

Comprehensive Mobility Planning: A Case of Pune Metropolitan Region

Ar. Nayan Gupta

Student, Dept. of Architecture and Planning, MITS College, Madhya Pradesh, India

Abstract - The urban transport infrastructure is quite possibly the main issues for the urban communities, and includes numerous angles that worry to residents, governments and the affordable development of the nations. The target of this paper is to show how this issue has been concentrated as of late, with accentuation in the utilization of reproduction and improvement at the entire arranging measure. We additionally think about the significant key themes as maintainability, expenses and dangers, versatility and climate sway. Some investigation cases are displayed to explain the ideas introduced.

Key Words: Comprehensive mobility planning, transit planning, urban transport, planning procedure

1. INTRODUCTION

Comprehensive mobility planning is a dream for long haul which gives a system and venture program to address the issues of transportation of individuals and merchandise for a city. The CMP accentuation on Sustainable vehicle modes. it basically addresses multimodal transportation framework and traffic development for every one of the methods of transportation.

Anticipating CMP requires examination and inventories of the 10 significant components to be specific land use, populace, monetary elements influencing advancement, travel designs, existing traffic courses and travel offices, stations and move offices, traffic signals, drafting, regions, and building regulations and monetary plans. The intent of this requirement and the listed items to be included can be converted into the accompanying explicit reasonable necessities. Comprehensive planning approach and organization should:

- Include the entire framework (organization) as opposed to singular lines or courses as it were
- Incorporate all methods of transportation, i.e., public and private, traveler and cargo, and so forth
- Include specialized and monetary (cost) factors, yet additionally related components, like social and natural variables and metropolitan structure
- Cover the whole metropolitan region, which addresses a useful framework. The basic steps in transportation planning process.

