



A Review Paper On 'Feasibility of traffic in Kharghar Node'

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● ABSTRACT

The developing interest for open transport in urban communities affects urban biological communities, particularly because of the expanded air contamination and changes in land use designs. A biologically supportable urban transport framework could be gotten by a proper blend of elective methods of transport bringing about the utilization of earth inviting energizes and land use designs. Transport, on account of its unavoidable nature, possesses a focal position in the texture of current urbanized society. In the majority of the nations, this has been an account of transformative change with new transport advancement supplanting the old transport framework in light of apparent financial requirements of the general population.

This project involves a case study for the feasibility of traffic in Kharghar node. The feasibility study involves the solution which are physically and economically possible to perform. We aim to provide a solution to the traffic problems, which have increased in the last few years due to rapid urbanization and industrialization. With this the increase in population has caused rapid growth in private and commercial vehicles affecting the traffic. Hence we aim to undergo a study where the multidimensional parameters will be considered, causing the issue and find a feasible solution. The solutions will be carried out in the most efficient and time saving manner, where the public transportation and road ways will be efficient to reduce the traffic. The problem which has been identified, will be resolved as per the demand and nature of the problem rather than just stating the previous study conclusions.

Keywords— *feasibility study, cost benefit analysis, traffic scenario, multi-dimensional solution, urbanization.*

● INTRODUCTION

In this quick moving mechanical world, urbanization and industrialization has increased genuine fascination. Assembly of assets altogether relies on transportation. Legitimate channelization and compelling arranging of transportation is fundamental for effective advancement of our locale. Mass transportation fulfills every one of the perspectives in this manner giving much significance to the development of traffic in a quick way. Mass transportation encourages between availability inside the

city is without a doubt an additional advantage.

The principle understanding that typically pursues the term achievability is one of the accompanying: the case in which an elective alternative, a methodology plan, a structure or an alternate area is demonstrated monetarily best; the case in which an elective alternative is regarded proper in social or ecological terms and the case in which plausible development and activity of a venture can be monetarily feasible just as reasonable. An achievability contemplate is a multidimensional arrangement of activities which expects to break down and assess a task so as to decide whether its development is doable. Such an examination alludes to the appraisal of results which concern the financial conjecture in connection to other vital elements, for example, financial effectiveness and natural effect. The characterizing purpose of an attainability contemplate is the vital data that drives decision makers to choose if the proposed alternative or task ought to be executed. Its need in undertaking advancement is viewed as critical, as the recognizable proof of mistakes in this stage adds to better execution of the undertaking. In this way, the accomplishment of a task is dictated by the suppositions that are set amid the plausibility contemplate process.

• **METHODOLOGY FOR THE FEASIBILITY STUDY**

For the study, location and the type of each project are factors leading to the diversification of feasibility studies. Through a recent survey conducted by *Shen et al* in four different project categories (residential, commercial, public and industrial) various methods were used to obtain the result. So we categorised the study into different parts.

The following were the

- **Location assessment**
- **Demand analyses**
- **Financial analysis**
- **Social-environmental assessment**

• **Location assessment**

For this the location with maximum congestion were studied. These included (**3-MONKEY, UTSAV CHOWK, HIRANANDI JUNCTION, AND KHARGHAR STATION UNDERPASS WAY**). All the locations were highly populated areas where the transportation through vehicles or by foot was the only way to travel to different location. Most of the people use 4-wheelers, 2-wheelers, autorickshwa or public transportation provided by the government. All location were thoroughly checked for the flow of traffic which meant to observe the vehicles either going into the city or outside the city

