Presentation Structure

Urban Mobility Challenges in India

Initiatives taken by MoUD

Recommendations
Increasing Urban Population

- Average Population growth - **1.6%** /annum over the last decade (as per Census 2011)
- **8000 towns and cities** consisting of:
  - **8 Metropolis Cities** – Over 5 million population
  - **53 cities** - over a million population
  - Rest are towns & cities less than or equal to a million

India’s urban population Expected to rise from 30% to 58% by 2050
Rapid Increase in Motorization

- Annual growth - **10%**
- Share of registered buses declined - **11.1%** in 1951 to **1%** in 2015
- Average Urban Motorised Work trips: **35.61%**
- 11% by bus, 3% by IPT and rest by Private modes

**Average Trip Length**

<table>
<thead>
<tr>
<th>Year</th>
<th>Motorized</th>
<th>PT</th>
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<tbody>
<tr>
<td>2011</td>
<td>10.0</td>
<td>9.0</td>
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<tr>
<td>2021</td>
<td>12.0</td>
<td>11.0</td>
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<td>2031</td>
<td>14.0</td>
<td>13.0</td>
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**Number of Registered Motor Vehicles (in million)**

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<tbody>
<tr>
<td></td>
<td>210.0</td>
<td>190.7</td>
<td>176.0</td>
<td>159.5</td>
<td>141.8</td>
<td>136.0</td>
<td>132.2</td>
<td>127.7</td>
<td>115.3</td>
<td>105.3</td>
<td>96.7</td>
<td>89.6</td>
<td>81.5</td>
<td>72.7</td>
<td>58.9</td>
<td>55.0</td>
<td>51.4</td>
<td>21.4</td>
<td>10.0</td>
<td>0.3</td>
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</table>
Declining share of public transport - reducing from 30% in 2011 to 26% in 2016 and projected to decline further to 22% by 2021.

Increased level of congestion - Average vehicle speed during peak hour is around 10 kmph.

Increased road accidents - annual growth rate of 1.5%.

7 fold increase in energy consumption - Transport consumes 9% of total energy.

Degrading environment - India is the fourth largest CO2 emitting country.

Involvement of too many ministries & Agencies such as MORTH, MOUD etc,
Need for Improved Mobility
Innovative Steps taken by MoUD
Recognition of Urban Transport in India

- 1986, Urban transport identified as a separate subject and assigned to MoUD
- 1996 to build a metro rail system in Delhi
- 2005 - Launching of the National Urban Renewal Mission
- 2006 - Adoption of a National Urban Transport Policy
Policies and Schemes

- NUTP-2006
- National Sustainable Habitat Mission (NSHM)
- 12th Five Year Plan - Short Term Plan
- Others – CMP, SLB

Schemes
- JnNURM
- AMRUT
- Smart City

Under Process
- Metro Policy
- TOD Policy
- Green Mobility Scheme
Metro Policy

• Alternative Analysis, Multi modal integration around stations & corridor (0.5 to 5 kms)

• **PPP** – BOOT, Various models for provision of rolling stock &/or O&M by private partner

• Central government may dilute its equity in the SPV after operations are in full swing

• Facilitate **Raising of Bonds** by Metro Companies
Green Urban Mobility Scheme

**Sustainable Urban Mobility**
- Safe NMT
- Bus Infrastructure
- Multimodal Integration
- Strategies for Urban Freight management

**Sustainable Vehicles and Fuels**
- Shift to Non-Fossil fuel in public transport through VGF

**Any other project demonstrating reduction in GHG emissions**

**Pooled Scheme Structure**
- Central (70%), State (20%), City (10%)
- 28% GOI Grant and 72% Line of credit from multilateral agencies

**Coverage:** Cities with Population > 500,000 (2011) + State Capitals = 103

**Projects will be identified by cities depending upon their size, sprawl, demand and other techno-economic criteria**

**Estimated Project Costs Rs 70,000 Cr**

**Initial Projects Implementation duration - 7 years**

**Prepare Green Mobility Plan**
- approved by UMTA (for million plus cities);
- State undertaking for financial assistance and guarantees
- Elected city council’s resolution;
- Report on outcome of citizen’s consultation process

**Create “NGUMF” - trust under Indian Trusts Act, 1882 by GOI.**
SGUMF will replicate the structure of NGUMF

**Evaluation Criteria at State, City and project level**
Pedestrian and Cycling facilities

- 8000+ kms of footpath and cycle tracks across 103 cities
- 73000+ public cycles across 58 cities

Public Transport Facilities

- Improved and cleaner PT across 103 cities
- 1000+ kms of BRT Network across 28 cities
- Real time PIS, AVLS, cashless ticketing across 103 cities
- 550 Depots across 103 cities
- 20000 para transit and 6000 buses on alternate fuel/electric across 103 cities

Expected Outcomes

Sustainable transport accessibility to nearly 58% of urban population

UT Financing and Institutional Strengthening

- Setting up of UMTA across 53 cities
- Permanent funding for UT financing and O&M
Development of Metro

- **Operational**: 326 km in 7 cities
- **Under Construction**: 546 KM in 16 cities
- **Under consideration**: 903 KM
- RRTS Phase-1 (381 kms)
Development of BRTS

