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Assessment of Transportation Facilities in Aurangabad City of Maharashtra State

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Introduction:

Transport represents one of the most important human activities worldwide as it allows us to mitigate the constraint of geography. It is an indispensable component of the economy and plays a major role in supporting spatial relations between locations. Transport creates links between regions and economic activities, between people and the rest of the world, and as such, generates value. It is composed of core components, which are the modes, infrastructures, networks, and flows. These components are fundamental for transportation to occur, but they also underline that geography, despite significant technological, social, and economic changes, remains a salient force shaping transportation.

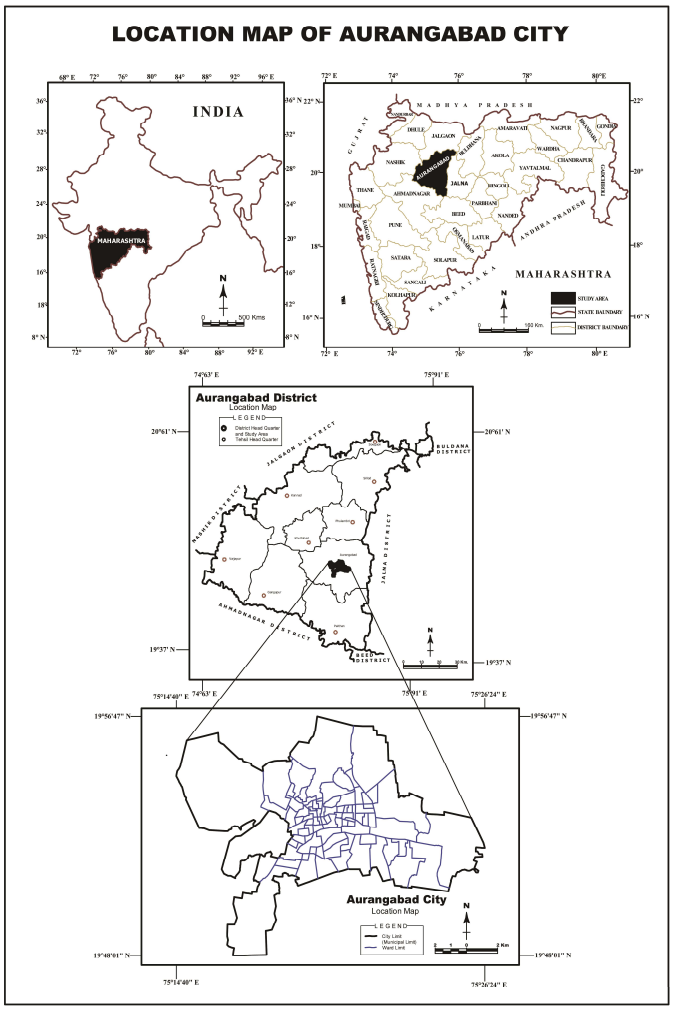
Transport means movement of both, people and goods from one place to another with the help of buses, cars, trucks, railways, airways, etc. The transportation facilities play an important role in the economy of a region or place. The roads and railways are the modes of transport in Aurangabad city. Aurangabad city is well linked by road, rail and airways to all major cities in Maharashtra and also India. However, within the city only road is the mode of transport.

Study Area:

For the present study Aurangabad city has been selected as a study region. The selection of study region is not arbitrary. In recent decades, the city witnessed rapid growth of population. In the city, landuse is changing rapidly and land values also increasing at fast rate. It can be considered as a representative of million cities of the nation. Besides, researcher is familiar with the study region and also there is a close attachment with it. All these considerations motivated the researcher to undertake the present study. Aurangabad is the largest urban centre of Marathwada region of Maharashtra state. It is headquarter of Aurangabad district and divisional headquarter of Marathwada region. It is an ancient and historical city of the Marathwada Region.

