Making Mobility a Part of the Sustainable Development Practice
Case studies from Ahmedabad and Bangalore
### Indian Context

**Over the next 20-30 years:**

<table>
<thead>
<tr>
<th><strong>By 2041 50% of India’s population will be Urbanized</strong></th>
<th>(source: IIHS Report)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6 Indian metros:</strong> Population increased by 1.9 times, while Motor vehicles increased by <strong>7.75 times</strong> (from 1981-2001)</td>
<td>(source: National Urban Transportation Policy [NUTP])</td>
</tr>
<tr>
<td><strong>Housing shortage recorded was 24.7 million people</strong></td>
<td>(*source: 11th year plan)</td>
</tr>
<tr>
<td>The Real Estate Sector in India is expected to grow by 30% Touch 180 billion USD by 2020</td>
<td>(*source: CREDAI)</td>
</tr>
<tr>
<td>The housing sector contributes <strong>5-6 % of the country’s GDP</strong></td>
<td></td>
</tr>
</tbody>
</table>

National Urban Housing and Habitat Policy (NUHHP) suggests a “Regional Planning Approach”

---

[EMBARQ India]
Scale of Opportunities

Ahmedabad
- 3.3 million 1992
- 6.4 million 2011

Bangalore
- 3.4 million 1992
- 8.5 million 2009

Residential Zone
- Area: 9938 Ha (7.5%)
- Projected Expansion: 14563 Ha (11%)
- Private Housing Stock: 25%

Residential Zone
- Area: 15976 Ha (12%)
- Projected Expansion: 24369 Ha (19%)
- Private Housing Stock: 5.2%*

- Private housing stock that is accounted for in the CDP
- Data source: City Development Plans for the respective Cities
Transport Sector Emissions

McKinsey 2009 estimates that in 2030 the transport sector will account for 12% of total emissions in India, whereas according to World Bank 2009 this figure will be 16% in 2031.

These interventions, and their impacts, were classified according to the ‘Avoid-Shift-Improve’ framework. The graphs above suggest that ‘Avoid’ and ‘Shift’ interventions have greater potential for emissions reduction than ‘Improve’ interventions.
EMBARQ Interventions

- **Multi-modal Mobility**
  - Bus Rapid Transport
  - Bus Karo Plus
  - Sustainable Transport Operators Industry

- **Intermodal Connectivity**
  - Feeders: Rickshaw + Public Bicycles
  - Fair Integration
  - Station Access and Area Design

- **Integrating Land use and Transport**
  - Street Design and Development Control Regulations
  - Land use zoning and Development Control Regulations
  - Land use zoning and Strategies and Priorities

- **Disincentive to Car Use**
  - Parking
  - City led Travel Demand management
  - Travel Demand management for businesses

Legend:
- Not Doing
- Developing Value Propositions
- Scaling Up
Project Intent

Prioritize non-motorized transport (NMT)

Design the built environment to incorporate NMT and make sustainable transport more competitive with individual motorized transport.

Introduce principles of Sustainable Mobility

Use principles of “Sustainable Mobility” to shift all non-work related trips to NMT modes.

Capitalize on the existing private housing market

To capitalize on an existing urban housing market and shift user demands, and market preferences towards sustainable means.
Methodology

- Two Pilot Projects. Existing technical knowledge applied
- Stakeholder Interviews conducted. Barriers identified
- Multi-stakeholder Convening organized. Enablers identified
- Recommendations listed. Need to conduct few more pilot cases to inform the process.
1. Adarsh Palms Retreat, Bangalore, India

Size: 250 Hectares

Program distribution:
- SEZ Development
- 5 Star Hotel
- Municipal Lake
- Villa Development
- Luxury Apartment Development
- Amenities
2. Godrej Garden City, Ahmedabad, India

Size: 250 Acres

Program distribution:

<table>
<thead>
<tr>
<th>Links</th>
<th>Open Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersections</td>
<td>Entry-Exit node</td>
</tr>
</tbody>
</table>

