DEVELOPMENT OF URBAN PUBLIC TRANSPORT INFRASTRUCTURE AND SERVICES IN INDIA- Initiatives, Challenges and Potentials for International Cooperation

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INDIA - URBAN TRANSPORTATION SCENE

- 2nd Largest urban system
- 60% GDP generated from urban areas

- 5161 towns and cities
  - 7 megacities (4 million + population)
  - 28 cities with population 1-4 million
  - 13 cities in 0.8 to 1.0 million range, will cross 1 million by next census
  - 40 cities in 0.5 to 1 million population range and balance state capitals

- Motorization rates are high
- In 6 Metro Cities, during 1981 to 2001
  - Population increased by 2 times
  - Motor vehicles increased by 8 times
- In 2006 organised city bus service - in only 20 cities
The Demand

- In order to improve the Urban Transport Infrastructure and provide the gaps, the investment requirement is estimated as USD 30 billion in the 11th five year plan and about USD 97 billion over next 20 years.

### Breakup of the Investments in the 11th Five year plan (2007-12)

<table>
<thead>
<tr>
<th>Items</th>
<th>Investment required in million USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity Building and urban transport planning</td>
<td>77</td>
</tr>
<tr>
<td>0.1-0.5 million cities</td>
<td>1645</td>
</tr>
<tr>
<td>0.5-1.0 million cities</td>
<td>1733</td>
</tr>
<tr>
<td>1.0-4.0 million cities</td>
<td>5787</td>
</tr>
<tr>
<td>4.0 million plus cities</td>
<td>4667</td>
</tr>
<tr>
<td>MRT for mega cities</td>
<td>7111</td>
</tr>
<tr>
<td>Modern Buses for city transport</td>
<td>8444</td>
</tr>
<tr>
<td>Total</td>
<td>About 30 billion</td>
</tr>
</tbody>
</table>
Ministry’s Response to Urban Transport Demand

I. Policy- National Urban Transport Policy
II. JnNURM- Sector Reform Linked Investments – Bus, Rail and Related Infrastructure
III. World bank – UNDP – GEF Sustainable Urban transport Project
IV. Human Resources and Capacity Enhancement
Strategies for parking space and freight traffic movements

Establish Regulatory mechanisms for a level playing field

Projects to demonstrate best practices in sustainable transport

Ensure coordinated planning for urban transport

Build capacity to plan for sustainable urban transport

Ensure integrated land use & transport planning

Promote ITS, cleaner fuel & vehicle technologies for cities

Innovative financing methods to raise resources

People focused & equitable allocation of road space

Investments in public transport & Non Motorized modes

National Urban Transport Policy – 2006

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National Urban Transport Policy – 2006
Jawaharlal Nehru National Urban Renewal Mission (JnNURM)
http://jnnurm.nic.in/

- A reform based mission for Central Financial Assistance (CFA) to Urban Local Bodies
- Reforms like abolition of Rent Act, Urban Land Ceiling Act & reduction of Stamp Duty etc
- Reforms for better urban transport planning and management-made conditional to the sanction of Urban transport Projects are:

1. Comprehensive Mobility Plan (CMP)
2. Setting up of Unified Mass Transit Authority (UMTA).
3. Setting up of Dedicated Urban Transport Fund at state and city level.
4. Transit Oriented Development Policy, Parking Policy and Advertisement Policy.
5. Setting up of city specific Special Purpose Vehicle for managing public transport.
6. Setting up of Traffic Information and Management Control Centre etc.
7. Use of ITS and integration of multi-modal systems
8. Bus prioritisation at intersections, dedicated/demarcated lanes for buses
9. Designate a nodal department for urban transport
10. Mechanism for periodic revision of public transport fares
11. Waive/reimburse state and local taxes on public transport

- About 22% of the projects sanctioned under JnNURM for Urban transport (NUTP compliant)
URBAN BUS TRANSPORT IS IMPORTANT AND HAS TO BE TRANSFORMED TO A LEVEL THAT IT CAN BE SOLD TO PUBLIC AS A “BRANDED PRODUCT”

AIM TO REPLICATE METRO EXPERIENCE ON THE URBAN BUSES
Bus Rapid Transit System (BRTS)