Now days it is an important industrial centre and tourist place of the state. It is also recognized as million plus city. In population it ranks 38th in the country. According to 2011 Census, the population of the city is 11,75,116 persons with the density of about 8,485 persons per sq.km. Aurangabad sits in a strategic position on the Maharashtra Plateau. The city is situated at the foot hills of Ajanta. It is surrounded by many hillocks. It is located on the bank of River Kham, a tributary of Dudhana which meet to Godavari. The average elevation of Aurangabad city is 555.04 metres above the mean sea level. Total area occupied by corporation limits of Aurangabad city is about 138.5 sq. km. The city area lies between 19° 48' 1"N to 19° 56' 47"N latitude and 75° 14' 40"E to 75° 26' 24"E longitude (Figure 1).

The Aurangabad Municipal Council was formed in 1936. In the year 1971 the geographical area of the town was 64.41 sq. km. On 3rd December 1982 the council was converted into a Municipal Corporation and 18 nearby villages were included in the city and area of the city extended up to 138.5 sq. km. Aurangabad was Asia's one of the fastest growing city during the decade of 80s and 90s due to development of industrial area.



The city has many attractions such as Bibi Ka Makbara, The Panchakki, Soneri Mahal, etc. Aurangabad is also a centre of education in Marathwada region. Marathwada University was established in Aurangabad in 1958. Many educational institutions have come up in the neighbourhood of university. This has caused the development of the new housing societies.

Aurangabad is well connected with Mumbai, the state capital, Delhi, the national capital and other important places by air, rail and road. The city is located on Hyderabad – Manmad - Mumbai railway line. After to conversion of meter gauge into broad gauge railway line, the city is well linked with the major cities in India.

Objectives:

The objective of the study is the assessment of transportation facilities in Aurangabad City.

Database and Research Methodology:

A] Literature Survey:

The available literature on the topic of research has been scanned from various libraries, research institutes, journals and internet.

B] Data Collection:

For this study the secondary data are used for the present research work. Base map of the city and road maps were obtained from the Survey of India, Municipal Corporation and Town Planning office and NRSC website. Geographical, historical and

socio-economic information about the city have been collected from government and non-government published literature.

C] Data Analysis:

The data collected from secondary sources are processed by adopting appropriate methods and statistical techniques to investigate various aspects. The details regarding the various scientific methods and techniques have been discussed in the text at appropriate place.

The obtained results are given in the form of tables and maps. Appropriate cartographic techniques are employed to support the analysis.

Discussion

Roads:

The infrastructural level of the any city is well judged by the condition of roads. The roads plays crucial role in transporting people and goods within the city. They are rightly known as arteries of the city. The evolution of the roads and their network is primarily depends on geographical set up. The Aurangabad is well connected with all major cities in Maharashtra and India. The roads can be classified as National Highways, State Highways, Major District Roads, Collectors and Local Streets. Roads connecting to Aurangabad with other places and roads within the city, thus can be categorized into two groups i.e. I) Outside Roads and II) City Roads.

I) Outside Roads:

The city is well connected by roads to many important places in or outside the State like Mumbai, Pune, Nagpur, Jalgaon, Solapur Secundarabad, Hyderabad, Surat, Indore, etc. The important highways and other roads linking Aurangabad with other places are as follows:

National Highway:

The National Highway No. 211 Dhule – Aurangabad- Beed - Solapur passes through the study region. National Highway is diverted from outer part of the city, it is known by the name Beed Bypass Road.

State Highways:

The important State Highways linking Aurangabad with other places are as follows.

- Aurangabad-Jalna-Parbhani- Hyderabad Highway
- Mumbai- Pune - Ahmadnagar- Aurangabad – Nagpur (MSH60)
- Aurangabad – Jamner- Muktai Nagar – Burhanpur (MSH 6)

The state highways passes by means of the city connects Aurangabad to Jalna to the east, Jalgaon to the north, Mumbai to the west, and Pune to the south-west (Srinivasan, et al., 1983).

