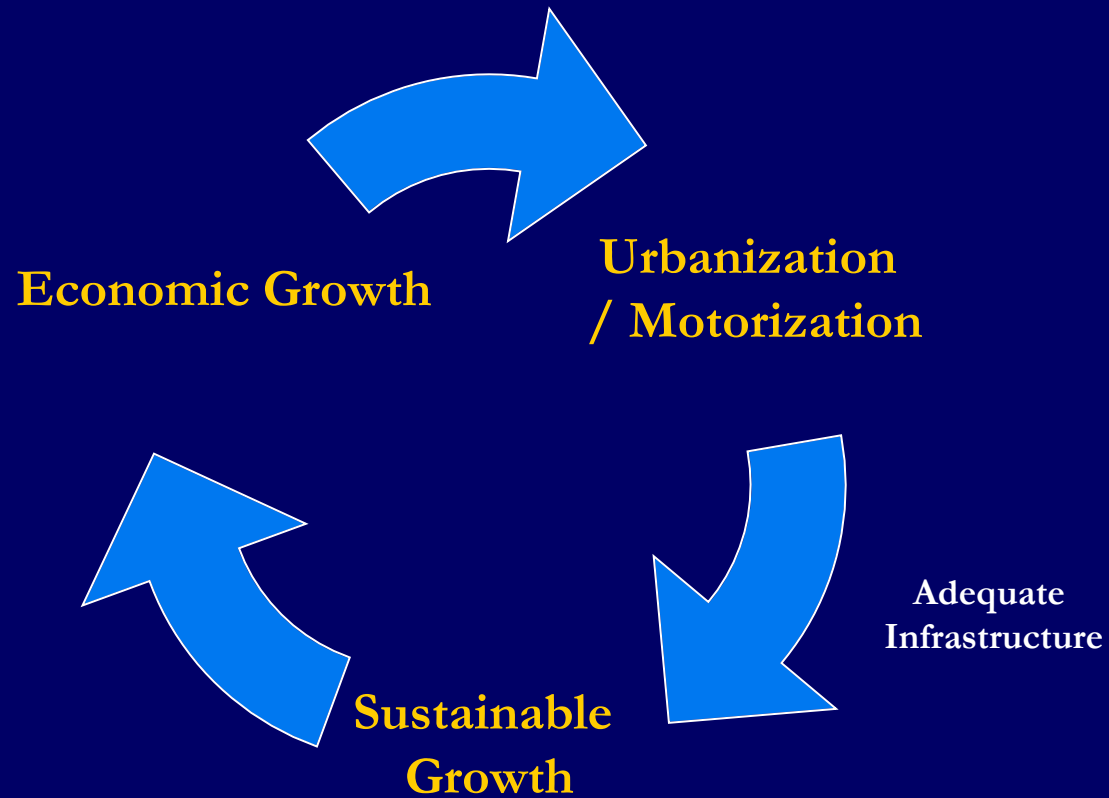


NEED FOR A SYSTEM APPROACH TO URBAN TRANSPORT PLANNING

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ROLE OF URBANIZATION





GROWTH TREND

- Population has increased from 350 million in 1947 to 1027 million by 2001 (193% growth in population) and 1.4 billion in 2021
 - India's urbanization is around 28 percent and is likely to reach a level of 34 percent by 2021 and 38.2 percent by 2026
 - 35 million plus cities accounting for 39 percent of total urban population.
 - Ten metropolitan cities with a population from 2.1 – 5.4 million and 35 metropolitan cities with population size over 1 million exceeding one million
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TRAVEL DEMAND AND PATTERN

