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VEHICULAR TRAFFIC CONDITION AT MANINAGAR STATION, AHMEDABAD, GUJARAT

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Abstract- **Ahmedabad city is the administrative centre of Gujarat, India. Located at latitude 23.0300° North and longitude 72.5800° East, the city is the centre for social, educational, commercial, residential, cultural, political and economic activities of Ahmedabad district. The total population of Ahmedabad is 7,796,000 as per Gujarat census, 2011. Ahmedabad has seen rapid economic growth during last decade. The city is facing problems of traffic, parking, and pedestrian‟ safety on certain stretches of roads in the city. The area to be covered in the study of above transportation problem in Ahmedabad maninagar railway station. Data collected at the maninagar railway station, Ahmedabad to study influencing factor and their effect on pedestrian walking speed. Maninagar railway station routs study for respect to age and gender of pedestrians. Traffic value at maninagar railway station crossing by foot cannot only challing but can be dangerous with this mind, to design and built pedestrian bridge at intersection of maninagar railway station. This wills eliminate traffic congestion and delay at highway as well as eliminate conflicts between pedestrians and motor vehicles.**

Keywords- *Traffic Capacity, Traffic Condition*

I. INTRODUCTION

In many ways pedestrian flow are similar to those used for vehicular flow because itcan be described in terms of familiar variables such as speed, volume, rate of flow and density. Other measures related specifically to pedestrian flow include the ability to cross a pedestrian traffic stream, to walk in the reverse direction of a major pedestrian flow, to maneuver generally without conflicts and changes in walking speed, and the delay experienced by pedestrians at signalized and unsignalizedintersections. A footbridge also called a pedestrian bridge, pedestrian overpass, or pedestrian overcrossing is a bridge designed for pedestrians and in some cases cyclists, animal traffic, and horse riders, instead of vehicular traffic. A bridge is a structure built to span a gorge, valley, road, railroad track, river, body of water, or any other physical obstacle, for the purpose of providing passage over the obstacle. Designs of bridges will vary depending on the function of the bridge and the nature of the terrain where the bridge is to be constructed.

II. LITERATURE REVIEW

Feasibility Study For Planning a Fly-over Bridge Over Railway Crossing at Vijalpore Road, Navsari

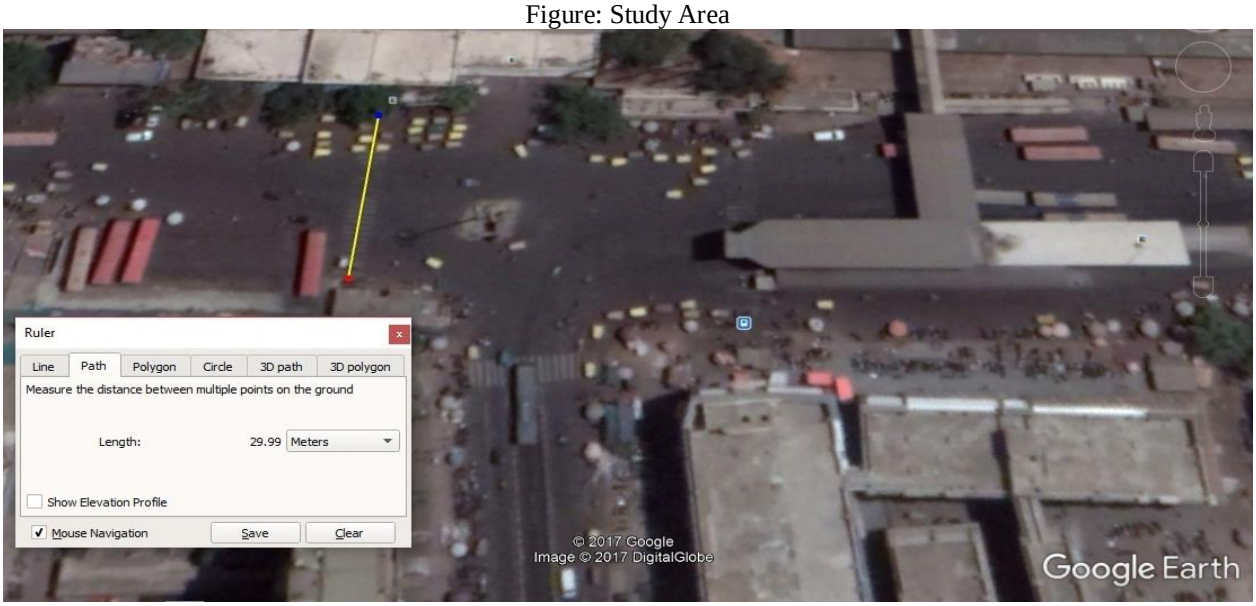
People of Vijalpore village are facing acute traffic problem at railway crossing road in Navsari. The main reason for this problem is passage of more number of trains from here which results in closure of railway gate for longer periods of time. People have to wait for several minutes to pass through this railway crossing. Also, a underpass situated near the railway crossing is very small and water gets accumulated under in rainy season.