Major District Roads:

Major district roads connect the tehsils and other important places with district headquarters. Aurangabad is well linked with tehsils and other important places by district roads.

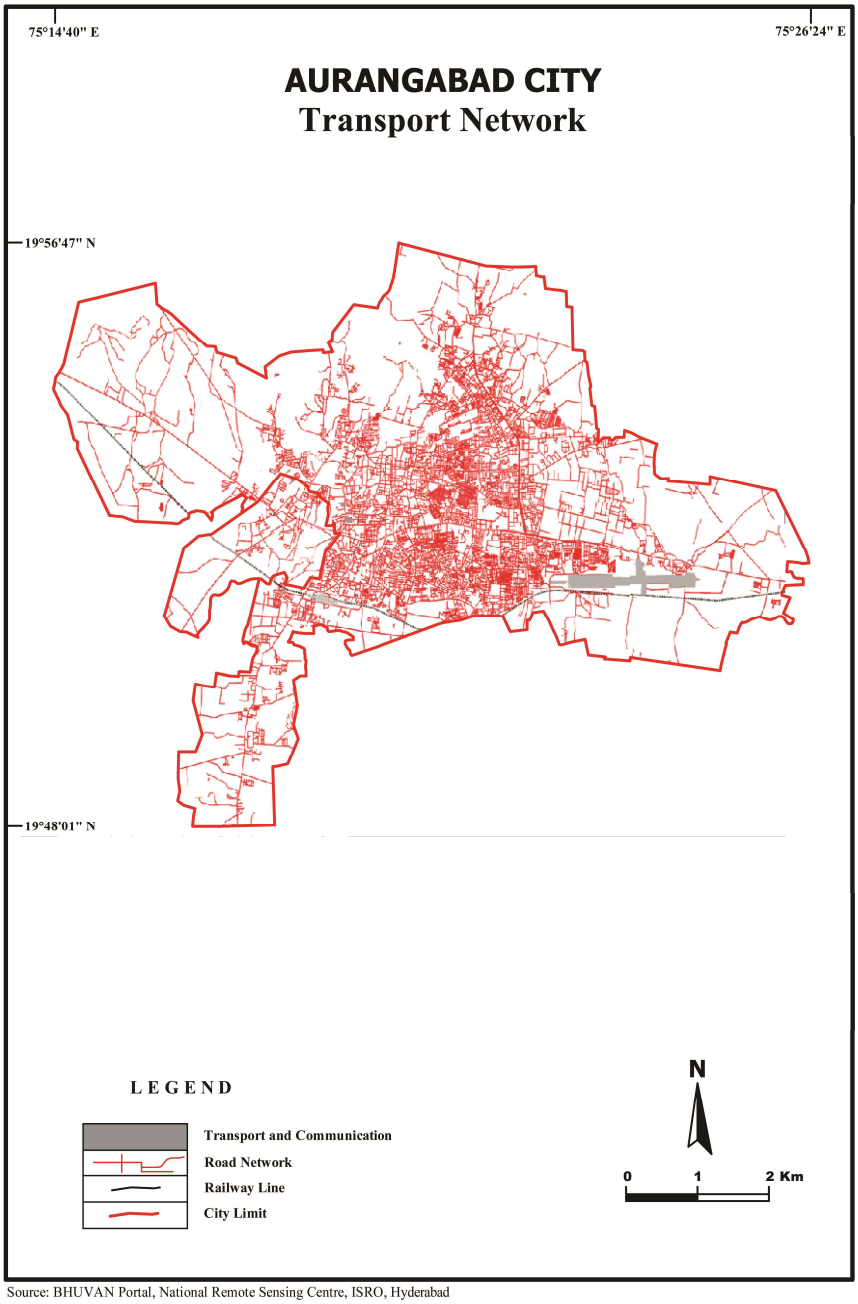
II) City Roads:

Different category roads available for Aurangabad city dwellers are mentioned in the table No. 1. It indicates that the roads are constructed by Municipal Corporation as well as PWD or Zilha Parishad. AMC has constructed surface roads having 842.70 kilometers length in the city whereas the length of un-surface roads is about 103 kilometers.