- Increase in personalized vehicles due to inadequate transport facilities and rampant urban sprawl of the cities
 - The proportion of trips made by public transport are more as compared to the non-motorized vehicles due to increase in city size . As the city size increases , the proportion of non-motorized trips decrease
 - Total Intracity passenger demand of 759 million passenger kilometer (mpkm)/ day in 1994 would go up to 2511mpkm/day in 2021
 - Total intra-city passenger demand in terms of vehicular trips which were of the order of 126 million in 1994 would be increase to 430 million in 2021 . Growth of Travel Demand is around 3.31% pa
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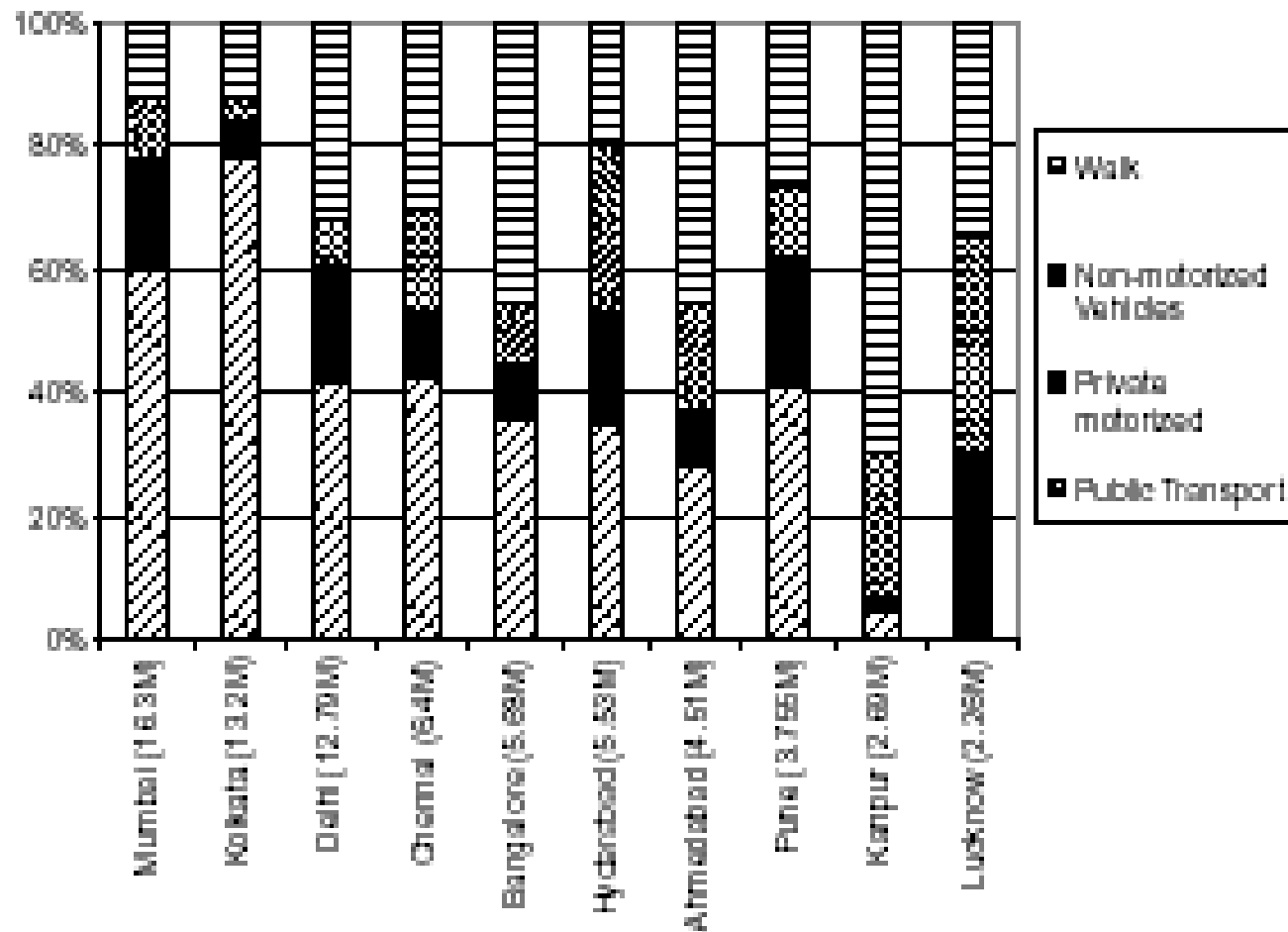


Fig. 1. Percent distribution of urban trips, by means, of travel for selected Indian cities, 2002. (Sources: Pendall, 2002 and World Bank, 2002.)