Below figures shows the various spots that were under the surveillance

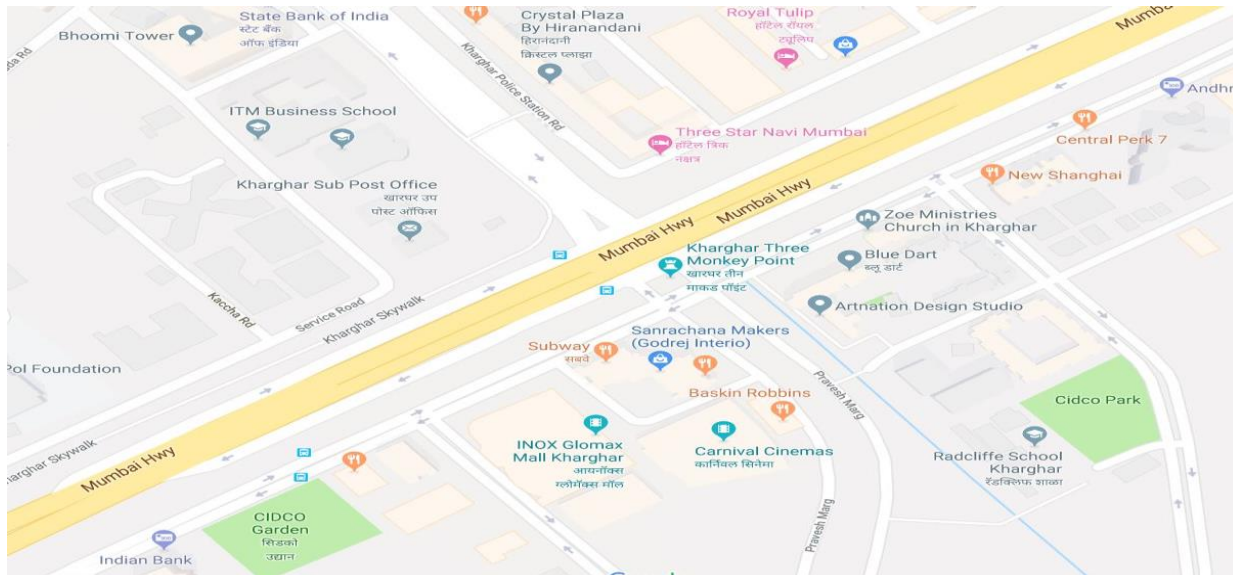


Fig:1(A) 3-monkey point

This point is the main intersection point where the traffic either enters the **KHARGHAR** city or leaves. This is also the stop for the intercity buses which travel to various locations like **Mumbai City, Pune, Bangalore etc.** There is a traffic controller on this spot, which handles the traffic when there is congestion. This is the prime location for the traffic where majority of the people get stuck in traffic.

