

# Demand of Mass Transit Rapid System in urban renewal process of core city area of Lucknow

Arun Kapur, Dr. Rekha Jain

Department of Architecture and Planning, MANIT, Bhopal

## Abstract:

Almost all the Indian cities have a core area. The core areas are often high density, congested areas with very less open spaces. They have high concentration of population and are also linked with the strong heritage of the cities. These core areas are in the process of decay due to numerous reasons and this decay is now posing a threat to the heritage value of the cities. Of many reason for this decay is the fast changing lifestyle of the inhabitants of the place, changes in the economy of the people living in core areas, the neglect by the local developmental authorities and the lack of connection with the new developed areas of the cities. Often the core areas are bound by within the heritage zone and is separated from the new developed areas of the cities. The congested roads connecting the core areas make them in accessible for the people of the city. There is a strong need to connect the heritage core areas with the main city to save the rich heritage of such places for the future generations. The research paper tries to find a solution in mass transit rapid system in renewal and conservation of core areas.

**Index Terms:** Heritage, core city area, public transportation.

## I. Introduction:

India is a country which has nearly seven-thousand-year old history. India has some cities which are one of the oldest cities in the country. These old cities were made when there were no motorized vehicles in the country. Today, in past few years, India has shown growth in almost all fields. The liberalization policy of the Government has affected the economic condition of the country in a positive way. With the better economic standards, the lifestyle of people has also started changing very rapidly. Today the ever increasing population of the country is facing a big challenge in terms of transportation. A country which was known to be agriculture dominated country has started showing rural to urban migration at rapid pace in last three decades. The urban centres are increasing in their sizes and also affecting the density of the core areas of almost all the cities in the country. The country is today at crossroad where we have a rich cultural heritage on one side and the future developments on the other side due to economic boom. The economic and technological development is a big reason for people migrating out from the core areas and the existing land uses getting converted into unreachable commercial areas. In almost all the cities we find that the old residential settlements are getting converted into wholesale commercial hubs. This conversion of land use and mutilation of the residential clusters in the core areas is not just affecting the built up heritage but also affecting the intangible cultural heritage of such core areas which is related with the people residing in these areas. The lack of proper public transport

system has failed to connect the core city areas with the new developed areas of the cities. The stark contrast between the new developed areas and the neglected core areas of the cities, the congested roads and the decaying core areas are greatly affecting the tourism industry.

## Research Area:

The research areas selected is the core area of Lucknow, Chowk. Chowk is the oldest part of Lucknow located at the west side of the city, which has a rich history and heritage value. The area tells about the prosperous *Nawabi* era of the city and speaks of the rich cultural heritage of Lucknow. Lucknow has always been known for its Sham- e- Avadh, just like *Subah-e-Banaras* of Varanasi. *Shaam-e-Awadh* has been famous and much has been written about it and its atmosphere of lilting sounds of music and *ghungroo*, *mujra* dances and melodious singing of *ghazals* and *thumri* as forms of light and classical music that was associated with it. Today many of the old characteristics of the area are not seen in Chowk. However, Chowk still shows the conviviality of a commercial area surrounded by residential clusters of different communities which add on to the *Ganga- Jamuni tahzeeb* of Lucknow.

Historically since Chowk was a place which was bound to have the presence of the patrons of the *tawaifs* who were mostly aristocrats, nobles, *nawabs*, *jagirdars*, *taluqadars*, *wasiqadars*, *mahajans* (money lenders) and highly placed officers of the Nawabi administration and were supposedly connoisseurs of arts and crafts; the market had gold and silversmiths, dealers of precious stones and engravers called *nageen taraash*, ivory craftsmen, cloth merchants who dealt in *chikan*, *zardozi*, *kaarchob*, *kamkhaab* and silk items of clothing, that the rich could afford.

A primary survey was conducted on the main Chowk Road to find out the typology of the shops in the Chowk Road. The types of shops include commodities like sweets, eateries, jewelers, *chikan* and *zardozi* shops, *hukka* shops, perfumery shops, florists, *gota* and *zari* shops, tea stalls, pan shops, religious books shops etc. The survey reveals that although today we no longer see the vibrancy of historical *sham-e-avadh* and hear the sound of *ghungroo*, *ghazals* and *thumri* but the shops present today seems to have a relationship to the original use of the Chowk Road. The present situation in the shops of Chowk area tell how they have not been successful in competing with the fast moving new technology and how they have been side lined in the rapidly growing city. The narrow lanes, lack of connectivity, lack of proper public transport are not just affecting the tourism in the core areas but are also affecting the commercial activities in these areas.