PERCENT DISTRIBUTION OF TRIPS BY DIFFERENT MODES OF TRANSPORT IN DIFFERENT CITIES



URBAN TRANSPORT PROBLEMS

- Haphazard and unplanned development at the suburban fringe with little or no provision of transport infrastructure.
 - Allocation of land for roads and circulation is very limited ranging between 6 – 10% of the total area of the cities.
 - Heterogeneity of traffic characterized by motorized and non-motorized vehicles.
 - Poor public transport facility.
 - Non existence of traffic management measure measures.
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URBAN TRANSPORT PROBLEMS

- High rate of road accidents especially among the pedestrian and motorized vehicles.
 - High degree of transport related noise and air pollution.
 - Inadequate ROW to accommodate special facilities for buses and non motorized traffic.
 - Absence of equity concept in the planning denying vast poor people to fulfill their mobility needs.
 - High degree of vehicle ownership due to inadequate mass transport facilities.
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EARLIER TRANSPORTATION STUDIES

- Transportation studies for Bombay, by Wilber smith Associates 1960-61
 - Planning for Road System for Bombay Metropolitan Region in 1979-85
 - Comprehensive Traffic and Transportation Studies for Delhi in 1969-72
 - Comprehensive transportation studies for Bangalore
 - Planning for Mass Rapid Transit System (MRTS) for Delhi in 1989-91
 - Transportation Studies for Surat, Transportation Studies for Jamshedpur((1992))
 - National Transport Policy by National Transport Committee (NTPC) in 1980
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ISSUES IN TRANSPORT PLANNING

- No Integration between Land use and Transport while preparing Urban Transport Plan.
 - No Quantification of Community Impact for Transport Proposals
 - No consideration of issues like Non-motorized Trips, Mobility for Weaker Section and Physically Handicapped,
 - Non-consideration of equity issues
 - Conventional techniques are used for developing Transport Model
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OBJECTIVES OF URBAN TRANSPORT PLANNING

- Address Equity along with Efficiency
 - Provision of facilities for pedestrian and Non-motorized vehicles
 - Integration between transport and land use in preparation of Transportation Plan
 - Provision of Good Institutional Management with mechanism of fund generation
 - Formulation of Objectives to be defined in a manner so that it ensures people's mobility for large for sections of the society & free from biases from western countries' concepts and values.
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HIGHLIGHTS OF THE REPORT OF THE WORKING GROUP FOR THE 11TH FIVE YEAR PLAN ON URBAN TRANSPORT, 2006

OBJECTIVES OF NATIONAL TRANSPORT POLICY with respect to Transport Planning

- To Estimate the Transport Needs not only for the Current Urban Population of Cities but also for the Needs of those who are yet to join Urban Population
 - **To Suggest Objectives, Policies, Strategies and Programs for the Improvement of Urban Transport for the 11th Five Year Plan**
 - To Suggest Measures so as to ensure that appropriate comprehensive City development Plans with regard to Traffic and Transport plans are prepared under Jawaharlal Nehru National Urban Renewal Mission
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COMPONENTS of NATIONAL URBAN TRANSPORT POLICY, APRIL 2006

SOME IMPORTANT COMPONENTS in the National Transport Policy

- Integrating Land use & Transport Planning
 - Clean and Appropriate Technology
 - Integrated Public Transport System
 - Innovative Financing Mechanism
 - Legal / Administrative/ Regulatory
 - Capacity Building and Awareness
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ACTIONS/ INTERVENTIONS REQUIRED TO MAKE INTEGRATED TRANSPORT PLANS SUCCESSFUL

- LAND USE INTERVENTIONS
 - TRANSPORT SECTOR INTERVENTIONS
 - INSTITUTIONAL/ REGULATORY INTERVENTIONS
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LAND USE INTERVENTIONS

- Encourage 'Transit Oriented Development' with high density areas at or close to public transport stations
 - Allow land use changes from time to time, to enable efficiency in urban structure through market forces
 - Discourage sprawl through introduction of vacant land tax and levy of 'Transport Impact Fee' on developments in the periphery
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TRANSPORT SECTOR INTERVENTIONS

- Promote NMV by creating facilities for safe use of such modes and its integration with public transport systems.
 - Promote public transit systems
 - Develop freight transport terminals outside city limits
 - Encourage investments in premium bus systems to persuade personal motor vehicle users to also shift to public transport
 - Develop ring roads and city bypass roads as well as Rail Line Bypass
 - Shift inter-city bus terminals from the city centre to the peripheries, with linkages to an intra-city bus service
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INSTITUTIONAL/REGULATORY INTERVENTIONS