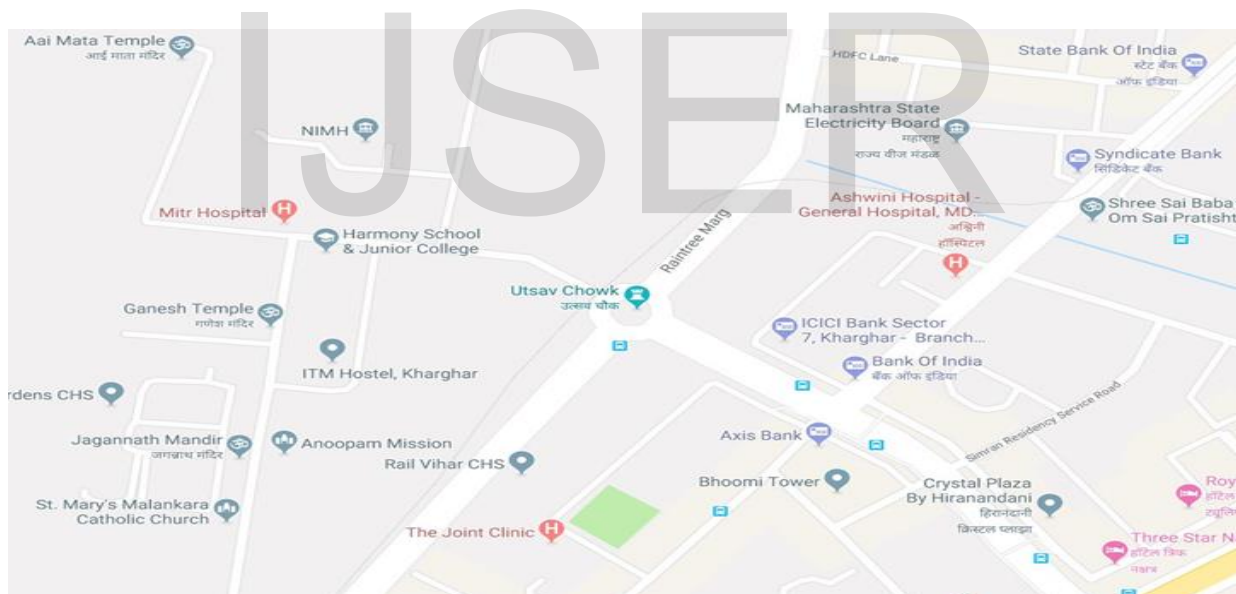
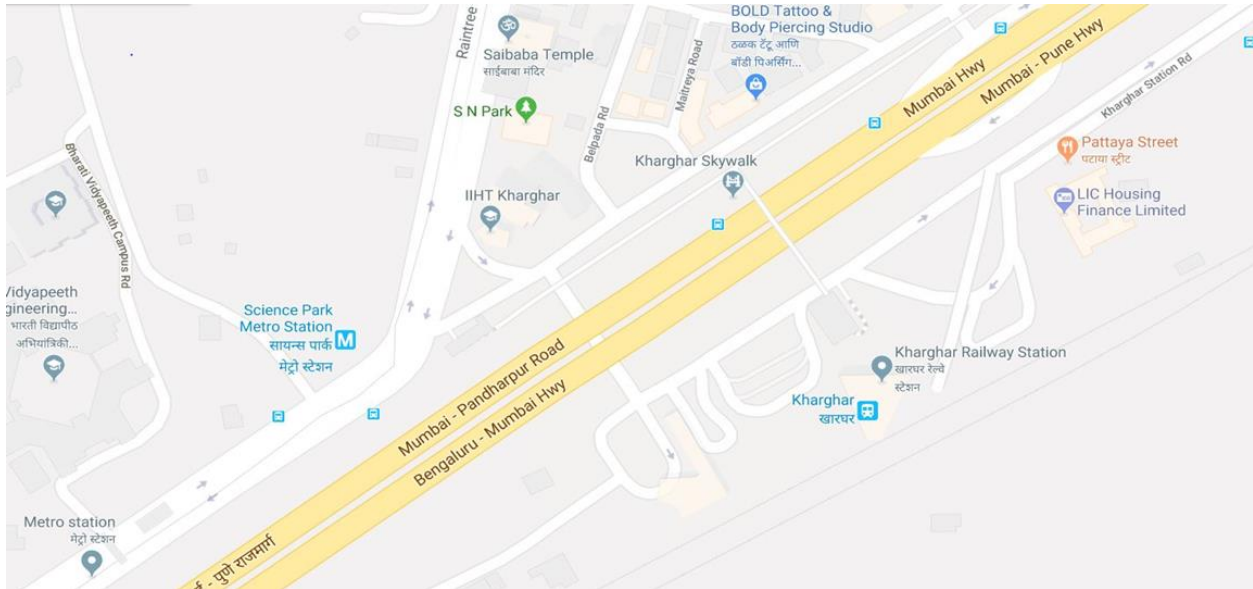


Fig:1(B) Utsav chowk

Utsav chowk is the travelling route for the people living in the developing sector of **KHARGHAR** like sector-12 to sector-36. Here, there is an area of people travelling on a daily basis, hence there is congestion at this point at peak travelling hours.



Under passage (BELPADA VILLAGE)

This spot is near the train station where there are major pedestrian travelling. There is heavy load of 2-wheeler and autorickshaw in the area which causes the major traffic issue. And there are two ways to travel in the underpass but only one is available to travel by the vehicles, other one is preserved for the pedestrian. This majorly causes the traffic on this route, which in turn makes congestion on the same route where the NMMT buses travel.