Table 1: Category Wise Length of Roads and Railway Line Within City Limit (2015)

Sr. No.	Category of Routes	Length in Km
1	Municipal roads:	
	a) Surface roads	842.7
	b) Un surface roads	103
	c) Foot path	26.81
2	PWD/ZP roads	72.6
3	Railway	15.1

Source: Municipal Corporation, Aurangabad.



Source: BHUVAN Portal, National Remote Sensing Centre, ISRO, Hyderabad

In last few decades numbers of city roads have been developed by Aurangabad Municipal Corporation. Certain roads are widened by the authorities, while some new roads are constructed to solve the traffic problems.

Table 2 Width-wise Classification of Roads

Sr. No.	Road width in metres	Length in km.	% to Total Length
1	30 and Above	32.2	3.82
2	24	61.8	7.33
3	18	33.0	3.92
4	15	58.0	6.88
5	12	29.0	3.44
6	9	401.0	47.59
7	6	227.7	27.02
Total Length in km.		842.7	100.00

Source: Municipal Corporation, Aurangabad

Widthwise classification of roads and their length is given in table No. 2. It is clear from the table that in Aurangabad city total length of roads (Constructed by Municipal Corporation) with all class width (six metre and above) is about 842.7 kilometers. In the city the proportion of 9 metre wide is maximum. Total length of these roads is about 401 km and their percentage share in city roads is about 47.59 percent. Roads with 6 metre width also have covered vast portion of the city. Narrow roads observed in core part and old parts. The proportion of wider roads with width of 12 meter and above is comparatively less. But, they are the main arteries of the city. Some of the important wider roads observed in the city are mentioned below.

i) State Highway passes from Harsool T Point to Central Bus Stand and further to Baba Petrol Pump.
ii) 24 meter wide road running from Varad Ganesh Mandir to Samshan Maruti. To the east it joins to North-South CIDCO Road that connecting Jalna Road and Central Octrai naka.
iii) 45 metre wide road has been constructed from Bhavsinghpura to University area. It is linked with 24 metre wide north-south road that connecting Aurangabad caves and Bibi ka Maqbar.
iv) Railway Station to Kranti Chowk Road is 40 metre wide, while Kranti Chowk to Paithan Gate Road is 35 metre wide.
v) Harsool T point to Shahaganj, CIDCO Bus Stand to Jalgaon T Point, High Court to Beed Bypass, Railway Station to Printravel, Printravel to Mill Corner, Shahaganj to Mondha Naka, Aurangapur to Mill corner and Mill corner to Collectorate are some of the important wide roads existed in the city.

Vehicles:

With the increasing population and changing life style, total numbers of vehicles are increasing day by day particularly in cities. Aurangabad city is not exception to this. Total number of vehicles registered in Aurangabad city by the year 2004 and 2013 are given in table 3.

Table 3 - Vehicle Statistics, Aurangabad City (2004 and 2013)

Sr. No.	Type of Vehicle	2004	% to Total	2013	% to Total	Change (2004 - 2013)	
						Absolute	Per cent
1	Two wheelers	69747	61.55	241325	77.95	171578	246.00
2	Light motor Vehicles	16044	14.16	24413	7.89	8369	52.16
3	Taxi	1694	1.49	714	0.23	-980	-57.85
4	Auto Rickshaws	14484	12.78	9966	3.22	-4518	-31.19
5	Contract Carriages	241	0.21	2577	0.83	2336	969.29
6	Private service vehicles	112	0.10	451	0.15	339	302.68
7	Ambulances	65	0.06	93	0.03	28	43.08
8	School buses	35	0.03	327	0.11	292	834.29
9	Delivery Van	**	**	13617	4.40	13617	**
10	Truck / Lories	4446	3.92	4969	1.60	523	11.76
11	Tankers	395	0.35	6158	1.99	5763	1458.99
12	Tractors	3610	3.19	4715	1.52	1105	30.61
13	Trailers	2337	2.06	162	0.05	-2175	-93.07
14	others	113	0.10	118	0.04	5	4.42
	Total	113323	100.00	309605	100.00	196282	173.21