Studies and surveys have shown that a lot of transformation is happening in Chowk not only in terms of tangible but also in terms of intangible heritage. Surveys indicate that there has been nearly 30% transformation in the core area. People have started migrating out from the core areas to the new developed areas of the city. The people living in the core areas often find the core areas too congested and de connected from the new developed areas. The changing lifestyles of the residents often limit them to keep four-wheelers due to lack of parking spaces in the core areas. The lack of civic amenities, lack of parking, lack of tourism etc. are forcing the core residents and their new generations to opt for better opportunities. The purpose of the study is bridge the gap between the old and the new developed areas through a medium which can stop the transformation process of Chowk area.

There is a need to understand that the core areas of the Indian cities belong to the era when motorized vehicles were not there on the roads. Thus the percentage of roads in the core areas are often much lesser that the areas left in the new developed areas in the cities. The percentage roads in the core areas were also less and streets were narrow because of the composite climate to keep the streets cooler during the hot summer months.

### II. Vehicular traffic scenario in India:

The forecast given by Ministry of Urban Development, Government of India for the coming years show a shocking rising trend in the number of motor of vehicles in India (refer table-1).

With this rising trend in the number of vehicles both in Lucknow as well as the whole country, it becomes important to analyze the ground reality in terms of traffic bearing capacity of the roads in the coming years. Today in fact nearly all the urban centres in India with a population more than a million are facing a major problem of transportation. The growth rate of population in the Urban areas and the continuous migration from the rural to the urban is adding to the problems.

The rapid urbanization, growth of population and economic development, nearly all the Indian cities are going to face a major problem of public transport.

The study shows that there has been an extensive rise in the economic status of the people residing in the urban areas of Indian cities. The core city areas are also not untouched with these economic developments. The surveys show that there has been a multi fold increase in the number of motorized vehicles owned by people living in the cities. In the past few decades, the percentage increase in the road network due to limited carriage ways in the cities is much behind the rate of increase in the population and the number of motorized vehicles. This economic development in the urban centres has been a major reason for rural to urban migration.

India since the liberalization policy of 1991, has shown an extensive economic growth. Today the country stands among the fast growing economies of the world. As the economy increases, so is the urge among the people to get behind the wheels. India has also not been untouched by the phenomenon. Easy automobile loans, more number of small segment cars and two wheelers in the market have lured the urban people to own at least one vehicle in each house. The comparison between the growth of population, number of vehicles and the length of roads in the country show a contrast and gives the reason for the growing congestion in the urban areas.

### III. About the study: Chowk, Lucknow

Lucknow has grown all around in a radius of 25 km. taking the General Post Office in Hazratganj as the centre (refer figure-1). The main office and commercial complexes are located in the central part of the town thereby making daily commutes a necessity. Considering the existing condition of the arterial roads from the north to south and from the east to west there is not much scope to augment the existing public transport system which includes public buses, three wheeler tempos and private vehicles. The growth of Lucknow in recent years has resulted in vastly increased demand for transport and a dramatic rise in the number of vehicles. Transport infrastructure, however, has not grown correspondingly and is therefore highly inadequate. With the number of registered vehicles rising by about 40,000 vehicles per year in the past decade, the roads and parking spaces in the City have become extremely congested, especially during peak hours. The U.P. Transport Corporation operates a fleet of ninety-

**Table 1: Estimated Vehicle population in India (in million vehicles)**

Population	2005	2008	2015	2025	2035
2-W	35.8	46.1	87.7	174.1	236.4
3-W	2.3	3	5.3	8.8	13.1
HCV	2.4	2.9	4.6	9.1	15.2
LCV	2.4	3.2	5.7	12.5	26.9
Car, SUV	6.2	8.8	18	41.6	80.1
Grand Total	49.1	63.9	121.3	246.1	372.7

*Source: Ministry of Urban Development, Govt. of India, 2006*

### Impact of economic growth in the increase of urban traffic:

eight buses on ten different routes and estimates that the total passenger load on these buses is around 47000 daily.

The studies suggest that the percentage of road areas in the core city areas is much lesser than the new developments of the city.



Figure 1: Source: lucknow.nic.in (Official website of)

The reasons may be that the old areas were developed much before the industrial era after which automobiles became a necessity. Another reason for less road area was the composite climate which suggested narrow lanes and also the living style of the core areas which created mohallas, katras and hatas.