All the above location also were surveyed for the extra details like the traffic signal, junction, a roundabout, roads with service road which lead to main connecting road etc. All the above were taken into consideration while location assessment.

- **Demand analysis**

Demand forecasting is an important step in a feasibility study as it assesses the necessity of the project. The broad coverage of areas, advanced connectivity and the placement of crossing are factors that increase the demand for the use of an alternative solution. The outcomes of the demand forecasts are necessary as they contribute to the determination of elements such as the roadway capacity, skywalk for the pedestrian, alternative route for heavy vehicles and traffic control unit office. This stresses the importance of the precision in forecasting demand, to ensure that the project undertaken is not a waste of time and finance.

This mainly involves the analysis of the solution to be put through after the problem has been detected. This directly puts that after location assessment there has to be proper findings that support the feasible solution. The following are the findings that were found out:

- Width of the road that the maximum number of vehicles travel**
- Parking area near these road which causes more congestion**
- Traffic control station near the major roads**
- Pedestrian travelling route and availability of the skywalk**
- NMMT bus stop and their route of daily travel**
- Auto-rickshaw stop and their route of commute**
- Inter-city bus stop**
- Taxi which travel to Mumbai city and Panvel**
- Collage bus which have a definite route of travel**

These findings were important in the financial analysis which is the major hurdle to overcome.

- **Financial analysis**

The money related examination comprises of the monetary net present esteem, budgetary profit for venture cost (FNPV(C) and FRR (C)), wellsprings of financing, monetary supportability, the money related net present esteem and budgetary profit for the national capital (FNPV(K) and FRR(K)). The FNPV is characterized as the total that outcomes when the normal venture and working expenses of the undertaking are deducted from the limited estimation of the normal incomes. Money related manageability is a standout amongst the most essential highlights in plausibility examine. The term money related maintainability incorporates the likelihood of an undertaking not risking a money setback in any period of its execution for the thought about timeframe.

The main aim was to keep the cost of the solution to such extends that the Government or the authority responsible for the implementation, is able to put into the required changes. Finance of the project was mainly dependent on the outcome from the demand analysis, were the requirement of the masses was taken into consideration and then the solution is put into action.

- **Social–environmental assessment**

Social and Environmental Assessment One of the most essential goes for the improvement of open division ventures as per Shen et al is to satisfy the social targets The potential social effects which are normal from the presence and the present undertaking could be partitioned into three classes, to be specific financial proficiency (traveler time investment, decrease of traffic blockage, cost sparing to society), advancement plan of the city (increment of profitability, proficiently capacity of urban zones, urban improvement) and social enhancements (access for all individuals, land procurement).

In this mostly the society is taken into consideration were all the changes which may affect the public and the people travelling in the vicinity. These mainly included

- **The feedback form the pedestrian travelling in the vicinity**
- **Taking an opinion from the (RTO) traffic controller**
- **Having a feedback from the NMMT bus drivers**
- **The auto-rickshaw union were important for the feedback**
- **Ola/uber drivers were also take into consideration for the feedback**

- **Case study for the feasibility of traffic in KHARGHAR node**

The case study is regarding the study of feasibility of traffic in **KHARGHAR** node, kharghar lies in the planned and developing region of **NAVI-MUMBAI**. **Kharghar being a small part of Navi-Mumbai lies on the NH48 which continues till BANGALORE. This being a very busy highway number of vehicles traveling daily is higher as compared to the other routes.**

Kharghar lies in the state of Maharashtra, near Mumbai which is the most populated city in India. Hence, another reason being so close to the densely populated city, there is migration of people from the main city to Kharghar. Which in turn has increased the population by a major number. This has caused a planned city to suffer from the development issues like traffic and parking problem.