Pre-Feasibility Study of Transportation in Infrastructure: A Case Study of Chhapi Railway

In this Paper Study focused on the town where the traffic congestion occur due to the railway crossing and other alternative to minimised problem. Chhapi is a main town surrounding area so the approach road which connect the SH 41 is only the way where railway crossing is there.so, the many people have problem occur due to crossing likewise traffic congestion, pollution, delay, fuel consumption etc.

III. STUDY AREA

Figure: Study Area



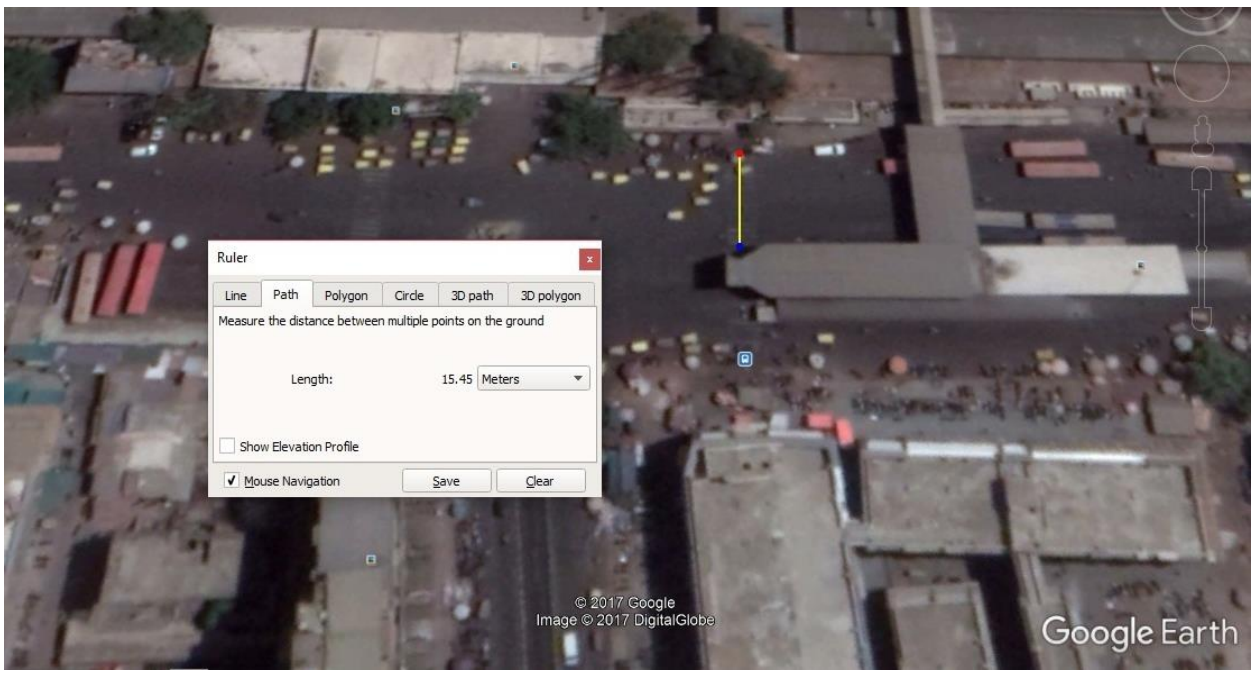


Figure: Study Area Details Ahmedabad New West Zone

IV. DATA COLLECTION AND ANALYSIS

16/10/2017 - Evening					17/10/2017 - Evening				
Observation No.	Time (Sec.)	Distance (Met.)	Speed (M.P.S)	Speed (K.P.H)	Observation No.	Time (Sec.)	Distance (Met.)	Speed (M.P.S)	Speed (K.P.H)
1	3.55	22	6.20	22.31	1	4.02	22	5.47	19.70
2	3.56	22	6.18	22.25	2	4.10	22	5.37	19.32
3	3.23	22	6.81	24.52	3	4.12	22	5.34	19.22
4	3.24	22	6.79	24.44	4	3.84	22	5.73	20.63
5	3.17	22	6.94	24.98	5	3.71	22	5.93	21.35
6	3.55	22	6.20	22.31	6	3.54	22	6.21	22.37
7	3.99	22	5.51	19.85	7	4.56	22	4.82	17.37
8	3.09	22	7.12	25.63	8	4.67	22	4.71	16.96
9	2.65	22	8.30	29.89	9	3.97	22	5.54	19.95
10	4.03	22	5.46	19.65	10	4.38	22	5.02	18.08
11	3.98	22	5.53	19.90	11	4.14	22	5.31	19.13
12	3.97	22	5.54	19.95	12	4.12	22	5.34	19.22
13	3.98	22	5.53	19.90	13	3.98	22	5.53	19.90
14	4.02	22	5.47	19.70	14	4.11	22	5.35	19.27
15	4.22	22	5.21	18.77	15	4.34	22	5.07	18.25
16	4.14	22	5.31	19.13	16	4.18	22	5.26	18.95
17	4.32	22	5.09	18.33	17	4.14	22	5.31	19.13
18	4.23	22	5.20	18.72	18	4.35	22	5.06	18.21
19	4.12	22	5.34	19.22	19	4.75	22	4.63	16.67
20	4.21	22	5.23	18.81	20	4.96	22	4.44	15.97

Spot Speed Data Collected

Serial No.	Class Limit	Mid Point	Frequency	Relative Frequency	Percentage Frequency	Cumulative Frequency
1	15.00 - 19.99	17.495	102	0.680	68.0	68.0
2	20.00 - 24.99	22.495	36	0.240	24.0	92.0
3	25.00 - 29.99	27.495	12	0.080	8.0	100.0
