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Urbanization and Commutation Patterns of Delhi

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Abstract – Observers have long believed that commuting to and from urban places well served by transit is more energy efficient than commuting to more auto-oriented suburban work sites. However, little empirical investigation has been conducted to substantiate this hypothesis. An analysis of commutation patterns for two locations in Delhi– one urban and one suburban -- provides strong evidence that, in the aggregate, workers commuting to urban places consume significantly less energy than those commuting to suburban locations.

The paper attempts to highlight the need for a cogent urban transport policy without which there will be ad hoc interventions. Such interventions, apart from not adding up to a comprehensive approach, will result in greater confusion. Furthermore, it emphasizes that if there is no worthwhile public transport, it will still need to be reinvented to promote a better quality of life. The need of the hour is formulation of an urban transport strategy that is both pragmatic and holistic in its approach.

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INTRODUCTION

Delhi being the capital city is the center of socio economic, cultural and political activities of the country. The city also acts as a major center of trade and commerce and is the nodal point for five national highways and intercity rail corridors, carrying large volumes of heterogeneous passenger and goods traffic. The national highways and other major road network carry intra city and intercity traffic traversing to and from the different parts of the country.

The transport system of Delhi consists of a well-developed transport network system, based on ring and radial pattern, large fleet of buses (DTC & CNG) and a suburban rail system including MRTS. The majority share of travel needs of Delhi commuters is met by road based transport systems.

There has been a major improvement in transport infrastructure in recent years in terms of flyovers, road widening, new roads development and development of metro rail corridors along major routes of travel in the city. Due to continuous increase in population, employment opportunities and number of vehicles, there is a constant increase in demand over the years; and infrastructure has not grown in adequate proportions making the existing network system function beyond its capacity. This has led to serious traffic problems of congestion, delays, safety, pollution and system management.

The transportation system being multidisciplinary and multidimensional requires integration and co-ordination amongst the various agencies. Multiagency planning and implementation add to overall inefficiency due to interagency interests and conflicts.

SITUATION ANALYSIS – TRANSPORT NETWORKS

Delhi is predominantly dependent on road based transport systems as the railways caters to only about 1% of local traffic demand. The poly-nucleated urban structure of Delhi has a hierarchical system of commercial and shopping centers besides well-distributed industrial areas. Widespread distribution of employment centers all over the urban space of Delhi has contained the growth in length of trips. The residential areas are located around the economic activities. The shorter trip lengths and inadequate public transport system has fueled the growth of private modes of travel at a rapid rate in the city. Transport network of Delhi consists of road network and rail network catering to intra city and intercity movement of traffic. The freight traffic is also substantial as Delhi acts as collection and distribution center.

ROAD NETWORK

The road network in Delhi is being developed and maintained by NHAI, DDA, PWD, MCD, NDMC and Delhi cantonment Board. There are nine major inter urban corridors catering to major intercity traffic. These are NH1, NH2, NH8, NH10, NH24, NH24 BYPASS, NH58, NH57 and Loni road (SH) connecting Delhi to DMA & NCR Towns and to the rest of the country. In addition, traffic enters the city through other arterials and sub arterials roads at more than forty locations.

The road network in Delhi was 28,500 Km. in March 20012. The road network has increased from 8380 Km. in 1971-72 to 28,500 Km. in 2001 (three times).

The road network can be categorized into four types i.e. Arterial roads, sub arterial roads, minor arterial roads and collector roads. About 1100 Km. of road length are provided with right of way 30 m and above, while another 1000 Km. form the major links carrying the traffic in Delhi. Road network accounts for about 21% of the total area, which is above average of 12 to 15 % for urban areas. This translates into a road density of 19.2 Km. per Sq. Km (for 1483 sq. kms); and 38 kms per Sq. Km, considering the current urban area of 750 sq. kms. Being already on the high side, this limits the potential for increase in road length.

The road network comprising of ring and radial pattern has C.P. as focal point with Mathura road, Lal Bhadur Shastri Marg, Aurobindo Marg, Rao Tula Ram Marg, Gurgaon Road (NH-8) Patel road, Shankar road, Rohtak Road, G.T.Road (NH1), Loni road, Shahadra road, NH 24 bypass forming the radials whereas Mahatma Gandhi Road (Ring Road), Outer Ring road, Noida road- Bund road forming the prominent rings. These radial and ring roads serve as major arterials carrying bulk of traffic in the city.

The expansion of the road network and the growth of vehicular traffic in Delhi has resulted in the installation of traffic signals at short distances. There are more than 700 signalized intersections located all over Delhi to control traffic operations and ensure smooth flow of traffic. These signalized intersections have led to excessive time and fuel consumption for all vehicular trips. The Delhi Traffic Police has introduced Area Traffic Control (ATC) System in Central Delhi covering about 48 intersections to provide real time green phases to cater to changing traffic needs.

