LOW-CARBON MOBILITY PLANS IN INDIA

Technical Session 8: Sustainable Urban Mobility Planning: Lessons Learned

10th November, 2016
Seminar Hall 3
Issues & Challenges of Cities

- Cities are Sprawling
- Environmental Degradation
- Supply Side Focus
- Poor Enforcement
- Declining PT & NMT
- Low Investments

From 2001 to 2011, the annual growth of population 1.6%, but motor vehicles increased by almost 10%

Focus on improving mobility for car users
This is Leading to-

- Increased pollution, adversely impacting health and quality of life
- Increased use of non-renewable resources—adversely impacting energy security
- Severely hampered mobility—adversely impacting social and economic activities
- Serious safety concerns

The poor are worst affected

Transport too often implemented and operated in pieces with too little objective decision support information
Need for Improved Mobility

1. Improved economic potential of the city
2. Improved Quality of Life
3. Livable Cities
Targets

- Improvement in operational effectiveness of para-transit and public transport systems
- Completion of the network
- Retain the pedestrian characteristics of the city
- Prevent Urban Sprawl
- Prevent environmental degradation

Desirable Modal Split

<table>
<thead>
<tr>
<th>City population (in millions)</th>
<th>Mass Transport (%)</th>
<th>Walk Trips (%)</th>
<th>Other Modes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 – 0.5</td>
<td>30 - 40</td>
<td>40</td>
<td>25 – 35</td>
</tr>
<tr>
<td>0.5 – 1.0</td>
<td>40 - 50</td>
<td></td>
<td>20 – 30</td>
</tr>
<tr>
<td>1.0 – 2.0</td>
<td>50 - 60</td>
<td></td>
<td>15 – 25</td>
</tr>
</tbody>
</table>
Major Component of Sustainable Transport

- Priority to Non Motorized Transport
- Support Public Transport
- Landuse Transport Integration
- Parking Management
- Safety
- Freight Management
Methodology and Approach

Task 1
• Defining the Scope

Task 2
• Data Collection and Analysis of the Existing Urban Transport Environment

Task 3
• Development of a BAU Scenario

Task 4
• Development of Sustainable Urban Transport Scenarios

Task 5
• Development of the Urban Mobility Plan

Task 6
• Preparation of the Implementation Program
Vision of CMP

What is CMP?
Long term strategic document which provides the vision and goals to achieve the desirable mobility pattern for the city’s populace in a sustainable and cost effective manner.

Includes –
• Changing behavior and travel habits
• Priority to Public Transport, IPT, NMT and pedestrians
• Land use Transport Integration

Strategies:
• Congestion relief
• Improved safety
• Improved air quality
• Improved quality of life
• Improved opportunities for economic development
Sustainable Urban Transport Scenarios - Key Strategies

- Reserving ROW
- Planning transport network
- Improvement in NMT infrastructures

Improving Non-motorized Transport

- Route planning & scheduling
- Road Pricing
- Investment in PT
- Taxation of private vehicles

Improving Public Transport

Urban Structure

- Zoning Regulation
- Land use and Housing policies
- Floor Area Ratio

Technological Changes

- R&D Investment
- Standards & Labelling
- Tax incentives
Overall City Planning

Introduction of mobility corridor

Induced Development due to new ring corridor

Mass Transit Corridors

Freight Hubs

Scope for an additional ring corridor for horizon years to connect new growth centres

Uncontrolled & unplanned Development along arterial roads

1. Non-Motorized Transport Plan
2. Public Transport Plan
3. Land Use Transport Integration
4. Mobility Corridors
5. Freight Management Plan
Implementation Program

- Phasing of the Projects
- Identification and Prioritization of Projects
- Funding of the projects
- Monitoring CMP implementation
EXAMPLE
Mobility Plan

Mobility Corridors
- Radial Roads
- Orbital Roads
Mobility Plan
Mobility Plan

Mobility Corridors
Public Transport Network
Public Transport Infrastructure

- Bus Terminals
- Sub terminals
- Workshop
Mobility Plan

- Mobility Corridors
- Public Transport Network
- Public Transport Infrastructure
- NMT Network
Mobility Plan

- Mobility Corridors
- Public Transport Network
- Public Transport Infrastructure
- NMT Network
- Pedestrian Signal
- Grade Separated Pedestrian Crossings
Mobility Plan

Mobility Corridors
Public Transport Network
Public Transport Infrastructure
NMT Network
Pedestrian Signal
Grade Separated Pedestrian Crossings
Freight Infrastructure

- Freight Terminals
- Loading/ Unloading Area
Mobility Plan

Mobility Corridors
Public Transport Network
Public Transport Infrastructure
NMT Network
Pedestrian Signal
Grade Separated Pedestrian Crossings
ROBs
  - Widening of existing ROBs
  - New ROBs
## Travel Characteristics

<table>
<thead>
<tr>
<th>Scenario</th>
<th>PV share(%)</th>
<th>IPT share(%)</th>
<th>PT share(%)</th>
<th>Average network speed (kmph)</th>
<th>Per Capita Trip Rate (PCTR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base year</td>
<td>52</td>
<td>42</td>
<td>6</td>
<td>&lt; 16</td>
<td>0.55</td>
</tr>
<tr>
<td>Do Nothing-2031</td>
<td>54</td>
<td>40</td>
<td>5</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>With Proposed Interventions</td>
<td>51</td>
<td>24</td>
<td>26</td>
<td>29</td>
<td></td>
</tr>
</tbody>
</table>
## Outcomes

<table>
<thead>
<tr>
<th>Indicators</th>
<th>LOS - Existing</th>
<th>LOS - Improved</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Overall Public Transport facilities City wide</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>B  Overall Pedestrian Infrastructure Facilities</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>C  Overall NMT Facilities</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>D  Level of usage of ITS facilities</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>E  Travel Speed along major corridors</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>F  Availability of Parking Spaces</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>G  Road Safety</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>H  Pollution Levels</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I  Integrated Land-use Transport Integration</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>J  Financial Sustainability of Public transport</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>
THANK YOU