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Applying Advanced Technology For Traffic Management System

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***Abstract**: India is a developing country. As a personal vehicle increase with the development of country. This will be rise in overcrowded in large cities .So, our india need advance technology for traffic management system. The purpose of project is to modulate traffic system which will be the modifying the present traffic situation in a lane. Usually, we will be the fixed the average waiting time for all lanes in road. This advance technology help to change the average waiting time by calculating the number of vehicle in signal lane. The data of traffic will be send to central system through internet. Then the system will be decide the timing for signal according to traffic lane or program. This project also recognise the perform congestion light at previous interaction of traffic, so that the vehicle is change the road lane at that situation of overcrowded. This traffic management system is also useful in emergencies and help to minimum pollution and traffic congestion.*

***Keywords**: Traffic, Waiting Time, Traffic Management, Pollution, Accidents, Signalized Intersection, Roadway Studies, Highway.*

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I. Introduction

The project describe a suitable solution for effective control of road traffic network having poor lane discipline and also address the issues of funds availability by introducing high scalability to the system and optimized communications strategy. This is currently apply in Indian cities Pune and Jaipur being executed in Kolkata and agenda bad. The solutions resulting in minimum network delay and improve mobility. So, in this project as we are civil engineering student, we are trying to analysis these world-wide phenomena for the limited areas of Municipal Corporation of Nashik. Before discussing all the methods & result, analysis we would like to go through some introductory part in this chapter, such as present urban transport scenario and future scene

Objectives

- Proposed the signal at proper location
- Suggest the time interval for signal to go green on proposed road
- Minimize the journeytime
- Minimize the waitingtime
- Reduce the emission of harmful gases
- Minimize the traffic density.

Obstacles in the work

- The study depends on some of secondary source of data that may not be accurate
- The environmental aspect of traffic management are not much covered in study
- The finding of study may losses it's utility of time changes in the characters of traffic issues of Nashik cities
- The observation conclusion and recommendation made in the extent on the perception of the respondent and many be less accurate
- There will be changes in the traffic condition time to time so there is less accuracy in the data

II. Methodology

NMC has proposed 3 signal from Canada Corner to Mahatma Nagar. We are going to adjust the timing of this signal such that, vehicle once set from Canada corner would reach mahatma nagar with utmost red signal only at any one of the signal throughout the road length. For our project work, we are going to do Origin and destination Survey to fix the priority of road. This sheet should be used for entry of vehicle.

TWO WHEELERS (ENTRY WAY)
B╬ AC
LOCATION NO. 02

SR. NO.	VEHICLE REG NO.	A	B	C
1	MH15FK7922			MH15FK7922
2	MH15AR7438	MH15AR7438		
3	MH15CC4539			MH15CC4539
4	MH15FP2406		MH15FP2406	
5	MH15EN8978			MH15EN8978
6	MH41AC7958			MH41AC7958
7	MH15FY5749			MH15FY5749
8	MH15GP8003			MH15GP8003
9	MH39X1050	MH39X1050		
10	MH15BL2534		MH15BL2534	
11	MH15DR8377		MH15DR8377	
12	MH15AZ7177			MH15AZ7177
13	MH12JX3903			MH12JX3903
14	MH15FB1234			MH15FB1234
15	MH15FP3381			MH15FP3381
16	MH15GN3901			MH15GN3901
17	MH15FB17			MH15FB17
18	MH15CU91			MH15CU91
19	MH15AF1938			MH15AF1938
20	MH15FW9540		MH15FW9540	
21	MH09BD7235			MH09BD7235
22	MH15DH3634		MH15DH3634	
23	MH15DF7468			MH15DF7468
24	MH15FA6066			MH15FA6066
25	MH15DW5159		MH15DW5159	
26	MH15FH3458			MH15FH3458
27	MH15FD6008			MH15FD6008

Data Collection Of Vehicle

III. Data Collection & Analysis

4-Wheeler Survey Velocity
Entry Way = (time 05:00:00 to 06:00:00 PM)

Table Number – 4.1

(1 – 2)	(2- 3)	(3 – 4)	(4 – 5)	(5 – 6)
1.13 minute	27 sec	48 sec	25 sec	29 sec
₮ = D/tiNe X 18/5 = 533/(1.13 X 60) X 18/5 = 29^{k}N/hr	V = 243/27 X 18/5 = 33^{k}N/hr	V = 407/48 = 30^{k}N/hr	V = 255/25 = 36^{k}N/hr	V = 230/29 = 29^{k}N/hr

Average **V** = $\frac{29+33+30+36+29}{5}$ = 31.4 ~ 35 km/hr

Exit Way = (time 06:00:00 to 06:30:00 PM)

Table Number – 4.2

(6 – 5)	(5 - 4)	(4 – 3)	(3 – 2)	(2 – 1)
29 sec	31 sec	49 sec	29 sec	1.21 minute
V = D X 18 tiNe 5 = 230 X 18 29 5 = 29^{kN} hr	V = 255 31 = 30^{kN} hr	V = 407 49 = 29^{kN} hr	V = 243 29 = 30^{kN} hr	V = 533 1.21 = 26.42^{kN} hr

Average V = $\frac{29+30+29+30+26}{}$ = 28.8 ~ 30 km

3-Wheeler Survey Velocity

Entry Way = (time 05:00:00 to 06:00:00 PM)

Table Number – 4.