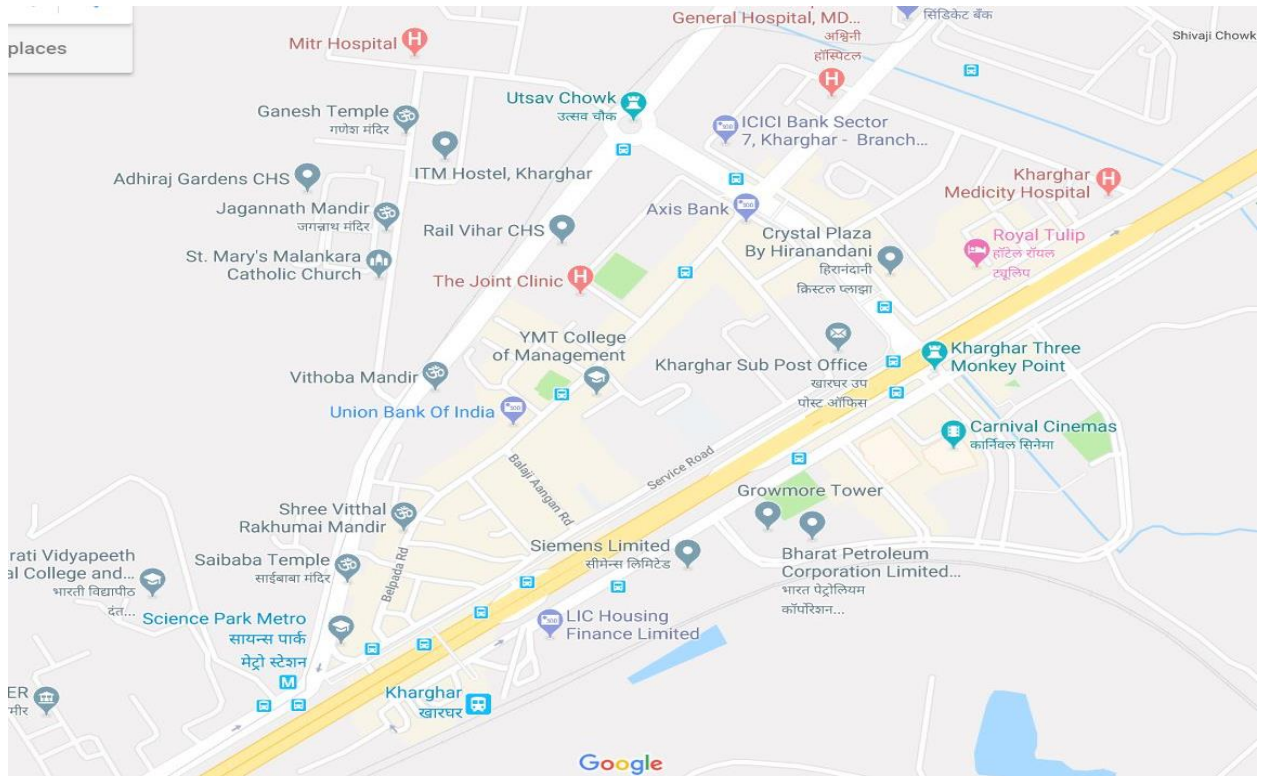


Fig: 1(C) Kharghar city

● **Traffic scenario and its alignment**

Like any other metropolitan cities in India, Kharghar also faces many transport problems. Low travel speed, high congestion and increased vehicular pollution are mainly due

- Narrow roads with heavy traffic congestion
- Frequent traffic jams at numerous road intersections
- High number of composition of traffic consisting of low occupancy vehicles
- Very high number of auto rickshaws
- High parking demand due to proliferation of personalized vehicles
- Over-crowded buses with long routes
- Pedestrian using the road rather than the skywalk

Hence a need of improving the traffic situation was necessary, and the survey based project was put into action. When all the problems were analyzed the feasible solution were to be found out with the help the data that was collected.

