

Analysis of Existing Parking System in Selected Areas of Nashik

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Abstract – The restricted capacity in association with the rapidly increasing vehicular load affects the system & generates transportation problems like traffic congestion, reduction in speed, increase in pollution & accidents, reduction in parking area etc. The increase in vehicular load causes not only transportation problems like loss of productive time but increase in distress condition, and loss in business & revenue due to psychologically reduced accessibility etc. The areas of old Nashik, i.e. Ravivar Karanja, Main Road & Shalimar are the core of business activities in Nashik. This attracts the people for various purposes like shopping, banking, commercial, entertainment, office works etc. For this area, parking allotments are provided nearby the footpath or in the open space in the particular area. In Nashik city, the roads are narrow and inadequate links across the river. Also there is no cycle track and there are missing links in the existing network. To overcome these problems, the proper arrangement of parking was necessary. To control the traffic in business area by providing parking facility at the entry of that area. This will help in reducing the number of vehicles in the core area. To providing parking facility in well manner so that less space is occupied by vehicle & travelling time is also less.

Key Words: Pollution, traffic, speed, parking facility etc.

INTRODUCTION

Nashik city is a “Holy City”, from ancient times. Nashik city is divided in two parts by the flow of river Godavari with the northern part being called Panchvati. The city got its name from the fact that it is surrounded by nine mountain peaks which provide it by natural fortification. As Nashik is one of the most developing towns in Maharashtra it is a potential goal mine having two full-fledged industrial estates of MIDC, one at Satpur occupying 637 hectares area and another at Ambad having an area of 521 hectares. As Nashik is a part of Golden triangle and also marching towards becoming smart city, there is increase in the demand of real estate, infrastructure, and shopping mall, commercial places like banks, offices and etc. which results into increase in vehicle population. As a result there is a need to make provision for parking of vehicles. According to Regional Transport Office (R.T.O), Nashik has 4th rank in Maharashtra in increased rate of vehicles. In Nashik city, the roads are narrow and inadequate links across the river. Also there is no cycle track and there are missing links in the existing network. To overcome these problems, the proper arrangement of parking was necessary. To control the traffic in business area by providing parking facility at the entry

of that area. This will help in reducing the number of vehicles in the core area. To control the haphazard parking by providing parking facility in well manner so that less space is occupied by vehicle & travelling time is also less. To assess existing parking demand and its characteristics. To analyse and eliminate existing parking area. To analyse future parking needs.

LITERATURE REVIEW

H.C.Bhatia : The Chandigarh city is mainly divided into three parts, North part comprises of government bodies, Central part comprises to business and commercial premises, Southern part comprises government bodies and open ground space. The central commercial portion mainly consist of shops, emporia, restaurants. This area draws continuous flow of the traffic, due to a one or other reasons. In this area management of the parking lots is poor. At times, the parking lots located in front of shops are found occupied with more than the capacity, whilst those lying at the back of the shops are falling vacant. The irregular parking patterns are also creating chaos in the area.

Mehmet Emere Bayraktar et al: in this paper sought to understand the truck parking problem in Florida, determine the supply and demand characteristics for commercial truck parking, assess technology that can be used to improve parking management, and conduct a pilot project to test a smart truck parking- management technology

METHODOLOGY AND SURVEY:

Procedure:

1. Select specified area for survey & count number of vehicles parked in that area with respect to time by registration number plate technique and comply this data for every analysis.

2. By this, the number of vehicles is obtained for on-street parking and off-street parking

From the data obtained, one can suggested parking spaces according to the position which can be easily accessible to the users and also different type of parking system can bring up into utilization as per need of the particular locality. The **REGISTRATION NUMBER PLATE TECHNIQUE** is used for survey work.

FIELD WORK:

The survey was carried out from 10:00Hrs. To 19:00Hrs.

The study area is divided into 4 parking lots on the basis of their location and use.

The recorder noted down the registration number of parked vehicles, while moving along the periphery of road and completing one cycle within the circuit length. The data is recorded for different categories of vehicles.

PCU are decided on the basis of parking area required by different categorized of vehicles for parking man oeuvres, assigning the factor for cars as unit.

The various remedial measures (physical and fiscal) have been suggested on the basis of parking characteristics being studied and evaluated.

Also there was interaction with shopkeepers & road users and asked about their opinions about pay & park policy of parking. Following roads have been surveyed and their details are shown as below:

1. Main Road, (Raviwar Karanja to Mhasoba mandir).
2. Tilak Road, (Raviwar Karanja to MG Road Signal).
3. MG Road
4. Raviwar Peth Road (Ashok Stambha to Raviwar Karanja).

