Traffic management system with the Movable divider and automatic barrier for Wagholi road (Traffic Management System)

Pallavi Kharat[1], Kapil Jadhav[2], Sanket Kamble[3], Ramdas Labade[4], Sanjay Labade[5]

[1]Associate Professor, [2,3,4,5]U.G. Students
Department of Civil Engineering,
Dr. D. Y. Patil School of Engineering & Technology,

***Abstract*— Technology is one of the principle driving forces in the present world, it is transforming our lives and shaping our future. Various new technologies are making daily life more comfortable in their own ways, one such technology is movable divider. A movable divider has many advantages like security, flexibility and cost effectiveness, due to which it can be used in many applications. One such application is in embedded systems. It helps us overcome many important demerits of standalone embedded system.**

Traditional road barriers are fixed to their position which makes handling of traffic difficult during peak hours. So to overcome this we came up with an idea of making movable barriers. This paper aims to provide a more efficient way of solving problems occurring with the existing systems. By using movable divider technology we are trying to help the commuters who face problems reaching their destination in an efficient way. Commuters daily face extreme traffic during peak hours resulting in a delay to reach their destination. In the morning, during peak hours the traffic on one side of the road is more compared to opposite side of the road, same is the situation in evening.

The dividers will shift according to the signals sent to the embedded system by the system administrator. This will be done by using a database will be configured and when updated and the data is sent to the embedded system will change the state of the divider. Along with a database, the movable divider will also contain a log which will contain the history of states of the barrier system over time.

***Keywords*— moving divider, rack and pinion gear, motor, Road Signals, Fibre barriers.**

Introduction

In recent years, with an ever increasing rate of development in metro cities around the world, there has been proportional increase in numbers of automobiles on the roads. Although the number of vehicles using the roads has increased, the static road infrastructure is almost the same and is unable to cope with changes like congestion, unpredictable travel-time delays and road-accidents that are taking a serious shape. Traffic congestion has been one of the major concerns faced by the metropolitan cities today in spite of measures being taken to mitigate and reduce it. It has emerged as one of the main challenge for developers in urban areas for planning of sustainable cities.

A. Planning:

Congestion issues rise and the construction of a new road structure or another mode of transport as an alternative solution seems lucrative and apt as a solution. But over the time it has turned out to be ludicrous as the congestion tends to rise with rise in the ever growing population, the rise in number of private automobiles registered, personal needs and demands, lifestyle, etc.

B. WORKING:

On the basis of facing problem we design a appropriate design for traffic management. In this system design from HP petrol pump to Kesnand Fata, which help to traveling people who do not want to stop in wagholi, they directly goes over to wagholi. For the reduce 1 side traffic moveable divider help at the time of 1 side traffic increases divider will moving other side which provide more space for traffic side vehicle to travel.

Gate block is very important for block the people who do not follow the rules. When the signal flag a red light that time gate for this side will block the road so no one able to go this side and it help to manage traffic.

C. PROBLEM STATEMENT:

We all know that traffic is big issue in Wagholi, Pune. Daily we are facing the small road problem which creates a traffic block. Most of the time there is 1 side block of traffic because of less width of road. Pune to Ahmednagar traveling people who do

not want to stop in wagholi, they directly go over to wagholi. And 1 more problem facing that is people on signal not follow the rules.

Following are the main problems:

1. No rules following at the time of driving on road.
2. Road area is not sufficient for moving vehicles.
3. No one focusing on this problem

D. METHODOLOGY:

1- Survey of the road problem facing in wagholi.
2- Finding solution for this problem
3- Design a whole system in Auto CAD.
4- Selection of material for construction.
5- Construct a divider, and gate block.

E. Objectives:

1. To reduce the complexity at the junction.
2. To increase the efficiency of flowing traffic.
3. To reduce the accidents.
4. To make the people follow the traffic rules
5. It is helpful in making smart arrangements of the roads in the city.

To create a comfort level road system

F. Figures and Tables

1) Traffic management system survey consist of the traffic volume of Wagholi chowk in Pune- Nagar highway. It is shown the major traffic problem of that area.

Table no-01 (vehicles moving towards Ahmednagar)

Sr no	Direction	Time	Two Wheelers	Four wheelers	Rickshaw	Buses	trucks
1.	To Nagar	(8:00-9:00)am	2762	1206	94	48	386
		(9:00-10:00)am	2511	1025	105	54	412
		(5:00-6:00)pm	1766	705	87	63	336
		(6:00-7:00)pm	1456	683	77	68	392

Table no-02 (Vehicles moving towards pune)

Sr no	Direction	Time	Two Wheelers	Four wheelers	Rickshaw	Buses	trucks
2.	To Pune	(8:00-9:00)am	2218	792	116	65	254
		(9:00-10:00)am	2101	812	132	72	267
		(5:00-6:00)pm	2638	964	156	63	395
		(6:00-7:00)pm	2856	1027	161	70	346

Table no-03 (Vehicles moving towards Lohegaon)

Sr no	Direction	Time	Two Wheelers	Four wheelers	Rickshaw	Buses	trucks
3.	To Lohegaon	(8:00-9:00)am	723	454	28	4	67
		(9:00-10:00)am	727	461	22	6	61
		(5:00-6:00)pm	714	451	27	8	73
		(6:00-7:00)pm	721	458	23	11	78

Fig. 1. (Traffic problem in Wagheshwar chowk)

G. CONCLUSION

It will help in to reduce the traffic from nagar-pune highway. Also it is helpful for the government to apply traffic rules. And people will follow the rules of traffic. Its applicable in most of city in the pune. Big highways where the village in the way their this type of system will helpful. It will applicable in the cross road and traffic zone.

By using this design we reduce a 1 side traffic from wagholi area. Gate block help to traffic officer to manage traffic and people to follow the rules of traffic. This all impact on the reducing the accident and create a safe travelling on road.

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