

COMPREHENSION OF NMT IN DELHI MASTER PLAN 2021

Siddharthkumar Lukhi¹ Bhasker Vijaykumar Bhatt², Himanshu J. Padhya³

M.E, Civil Engg., Sarvajanic College of Engg. and Tech., Surat, Gujarat, India¹

Associate Prof., Civil Engg., Sarvajanic College of Engg. and Tech., Surat, Gujarat, India²

Associate Prof., Civil Engg., Sarvajanic College of Engg. and Tech., Surat, Gujarat, India³

Abstract: Today In the 21st century world, the word “sustainable” is the most common term used in almost all aspects, especially in Urban Planning. Transportation and efficient land use are the two variables that act as a constant in the process of urban planning. Nowadays, as a part of sustainable transport, NMT is being getting an importance in urban transportation planning. NMT acts as a feeder link for motorized transport that require a prime care planning. Walking and Cycling is the most common modes of non-motorized transport. An essential part of livable communities is a safe and convenient place for people for biking and walking as part of their daily activities. To have successful mass transportation system, it is must have proper integration of NMT facility with mass transportation system. In India, Delhi Master Plan 2021 is considered as the most comprehensive plan among other cities plans. In this program, special provisions are found for NMT and parking facility. With this plan, complete street policy is prepared which seems to be the mostly available policy approach used in the Western countries.

Keywords: NMT, Delhi Master Plan 2021, Urban Planning, Sustainable Transport.

INTRODUCTION

The capital of the largest democracy in the world is Delhi, is the focus of the socio-economic and political life of India. It is also a symbol of prehistoric values, ambitions and is scheduled to take its eminent place amongst the major cities of the world. It is also the seat and growth driver for the Indian economy. Delhi is a prime mover and nerve centre of ideas and actions and also serves as the seat of national governance. People enjoy the city as a centre of business, culture, education and sports. With much of importance, it demands a visionary and accurate planning approach. Delhi is getting evolved and developed into the world class city, and seek particular importance in physical infrastructure and modern outlook. For this, DDA has prepared Vision-2021.

Vision-2021 is a document with guiding principle for the framework, formulation and implementation of the Master Plan– Delhi 2021. It aims to make “Delhi a global metropolis and a world-class city”. People and resources to have favorable atmosphere and infrastructure to conduct themselves in fruitful work and have a better quality of life with living in a sustainable environment.

DELHI MASTER PLAN 2021: AN OVERVIEW

With an ever increasing population, Delhi is experiencing a quick growth in urbanization. The pressure on infrastructure and land has led to the area regulating agency – DDA to unlock land for urbanization in a restricted manner through the various master plans. Around 66,000 Ha of land has been earmarked as per MPD-2021 for the purpose of urbanization.

- 33% of this unlocked area is for residential land use;
- 26% is under green belts and other spaces
- 3% is for commercial land use.

By implementation of MPD 2021, Delhi will grow to almost twice its existing size from 823 Sq. Km. to 1483 Sq. Km..

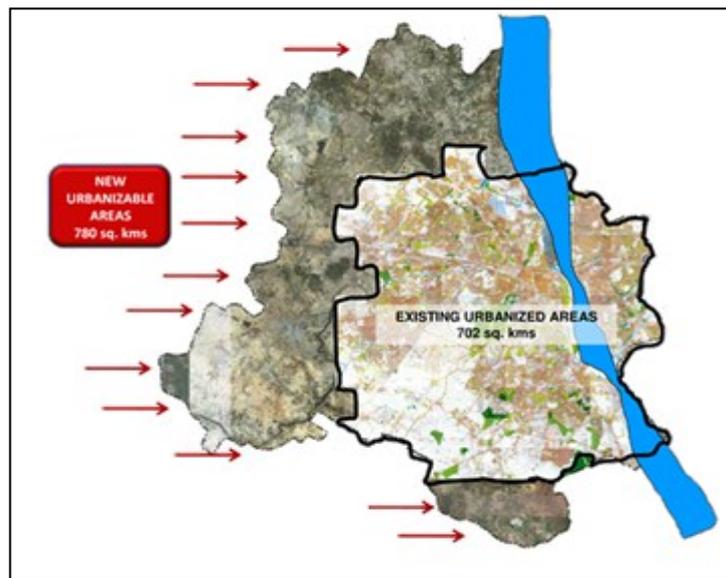


Figure 1 Urban expansion of Delhi

The Master Plan comprises vision and policy guidelines for the perspective period up to 2021. The Plan will need review every five years to keep pace with varying requirements of the society.