Connect to Sustainable modes

<table>
<thead>
<tr>
<th>Bus Stops</th>
<th>Bike Stands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gates</td>
<td>Existing</td>
</tr>
<tr>
<td></td>
<td>In Construction</td>
</tr>
<tr>
<td></td>
<td>Proposed</td>
</tr>
</tbody>
</table>
Multi-Stakeholder Convening

- Planner
- Developer
- Architect
- Civil Society
- Climate or Environment officials
- Real Estate Professional

EMBARQ India
OECD’s GREEN INVESTMENTS POLICY FRAMEWORK

Scaling up the Market’s Approach

To Scale up the Supply and demand of housing and Building technology, need to be addressed.

- Supply needs to be informed
- Existing technical knowledge has to be applied effectively
- Demand needs to be created

Using the enablers listed here, specific strategies for a way forward can be designed to develop a systemic approach for sustainable mobility.
<table>
<thead>
<tr>
<th>Barriers</th>
<th>Enablers/ Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Goal setting and aligning policies across and within levels of government</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Policies</strong></td>
<td><strong>Advocacy and awareness</strong></td>
</tr>
<tr>
<td>- Lack of ‘Sustainable Mobility’ information exchange between public and private agencies and projects.</td>
<td>- Multi-stakeholder convening.</td>
</tr>
<tr>
<td></td>
<td>- Use State Township policy model to influence information exchange and inter-agency communication.</td>
</tr>
<tr>
<td></td>
<td>- Need for a new institutional set up.</td>
</tr>
<tr>
<td><strong>2. Enabling policies and incentives for LCR investment</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Regulations</strong></td>
<td><strong>Building bye-laws</strong></td>
</tr>
<tr>
<td>- Retrofitting is more extensive and less effective than planning upfront</td>
<td>- Progressive building regulations</td>
</tr>
<tr>
<td></td>
<td>- Redirect Costs from auto-mobility and parking towards promoting alternate modes and technologies</td>
</tr>
<tr>
<td><strong>3. Financial policies and instruments</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Finance</strong></td>
<td><strong>Market value creation - Incentivize</strong></td>
</tr>
<tr>
<td>- Lack of incentives and financial instruments</td>
<td>- Promote financial incentives to add market value and create demand</td>
</tr>
<tr>
<td></td>
<td>- Incentives to incorporate sustainable mobility principles while planning new residential townships</td>
</tr>
</tbody>
</table>
## 4. Harness resources and building capacity for an LCR economy

<table>
<thead>
<tr>
<th>Information</th>
<th>Advocacy and awareness/ Building information systems</th>
</tr>
</thead>
</table>
| - Lack of information for developer to plan for sustainable mobility | - Access to information to locate developments close to public transit nodes  
- Developing relevant measurable indicators and a basic rating or certification system to add value to the property and create awareness. |

**Building capacities**

- Trainings for development professionals, teaching the principles and benefits of sustainable mobility.  
- Speeding up approval processes.

## 5. Promote green business conduct and consumer behaviour

<table>
<thead>
<tr>
<th>Information</th>
<th>Advocacy and awareness/ Building information systems</th>
</tr>
</thead>
</table>
| - Lack of information for potential consumers and settlers | - Instruments such as trip-rate analysis and trip-calculators for consumers to identify cost saved and added benefits  
- Presenting transport costs and environmental, social and physical health benefits to consumers. |
Way Forward

Short term
- Few more pilot projects
- Trainings and Capacity building programs in partnership with IGBC and TERI
- Develop a system of measurable indicators to incorporate sustainable mobility, requiring household surveys conducted in similar developments.

Middle term
- Inform user choices and market demand
- Initiate dialogue with developers and real estate groups like CREDAI to device ways to conduct post-occupancy surveys and inform consumer circles.
- Organize focused training sessions with future consumers and residents welfare associations.

Long term
- Develop a new institutional framework
- Regulations as long-term goal
- Revision into the master plan
- Develop new principles for state township policies
Thank you.
Questions and Comments