



Survey of Road Parking and Marking Study along with Traffic Density

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ABSTRACT: India is a growing economy it is almost growing at a whopping rate of 7.5 to 8%. It also has a tremendous population which contributes to this growth. Hence an efficient and quality transportation system is very important to maintain this growth rate. But looking at the current scenario we can say that the current infrastructure is not up to the mark, hence we have to strive to develop the infrastructure. The road parking study is a survey in which we observe the parking behaviour of vehicles in certain area whereas in the road marking study we observe the road markings in same area. Also we are going to study the traffic density in the same area and note down the observations. The essential purpose of road markings is to guide and control traffic on a highway. They supplement the function of traffic signs. The markings serve as a psychological barrier and signify the delineation of traffic path and its lateral clearance from traffic hazards for the safe movement of traffic. Traffic density is a fundamental macroscopic characteristic of traffic flow, and is used in assessing traffic performance from the point of view of users and system operators. It is also employed as the primary control variable in freeway control and surveillance systems.

KEYWORDS: Traffic Survey, Kolhapur City, Parking Study, Marking Study, Traffic Density.

I. INTRODUCTION

The city of Kolhapur is situated on the south-western part of the state of Maharashtra. The city of Kolhapur is also a growing economy with a promising future. But the transportation system here is not suitable to carry its future developmental hunger, hence an efficient and well managed transportation system is the need of time.

The place we visited for survey of parking study was near to Dabholkar corner area. We have selected this area since this location is very near to the crowded area of central bus stand. We conducted the study on a stretch of 250mts. The main aim of our survey was to identify the traffic problems in that area and provide feasible solutions. This area is mostly a commercial area with lots of public buildings such as offices, restaurants, hotels, shops, etc. Thus the number of people travelling in this area is also high. So, the number of vehicles coming to this area is also high. But unfortunately the infrastructure is not up to the mark because of which there are problems such as traffic jams and insufficient space for parking. Apart from this it is quite difficult for the authority to maintain this area and conduct repairs during the day time because of the high number of people using this area during the day. This is causing problems such as poor road markings and lack of traffic signs and signals.

Study Area

Location :- Dabholkar corner (Central Bus Stand area)

Length of road :- 250 meters.

Width of the road :- 17 meters.

Total lanes :- 5

II. RELATED WORK

The focus of the literature search was on the impacts from the conversion of traffic lanes into on street parking on:

- a. Capacity,
- b. Safety,
- c. Accessibility,
- d. Development and economic growth,



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- e. Traffic calming, and
- f. The environment.

Consideration was also given to other relevant issues such as:

- a. Analytical models to estimate quantitatively the demand for on-street parking,
- b. Effect of on-street parking design on traffic operations and safety,
- c. Parking management and pricing policies,
- d. Parking enforcement, and
- e. Potential impact of emerging new technologies on parking.

On-street parking limits street capacity in two ways. First, it preempts lanes that otherwise would be used by moving traffic. Second, parking and un-parking maneuvers frequently reduce the capacity of the adjacent lanes. Even a single vehicle parked within a curb lane can effectively close the lane to moving traffic. An early study on traffic signal design by Webster and Cobbe (Webster F.V. and Cobbe B.M., 1966) reported that a single parked vehicle at or within 7.6 m of the stop line caused a loss in the effective width of the roadway directly equivalent to the width of the vehicle.

III. METHODOLOGY

The road opted for survey was in front of Mahalaxmi Chambers, which is basically a commercial building located in the hustling bus stand area. Almost hundreds of people visit here daily for business purpose. Also there are various travel agencies here whose buses are parked daily on the road. Although there is separate parking space available for two wheelers in the rear side of the building it is a bit insufficient. Which results in parking of vehicles on the front side of the building. This leads to parking of the vehicles on the footpath. Also there are lot of shopkeepers who place their advertisement boards right in between the walking area which creates a problem to the pedestrians. There are always buses and auto-rickshaw parked on the roadside, this creates traffic congestion. Also there are a very few pedestrians who try to walk on the footpath, thus making them useless. There are also a few hawkers who occupy some part of the road. Also some four wheelers are also parked on the other side of the road thus making lesser road available to use. The main traffic consist of buses, auto rickshaw, two wheelers and cars. However LCV are also seen around here often. Since the road over here is always having traffic there are very few times when maintenance work is carried out here. The marking on the road are almost faded away. There are very few sign boards, which indicate any traffic rules. There are no proper markings for the parking facilities which leads to improper and disruptive parking by the people.

