum Products	4.17%	0.00%	5.41%	3.85%
Stone Product	4.17%	25.00%	18.92%	0.00%
Total of Above	100.00%	92.86%	95.94%	94.23%

Jamnagar to Dhoraji				
Empty	69.70%	82.76%	64.91%	5.00%
Perishable Products	3.03%	0.86%	1.75%	0.00%
Food Products	6.06%	0.86%	3.51%	5.00%
Manufacturing Products	0.00%	0.00%	0.00%	0.00%
Building Materials	0.00%	0.86%	0.00%	15.00%
Coal	3.03%	0.86%	3.51%	70.00%
Total of Above	81.82%	86.20%	73.68%	95.00%

Table 4.11: Mode Wise Distribution of Trips by Various Lead Ranges (%) at km 10+000

Trip Length	Car	Standard Bus
0-25	17.01%	11.43%
25-50	1.84%	1.43%
50-100	62.70%	52.86%
100-150	13.11%	30.00%
150-200	1.84%	0.00%
200-300	2.25%	4.29%
300-400	1.02%	0.00%
400-500	0.20%	0.00%
500-700	0.00%	0.00%
>700	0.00%	0.00%
Total Vehicles	100.00%	100.00%

Table 4.12: Projected Normal Traffic in AADT (PCU)-Most Likely Growth Scenario

S. No.	Year	Total AADT (PCU)
		Km 10+000
1	2015	10,537
2	2016	11,212
3	2017	11,932
4	2018	12,699
5	2019	13,525
6	2020	14,405
7	2021	15,342
8	2022	16,285
9	2023	17,285
10	2024	18,349
11	2025	19,341
12	2026	20,388
13	2027	21,493
14	2028	22,659
15	2029	23,886
16	2030	25,116

S. No.	Year	Total AADT (PCU)
		Km 10+000
17	2031	26,410
18	2032	27,771
19	2033	29,203
20	2034	30,710
21	2035	32,247
22	2036	33,859
23	2037	35,551
24	2038	37,327
25	2039	39,195
26	2040	41,156
27	2041	43,213
28	2042	45,373
29	2043	47,643
30	2044	50,026
31	2045	52,527

Table 4.13: Projected Generated/Induced Traffic in AADT (PCU) - Optimistic Growth Scenario

S. No.	Year	Total AADT (PCU)
		Km 10+000
1	2015	10,537
2	2016	11,212
3	2017	11,932
4	2018	12,699
5	2019	13,525
6	2020	14,405
7	2021	15,342
8	2022	16,285
9	2023	17,285
10	2024	18,349
11	2025	19,341
12	2026	20,388
13	2027	21,493

S. No.	Year	Total AADT (PCU)
		Km 10+000
14	2028	22,659
15	2029	23,886
16	2030	25,116
17	2031	26,410
18	2032	27,771
19	2033	29,203
20	2034	30,710
21	2035	32,247
22	2036	33,859
23	2037	35,551
24	2038	37,327
25	2039	39,195
26	2040	41,156
27	2041	43,213
28	2042	45,373
29	2043	47,643
30	2044	50,026
31	2045	52,527

Table 4.14: Projected Diverted Traffic in AADT (PCU) - Pessimistic Growth Scenario

S. No.	Year	Total AADT (PCU)
		Km 10+000
1	2015	10,537
2	2016	11,247
3	2017	12,008
4	2018	12,822
5	2019	13,695
6	2020	14,627
7	2021	15,623

S. No.	Year	Total AADT (PCU)
		Km 10+000
8	2022	16,628
9	2023	17,698
10	2024	18,840
11	2025	19,909
12	2026	21,040
13	2027	22,236
14	2028	23,502
15	2029	24,841
16	2030	26,156
17	2031	27,542
18	2032	29,002
19	2033	30,538
20	2034	32,158
21	2035	33,789
22	2036	35,503
23	2037	37,303
24	2038	39,192
25	2039	41,182
26	2040	43,242
27	2041	45,404
28	2042	47,672
29	2043	50,057
30	2044	52,561
31	2045	55,188

Table 4.15: Projected Traffic in AADT (PCU) – 5% CAGR Scenario

S. No.	Year	Total AADT (PCU)
		Km 10+000
1	2015	10,537

S. No.	Year	Total AADT (PCU)
		Km 10+000
2	2016	11,061
3	2017	11,614
4	2018	12,197
5	2019	12,809
6	2020	13,449
7	2021	14,119
8	2022	14,824
9	2023	15,565
10	2024	16,342
11	2025	17,160
12	2026	18,017
13	2027	18,919
14	2028	19,864
15	2029	20,856
16	2030	21,898
17	2031	22,995
18	2032	24,144
19	2033	25,353
20	2034	26,622
21	2035	27,953
22	2036	29,350
23	2037	30,818
24	2038	32,359
25	2039	33,979
26	2040	35,678
27	2041	37,461
28	2042	39,332
29	2043	41,299
30	2044	43,365
31	2045	45,535