4.1 TRANSPORTATION PLANNING PROCESSES

Urban transportation planning is the process that leads to decisions on transportation policies and programs. In this process, planners develop information about the impacts of implementing alternative courses of action involving transportation services, such as new highways, introduction of new modes of public transport etc, or parking restrictions. The fundamental objective of transportation is to provide efficient and safe levels of mobility required to support a wide spectrum of human needs for a heterogeneous variety of societal groups. Because these needs, goals, and objectives are continuously changing, transportation planning is also an ever-evolving process. The important steps of the transportation planning process are as given below:

**Step 1:** Forecasting target year population and economic growth for the subject metropolitan area.

**Step 2:** allocation of land use and socio – economic projections individual analysis zones according to land availability, local zoning and related public policies.

**Step 3:** specification of alternative transportation plans partly based on the result of Step 1 and Step 2.

**Step 4:** calculation of the capital and maintenance costs of each alternative plan.

**Step 5:** application of calibrated demand – forecasting models to predict target year equilibrium flows expected to use each alternative, given the land use and socio – economic projection of Step 2 and the characteristics of the transportation alternatives (Step 3).

**Step 6:** conversion of equilibrium flows to direct user benefits, such as savings in travel time and travel cost attributable to the proposed plan.

**Step 7:** comparative evaluation and selection of the best of the alternatives analysed based on estimated costs (Step 3) and benefits (Step 6).
This information is used to help decision-makers (elected officials or their representatives) in their selection of transportation policies and programs.

4.1.1 Problem definition

Problem is defined by defining the objective/goal of planning. The objective could be-

i. To develop a transport system that caters to all sections of society thereby promoting inclusive development.

ii. To develop a transportation system that is primarily sustainable in nature.

iii. To minimize system costs and provide self operation etc.

4.1.2 Identification of need

- Inventory of existing state of system and a forecast of future condition (demand).
- Interpolation of objective.

4.1.3 Solution Generation and Analysis

Based on problem definition, transportation planners have to identify various alternatives and make choice about-

- Various modes like roadway (DA/PT), railway, waterways or airways.
- The technological aspect such as high speed train, raised monorails underground transit system, driver information system.
- Traffic engineering aspect such as changing or improving flow pattern by making certain road one way, reducing delay on arterial street by improving signalization or grade separated intersection, disallowing certain movement at intersection
- Regulatory aspect such as reserving land for only high occupancy vehicles, disallowing high polluting vehicles, imposing speed limit.

For example, to travel from Kanpur to Delhi following alternatives can be worked out.

- Facilitate train leaving Kanpur at 6:30 am and reaching Delhi at 10:30 am and again leaving Delhi at 5:30pm and reaching Kanpur at 10:30pm.
- Developing existing airport at Kanpur for small commercial flight
- Improve the existing road facilities providing operating speed 120 kmph.