IV. PROPOSED SOLUTION

First of all the roads must be cleared off by not allowing people to park on the roads, Buses which take most of the part of the road should not be allowed to stand by. The hawkers and the street vendors must be allotted a separate place for business. Auto rickshaw must only stand in the Rickshaw stand specially allotted for them.

We can also resolve the parking problem by creating a parking lot on the Sasne ground area. The advantage of this kind of parking will be that there will be no excess vehicles in the bus stand area which will also help to reduce the traffic congestion during the peak hours.

Another solution available to us is that we can allow only government vehicles and two-wheelers to enter this area, all the private vehicles (including private buses, cars, auto rickshaws, and trucks) will be allowed to enter this area only between 10:00PM and 6:00AM this would reduce a lot of traffic pressure on this area.

We can also allot a few traffic police constable who can maintain the traffic rules and regulations in this area.

Thus these are the feasible solutions to reduce the traffic parking problems in the area of Dabholkar corner near Central bus stand.

The picture depicts the alternate location for parking of vehicles to reduce traffic congestion by building a parking lot. It would be very helpful as it is very close to the survey area and the area is big enough.

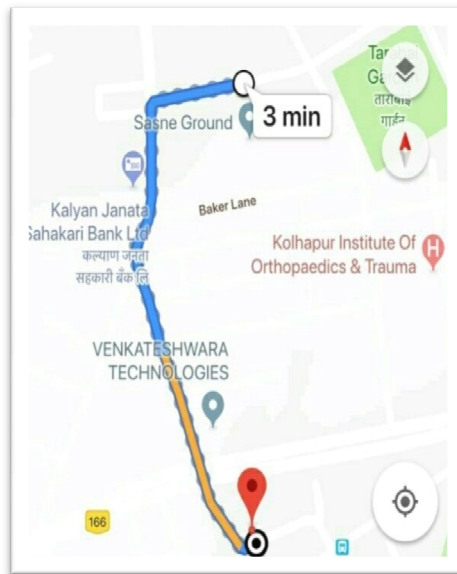


Fig 1 Alternate Parking Location

V. SURVEY RESULTS

Fig 2 Shows the Ariel view of the traffic density in the survey area which causes traffic congestion due to narrow roads and more density of vehicles. Also traffic regulations are poor.

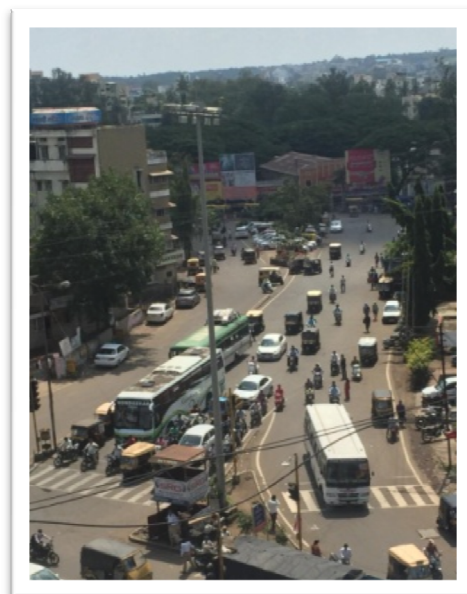


Fig 2 Shows the traffic density in the area

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The fig below shows the illegal occupation of the road by the street vendors leading to narrowing of road and occupation of foot paths and parking spaces which leads to pedestrians walking on road .



Fig 2 Illegal occupation by street vendors

The fig below shows improper parking of vehicles. As we see the vehicles are outside the parking borders there is less space for proper movement of vehicles thus leading to congestion.



Fig 4 Improper parking of vehicle

The following bar chart depicts trend of different category of vehicle registration in karvir taluka over a period of six years. Here we can observe that the trend of buying two wheelers is almost constant whereas the number of four wheelers is also almost same every year. The other category of vehicles include buses and auto rickshaw.