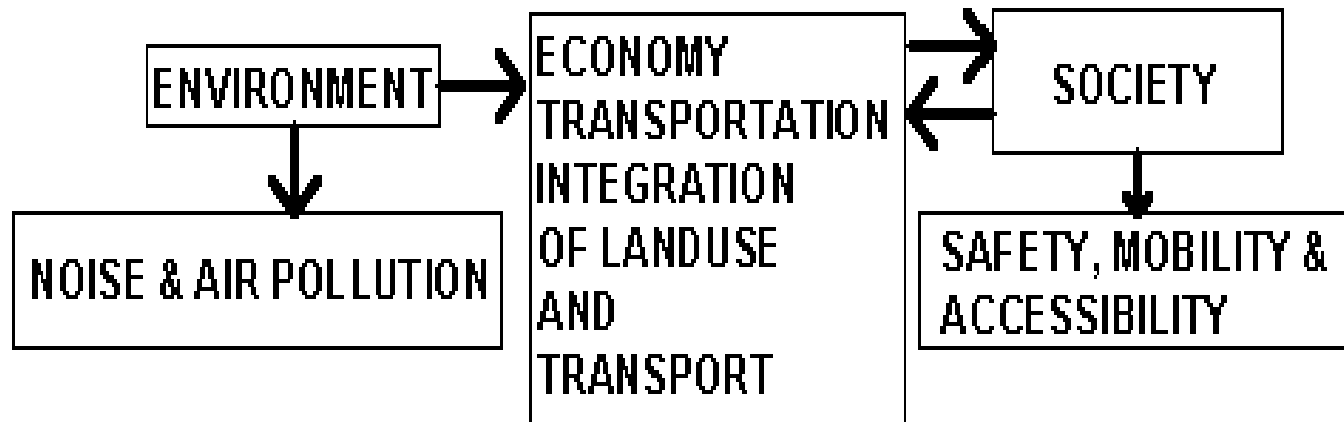
- Modify the enabling legislations
 - Establish fare policies and fare regulations
 - Implement fiscal measures that encourage use of public transport.
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MOBILITY NEEDS

FOR SMALL , MEDIUM & Million PLUS TOWNS/CITIES

- Provide pedestrian pavements and cycle tracks
- Improvements in the quality of roads
- De-congestion of some of the crowded areas like Inter State bus stations, major hospitals, central market areas, major Government offices, railway stations, etc.
- Develop transport corridors in advance to enable the orderly growth of new settlements that would facilitate public transport.
- Creation of parking spaces for para-transit and other vehicles.
- Planning for Medium to High Capacity MRTS for Million plus Cities.
- ~~Planning for sub-system & Feeder System to be connected to MRTS~~