● **Location of survey**

When a survey was undertaken the following were the hotspot that were under taken for the survey, which had their own issues and type of traffic. The location were done a survey at the peak hours when the traffic was maximum, while the normal hours when the traffic was normal were also done a survey

The peak hours are

Morning- 8am to 9:45am and the Evening- 6:30pm to 8:45pm

The timing were selected on the basis when

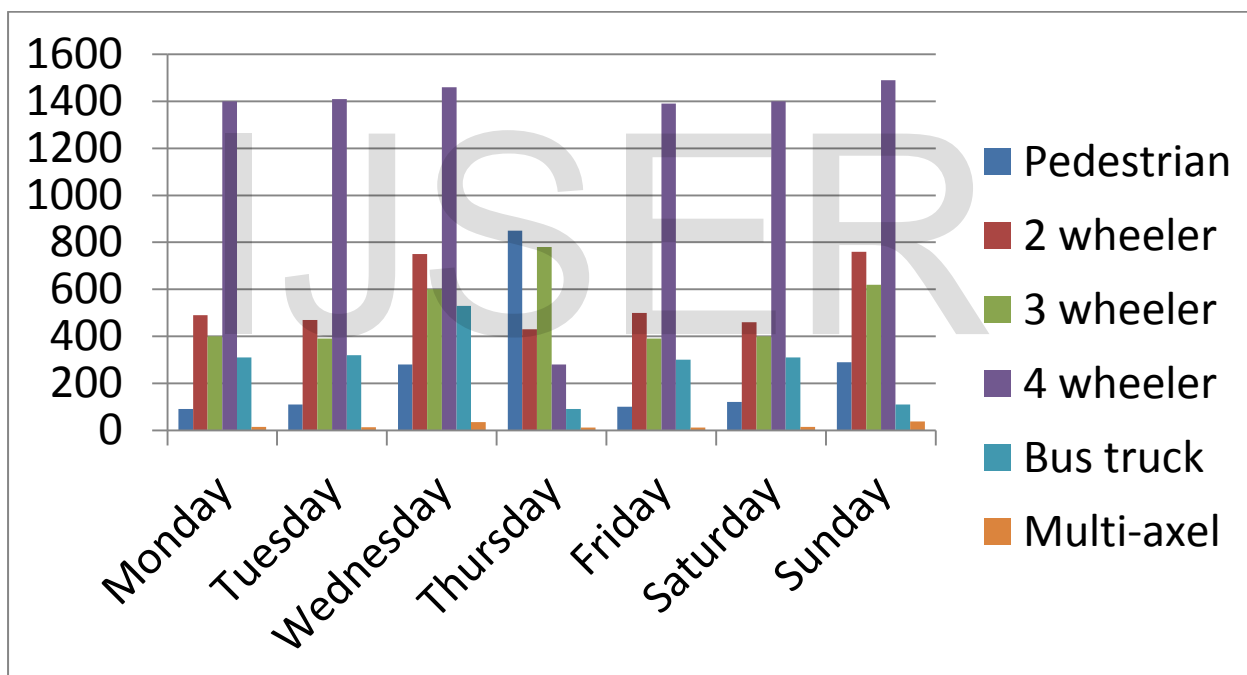
- Majority of public leaves for the office and work
- The timing of the collages in the area
- Timing of the schools and pre-schools
- And observation at the different location

These were the major reason to set the timings at that time.

The different location are:

- a. 3-Monkey point
- b. Utsav Chowk
- c. Hiranandani signal
- d. Belpada underpassage

The Classified Volume count has been taken at these places during the peak hour and other duration. The results are summarized as follows:



The questionnaires' taken during the survey were also useful, the traffic chart clearly notes that due to increase in the population the private vehicles have increased by two fold which turn the problem of parking of the masses in the commercial area.

While the data is the collection of the all the location and a entire month it only shows one side of the problem which may turn in major problem in the future , hence a proper plan is required to be implemented.

• Questionnaire Survey

A questionnaire (or form) is a group or sequence of questions designed to obtain information on a subject from a respondent. Questionnaires play a central role in the data collection process since they have a major impact on data quality and influence the image that the statistical agency projects to the public. Questionnaires can either be in paper or computerized format. Problems faced during Questionnaire design include: deciding what questions to ask, how to best word them and how to arrange the questions to yield the information required. The goal is to obtain information in such a way that survey respondents understand the questions and can provide the correct answers easily in a form that is suitable for subsequent processing and analysis of the data. While there are well established principles for questionnaire design, crafting a good questionnaire remains an art requiring ingenuity, experience and testing.