CONCLUSIONS

1.MAIN ROAD:The area where we conducted the survey is the central business area of the city. Hence, the trips generated in various parts of the city towards the R.K and Main Road can also be assessed to control them at origin and destination points.

Duration (HOURS)	Two Wheelers	Cars/Jeeps/Vans	Tempo	Auto
Less than 1	294	0	0	0
2	64	0	0	0
3	34	0	0	0
4	25	0	0	0
5	5	0	0	0
6	7	0	0	0
7	3	0	0	0
8	2	0	0	0
9	2	0	0	0

Parking duration of number of vehicles

From all the above study, the parking index may becomes more than 0.78 after ten years, and at that time haphazard parking will causes so many problems, and it will may effect on businesses of shopkeepers. So there is need to provide long term parking facility. The average parking load is found to be 155veh./hr.

2.Tilak road:Due to less width of the road, only one way passing was provided from R.K. to M.G. road. Due to the more vehicles are passing through that road and the width was not sufficient, traffic was every time present on that road, before two to three month. But for reducing the traffic, Nashik Municipal Corporation constructed a new road which is having the width is of 9.15m and the side width of shoulder is 2.5m on both side. From analysis of data, we conclude that peak hour accumulation is between 1:00- 2:00pm and 5:00-6:00pm. Since it is commercial as well as business road. The dip accumulation is in between 10:00-11:00am. From all the above study, the parking index may becomes more than 1.084 after ten years, and at that time haphazard parking will causes so many problems, and it will may effect on businesses of shoppers. About 58% vehicles are parked for less than 1Hr. For whole survey during peak load it may be 253 veh/hr.

Duration (HOURS)	Two Wheelers	Cars/Jeeps/Vans	Tempo	Auto
Less than 1	490	21	0	62
2	184	7	0	0
3	66	7	0	0
4	43	2	0	0
5	29	2	0	0
6	9	0	0	0
7	13	0	0	0
8	8	0	0	0
9	3	0	0	0

3.M.G.Road: M.G.Road is one of the crowded areas in Nasik city. It has commercial complex on both sides of the road. We observed that there is no separate place for parking is provided nearby the road at walking distance. The people come with their private vehicles & park it outside the shops. Also vehicles of the shop owners were parked in front of respective shop. The parking is not in the disciplined manner.

Duration (HOURS)	Two Wheelers	Cars/Jeeps/Vans	Tempo	Auto
Less than 1	1050	111	4	12
2	131	37	1	0
3	33	13	1	0
4	18	14	0	0
5	11	10	0	0
6	10	7	0	0
7	3	8	0	0
8	2	4	0	0
9	0	1	0	0

From analysis of above data, the peak accumulation is between 1:00-2:00pm and 4:00-5:00pm. Since it is commercial as well as business road. From all the above study, we concluded that the parking index may becomes more than 1.2 after ten years, and at that time haphazard parking will causes so many problems, and it will may effect on businesses of shoppers. From above table, we conclude that about 83% 2 wheelers are parked for less than 1Hr. But about 17% vehicles are parked for more than 1Hr. However only 54% 4 wheelers were parked for less than 1 Hr while 46 % 4 wheelers are parked more than one Hr.

4.Ravivar Peth: The road from Ashok Stambha to R.K. is a one way traffic road. The road starts near the Ashok Stambha & ends at the Ravivar Karanja circle. The road has no. of shops on both the sides. The people come with their private vehicles & park it outside the shops. Also vehicles of the shop owners were parked in front of respective shop.

Duration (HOURS)	Two Wheelers	Cars/Jeeps/Vans	Tempo	Auto
Less than 1	292	111	4	12
2	73	37	1	0
3	44	13	1	0
4	13	14	0	0
5	31	10	0	0
6	21	1	0	0
7	7	0	0	0
8	4	0	0	0
9	1	0	0	0

From analysis of above data, the peak accumulation is between 2:00-3:00pm. And 5:00-6:00pm. Since it is commercial as well as business road. The parking index may becomes more than 1.05 after ten years, and at that time haphazard parking will

causes so many problems, and it will may effect on businesses of shoppers. About 60% 2 wheelers are parked for less than 1Hr. But about 40% vehicles are parked for more than 1Hr. So there is need to providing long term parking facility on that road. The average parking load is found to be 157veh./hr. for the whole survey and during peak load; it may be 178veh./hr. There is a need of adopting such policies, in the parking lots located in front of shops, which are more beneficial for short term parkers then for long term parkers.

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