**A SYSTEM APPROACH TO SUSTAINABLE
TRANSPORTATION PLANNING**



A SYSTEM APPROACH TO URBAN TRANSPORT PLANNING FOR INDIAN CITIES

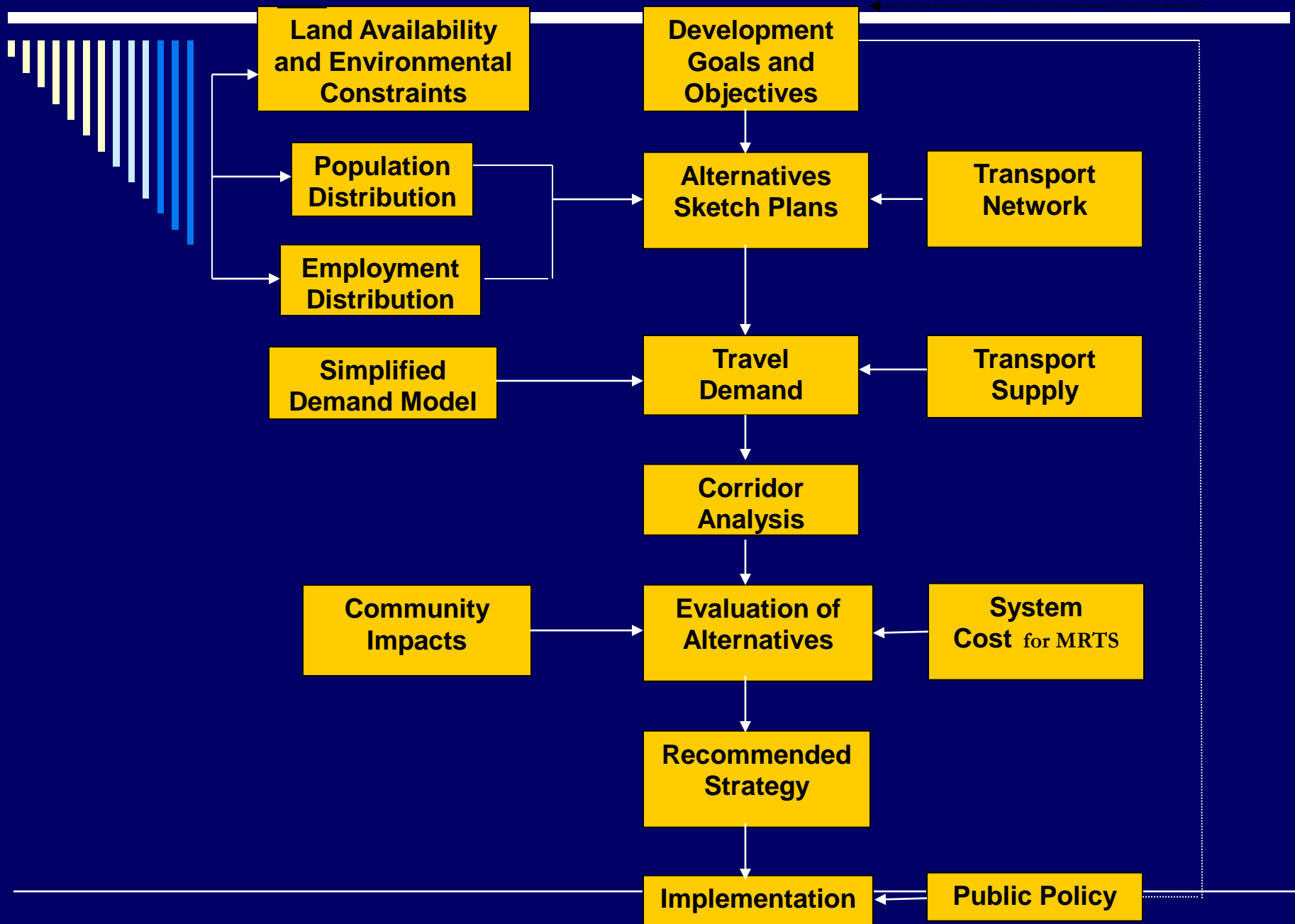
COMPONENTS OF URBAN TRANSPORT PLANNING

- **LONG TERM URBAN TRANSPORT PLANNING**
 - **PLANNING FOR PUBLIC TRANSPORT SYSTEM**
 - **SHORT TERM PLANNING/LOCAL AREA
TRANSPORT PLANNING**
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LONG TERM URBAN TRANSPORT PLANNING

- Long Term Strategy plan which examines the traffic implications of alternative land use options and recommends the best pattern of staging development
 - Consider and evaluate different strategies for urban development to determine the optimal urban transport system with maximum benefits to the community at least investment
 - To work out a rational balance between residential and work place so that journey to work trip is contained
 - To work out a financially feasible transport system that is compatible to environment and with preferences to the community where the option of Public Transport can also be examined and developed.
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STRATEGIC LANDUSE TRANSPORT PLANNING PROCESS



PUBLIC TRANSPORT PLANNING

- **Priority to the Use of Public Transport System**
 - **Quality and Pricing of Public Transport System**
 - **Appropriate Technologies for Public Transport System**
 - **Integrated Public Transport System**
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SHORT TERM PLANNING TRANSPORT PLANNING

- Design and Implement Transport projects that becomes an integral parts of long term transport plan
- Improve the existing situation by optimizing the transport system with least cost through development of TSM
- Control the movement of people and goods on the urban transport network in safe and efficient manner
- No. of measures adopted for preparation of Short Term Transport Plan