The population of the city has increase multifold in last twenty

indicator for economic development of any country. This is also due to increased pace of urbanization in the cities. One also notices increase in the ridership in the public vehicles which has added on to the load on the roads of almost all Indian cities. The rites and UP State Transport Dept. report suggests that there is nearly 16% growth rate in the number of vehicles in Lucknow every year, which clearly suggests that there is a strong need for a new transportation system.

Growth in the number of vehicles on the roads are often due to basic three parameters. Growth in population, increase in the rate of urbanization and the economic growth of the place. In India, owning a vehicle is also associated with status of people. Thus, with economic growth, there has been extensive rise in the number of vehicles on the roads. Today India is targeted as a prospective market for new and modern vehicles by almost all the vehicle manufacturing companies across the world.

The data from the UP State Transport Dept. shows an annual growth of vehicles by nearly 16% to 19% which is an alarming situation for the city where the road and infrastructure occupies a very less percentage of the land use in the city planning (refer table-2). Lucknow has about 10.2% of the land use for roads which is much lesser than cities like New Delhi and Chandigarh. On close observation one finds that the traffic of Lucknow comprises of 82% of two wheelers, 14% of four wheelers and rest only 4% for public transport and other modes of transport. Thus it is very clear that the city lacks any form of Mass Transit Rapid System.

The only public transport available from Chowk are three wheeler autos which ferry only 8 passengers at a time and occupy a lot of road area. Thus, there are often traffic jams near Chowk,

Table2: Annual Growth rate of vehicles in Lucknow

Registration of Vehicles in Lucknow					
S. No.	Type of Vehicles	1994	1998	2005	Annual Growth rate % (1994-2005)
1	Two wheelers	212774	285511	601745	16.62
2	Car/ Jeep/ Vans	27608	42855	97878	23.14
3	Bus	1126	1349	3553	19.59
4	Truck/ HCV	4219	5264	7742	7.59
5	Tractor and LCVs	10077	11017	19985	8.94
6	Three Wheelers, taxis and others	6487	8579	9567	4.32
	<b>Total</b>	<b>262291</b>	<b>354579</b>	<b>749395</b>	<b>16.88</b>

Source: RITES Report and UP State Transport Department

years. As per the masterplan of Lucknow the population growth rate varies from 3.51 to 4.37% with a population density of 67 persons per hectare. The city is recognized as low height low density city with open spaces and greenery.

According to the available data there has been a rapid increase in the number of vehicles plying on the roads, both private and public. It is said that the growth in the number of vehicles is an

especially on Sundays and Fridays when there are weekly markets or Friday prayers. The traffic often gets choked due to various religious rallies in the area during festivals.

**City Growth in last 20 years:**

Since last two decades Lucknow shows a sharp increase in the migrant population. Today nearly 36% of the city's population is among the people who have migrated to the city for better

lifestyle. Of the 5.76-lakh people added to the Lucknow Urban Area during 1991-2001, about 2 lakh were migrants. In comparison, the natural growth was 3.68 lakh (refer table:3 &4).

The masterplan 2021 clearly indicates the growth of population in Lucknow since 1981 and also gives a projected figure as per the growth trends. The present extent of Lucknow Municipal Corporation extends to nearly 980Sq.Km. for Masterplan 2021.

**State of core areas of the City:**

The core city areas of Chowk, Lucknow are showing signs of rapid mutations which are posing hurdles in the way of conserving the cultural heritage of the areas. The survey conducted in the core area of Chowk reveals that nearly 27% of the total old buildings have been replaced by modern structures. The survey conducted shows that nearly 30% of the people in the

Composition	Population Increase	
Natural Increase	368998	64%
In Migration	207307	36%
<b>Total Increase</b>	<b>576305</b>	<b>100%</b>

*Source: Census of India 2001- Migration Tables D-3 Series*

core area have either their work place or their residences more than 4Km away from this place. It is a clear indicative that people belonging to the core areas have started migrating to better developed areas. It is important to understand the root cause of the problems so that a proper solution could be found out.

The transformation has resulted in the rapid change of the

With the out migration of the original inhabitants, the new people who are occupying the buildings are from different cultural backgrounds. Thus, they do not have any oneness with the place and thus are changing the built form of the original buildings. There are rapid changes occurring in the architectural character of old city cores. The intervention by property dealers are trying to change the whole skyline of the core city areas which is a matter for concern.

There is a constant change in the imageability of the buildings of different communities living in the old core areas which have its own heritage value both in terms of tangible built up architecture and also in terms of intangible cultural values.

Another issue is also a resultant of this slow migration, that the small scale industries which used to be run in each household is also reducing and we rarely find the new breed of artisans in such areas.