- 620 km of BRT is under various stages of development across 15 cities of which more than 250 km are under operations.
Bus Funding Scheme under JNNURM

- Objective - Improving the availability and quality of buses in Indian cities
- Total Cities- 177 Cities
- Total Bus Sanctioned- 25,000
- State and city level reforms
  - State level- UMTA, UTF, LUT integration/ TOD promotion, Single nodal dept for UT, Waiver of state taxes on CBS/ buses
  - City Level- UTF, Parking policy, Advt policy, Modern city bus transport system including SPV for CBS, MMI, TIMCC
Smart Urban Mobility
<table>
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<th>Recommendation</th>
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<tr>
<td>Legislative and administrative frameworks</td>
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<td>Infrastructure and seamless intermodality</td>
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<tr>
<td>Safety</td>
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<td>Training</td>
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<td>Accessibility</td>
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<td>Users’ needs</td>
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<tr>
<td>Environment</td>
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<tr>
<td>New business models and aggregators</td>
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Legislation and Institutional Framework

- Dedicated urban Transport department at state/City level
- Urban transport to be listed in Concurrent list in the Constitution;
- Unified Metropolitan Transport Authority (UMTA) in million plus cities or for a group of small cities;
- Comprehensive urban transport act

INSTITUTE OF URBAN TRANSPORT (INDIA)
Need of Effective Coordination

Effective Coordination

- Road network, roundabouts, intersections, traffic lights, etc
- Public transport including intercity
- Feeder systems
- Bus stops and terminals
- Footpaths & cycle tracks
- Freight mobility and infrastructure
- Motorized and non-motorized vehicles
- Para-transit
- Parking spaces
- Traffic management & control system
- Demand management
- Supply management

City/Regional Transport System

Demand management

Supply management

Demand management

Supply management
# Infrastructure and seamless intermodality

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<thead>
<tr>
<th>Components</th>
<th>Institutional Integration</th>
<th>Physical Integration</th>
<th>Operation Integration</th>
<th>Fare Integration</th>
<th>Information Integration</th>
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<tbody>
<tr>
<td>Public Transport</td>
<td>Setting up of UMTA</td>
<td>Bus Stop</td>
<td>Route network Planning</td>
<td>One ticket for all means of transport</td>
<td>Intermodal real time passenger information systems</td>
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<tr>
<td>Transport Network</td>
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<td>Bus terminal</td>
<td>Service Plan</td>
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<tr>
<td>Non-Motorized transport</td>
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<td>Metro Station</td>
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<td>Intermediate Public Transport (IPT) Stop</td>
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<td>Multi-Modal Hub</td>
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<td>Road Network</td>
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<td>Intersection</td>
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<td>Parking</td>
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<td>Cycle Track and Parking Station</td>
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<td>Footpath</td>
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Infrastructure and seamless intermodality

- Create **facilities for walking and cycling** in all 2 lac+ cities and State capitals;
- Develop an **upgraded cycle rickshaw** as an integral part of the last mile connectivity;
- **Augment public transport** in all 2 lac+ cities* and State capitals;
  - Add **BRTS @ 20 km/1 Million population** in 51 cities with population > 1 Million*;
  - Add **rail transit @ 10 km/ Million Population**
    - start planning >2 Million and start construction > 3 Million
- **Improve and upgrade IPT vehicles and services.**
Safety

- **Road design and traffic management standards** to be reviewed;
- Road Safety Audit (**RSA**) for hazardous locations;
- Crash **database** on standard format;
- Segregated NMV lanes to be constructed on all arterial roads;
- Capacity building;
- Dedicated safety board at state level and safety cells in cities with dedicated personnel and budget.
- National Road Safety Commission at the central level.
Capacity Building

- Expand *centres of excellence*;
- Certifying experts;
- **MoUD scheme** for capacity building on urban transport
Accessibility

✓ Developing hierarchical road network in newly developing areas;
✓ Completion of mission links;
✓ Regulate and coordinate work of utility agencies;
✓ Footpaths for walk and cycle lanes within 500 m of stations/stops;
✓ Road access for vehicles within about 3 km of stations/stops;
✓ Drop off & pick up facilities at stations/stops;
✓ Park facilities;
✓ Land use control around stations/stops to avoid congestion at entry/exit
User’s Need

✓ Safety: Safety Board should be set up in each State to deal with safety issues in a comprehensive, scientific and a systematic manner

✓ Comfort: provisions such as giving buses priority at the junctions, mandatory give way at bus ways etc

✓ Accessibility: provision of a more accessible transport system and improved transport connectivity and capacity

✓ Affordability
Environment

Scenario 1 – Business as Usual Scenario, Scenario 2 - Promoting NMT, Scenario 3 - Promoting Public Transit Ridership, Scenario 4 - Clean Technology-focus on personal vehicles, Scenario 5 - Clean Technology- focus on electric traction for public transit (buses), Scenario 6 - Improving Urban Structure, Scenario 6A - Aggressive Urban Structure and Form Control and Scenario 7 - A multi-pronged approach (combination of scenarios 2, 3, 4,5 and 6A)

Annual Emissions –CO2 (Million Metric Tonnes)
“An advanced city is not a place where the poor move about in cars, rather it’s where even the rich use public transportation”

— Enrique Penalosa, Former Mayor of Bagota, Colombia
Thank You

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