1.1 The planning procedure

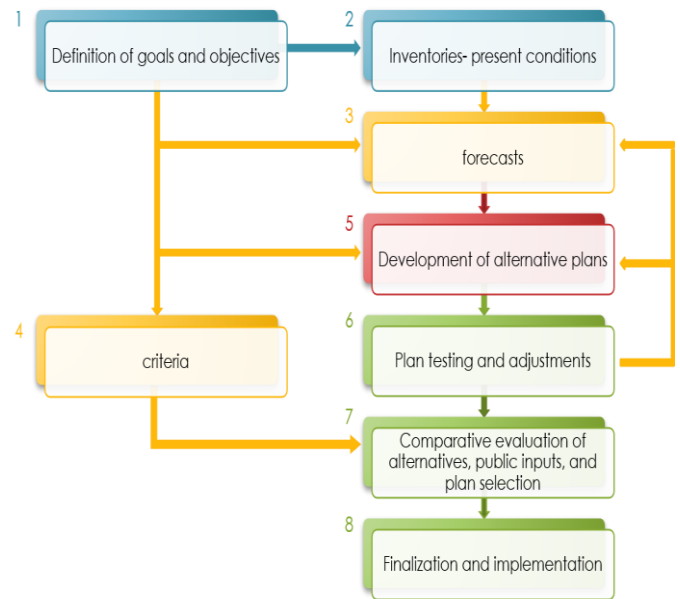


Fig -1: The planning procedure

1.2 Planning Sequence from Urban Transportation System to Individual Projects

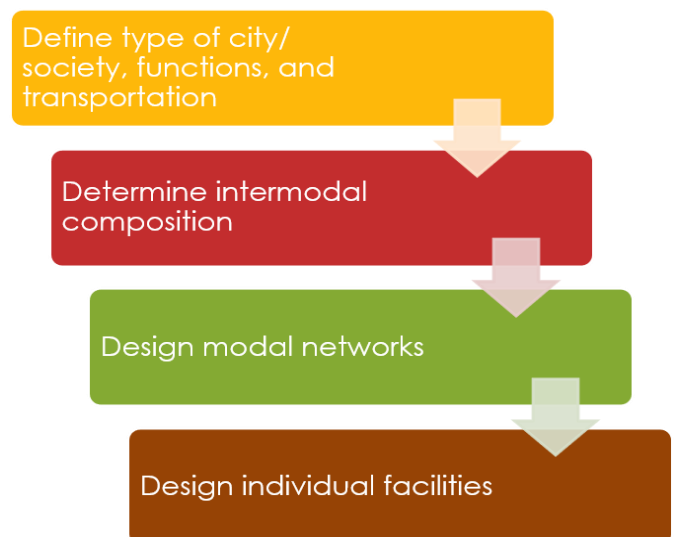


Fig -2: Individual project planning procedure

1.3 Transportation Planning Procedure

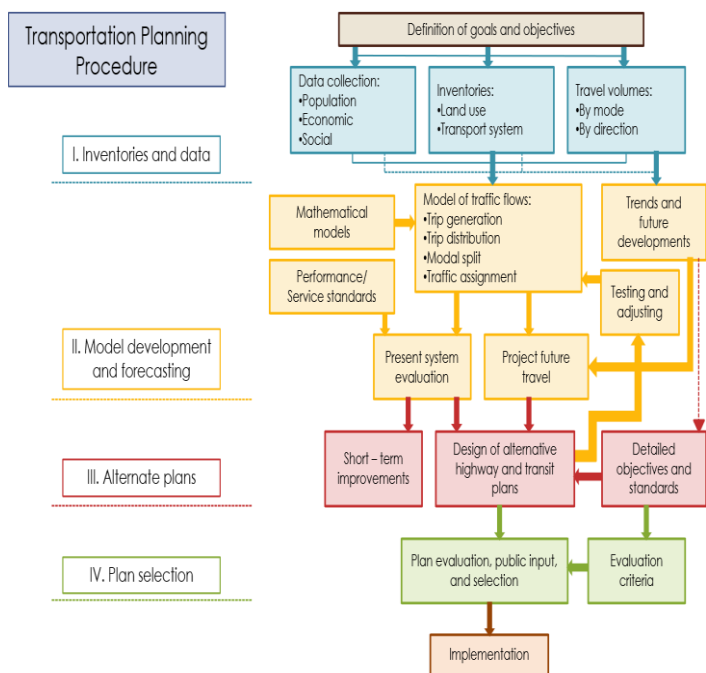


Fig -3: Transportation planning procedure

1.4 Transit Planning Process

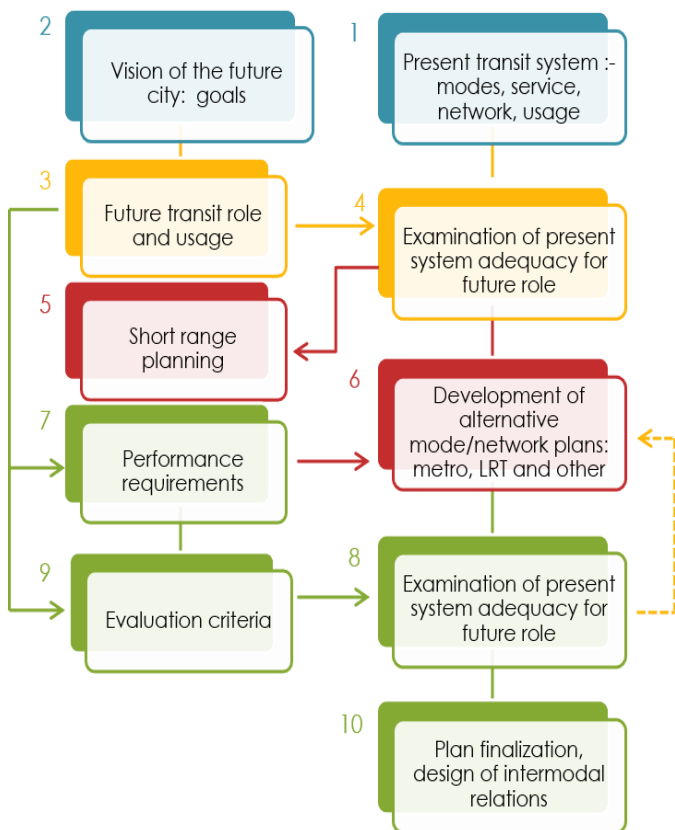


Fig -4: Transit planning process

1.5 Objectives of an Urban mobility planning

Objectives of an urban mobility planning are:-

- Sufficient portability ought to be accessible to all classifications of the space's populace to improve their chances for work, amusement, business, and different exercises.
- Transportation in the city should allow different exercises that require different densities.
- Transportation inside the focal business locale (CBD) ought to animate its working and development; over the long haul, it should get worked on natural and financial conditions.
- The CBD and other significant action places ought to be open without constant gridlock.
- Transportation should serve rural neighborhoods without forcing exorbitant adverse consequences, for example, air contamination, clamor, and security perils.
- Low-pay regions ought to be furnished with sufficient transportation to the space of possible work.
- In medium-sized and huge urban areas, multi-purpose transportation of frameworks ought to be given to accomplish the necessary administrations proficiently.

2. Case Study of Pune Metropolitan Region

- Pune district has a grounded fabricating in Auto, Pharma, glass, sugar, and fashioning ventures. It is additionally a conspicuous area for IT
- Pune District has 20% of MSME of State contributing 26% of business and 30% of Venture (Financial Overview 2017-18)
- It has most elevated number of MIDC Mechanical Units (38%) with 4.77 lakh Business
- As per Business World (June, 2017), Pune is the seventh most extravagant city with 69 billion dollars Gross domestic product (PPP)
- Pune known as 'Oxford of the East' has a sum of 156 and 1810 universities and schools in PMC and PCMC.