Traffic, services, parking, waste management etc. has always been an issue in the core city areas. The streets are not equipped to handle heavy traffic. There is problem of connectivity with the newer developments of the city.

Above all, there is problem of self-awareness among the people living in the core city areas. There is complete loss of participation in any conservation activity or Government policy matter for such areas.

**IV. Core City areas and demand for connectivity with the rest of the city:**

**Chowk area: a hub of tourism**

The core city area of Chowk is a major tourist attraction among the tourists coming to Lucknow. Lucknow is often known for its *nawabi* lifestyle, its food, its *nazaqat*, its handicrafts, its perfumes etc. Chowk offers a platter of variety of places for the

**Table 4: Decadal Growth of Urban Agglomeration & Lucknow Municipal Corporation (1951-2021)**

Year	Lucknow Urban Agglomeration			Lucknow Municipal Corporation			Lucknow Cantonment		
	Population	Decadal Growth	Growth Rate %	Population	Decadal Growth	Growth Rate %	Population	Decadal Growth	Growth Rate %
1981	1007604	193622	23.79	9479900	173346	22.38	59614	20276	51.54
1991	1669204	661600	65.66	1619116	671125	70.79	50089	-9525	-15.98
2001	2245509	576305	34.53	2185927	566811	35	59582	9493	18.95
2011	3226000	980491	43.66	3166000	980073	44.84	60000	418	0.70
2021	4500000	1274000	39.49	4440000	1274000	40.24	60000	0	0

*Source: Master Plan 2021: Projected Population of Lucknow*

landuse of the buildings which is one of the most important problems. The survey reveals that nearly 30% of both the residential clusters and the shops in the main shopping street are rented to new people and the original owners and inhabitants have migrating out to more open and newer areas. Thus the residential areas are slowly converting to commercial hubs and godowns.

tourists. UP tourism has started a heritage walk in the core area of Chowk in Lucknow to make the tourists aware of the rich cultural heritage of Lucknow. However, the initiative has not been very successful due to increasing traffic in the narrow roads to the city and also the rampant transformation that is happening in the core city area. The tourism has not been promoted properly so it could help the people living in the area to earn their livelihood.

The Chowk Road starts from Gol Darwaza at one end till Akbari Gate at the other end. The connecting road is called as Chowk Road and has variety of shops related to the culture of Lucknow with residential clusters behind these shops.

The residential hamlets around the Chowk Road show a variety of cultural heritage. We find religious centres of many communities around the street. The examples of Shri kali Ramji Mandir, Sambhavnath Jain Temple, The Krishna Temple, The Nepali temple, Baba Vishwanath temple, Madrasa-e-Nizaamia, Meer Anees's Mazar, Tehsin ki Masjid etc. show the concentration of people from different communities living around the main Chowk Road. The variety in the communities living in the Chowk area add to the conviviality and vibrancy during the festivals of different communities.

However, the present situation is not very good. Only 5% of the tourists coming to Uttar Pradesh travel to Lucknow. More than 75% of the tourists are corporate clients who come to Lucknow for only business purpose. This means that though Lucknow has immense potential in terms of cultural tourism, but it has failed to project it on the world map. Experts blame the lack of infrastructure and connectivity to be one of the reasons for the failure.

#### Case study of Delhi Metro:

Delhi is another city with nearly same type of problems but of more magnified scale. The present population of Delhi is about 16.75 million with high rate of rural to urban migration cases and decadal population growth rate of about 21.15%. Last few decades have seen major congestion on Delhi Roads and rise in the number of road accidents. Delhi has a mix of areas ranging from the congested Old Delhi to the Lutyens New Delhi. Delhi till the time Delhi Metro Rail Corporation started its functioning, the Delhi roads were always choked with high traffic. Delhi had its historic city centre at Chandni Chowk and the City Centre for the New Delhi at Connaught Place (Rajiv Chowk). Delhi grew with a multi nuclear approach and many smaller Distt. Centres were developed at Nehru Place, Janakpuri, Saket, Green Park, Laxmi Nagar etc. The distance between all the district centres and the traffic on the connecting roads was one of the reasons why many of these District Centres could not function properly

(refer figure-2). Delhi shows an annual growth rate of nearly 7% in the number of vehicles on the roads. Delhi Metro Rail Corporation (DMRC) has tried to solve the problem of Delhi traffic to a great extent. Not only has it connected the old to the new areas of the city but has also brought all the commercial centres closer to each other. Delhi Metro has emerged as a cost effective solution for urban transportation. The Delhi Metro with its 280 carriages transports 650,000 passengers daily and siphons 1.5 million commuter trips each day off the roads. "The result is 1,650 fewer buses on the roads.