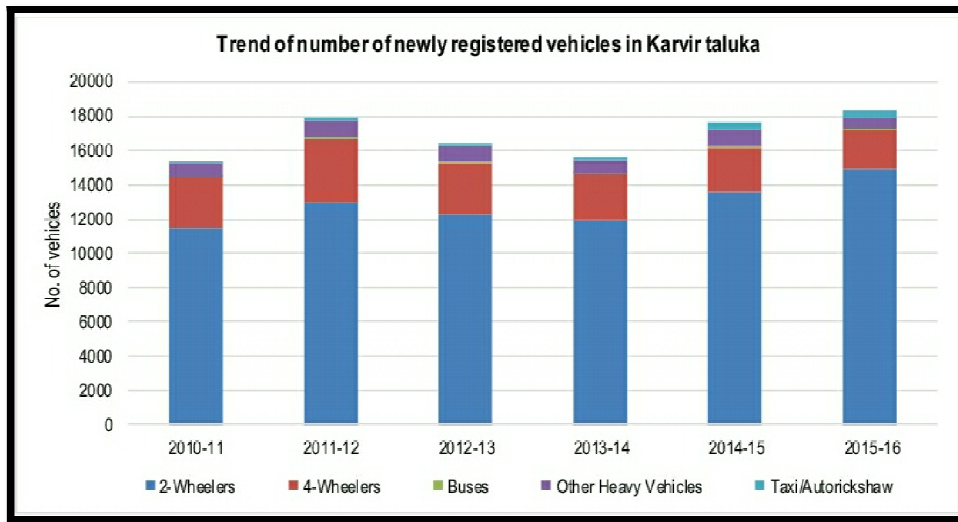


Fig 5 Bar chart of different types of vehicle registration in karvir taluka

The bar chart given below depicts the gradual rise in number of vehicles in karvir taluka from march 2010 to 2016. Here we can observe that there is a gradual rise in number of vehicles over a span of six years and we predict this rise is going to continue over the coming years.

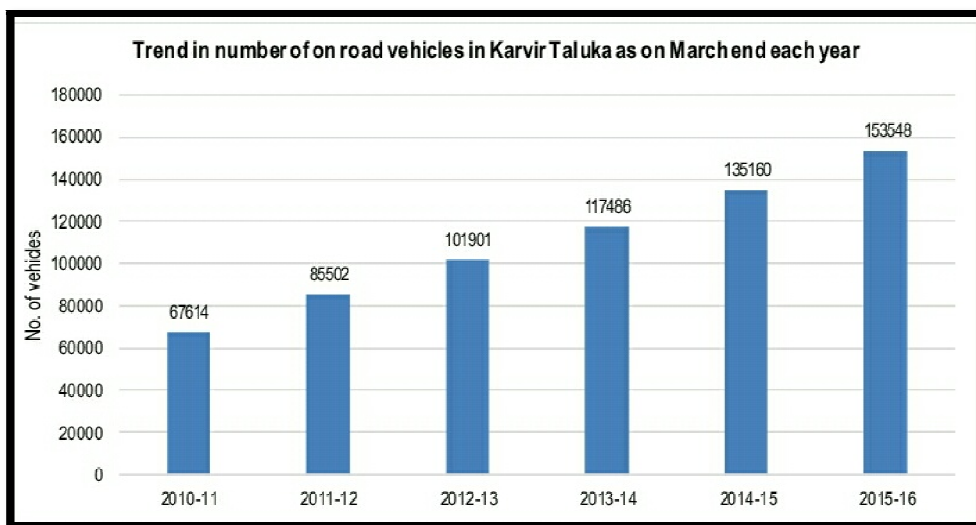


Fig 6 Trend in number of vehicles in karvir taluka from 2010 to 2016

Fig below shows poor maintenance of road marking and absence of traffic signs and signals which leads to poor regulations in traffic and road users disobeying the traffic rules.



Fig 7 Fading of road marking and absence of traffic signs.

Fig below shows the poor maintenance of traffic signs and improper use of advertisement boards on the traffic cambridge.



Fig 8 Poor maintenance of traffic signs



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Thus we observed that the maintenance of the roads and traffic signs and signals is very poor and requires quick attention of the authority to prevent further degradation of the same. Also adequate number of traffic constables are needed to be appointed to impose proper rules and regulations in the area.

VI. CONCLUSION

By conducting this survey we observed the poor road infrastructure quality and provided some urgent and necessary but at the same time efficient solutions for the problems. This survey pointed out the actual flaws in the road infrastructure in this area and the reasons behind it along with the factors governing it and provided feasible solutions

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