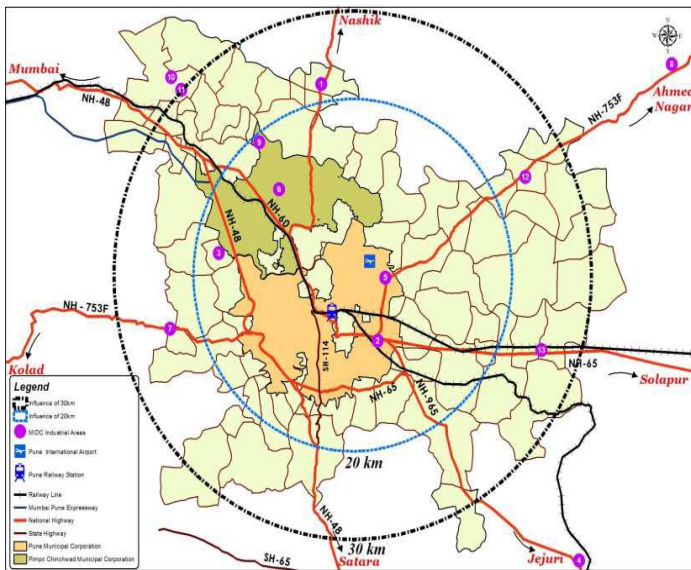


Fig -5: Pune CMP Plan

2.1 Challenges and Opportunities in Pune City Urban Transport

Challenges and opportunities in Pune city are :-

- **Public Transport:** The expansion in customized vehicles combined with the sluggish development in the PMPML armada has diminished the portion of public transportation trips in Pune.
- **Growth:** Pune has been encountering gigantic development. In 2001, PMC ward was stretched out by consolidating 23 adjoining towns (in parts) and DP was only ready for this periphery region for next 20 years (legitimate till 2021).
- **Socio Financial matters:** The flood of IT area has brought about change in the way of life inclinations. Livelihoods are expanding and homes and working environments are turning out to be more fanned out from the center region. Every month 10,000 – 13,000 new vehicles are enrolled (a pace of more than 400 every day). There are 250 bikes for each 10,000 people.
- **Non-Mechanized Vehicle:** Verifiably Pune is known for its utilization of bikes. Over the new years the utilization of bikes has descended fundamentally because of the ascent in mechanized vehicles. Strolling and cycling establish roughly 33-35% of the all-out trips in Pune.
- **Funding –** Late advances in innovation, like Savvy Transportation Frameworks, electronic cost assortment, keen card advances and so on, have presented better approaches for further developing the framework efficiencies just as news methods of subsidizing procedures. It is obvious that a constant subsidizing hole exists for city transportation needs, and hence it is basic that Pune City needs to accept new subsidizing and financing techniques that help the Versatility Plan.

2.2 Level of service

LOS	1	2	3	4
Public transport facilities	<12 The City has a good public transport system	12 The city has public transport system which may need considerable improvements in terms of supply of buses/coaches and coverage as many parts of the city are not served by it. The frequency of services available may need improvements. The system provided is comfortable.	13-20 The City has a public transport system which may need considerable improvements. The system provided is not comfortable as there is considerable over loading.	21-24 The city has very poor/unorganized public transport system
Pedestrian Infrastructure Facilities	3-5 The City has adequate barrier free pedestrian facilities along overall road network.	6-7 The City has pedestrian facilities which may need some improvements in terms of improvements in intersections, footpaths, and street lighting as some parts of the city are not served by it. The footpath available needs improvements. The system provided is otherwise comfortable and sustainable.	8-10 Facilities at intersections, availability of footpath etc needs improvements as also many parts of the city are not served by it.	11-12 The city lacks adequate pedestrian facilities
Non-motorized Transport (NMT) Facilities	3-5 The City has adequate NMT facilities along overall road network.	6-8 The City has NMT facilities which may need some improvements. The system provided is otherwise comfortable and Sustainable	9 The City has NMT facilities which may need considerable improvements as many parts of the City are not served by it.	10-12 The city lacks adequate NMT facilities
Level of Usage of Intelligent Transport System (ITS) Facilities	5-7 The city has adequate ITS Facilities	8-10 The city has ITS facilities which may need some improvements in terms of Integrated Ticketing System, Signal Synchronization, GFS/GPRS, PIS etc.	11-15 The city has bare minimum ITS facilities and may need considerable improvements as many parts of the city are not served by it.	16-18 The city lacks adequate ITS facilities
Travel Speed (Motorized and Mass Transit) along Major Corridors	2 Primarily free flow movement of average travel speeds usually about 70% of the free flow speed for the key corridors.	3-4 Small increase in traffic causing substantial increase in approach delay and hence decrease in arterial speed.	5 Significant approach delays causing travel speed of 1/3 the free flow speed or lower. Such conditions causing a combination of one or more reasons such as high signal density, extensive queuing at critical intersections and inappropriate signal timing	6-8 Key corridors at extremely low speeds below 1/3 to 1/4 of the free flow speed.

