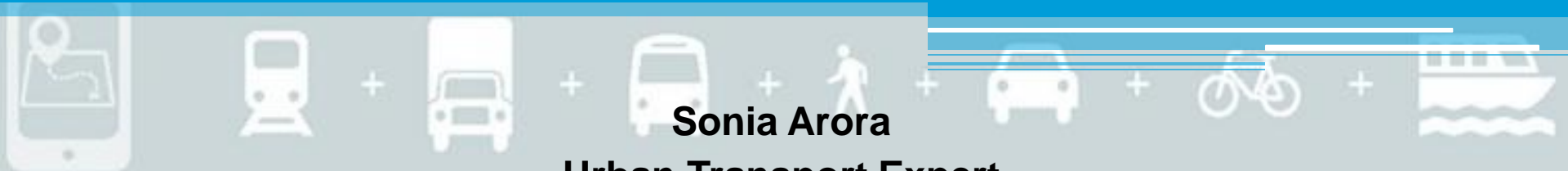# Urban Mobility in India

Sonia Arora
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08-05-2017

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Presentation Structure

Urban Mobility Challenges in India
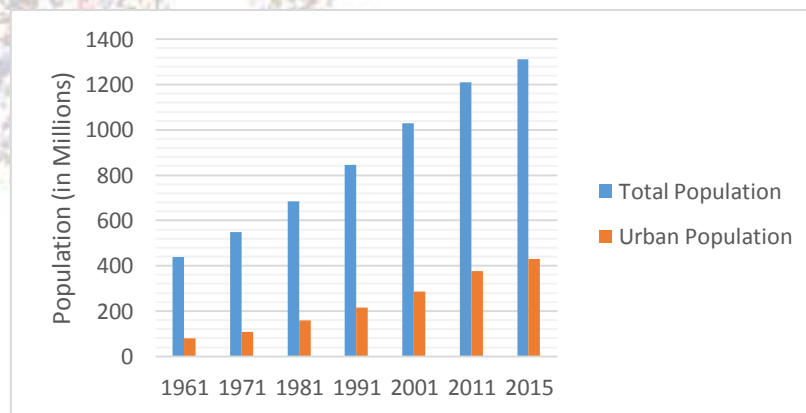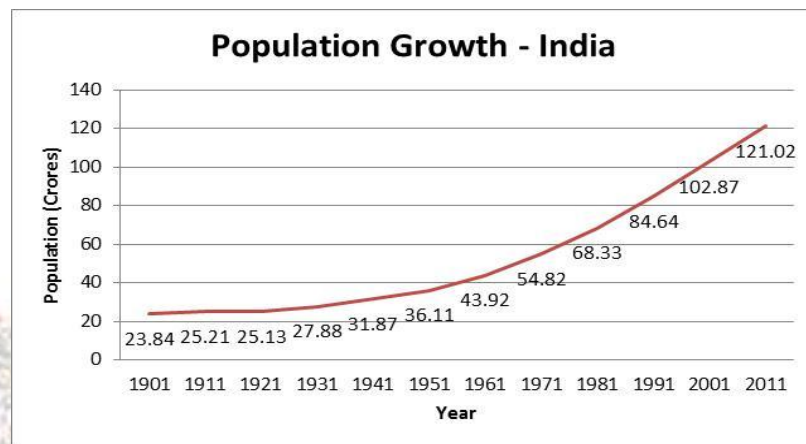
Initiatives taken by MoUD

Recommendations

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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