Source: Motor Vehicle Department (MVD Statistics), Government of Maharashtra 2004 and 2013

From the table it is seen that till 2004, there were 1,13,323 vehicles in Aurangabad city. By the year 2013, the number of vehicles increased up to 3,09,605. It means within ten years period the number of vehicles became more than double. In 2004, the percentage share of two wheelers in total vehicles was 61.55 percent, whereas in 2013 it was 77.95 percent. On the other hand, the percentage share of auto rickshaws decreased from 12.78 percent in 2004 to 3.22 percent in 2013. It indicates that the individual transportation system is predominant in the city.

Table also reveals that in city there were 69,747 two wheelers in 2004. This number increased up to 2,41,325 by the year 2013. It means in ten years period the number of two wheelers increased by 246 percent. During the above mentioned period significant positive change is noticed in number of tankers (about 1459 %) contract carriages (969 %), school buses (834 %), and private service vehicles (303 %). Light motor vehicles and tractors also reported positive change. On the other hand, in ten years period the number of taxis and auto rickshaws decreased considerably.

Bus Services for Outer Places:

The efficient public transport system is very essential for city people. In this regard the Maharashtra State Road Transport Corporation (MSRTC) has constructed two bus stands. Central bus stand is located near mill corner. It is 2 km away from railway station. Another bus stand is situated in CIDCO area near Jalna Road. MSRTC serve well linked with all important cities, taluka places and district places of Maharashtra.

City Bus Service:

The local public road transport is one of the important mode of transport within city. Until few years ago, city bus service was provided by Municipal Corporation on 21 routes with 73 buses. Due to certain unavoidable reasons, concerned authorities have stopped this service. Therefore, facility is made available for city people by MSRTC local transport facility in Aurangabad Municipal Corporation area on some important routs. Due to low efficiency of public transport people hire the rickshaws for move from one place to another place within city.

Traffic Transportation Problems:

Aurangabad, the 'million city' is rapidly developing. Day by day numbers of two wheelers and four wheelers are increasing. At present city is experiencing traffic congestion frequently because of narrow roads and historic gates at many locations. Traffic congestion is responsible for increase in air and noise pollution. Traffic congestion and associated air and noise pollution problems are more serious near Paithan Gate, Akashwani, Mahavir Chowk, Harsool T point, Baba Petrol Pump, Jalgaon Road, Jalna Road and Railway Station.

Railways:

Railway is the most effective mass transport system in India. Freight and passenger traffic are the two major segments of the railways (ESM, 2014-15). Aurangabad city is one of the most important tourist places in India and World. There are two World Heritage Sights in the District. Railway is the prime choice connectivity for the tourist and travellers.

The city is connected by Railway on Hyderabad- Mumbai Railway corridor by which it having direct rail linkages to New Delhi, Mumbai, Pune and Hyderabad. Total length of railway route within the city limit is 15.10 kilometer. Aurangabad main railway station is located in the southern part of the city. In addition there are two sub railway stations namely Mukundwadi and Chikalthana.

Airways:

The city has domestic airport located in the eastern part at Chikalthana on Jalna Road, about 8 km away from the city centre. It is being proposed as international airport. Thus, by airline also Aurangabad is well connected with the other million and mega cities of the country.

Conclusion

Aurangabad city is well linked by roads, rail and airways to all major cities in Maharashtra and also India. However, within the city only road is the mode of transport. There is need to develop efficient public transport system for the city people.

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