

Traffic Signalling & System

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Abstract— As in the cities traffic is always an issue for the passenger and the people of the various cities like Mumbai, Delhi, Bangalore, Kolkata, etc. To curb the Traffic issue of the cities. By providing iron panels, adruino chips and pressure cells on the road which is coming towards the traffic signal. As the cities lack the land spaces required for new ventures but by applying the methodology of providing iron panels and pressure cells on the present existing structure that is rigid pavement or flexible pavement. It improves the road infrastructure with a little demolition of existing structures. Iron panels and pressure cells get into the act when the load from vehicles comes on them and it changes the signal.

Keywords: Traffic Signalling & System, Iron Panels, Pressure Cells Adruino Chips, Rigid Pavement, Flexible Pavement and Curbs

I. INTRODUCTION

The Traffic congestion is the biggest problem in the world. It is increasing significantly in India also. Agencies tasked with managing traffic control system are more and more frequently challenged with moving traffic in congested condition and situation where traffic demand exceeds the capacity of the system. Its hard to believe, but rush hours at Goregaon have busiest intersection could have been worse. The rapid growth of city where more than 300 to 350 vehicles get added to the roads everyday has brought with it problems of traffic management. Desperate of solution, there has no put its faith in technology.

As a part of the world bank best supported Mumbai urban transport project, a modern traffic management system is being introduced that is quietly reducing congestion on city roads. In the Mumbai peak hours the traffic jam from Virar to Churchgate and Ghatkopar to Andheri is very high. To overcome this problem for traffic jam in peak hours we use a new technology as traffic signalling & system by providing iron panels and pressure cells. This technology is work by transferring of vehicle laod on the iron panel which is placed over the rigid and flexible pavement .This load is come in the pressure cell, this pressure cell attached with adruino and it will convert into light which is connected with traffic signal. This technology helps to overcome the traffic congestion in city.

II. PROBLEMS FACED BY THE MUMBAI VEHICLES COMMUTERS

India is a developing country, now in day to day population increases therefore traffic, population, vehicles, etc. also increases. In metro cities like Mumbai, Delhi, Bangalore the spaces are limited but peoples buying vehicles in large numbers, therefore roads are limited. Due to this traffic congestion occurs. Public who go for work have to left by their actual timing. In recently the Mumbai police constituted

a committee to give suggestion on the basis of parking spaces and congestion in the city.

The additional commissioner of police(traffic) was named the head of the committee, which also includes official from the Mumbai civic body, its transport being BEST and the states-run bodies MMRDA and MMRC.

During peak hours traffic will jam in that time if any emergency vehicles like ambulance, fire brigade, police vehicle comes get blocked because of the heavy traffic in the roads and they don't get the clear path.



Fig. 1: Figure shows ambulance stuck in heavy traffic



Fig. 2: Figure shows vehicles stuck in heavy traffic

People gets frustrated, anguish due to this heavy traffic they are unable to meet their source or meeting point at actual time.

Problems arise from this traffic issues are headache, irritating noise, air pollution and consumption of fuel increases.

III. TRAFFIC SIGNALLING & SYSTEM

A. Traffic Signal and System:

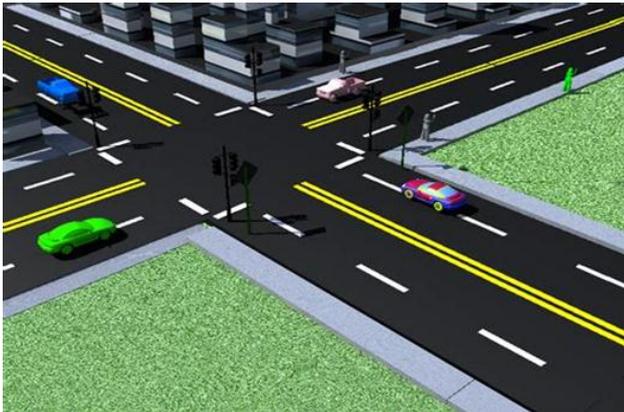
It is a set of automatically functioning of coloured lights at road junction. It is mainly consist of red, yellow and green in colour for controlling road congestion at junction. The traffic signaling and system is a technology in which all the traffic congestion will reduced .This system is used in all over the

world ,this is necessary to provide for free moving of vehicle. It is provided for controlling of traffic rules and regulation.