REGIONAL CONNECTIVITY

Existing road network for connectivity of Delhi with rest of the region is a four lane or six lane divided carriageway. NHAI is converting the road connecting Delhi to Gurgaon into an eight-lane Toll expressway that is of 28 Km. length (18 Km. in Haryana and 10 Km. in Delhi). The project is being constructed on BOT basis. DMA towns of Faridabad, Rohtak, Sonepat, Gaziabad, NOIDA are well connected with Delhi having multiple road linkages. To reduce the load of intercity traffic through in nature and for speedy interaction between NCR towns and Delhi new ring road / peripheral road projects are under process of

implementation as follows : i) Faridabad – NOIDA – Gaziabad – This is an Eastern Peripheral Expressway with a total length of 106 Km. and is being implemented by formation of SPV between NCRPB,MOUD,ILFS and state Govt. of Haryana, U.P. and Delhi. ii) Palwal – Manesar - Kundli – This is Western Peripheral Expressway and is being implemented by NHAI connecting NH 1, 8 and 10.

RAIL NETWORK

The rail network consists of both broad gauge and meter gauge railway lines. Delhi is a major junction on the rail map of India linked with all the metropolitan cities directly Delhi is connected by 8 radial lines extending to suburban areas spreading to states of U.P. and Haryana. These radials are:

a) Delhi Gaziabad Khurja

b) Delhi Gaziabad Hapur

c) Delhi Gaziabad Meerut

d) Delhi Shahadra Shamli

e) Delhi Sonepat Panipat

f) Delhi Nangloi Rohtak

g) Delhi Gurgaon Rewari

h) Delhi Nizamuddin Okhla Palwal.

The rail network has two specifically identified lines known as the Goods Avoiding Lines (GAL) and Delhi Avoiding Lines (DAL) forming a ring in the city and ring rail system in Delhi. The GAL provides a direct entry from Gaziabad to New Delhi bypassing the congested Delhi Railway Station Complex. The DAL provides a direct passage from the major yards- Tughlakabad and Gaziabad directly into the Delhi – Ambala Kalka section and through Lajpat Nagar, Patel Nagar, Daya Basti and Azadpur link. There are four main railway stations at New Delhi, Old Delhi, Hazrat Nizamuddin and Sarai Rohilla besides container depots at Patparganj and Tuglakbad.

CITY BUS SERVICE

Till 1992, Delhi Transport Corporation (DTC) was the primary agency for providing the mass transport service, when private buses under the control of the Transport Department were first introduced to supplement the DTC fleet. Today DTC operates 786 city and 131 interstate routes with average route length of 22.4 Km. and 296.4 km. respectively. As per records, in January 2000 the fleet strength of DTC comprised of 3088 DTC buses; and 2593 private buses under DTC operation, totaling to 5681. The present DTC fleet is plagued with overage buses resulting in inefficiency in operation and economic loss.

Besides DTC, intercity bus service is also provided by nearly 2600 individually owned private buses. The existing system suffers from:

- Lengthy, zigzag and overlapping destination oriented routes:
- Misdistribution, low frequency of buses along different routes

- Absence of published information
- Disorganized private bus operation
- Fierce competition, over speeding and non-observance of traffic rules by private operators
- Inadequate enforcement and regulatory machinery.

A new corridor of High Capacity Bus System is being implemented from Ambedkar Nagar to Moolchand Hospital in 2006. Also a new company has been formed by Transport Department Govt. of Delhi to integrate mass transport by various modes of travel, named Delhi Integrated Multimodal Transport Systems Ltd. (DIMTS).

CONCLUSIONS

In order to plan for balanced and integrated development of the district and to control the growth of Delhi, potential cities and towns should be developed to their optimum capacity. These growth centers should be developed not only to direct some of the population that would otherwise come to Delhi as this process jeopardizes the planned growth but also helps other towns to grow in a planned way and to effect corresponding positive impacts on the surrounding hinterland. Other towns should be characterized by being self-contained, self-sufficient. There should be minimum need or scope for commutation with the main city for day to day activities. These should give all desired relief from growing congestion.

Among various factors affecting the quality of life and safety in a city, the transport system is among the most important. It has a direct correlation with air quality and safety. The urban transport situation in large cities in India is deteriorating. The deterioration is faster in metropolitan cities where there is an excessive concentration of vehicles. Commuters in these cities are faced with acute road congestion, energy wastage, rising air pollution, and a high rate of accident risk. It is no longer safe to walk on the road or to ride a bicycle. Mass transport is scarce, overcrowded, unreliable, and involves long walking periods. Considering the population growth in most Indian cities, the urban transport infrastructure thus needs to be increased manifold over the next few years, if the gap in the demand and supply has to be eliminated.

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