One can note that nearly 70% of the revenue of Delhi Metro Rail Corporation comes from operational sources (ticket sales) and the rest from non-operational ones such as advertising and property development. Thus metro has been successful in not only giving a cushion to the increasing traffic of Delhi but has also helped in connecting the old parts of the city to the newer developed ones. DMRC has come as a handy tool to reduce the constant transformation of the residential hamlets of the old Chandni Chowk area thus there by reducing the number of out migration cases. Metro has connected the two different areas with the help of technology.

#### V. Findings of the Study:

The survey conducted in the core area of chowk was done to understand the extent of transformation that has happened in Chowk and to understand the reasons for the transformation. The survey reveals that nearly 27% of the total old buildings have been replaced by modern structures. The survey conducted shows that nearly 30% of the people in the core area have either their work place or their residences more than 4Km away from this place. It is a clear indicative that people belonging to the core areas have started migrating to better developed areas. Survey indicates that almost of the people living in the core area own a two wheeler and few even own four wheeler automobiles. Nearly 30% of both the residential clusters and the shops in the main shopping street are rented to new people and the original owners and inhabitants have migrating out to more open and newer areas. Thus the residential areas are slowly converting to commercial hubs and godowns. With the out migration of the original inhabitants, the new people who are occupying the buildings are from different cultural backgrounds. There are rapid changes occurring in the architectural character of old city cores. The out migration of original inhabitants is affecting not



Figure:2- Delhi Metro



Figure:3- The narrow streets of Chowk Road

just the tangible built character but also the intangible cultural values of the core area of Chowk.

Survey reveals that traffic, services, parking, waste management etc. has always been an issue in the core city areas. Lack of proper public transport, the narrow streets and connectivity makes the core area un accessible for the tourists thus affecting the inhabitants economically. Lack of proper connectivity is also affecting the small scale craftsmen who were the backbone of the cultural heritage.

As per the survey, many of the original residents are not aware of the heritage value of the place and this is one of the reasons for their willingness for the transformation.

## VI. Conclusions:

The population of India is growing at a fast pace and so is the rate of urbanization in the country. Today the country has more than 40 metropolitan cities. While researches show that the ideal modal share of public transport should be around 70%, however it is in tune to only 35%–40% in India's metro cities. Thus with nearly 70% share of private owned vehicles and growing rate of urbanization, all the metropolitan cities are moving towards a jam packed situation. This will not only increase the pollution level in the cities but will also affect the economy of the cities. The core areas will become unreachable. People from the core areas will migrate out for greener pastures. This transformation will affect the tourism industry. Since last few decades the transport demand in most Indian cities has increased substantially, due to increase in population as a result of both natural growth & migration from rural areas & smaller towns. Availability of motorized transport, increases in household income & increases in commercial & industrial activities have further added to transport demand. In many cases the demand has outstripped the road capacities. As the cities grow in size, the no. of circular trips on road system goes up. It has to be noted that smaller cities cannot afford to cater only to private modes of transportation as cars & scooters or bikes.

There is a need for a pragmatic policy to discourage private modes & encourage public or mass transit modes once the traffic along any travel corridor in one direction exceeds 20000 persons/hr. The introduction of Mass Rapid Transit Systems is the solution. MRTS are capital intensive & have a long gestation period. Once the MRTS is functional, it will now only connect the old area with the new developed parts of the city but will also be helpful in promoting tourism which has been neglected in Lucknow.

It has been observed that in developed countries, planning of for mass rapid transit system starts when the city population exceeds 1 million, the system is in position by the time the population reaches 2 to 3 million & once the population exceeds 4 million or so, planned extensions to the MRTS is vigorously taken up.

India has been very late in its action due to various reasons. However, the success story of Delhi Metro has been a positive encouraging step for other cities. The State Governments should learn from DMRC and relate the tourism sector with the MRTS. This can be a great opportunity to showcase the rich cultural heritage of core city areas of almost all old cities across India. This initiative will also help in reducing the transformation happening in the core areas to conserve both the tangible and the intangible heritage of such areas.



Figure:4- Chowk Road from GolDarwaza to Akbari Gate

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#### **Authors:**

**First Author:** Arun Kapur, B.Arch. M.Arch. PhD scholar at Department of Architecture and Planning, MANIT, Bhopal. E-Mail: arunjan@yahoo.com

**Second Author:** Dr. Rekha Jain, B.Arch. M.Plan. Professor, Department of Architecture and Planning, MANIT, Bhopal. E-Mail: rekha.manit@gmail.com