

Transport Infrastructure for Developing Smart City: A Case of Aurangabad City

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ABSTRACT: Transportation is most important as far as growth of particular city is considered. Public transport in most of Indian cities is rapidly deteriorating because of increasing travel demand and insufficient transportation system. Aurangabad, important city in state of Maharashtra facing numerous problems related to public transport because of increase in population, of both people and motor vehicles. The quality of life of the citizens is highly relies on the efficiency and effectiveness of its transportation system. The main goal of transportation is to get easy access to each and every location in the city. Effective transportation system helps to reduce time consumption as well as pollution to some extent. This paper presents an analysis of the Aurangabad city's transportation system, pitfalls in the existing system and discusses different techniques for network analysis. It will show us a clear picture where we need to focus to make Aurangabad as a smart city. The aim of this study is to do an analysis of the current transport system in Aurangabad city and provide better solution to serve futures increasing population.

KEYWORDS: Transportation, Smart City

I. INTRODUCTION

For a rapid growth of city, a good network of roads is essential. It is the basis of the existence of the city. The importance of the city depends mainly on the methods of communication. As parks, gardens, open spaces are the 'lungs', so also roads are the 'arteries' of the city. The road or street plan is considered as the foundation of the town plan. In urban planning, transportation network plays an important role to make better decisions the provisions of infrastructure facilities. A smart city is an urban development vision aimed at integrating multiple practical solutions with respect to infrastructure facilities and services to the citizens and also for efficient management of a city's assets. The goal of building a smart city is to improve quality of life by using urban informatics and technology to improve the efficiency of service delivery and meet residents' needs. Four essential components of a smart city are Aurangabad is one of the proposed smart city by Maharashtra government.

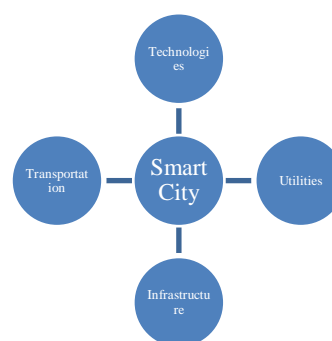


Figure 1: Components of a Smart city

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

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Vol. 8, Issue 12, December 2019

Aurangabad is an ancient & a big city in the state of Maharashtra in India. It is considered as Historical and Industrial hub of Maharashtra that stands on the bank of Kham River. The study area is located in the Middle North part of the state and bounded by 19°53'0"N Latitude and 75°20'00"E Longitude and the total geographical area of the is 135.752 Km. The city has historical 52 Gates, but only 13 have survived over a period of time.

II. ANALYSIS OF TRANSPORT SYSTEM

Aurangabad city is divided into three Government organization. These are Municipal Corporation, City and Industrial Development Corporation (CIDCO) and the Maharashtra Industrial Development Corporation (MIDC). The transportation network has wide coverage, which covers 142.789 km².

Existing modes of transportation in Aurangabad city.

1. Air
2. Rail
3. Road

The transportation through roads again divides into:

- a. Public transportation
- b. Private transportation

Aurangabad City is mainly dependent on Bus and Auto for public transportation. Aurangabad Municipal Corporation is the Prime planning Organization for the city, consisting of six zones with a population of approximately 11, 71,260 as per census 2011. The present public and private transport system has various drawbacks which directly affect the traffic, ease of traffic and transport system. Population growth of the city from 1991-2011 has been tabulated here.

Census	Population	Increase %±
1991	592,000	96.7%
2001	902,179	52.4%
2011	1,171,260	29.8%
2016	1,228,032	95.37%

Table 1: Population of Aurangabad City

In recent years, there is tremendous increase in the population of Aurangabad city, which indirectly affects the transportation system. According to Regional Transport Office, Aurangabad, there are 5000 two wheeler, 165 four wheeler is passed out per month, whereas 60 to 65 three wheeler auto for transportation purpose are registered in the city.

Vehicle type	Vehicles registered/month	Total number
Two wheeler	5000	---
Four wheeler	120-160	--
Three wheeler (Transport permit)	60-65	16807

Table 2: Vehicle registration in Aurangabad City

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Vol. 8, Issue 12, December 2019

The Transportation system of the Aurangabad city requires much more improvement, as the passenger either has to wait for a long time at the bus stop or walk along and face huge traffic. There are 35 routes defined in Aurangabad city for the full fillment of public transportation in the city which gives rise daily income of about 1 Lac 12 thousand to the Municipality.

Following are the pitfalls in the transportation system of Aurangabad city

- No bus route network was defined.
- Narrow road network.
- Unplanned bus stop location.
- Lack of parking area.
- Long travel time & low passenger trips.
- Area restriction.
- Insufficient number of staff and buses.
- Poor social awareness.

B. Private Transportation

This mode of transportation is increasing day by day in Aurangabad city. There are various issues which cause tremendous rise in the private transportation, which mainly point out the drawback of public transportation system. Reasons why public transport is not favorable are:

- Long waiting time.
- Long walking distance.
- Buses Not on time.
- Bus Frequency rate.
- Insufficient Bus stops.
- No space, congested routes.

Accident Record of Aurangabad City

The total accident numbers of last two years collected from Regional Transport Office, Aurangabad.

Total no of accidents = 1520.

There are total 71 no. of signals around Aurangabad city. Out of which 50 signals are in working condition.

III. CONCLUSION

Aurangabad city has special identity of historical, cultural, educational, commercial and industrial city. The main obstacles of transport within the city are narrow roads and ancient doors. The problem of traffic jam concentrated in the area of old Aurangabad. The areas like Gulmandi, Aurangpura, Mill Corner, Panchakki, Jubilee Park, Baba Petrol Pump, and Railway Station have been experienced heavy traffic.

There is need of wide roads, one-way traffic on certain roads and implementation of signals system effectively, speed breakers requires on the major internal roads near the schools. The help of BRTS and JNNURM schemes become beneficial in Smart City Planning.

ACKNOWLEDGMENT

I would like to thank my family members. Also I would like to thank my colleagues for their support and valuable guidance.

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ISSN(Online): 2319-8753
ISSN (Print): 2347-6710

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 12, December 2019

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