Fig -6: Level of service

LOS	1	2	3	4
Availability of Parking Spaces	2 Paid parking spaces are available in the city and the demand is well managed.	3-4 Some improvements may be required	5-6 Paid Parking space need to be improved upon and to cater to the demand some differential parking rates for the CBD have been adopted. The city authorities need to initiate considerable improvements measures.	7-8 The city authorities need to initiate immediate actions with respect to providing paid parking spaces and demand management for parking.
Road Safety	2 Level of Fatality rate in a city is very low.	3-4 Need some improvements in road design and available road infrastructure.	5-6 Need considerable improvements in road design and available road infrastructure, traffic management and in other such reasons which significantly contribute to road safety	7-8 Level of Fatality rate in a city is very high.
Pollution Levels	<=5 Level of pollution in a city is very low.	8 Need some improvements in emission standards, data collection and data review needs to be made accurate	9-13 Need considerable improvements in emission standards, checking pollution etc.	14-16 Level of pollution in a city is very high.
Integrated Land Use Transport System	<=8 <=9 City structure is appropriately planned in a manner which patronizes public transport.	14 9-14 City structure is somewhat in coherence with the public transport system	15-22 14-20 Faint coherence between city structure and public transport system.	22-38 20-24 Inconsistency in the city structure and public transport system leading to lesser ridership and high dependence on
Financial Sustainability of Public Transport	<=4 The public transport of a city is financially sustainable.	5-7 The public transport of a city is financially sustainable but needs some improvements	8 The public transport needs considerable improvements	9-12 The public transport of a city is not financially sustainable.

Fig -7: Level of service

2.3 Vision

The vision for Pune comprehensive mobility plan was “Moving people safely and economically by emphasizing public transport and non-motorized transport.”

2.4 CMP Strategy

- Identification of various trunk portability passageways
- Enhancing the limit and nature of the public vehicle
- Providing elective courses for those entering the center city region
- Providing sidestep courses for significant distance worker and truck traffic
- Identifying feeder frameworks that interface various pockets and wards
- Providing an organization of devoted cycle tracks, trails and walker intersections
- Pedestrianizing significant parts of the center city region and connecting them with vital stopping
- Providing flyovers in a couple of intensely blocked intersections/convergences
- Special consideration towards street wellbeing
- Introduction of physical and financial measures that would debilitate the utilization of individual engine Vehicles.
- Reform and fortify the institutional plans for overseeing and directing the vehicle framework in the city.

3. Inferences based on case study of Pune

- Pune CMP advances value standards of portability. It advances fair assignment of street space and suggests committed street space for public travel modes and NMT.
- Pune CMP has thorough proposals to advance security of NMT and mechanized vehicle clients. Proposed suggestions include:
 1. Establishment of a complex street mishap investigation stem for exact announcing and use in mathematical enhancements.
 2. Setting up a street upkeep the board framework upheld by street data framework for customary and convenient support of streets.
 3. Establishment and the board of seller zones, intending to decongest primary streets and work with safe development of people on foot
 4. Extensive instruction and authorization crusades in the city to further develop travel conduct of residents.
- Plan proposes exhaustive measures to advance utilization of public vehicle
- It proposes a far-reaching bundle of measures to oversee current traffic circumstance and diminish transport interest
- Clear implementation methodology in the arrangement - staging of distinguished ensures given in the arrangement
- Complete system of pointers and targets proposed in the arrangement

3.1 Conclusions: -

Planning process/plan- Lack of clearness in wording like vision, goals, strategy, etc. Lack of clearness on proper linkages of CMP with other city plans like Ground breaking strategy and CDP.

NMT- Lack of suggestions on arrangement of supporting offices for NMT clients. Lack of suggestion on combination of vendors/casual area in NMT/street proposition.

Security - Many plans don't recommend any actions to further develop security of transport framework clients.

Access- Lack of recommendations on running differential travel administrations in urban areas.

Public vehicle-Lack of recommendations to work on nature of public travel administrations. Lack of measures to advance reconciliation of IPT with public vehicle.

Climate- Absence of proposals explicit to climate quality improvement.

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BIOGRAPHIES



Ar. Nayan Gupta
(Bachelors in Architecture from MIT, Uttar Pradesh
Masters in urban planning from MITS, Madhya Pradesh)