(1 – 2)	(2- 3)	(3 – 4)	(4 – 5)	(5 – 6)
1.17 minute	28 sec	47 sec	30 sec	28 sec

Average **V** = $\frac{28+31+31+30+32}{}$ = 30.4 ~ 35 km

Exit Way = (time 06:00:00 to 06:30:00 PM)

Table Number – 4.4

(6 – 5)		(5 - 4)	(4 – 3)	(3 – 2)	(2 – 1)
26 sec		30 sec	48 sec	27 sec	1.13 minute
V = D X tiNe = 230 X 26 = 32^{kN} hr	18 5 18 5	V = 255 30 = 30^{kN} hr	V = 407 48 = 30^{kN} hr	V = 243 27 = 31^{kN} hr	V = 533 1.13 = 30^{kN} hr

Average V = $\frac{32+30+30+31+30}{5}$ = 30 km Mr

2-Wheeler Survey Velocity

Entry Way = (time 06:00:00 to 06:30:00 PM)

Table Number – 4.5

(1 – 2)	(2- 3)	(3 – 4)	(4 – 5)	(5 – 6)
1.16 minute	29 sec	50 sec	28 sec	26 sec
V = D X 18 tiNe 5 = 533 X 18 1.16 X 60 5 = 28^{kN} hr	V = 243 29 = 30^{kN} hr	V = 407 48 = 29^{kN} hr	V = 255 28 = 32^{kN} hr	V = 230 26 = 32^{kN} hr

Average **V** = 28+30+29+32+32= 30 k

Exit Way = (time 06:00:00 to 06:30:00 PM)

Table Number – 4.6

(6 – 5)	(5 - 4)	(4 – 3)	(3 – 2)	(2 – 1)
27 sec	29 sec	48 sec	28 sec	1.15 minute
V = D X 18 / tiNe 5 = 230 X 18 / 27 5 = 31 kN / hr	V = 255 / 29 = 32 kN / hr	V = 407 / 48 = 30 kN / hr	V = 243 / 28 = 31 kN / hr	V = 533 / 1.15 = 28 kN / hr

Average V = 31+32+30+31+28= 30 km

Will gives Total CO content reduce by adding signal installation

t_1= 98 + 86 + 93 + 46 + 40
= 363 sec ~ 6`3”
t_2 = 75 + 28 + 48 + 25 + 30
= 206 sec ~ 3`26``
t_3= t_1 - t_2
= 363 – 206
t_3= 157 sec ~ 2`37``

Technology In Traffic Signal

Entry Way

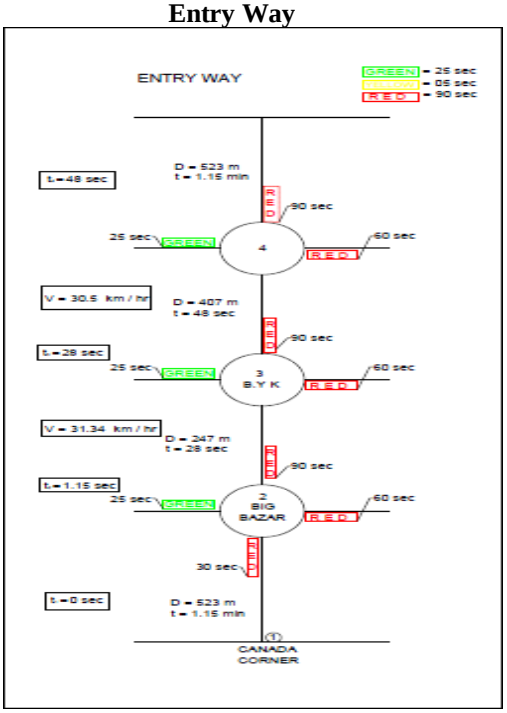

Fig 1. Entry Way Diagram

Exit Way

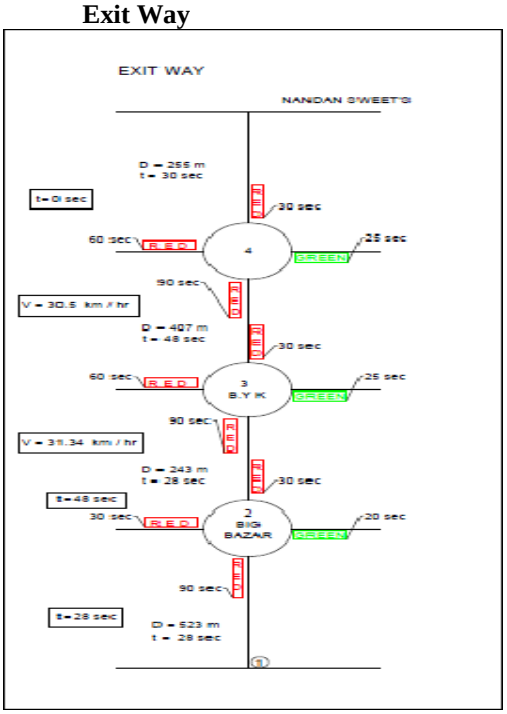

Fig 2. Exit Way Diagram

IV. Conclusions

- Time interval for signal to go green on proposed road for continuous flow of all vehicles on time basis of our design is suggested.
- Reduce the pollution of harmful gases it is very good for health and environment.
- The traffic is minimum on road.
- The waiting time will be the minimum on signal then the vehicle movement is fast.

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