- Buses contribute as the most important mode of Public transport across all cities.
- BRTS Projects for 422 Kms sanctioned for 9 mission cities at a total cost of US $ 1015 million (@US $ 2.4 million per km)
  
  - Pune 101.77 km
  - Pimpri Chinchwad 42.22 km
  - Indore 11.45 km
  - Bhopal 21.71 km
  - Ahmedabad 88.50 km
  - Jaipur 39.45 km
  - Vijaywada 15.50 km
  - Vizag 42.80 km
  - Rajkot 29.00 km
  - Surat 29.90 km

# Delhi is implementing BRTS with its own funds

* Ahmedabad is the first city under JnNURM to have successfully launched a complete BRT system.
# BRTS Projects in India

<table>
<thead>
<tr>
<th>Cities</th>
<th>Length (in km)</th>
<th>Cost Sanctioned In milion USD</th>
<th>Additional Central Assistance In milion USD</th>
<th>System</th>
<th>Segregation</th>
<th>Bus Stop Location</th>
<th>Ticketing System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmadabad</td>
<td>88.50</td>
<td>218.08</td>
<td>76.38</td>
<td>Closed</td>
<td>Yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Rajkot</td>
<td>29.00</td>
<td>24.44</td>
<td>12.22</td>
<td>Closed</td>
<td>Yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Surat</td>
<td>29.90</td>
<td>104.22</td>
<td>52.11</td>
<td>Closed</td>
<td>Yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Bhopal</td>
<td>21.71</td>
<td>52.83</td>
<td>26.42</td>
<td>Open</td>
<td>Yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Indore</td>
<td>11.45</td>
<td>21.88</td>
<td>10.94</td>
<td>Partially open</td>
<td>Yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Pune &amp; Pimpri Chinchwad</td>
<td>124.77 (23.00)</td>
<td>302.92 (69.36)</td>
<td>151.46 (34.68)</td>
<td>Open</td>
<td>Partial</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Vijaywada</td>
<td>15.50</td>
<td>33.92</td>
<td>16.96</td>
<td>Open</td>
<td>Yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Vizag</td>
<td>42.80</td>
<td>100.65</td>
<td>50.33</td>
<td>Closed</td>
<td>Yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Jaipur</td>
<td>26.10</td>
<td>48.71</td>
<td>24.36</td>
<td>open</td>
<td>yes</td>
<td>Middle</td>
<td>Off board</td>
</tr>
<tr>
<td>Delhi</td>
<td>14.6 (implementing with own funds)</td>
<td></td>
<td></td>
<td>Open</td>
<td>Partial</td>
<td>Middle</td>
<td>Off board</td>
</tr>
</tbody>
</table>
Example: JANMARG, Ahmedabad, India
Buses for City Transport

- **Urban Bus Specifications**
  - Low floor (400mm), semi low floor (650mm) and standard buses (900mm) as against prevailing 1100mm floor height (truck chassis)

- **ITS features**
  - LED sign boards,
  - Audio visual passenger information
  - Multiplexing, On board diagnostics,
  - Cameras, integrated controller
  - GPS, GPRS, Smart card ticketing machines

- **Economic stimulus package**
  - Funding procurement of buses for urban transport under JnNURM.
  - 15260 modern buses sanctioned under economic stimulus package at a cost of US $ 1020 Million
  - Waive state & local taxes on public transport (upto 16%)
  - 61 mission cities Covered; about 5200 buses are on road – 28th Feb’10
  - City buses planned for 118 more 200 thousand+ population cities

34 new cities to get organised city bus service
Urban Transport-Metro Rail Projects

- Urban ministry is supporting metro rail projects also in bigger cities to serve high demand corridors.
- Delhi
  - 96 kms is under operations.
  - Another 94 kms is under construction.
- Metro rail projects promoted under joint ownership with the concerned state governments in Delhi, Bangalore, Kolkata & Chennai.
- 20% Viability Gap Funding for Urban transport projects on PPP
  - Mumbai
  - Hyderabad