The following areas have been the focal points of the Plan:

Land Policy:

The land policy is based on the best possible utilisation of available resources, both, public and private in land assembly, development and housing.

Public Participation and Plan Implementation:

Local area planning is made decentralised by participatory approach, and the master plan is more focused on performance oriented planning and development, with implementation and monitoring.

Redevelopment

Incentivized redevelopment with additional FAR introduced to ensure development in all the areas. Following two categories identify these places;

- **Planned Zones:** Influence Zone along Major Transport Corridor and MRTS; Special Area; shopping / commercial centres; underutilized / low-density areas; Industrial zones / clusters and resettlement colonies.
- **Unplanned Zones:** unauthorized colonies; villages and JJ Clusters.

Shelter

- For optimal utilization of land, plotted housing shifted to group housing;
- For development / redevelopment of shelter through private sector participation;
- To facilitate 'signature' projects and optimum utilization of earth, adopted strategy is the removal of criteria imposing controls (like height)
- Enhancement of FAR, ground coverage and height in all categories of residential schemes.

Housing for Urban Poor

- Land resource for private sector participation in in-situ slum rehabilitation is proposed;

Mandatory provision proposal of EWS housing / slum rehabilitation in all group housing with an extent of highest of 15% of permissible FAR or 35% of DU on a plot.

Land use allocation in Housing for the urban poor is up to the extent of 50-55% of total. The Recategorisation of house types, development and control norms and differential densities are adopted to make EWS /LIG housing feasible and economical.

Environment

- A particular emphasis is on conservation of the Yamuna Ridge.

Rejuvenation of the River Yamuna through measures as - ensuring refurbishment of trunk sewers; sewerage of un-sewer areas; adequate flow in river by release of water from riparian states; treatment of drains; treatment of industrial effluent; recycling of treated effluent and removal of coliforms at STPs is under proposal.

- Provision of breathing spaces / recreational areas and greenbelt - 15 to 20% of the land.
- Grounds for Multipurpose use: marriages / public functions.

Unauthorized Colonies

Unauthorized colonies, needing regularization as per government policy, should be incorporated into the mainstream of urban development. It requires the provision of services and facilities, infrastructure development for which differential norms and procedures needs definition.

Mixed Use of Land

- Comparatively relaxed provision of Mixed Landuse in habitable areas is to cater increasing demand for commercial accomplishments and overcome the shortfall of available commercial space. Also, it will aid achieving better synergy among residence, transportation and workplace,.
- 2183 streets in total are notified by the GNCTD since 2006 for local commercial and mixed-use activities.
- Small-sized daily needs shops on the ground floor, in residential areas, can have establishment.

Trade & Commerce

- District & Community Centres are proposed to be developed as facility corridors along major transport networks to prevent unintended and unplanned ribbon development and for better synergy between public transport and work centres.
- Development of Integrated Freight Complexes / Wholesale Markets at the urban periphery.

- Mandatory provisions for service and repair activities.
- Informal shops, weekly markets, handicrafts bazaars, used books / furniture / building materials bazaars to be developed.
- Enhancement of FAR.

Informal Sector

- The informal and organised sector are an important source of employment in the economic fabric of the city for which the following approach is proposed:
- Earmarking of 'Hawking' and 'No Hawking' Zones at neighbourhood and cluster levels.
- The weekly markets to be identified and planned / developed.
- For informal trade, new areas are to be prepared and integrated with housing, commercial, institutional and industrial areas.
- Provision of standard basic services like toilets, water points, and so on.
- Institutionalizing designs of stalls, push-carts and mobile vans.
- Involvement of NGOs envisaged.