The questions are as follows:

- a. **Is the traffic regulation in KHARGHAR satisfactory?**
- b. **Does KHARGHAR have good road planning and good quality of road?**
- c. **Do you observe yourself stuck in traffic frequently?**
- d. **Is the traffic controller able to control and regulate the traffic efficiently?**
- e. **Is there a need for another road connection to KHARGHAR Railway station?**
- f. **Is parking regulations for the crowded area proper?**

Sr No.	Questions	Feedback
1	Is the traffic regulation in KHARGHAR satisfactory?	Pedestrian- Yes-7 No-3 Swiggy/ola- Yes-8 No-2 Auto-rickshaw- Yes-6 No-4 NMMT bus driver- Yes-5 No-2 SCOE bus drive- Yes-4 No-3
2	Does KHARGHAR have good road planning and good quality of road?	Pedestrian- Yes-8 No-2 Swiggy/ola- Yes-7 No-3 Auto-rickshaw- Yes-4 No-6 NMMT bus driver- Yes-4 No-3 SCOE bus drive- Yes-5 No-2
3	Do you observe yourself stuck in traffic frequently?	Pedestrian- Yes-9 No-1 Swiggy/ola- Yes-8 No-2 Auto-rickshaw- Yes-8 No-2 NMMT bus driver- Yes-5 No-2 SCOE bus drive- Yes-6 No-1
4	Is the traffic controller able to control and regulate the traffic efficiently?	Pedestrian- Yes-2 No-8 Swiggy/ola- Yes-8 No-2 Auto-rickshaw- Yes-6 No-4 NMMT bus driver- Yes-5 No-2 SCOE bus drive- Yes-1 No-6
5	Is there a need for another road connection to KHARGHAR Railway station?	Pedestrian- Yes-7 No-3 Swiggy/ola- Yes-8 No-2 Auto-rickshaw- Yes-8 No-2 NMMT bus driver- Yes-7 No-0 SCOE bus drive- Yes-6 No-1
6	Is parking regulations for the crowded area proper?	Pedestrian- Yes-1 No-9 Swiggy/ola- Yes-1 No-9 Auto-rickshaw- Yes-3 No-7 NMMT bus driver- Yes-2 No-5 SCOE bus drive- Yes-0 No-7

Here the volume of the data is as follows:

1. **total number of pedestrian=10**
2. **total number of swiggy/ola=10**
3. **total number of Auto-rickshaw=10**
4. **total number of NMMT Bus driver=7**
5. **total number of SCOE bus drive=7**

From the above questionnaires' we can approximately figure out the problem, where most of the people are satisfied with the road quality and the regulation which are put into action. The major problem which was found out was the parking issue were the most of the people were facing an parking issue were there was no available. Hence, most of the people used the road side area which increased the congestion and the Traffic regulation Officers were force to put a CHALAN on the no parked areas. And the rest of the issues are resolved in the conclusion wee the conclusion is based on the economic based type, which in turn mean that minimum amount of changes would be needed to resolve the problem.

● **Observation, conclusion and recommendation**

- There is a need of making more strict action on the traffic regulation
- The traffic controller department has to adjust the timing of the signal that is between the (3-monkey) and (Hiranandani junction) so that the vehicles have a proper time and they don't have to wait for longer period of time.
- The service road in the sector 4 has to have a proper signal arrangement so that the people travelling from there don't rush and make a traffic jam at the junction.
- The people travelling to KHARGHAR can use the break in provided to entre the city before the (3-Monkey) junction
- The underpass near the station that allows the pedestrian and the vehicles to travel to Belpada village have more difficulty due only one road made available to use, there is a need to available to travel so that there is a two way pass and vehicles don't get stuck.
- A signal system can be added to the UTSAV chowk so there are less number vehicles travelling, and traffic jam can be avoided.

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