

# Traffic Analysis & Impact Study for Infrastructural Growth of Dhule City

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**ABSTRACT**— Despite being on junction of three National high ways, Dhule has not risen much into the development area. The key problems here are the majority of rural population and lack of industrial growth. The project was aimed at Traffic Impact Study of these National Highways passing through the city and to suggest some mitigation measures for better traffic management. The project was completed by studying traffic conditions at important intersections and parking problems in business area of Dhule. The result of traffic studies indicated that lack of traffic management and inadequate infrastructure and scarcity of parking spots as primary reasons for traffic irregularities. Hence the project has recommended parking lots and their benefits, access sectors for divided traffic and some smart strategies to cope with the increasing traffic and to reduce impact on surrounding. However, this project can be further studied for traffic increments due to Navapur-Manmad rail route.

**KEYWORDS** – Dhule, NH-3, NH-6, Traffic Impact Study.

## I. INTRODUCTION

Dhule is largely emerging as one of the biggest upcoming hubs of Textile, Edible oil, and Power-loom across the state and has gained a strategic advantage for being on the junction of three national highways viz. NH-3, NH-6, AND NH-211. Dhule is also a part of Delhi Mumbai Industrial Corridor Project, India's most ambitious infrastructure program, aiming to develop new industrial cities as 'Smart Cities' and converging next generation technologies across infrastructure sectors.

The objective of this study is to assess the potential impact of traffic generated by existing (NH3) & proposed (NH6) national highways on the roadway segments, intersections and at access points of the Dhule City and recommend various roadway improvements and mitigation measures required to ensure safe and efficient vehicular and pedestrian circulation in the study area upon the completion of project.

## II. LITERATURE REVIEW

### A. Existing Conditions -

Dhule is a city and a municipal corporation in Dhule District in the north-western part of Maharashtra state, India.

It is one of the very few well-planned cities of India. Dhule is widely known across the country for its architecture and urban design. The town planning of this city was done by Sir Mokshagundam Visvesvaraya. As per Census

2011, Dhule district has a population of 20.5 Lacs with 72 % of them being between working age group (18-59

Years). As of 2010-11, Dhule district stood 22nd in terms of Gross District Domestic Product (GDDP) in Maharashtra at 1.13 per cent of the Gross State Domestic Product. However, Dhule is facing some issues like lack of industrialization as

More than 71 per cent of the population is dependent on agriculture for a livelihood. As a result of lack of industrialization within the district. The local population has a tendency to migrate to adjoining districts such as Nashik and Pune as well as to

the neighboring state of Gujarat (Surat region) for better jobs within the automotive, textile and diamond cutting industries. The map showing internal main road and Old Agra Road, the internal development is depending on the same road and river

side. The TIS must exhibit showing the existing traffic volumes and turning movements for roadways and intersections in the

study area, including pedestrian and heavy vehicle volumes. It has been identified that Old Agra road plays key role in the district, because of NH-3, Infrastructural growth of Awdhan MIDC as well Dhule City.



Fig. 1 Road Network in Old Dhule



Fig. 2 Road Network in Deopur

TIS mean “Study to evaluate the impact on a roadway network due to a proposed development”. The goal of a traffic impact study (TIS) is to assess the potential impact of traffic generated by a proposed development or redevelopment and to identify the roadway improvements required to ensure that the road network will operate safely and efficiently upon completion of the development. A full-blown TIS report should, at the minimum, address the following:

- State the purpose and scope of the report and identify the study area of the project.
- Provide a detailed summary of data collection efforts and results.
- Identify other “nearby approved” developments within the study area.
- Include findings and recommendations using nontechnical jargon to help public officials with their decision making

### III. PROPOSED PROJECTS

#### **A. NH-3 (Mumbai – Agra Road)**

NH3 plays an important role in development of Dhule MIDC with an industrial area of 400.35 Hect. of land as well as infrastructural growth of Awdhan MIDC and Dhule City. Also Nardana MIDC has planned to develop an industrial area on 750.09 Hect. of land.

#### **B. NH-6 (Hazira – Kolkata Road)**

National Highway Authority of India (NHAI) has taken up the task of four lining of Jalgaon to Maharashtra / Gujarat Border section of NH-6 from Km. 441.950 to Km. 650.794 in the state of Maharashtra to be executed on BOT (Toll basis) on DBFOT Pattern under NHDP Phase-IV. The project road passes through Jalgaon, Dhule & Nandurbar districts of Maharashtra state. The project would visualize widening to four- lane highway with additional features, such as, providing of additional service roads, underpasses, flyovers and rehabilitation of bridges, construction of new minor and major bridges, rail over bridges etc. so as to enhance operational efficiency and safety.

### **IV. RECOMMENDATIONS**

**A. Traffic Management Plan** –The improvements to maintain the required level of service can be implemented by adopting traffic management measures for efficient traffic operations. Traffic Management Plan (TMP) indicates traffic routes and the measures for traffic regulation.

**B. Traffic Regulations** -Traffic calming is intended to slow and control motor-vehicle traffic in order to improve safety for pedestrians and bicyclists.

**C. Parking Lots** - Commuters spend on an average 20 mins. Looking for parking slots, which amounts to 92? Tonnes of CO2 every year; also leading to unauthorized parking. There are currently 1070 four-wheeler parking spots, 350 two-wheeler spots and 166 bus spots spread over eight parking lots. Smart parking will reduce the hassle that commuters to Dhule currently have – the difficulty in finding a parking spot.

### **V. CONCLUSION**

The project was aimed at study of traffic impact study of Dhule City due to existing and proposed National Highways. The key hurdles of lack of traffic management and infrastructure can be crossed by following the recommendations for Traffic Control Organisation. Another hurdle in Dhule City traffic management, unauthorized parking was overcome by providing parking lots and smart parking facility. Construction of parking lots with new technology will result time saving while parking and it will also free up the roads from unauthorized parking. The overall traffic of Dhule City will be improved by going for all round development which would include developing a Smart Traffic App, establishing high frequency local transportation system, undergoing hierarchical changes in traffic control authority and creating social awareness for obeying traffic rules.

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