Industry

In this plan, the environment is considered as a major concern and prohibited industries in particular areas are well described and listed.

- Modernization / up-gradation of existing industries including non-conforming.
- Industrial centres are planned.
- Special Provisions are formed for service and repair centres.
- Inclusion of new activities like IT industry and such.
- FAR for various types of industries are enhanced.

Conservation of Heritage

Heritage zones and archaeological parks are very well identified under this plan, which is then followed by heritage conservation and preservation, and the plan suggests authority to prepare Special Conservation plans for listed buildings and precincts.

Transportation

Under this, the proposals include the following:

- Unified Metro Transport Authority
- Synergy between land use and transport
- A new parking policy is developed, which including private sector development of parking facilities, increase in norms for parking space, multi-level parking and underground parking.
- Integrated multimodal public transport system to reduce dependence on personalized vehicles.
- Road and rail-based mass transport system are to be a primary mode of public transport, optimal use of existing road network and development of missing links.
- Restructuring of existing network through expressways, elevated roads, arterial roads, distributor roads and relief roads.
- For NMT, Provision for cycle tracks, pedestrian and disabled friendly features in arterial and sub-arterial roads are made mandatory to provide.

Health Infrastructure

- Health facilities are proposed to achieve norms of 5 beds / 1000 population

- Enhancement of FAR for hospitals and other health facilities.
- Nursing Homes, Clinics and such are also allowed under relaxed Mixed Use norms.

Educational Facilities

- Rationalization of planning norms with enhanced floor area.
- Locating new school sites adjacent to parks / playgrounds.
- Provision for vocational and other educational facilities.
- Schools and training centres for mentally / physically challenged with differential development norms.

Disaster Management

- Disaster Management centre provided in each administrative zone.
- Building regulations for safety of structures as per seismic zone.
- Land Use zoning as per micro zonation.

Provision of Sports Facilities

- Provisions for sports infrastructure for local, national and international events.
- Incentives provided for sports facilities and swimming pools in schools, clubs and group housing.

Focus on Infrastructure Development

- Perspective Plans for Water, Power, Drainage & Solid Waste Management of Service Agencies is part of MPD-2021. Plan also focuses on finding alternative Sources of energy and new technology. The Plan gives emphasis on energy conservation, efficiency and exploring alternative sources of energy.
- Realistic standards of water supply for equitable distribution are introduced rather than adopting past standards.

NMT AND DMP-2021

“The highest priority should be with mass transport, walking and NMV that are mostly accessible to everyone with little impacts” (Enrique Peñalosa)

Our National Urban Transport Policy also emphasises an equitable allocation of road area for people, rather than vehicles, as its primary focus. In addition, Central Motor Vehicles Rules (CMVR) 1989, Safety Rules provide passive protection for pedestrians, asserting that motorists cannot enter walking paths and are liable to a penalty if they enter. On 29th May 2014, Delhi High Court directed Delhi Government to submit a plan for NMV.

Delhi High Court in its statement has already mentioned, “You have hundreds of areas where you can have pilot projects..... Road space is democratic; everybody must have a share. If you can address BRT, you can take care of NMV also”.

It is projected in the DDA plan that the total trips may increase to 280 lakh by the year 2021, including 257 lakh motorized trips and 23 lakh non-motorized trips. Principal purpose of the plan is to have a pedestrianization. The other one is to have proper and intended use of NMT systems in specific areas, (with others; to ensure safe and economical commuting between place of origin and destination, convenient and quick access to all fields for all sections of the society, reduction of pollution and congestion, energy efficiency and conservation, safety for all parts of the road and transport users).