Traffic Engineering Techniques

Traffic Restraint

Bus Priority

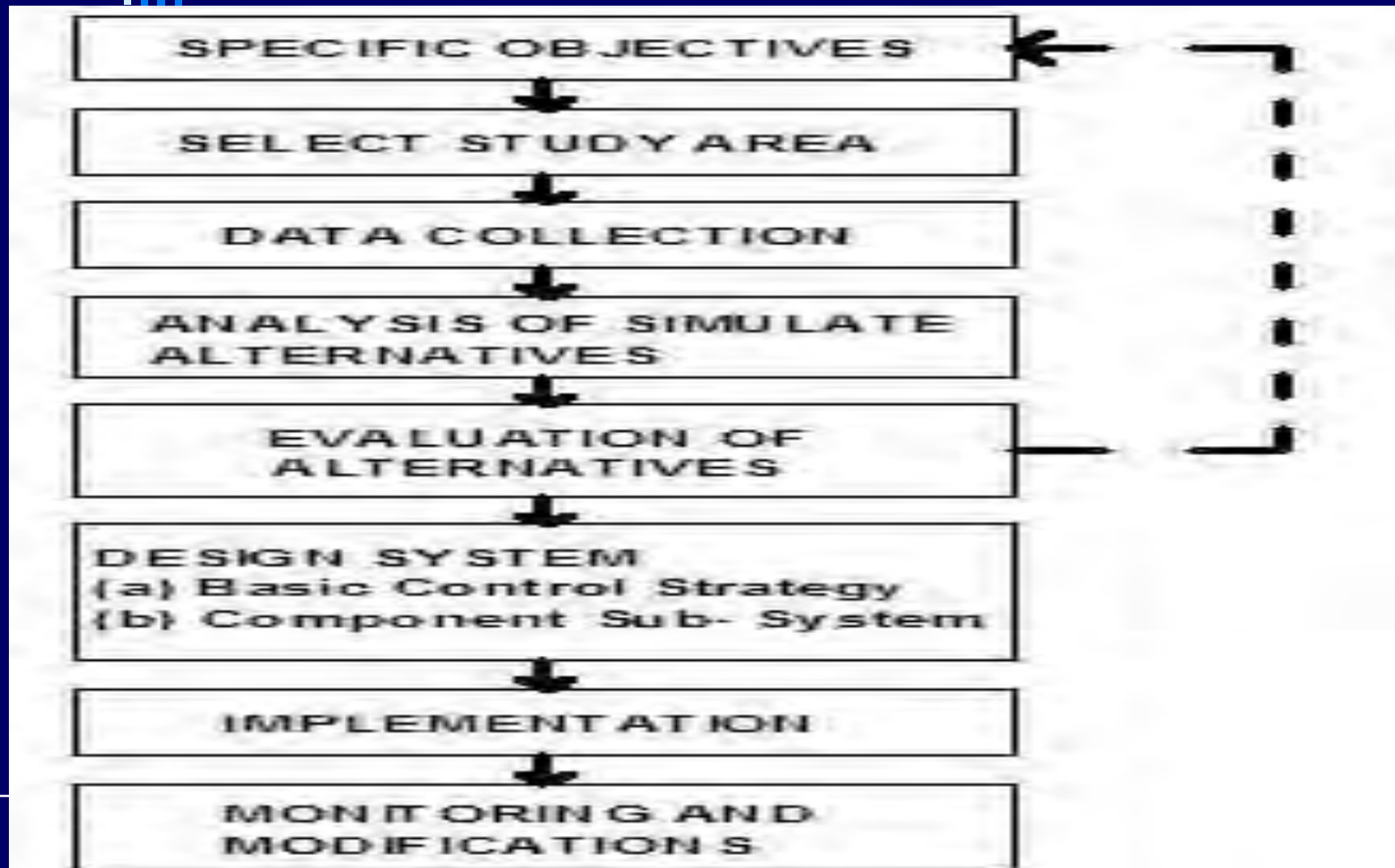
Pedestrian Scheme

Lorry Routes

Parking Control

Public Transport Pricing and Marketing

STEPS IN SHORT TERM TRANSPORT PLANNING





CONCLUSIONS

- Due to growing Urbanization and Motorization the present Transportation System in all cities in India is Inadequate
 - There is a need to develop a system approach to urban transport planning where the issues like non-motorized traffic, usage of conventional techniques, absence of equity concept for mobility consideration, integration between land use and transport plan, consideration for evolving funding mechanism to implement the transport project should be addressed
 - Long term plan should encompass public transport plan, short term plan/ local action plan which would have its own significance and inter relationship and would ensure greater degree of mobility , safety to all passengers and goods traffic
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