<table>
<thead>
<tr>
<th>City</th>
<th>Kms</th>
<th>App. Cost (US$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delhi</td>
<td>121.26</td>
<td>4085</td>
</tr>
<tr>
<td>Mumbai</td>
<td>62.89</td>
<td>3915</td>
</tr>
<tr>
<td>Bangalore</td>
<td>42.30</td>
<td>1736</td>
</tr>
<tr>
<td>Kolkata</td>
<td>14.67</td>
<td>1037</td>
</tr>
<tr>
<td>Chennai</td>
<td>46.50</td>
<td>3106</td>
</tr>
<tr>
<td>Hyderabad</td>
<td>71.00</td>
<td>2638</td>
</tr>
<tr>
<td>Cochin</td>
<td>25.30</td>
<td>617</td>
</tr>
</tbody>
</table>

US $ 17135 Million for about 380 kms at US $ 45 Million/km

Finding resources to cover entire demand!
World Bank – UNDP – GEF Sustainable Urban Transport Project (SUTP)

- Unique project for taking up Demonstration projects in select cities and Capacity Building across India
  - World Bank loan, Govt of India as well as State Govt/ Urban local funding, GEF grant pooled together
  - UNDP to take up capacity development through GEF grant
  - Moving train concept – More projects and Cities can join as the project is implemented
  - Reforms in Urban transport made conditional
Other Initiatives of MoUD for Urban Transport planning & Capacity Building

To promote better practices:

- Ministry provides central Financial Assistance up to 80% of the cost for
  - Undertaking various studies relating to preparation of CMP
  - Launching of awareness campaign and
  - Developing Clean development mechanisms etc...

- For preparation of Detailed Project Reports (DPR) Financial assistance is given upto 50% of the cost of preparation of DPR

- Training of trainers and practitioners

- Institute of Urban Transport to support ministry in capacity building initiatives

- 4 Centres of Excellence in Urban Transport
  - CEPT University, Ahmedabad
  - IIT, Delhi
  - IIT, Madras
  - NIT, Warangal
Capacity Building Initiatives – Guidelines/ TOOLKITS

- Urban Street Design guidelines
- Model Concession Agreement for Metro Projects
- Bus Operations and management
- Institutional framework - UMTA
- PPP in urban transport
- Alternative Analysis
- Comprehensive Mobility Plan
- Non Motorized Transport
- Parking Measures
- Bus rapid Transit Measures
- Urban Bus Specifications
- Urban Bus Specifications
Standard Service level benchmarks in Urban Transport

- **Benchmarking** is to identify the gaps in service delivery and effect in improvement through the sharing of information and best practices, resulting in better services to the people through urban sector.

- It provides common minimum framework for monitoring and reporting on SLBs and Guidelines on how to operationalize in phased manner.

**SSLBs in Urban Transport (total-10)**

- Public transport facilities
- Pedestrian facilities
- Non motorized transport facilities
- ITS facilities
- Congestion level
- Parking
- Road safety
- Pollution levels
- Integration of land use and transport
- Sustainability of public transport
- **Overall LOS 1 to 4**
- Each LOS computed based on number of indicators.
- All future projects and plans in Urban transport shall be linked to SSLBs.
Initiatives and potential for International co-operation

• **Policy and Planning**
  – National policy for public transport sensitive to climate change
  – National policy for metro rail projects
  – Advisories/Circulars to State Govts for guiding city development and redevelopment

• **Management**
  – National public transport helpline
  – Common mobility card across India
  – Control centre based management of all Auto-rickshaws and Taxis
  – Task Force on UMTA
  – Core Group on ITS
  – National Consultant for CDM
  – Partial Funding for Urban Transport cell at ULB and UMTA in cities

• **Investment**
  – Innovative PPP to attract private financing.
  – Dedicated Urban transport fund so as to catch up with investment requirements given the pace of urbanization and increase in the travel demand.
  – Fund Innovations in ITS and Bus Technologies
Thanks
1. Public Transport facilities
2. Pedestrian Infrastructure facilities
3. Non Motorized Transport facilities
4. Usage of Intelligent Transport System (ITS) facilities
5. Travel speed along major corridors
6. Availability of Parking facilities
7. Road Safety
8. Pollution levels
9. Integrated Land Use Transport System
10. Financial Sustainability of Public Transport