City	Modal Split for Travel, Percent of Trips					Vehicle Ownership	
	Population (2001 Census)	Public Transport	Private Transport	Bicycling & Walking	Average Trip Length km	Vehicles Per 1000	Passenger Cars Per 1000
Ahmedabad	4,500,000	30	38	32	5.4	371	55
Bangalore	8,625,000	36	39	25	9.6	283	50
Bhopal	1,433,000	28	19	53	3.1	189	24
Chennai	7,014,000	39	30	31	8.6	226	45
Delhi	13,840,000	48	19	33	10.2	355	117
Indore	1,759,000	16	37	47	5.6	257	27
Jaipur	2,032,000	17	39	44	5.4	359	55
Mumbai	17,702,000	52	15	33	11.9	54	24
Mysore	787,000	26	23	51	2.5	380	40
Pune	4,200,000	12	54	33	6.1	335	48
Rajkot	1,002,000	13	38	49	3.7	403	33
Surat	2,430,000	13	31	55	5.3	492	55

Figure 2 Modal Split of various Indian Cities

Source: Compiled by EMBARQ - URL: <http://www.embarq.org/sites/default/files/12-Indian-Cities-Transport-Indicators-Database.xls>

To meet these objectives, a strategy is prepared to have an integrated and mutually complementary multi-modal transportation and traffic plan. It will comprise the integration of the Road, Rail and Metro rail network so that work centers / residences are within a walkable distance. The multimodal system will be integrated with safe facilities for pedestrians, bicyclists, disabled persons and Intelligent Transport System (ITS) enabled taxis and three-wheeled scooter rickshaws (TSR). Optimal use and utilisation are to be assured of the existing road network and full development of ROW by removing all impediments is made assured by Street Design Policy and Guidelines. All arterial roads will be restructured to allow for smooth and safe flow of buses and non-motorised transport to minimize pollution and congestion that of the objectives of the plan.

According to the scheme, fully segregated cycle tracks are provided on all the arterial and sub arterial roads of the city. Local streets are made bicycle friendly and pedestrian by using modern traffic calming designs. It is to keep speeds within prescribed limits as per street design policy. These all are to be provided with safe parking in the park and ride lots. Use of rickshaw/cycles as a non-motorised mode of transport is deliberately planned along with pedestrianization in some areas of Delhi namely; Walled City / Sadar Bazar / Chandni Chowk / Lajpat Nagar / Karol Bagh and Trans Yamuna Area.

CONCLUDING REMARKS

Delhi Master Plan 2021 is overall most comprehensive plan amongst available till now in India. Following NUTP, prepared Street Design Policy is proved very useful in the implementation in the city. It ultimately results in an efficient and comprehensive mobility in Delhi.

REFERENCES

- [01] Delhi Master Plan 2021
- [02] Draft Revised Regional Plan 2021: National Capital Region, National Capital Region Planning Board, July, 2013
- [03] K.K. Joadder, J. K. Kapoor, Jasmine B. Mallick, Retrofitting Plan-To Promote Non-Motorised Transport And Pedestrianisation, Town And Country Planning Organisation, Ministry Of Urban Development, Government Of India
- [04] National Urban Transport Policy 2006
- [05] Paul Guitink, Susanne Holste, Jerry Lebo, Non-Motorized Transport: Confronting Poverty Through Affordable Mobility, Transport No. Ut-4, World Bank, April 1994
- [06] Prof K.T. Ravindran, Summary: City And Transport Vision, Delhi Master Plan, 27 May 2014
- [07] Public Policies For Pedestrian And Bicyclist Safety And Mobility, International Technology Scanning Program, August 2010
- [08] http://www.tradeindia.com/newsletters/special_report/articles3_13_feb_2007.html; Tradeindia website, newsletter archives, 2015
- [09] Vedant S. Goyal, Planning For Non-Motorized Transport In Urban Areas, National Capacity Building Workshop For Sustainable And Inclusive Development, 12-13th August 2014, Dhaka, Bangladesh
http://www.unescap.org/sites/default/files/3a.3_Integrating%26Planning_NonMotorisedTransport_VedantGoyal.pdf
- [10] <http://www.pib.nic.in/newsite/erelease.aspx?reid=24726>