4	30.00 - 34.99	32.495	0	0.000	0.0	100.0
5	35.00 - 39.99	37.495	0	0.000	0.0	100.0
6	40.00 - 44.99	42.495	0	0.000	0.0	100.0
7	45.00 - 49.99	47.495	0	0.000	0.0	100.0
Total			150			

Towards the Maninagar Crossing							
Time Duration	**Two Wheeler**	**Three Wheeler**	**Four Wheeler**	**Bus**	**Truck**	**Tractor**	**Cycle**
05:30 to 05:35	245	34	21	5	0	1	15
05:35 to 05:40	253	38	24	5	1	1	14
05:40 to 05:45	246	28	25	6	1	0	17
05:45 to 05:50	238	33	20	4	2	1	21
05:50 to 05:55	231	35	28	4	0	2	23
05:55 to 06:00	241	27	22	3	1	0	14
06:00 to 06:05	250	30	27	4	0	1	11
06:05 to 06:10	246	27	25	3	0	0	16
06:10 to 06:15	242	34	24	4	2	0	15
06:15 to 06:20	232	35	20	4	0	1	18
06:20 to 06:25	231	29	20	5	1	0	19
06:25 to 06:30	232	34	18	4	2	0	16
Sub Total	2887	384	274	51	10	7	199
PCU value	**0.5**	**1.0**	**1.0**	**3**	**3**	**4.5**	**0.5**
PCU	1443.5	384	274	153	30	31.5	99.5
Total PCU	**2415.5**						

Towards the Maninagar Station							
Time Duration	**Two Wheeler**	**Three Wheeler**	**Four Wheeler**	**Bus**	**Truck**	**Tractor**	**Cycle**
05:30 to 05:35	255	39	22	4	1	1	15
05:35 to 05:40	243	40	24	4	0	0	18
05:40 to 05:45	232	35	23	3	1	1	10
05:45 to 05:50	242	36	20	4	1	1	16
05:50 to 05:55	224	33	20	3	0	2	15
05:55 to 06:00	254	32	19	3	1	1	16
06:00 to 06:05	247	31	23	3	0	0	19

06:05 to 06:10	248	34	25	4	1	0	17
06:10 to 06:15	234	36	27	3	0	1	14
06:15 to 06:20	246	26	21	3	1	1	13
06:20 to 06:25	232	34	19	4	1	1	12
06:25 to 06:30	227	37	18	4	1	0	13
Sub Total	2884	413	261	42	8	9	178
PCU Value	**0.5**	**1.0**	**1.0**	**3**	**3**	**4.5**	**0.5**
PCU	1442	413	261	126	24	40.5	89
Total PCU	**2395.5**						

CVC Data Collection

V. CONCLUSION

Followings are the major conclusion of the study

1. Data Collected we can conclude that avg. speed was too low comparing to any other Roads.
2. From CVC we can conclude that Vehicular Traffic is somewhat higher than any other roads.
3. Main problem is not Vehicles but its Pedestrian Interference.

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