B. Road Pavement:

Road pavement or surface is the surface material laid on the place or area which is intend to sustain or bear load of vehicular or foot traffic, such as walkway or road.

In the past, gravel road surfaces, cobblestone and granite sets where extensively used. But we are using iron panels on the road surface. It is durable for long life, less maintenance etc. The width of road pavement is 5m and we are using the panels for 1000m.



C. Iron Panel:

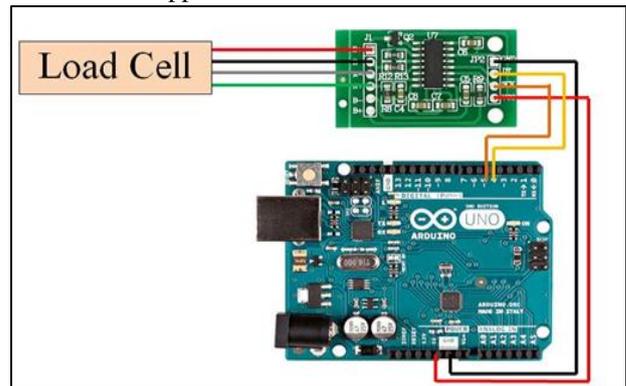
It is made or get casted of iron or steel materials. The materials get moulded into their desire shape. It can be made of various shape and size. In our project we are introduce iron panel of size about 5 meters in length and 2 meter in width for about 1 kilometer of road. Iron panels are more durable and cost efficient then other materials. This iron panel should be provided on the rigid or flexible pavement. This panel are long life, durable, economic, gripping etc. They are manufactured at any shape .The cost of one iron panel is 60 Rs.



D. Pressure Cells or Load Cells:

It is a mechanical device which is used to measure the pressure coming from the vehicles or road pavement against the earth surface .The capacity of one pressure cell is 5 ton. It is made up of stainless steel having long life .This pressure cell also used in weighbridge which is used for measuring the

weight of the vehicle .the load cells or pressure cells are available for different types of weight. The price of one pressure cell is approximate 10000 Rs.



Vehicle	Approximate vehicle weight in pounds	Comparative level of damage
9 ton big-rig	18,000	410.0625
Hummer H2	8,600	21.3675
Chevy Tahoe	5,500	3.5745
Toyota Highlander	4,250	1.2744
Average Car	4,000	1.000
RAV 4	3,550	0.6204
Prius	3,050	0.3380
Smart Car	1,800	0.0410
Fat Man on a Freakishly Heavy Bicycle	350	0.00006

E. Aduino Chip:

It is a microcontroller which is used to convert the load coming from the vehicles into light signals it is created on the popular aduino development platform. It is a electronic hardware and software material. This boards able to read input - lights and sensor, pressure on board, a finger on a button, etc. and turn it into an output – uploading a photo, turning on a signal, changing lights, etc.

F. Directions:

It is a guidance or course along which someone or something moves. It is used to reach the source in proper way. The traffic sign or road sign are signs erected at the side of or above roads to give instruction or to provide information to road users. The earliest signs where simple wooden or stone or milestones. Information and direction are rectangular, with a green background indicating the straight highway, a blue background for all other roads and all services (except in some, where directional signage is white), and a brown background for tourist attraction.

G. Sign Boards:

Signs and Symbols are used to communicate a message to a specific group, people, etc. Sign boards are essential for safety navigational purpose and direction. They are the silent speakers on the road. It gives information about road conditions, instructions to be followed, to warn or guide drivers and to ensure proper functioning of road traffic.



IV. WORKING MODEL

The model will work when the load from the vehicles comes to the panel. It will act similar to the weighbridge principle. It will act similar to the weighbridge principle.



V. CONCLUSION

As in various metropolitan cities or important cities road traffic congestion is seen. By providing this methodology we will be able to reduce the traffic issues faced by the people. To reduce many serious problems of day to day life, citizens who go to town side for their daily services or place of work for living. It seems that this is one of the most effective technology that could be made to reduce numerous flaws in the current location Goregaon checkna ka.

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