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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
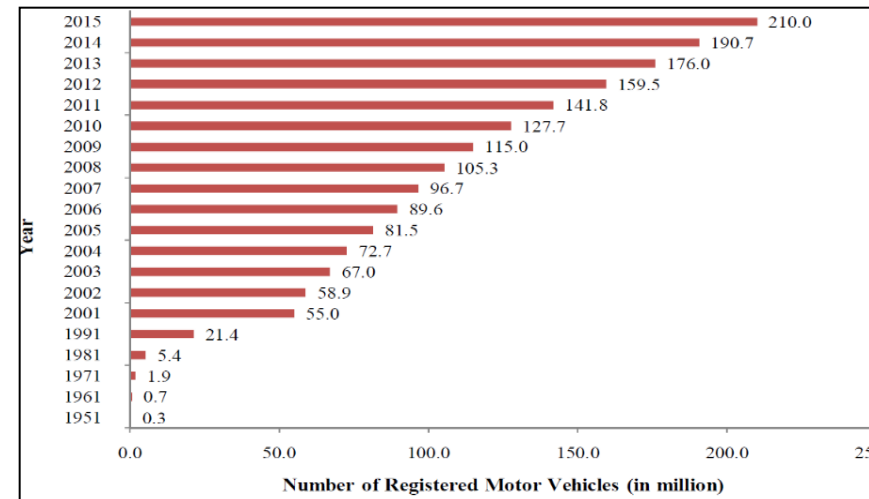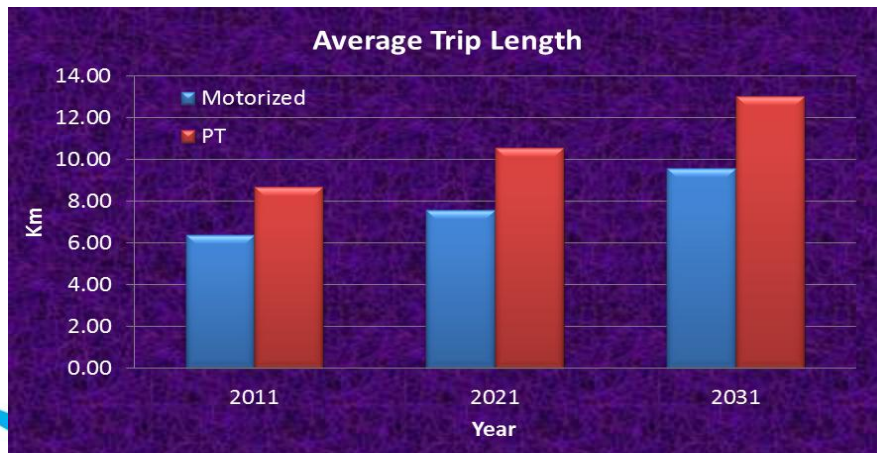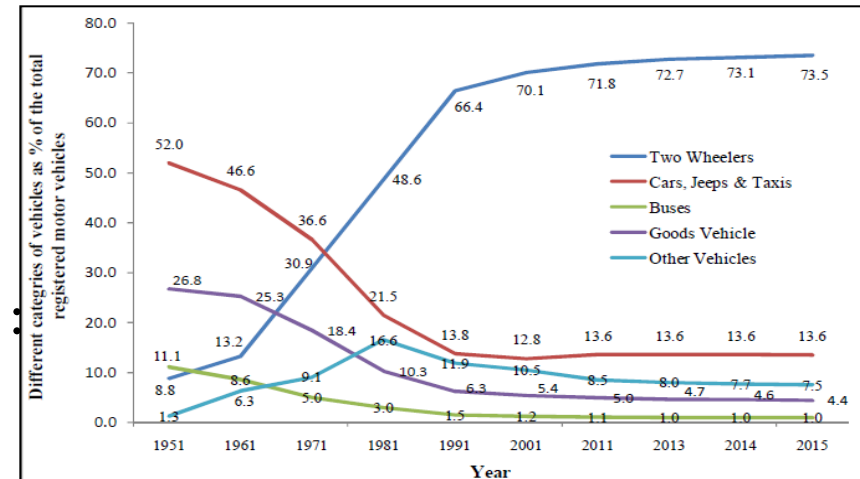
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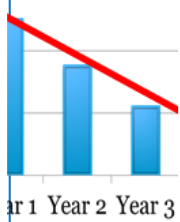
Declining share of public transport -reducing from 30% in 2011 to 26% in 2016 and projected to decline further to **22% by 2021**

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,

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?

Need for Improved Mobility

Innovative Steps taken by MoUD
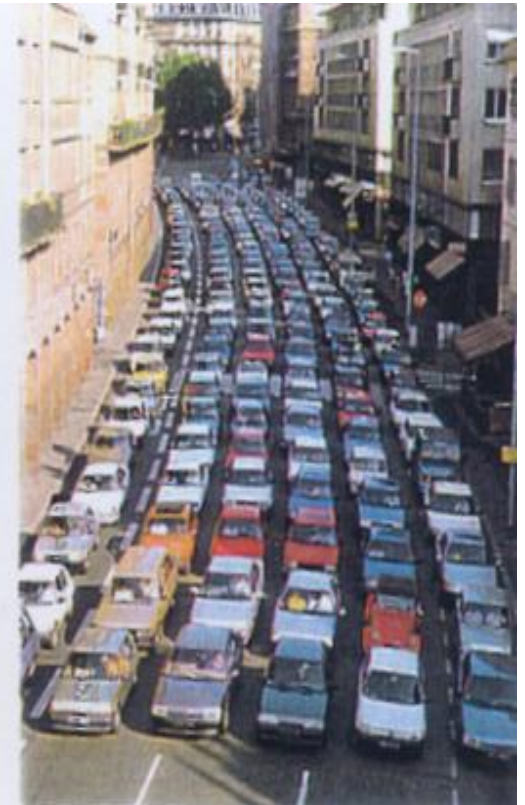
Recognition of Urban Transport in India

- 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

People occupy centre stage in city planning

Make our cities most liveable in the world

Plan the cities to be most efficient as per their geographical condition

Under Process

- Metro Policy
- TOD Policy
- Green Mobility Scheme

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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
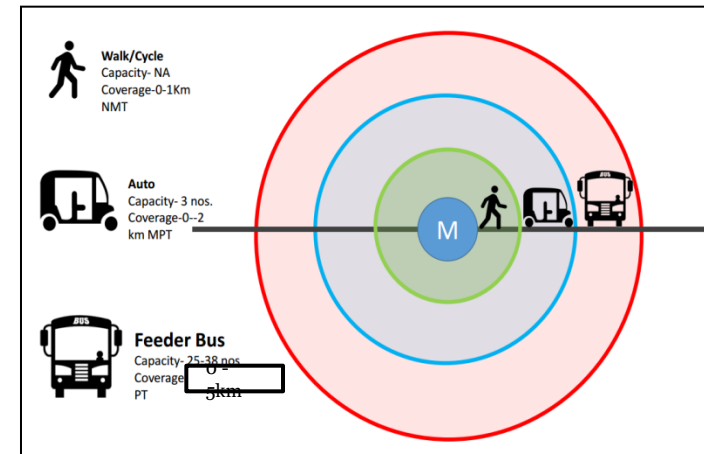
Green Urban Mobility Scheme

ECO² FOOTPRINT

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

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

Estimated Project Costs Rs 70,000 Cr

Initial Projects Implementation duration - 7 years

Pooled Scheme Structure-

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

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

Evaluation Criteria at State, City and project level

Create "NGUMF" - trust under Indian Trusts Act, 1882 by GOI.

SGUMF will replicate the structure of NGUMF

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

Expected Outcomes

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

550 Depots across 103 cities

Real time PIS, AVLS, cashless ticketing across 103 cities

20000 para transit and 6000 buses on alternate fuel/ electric across 103 cities
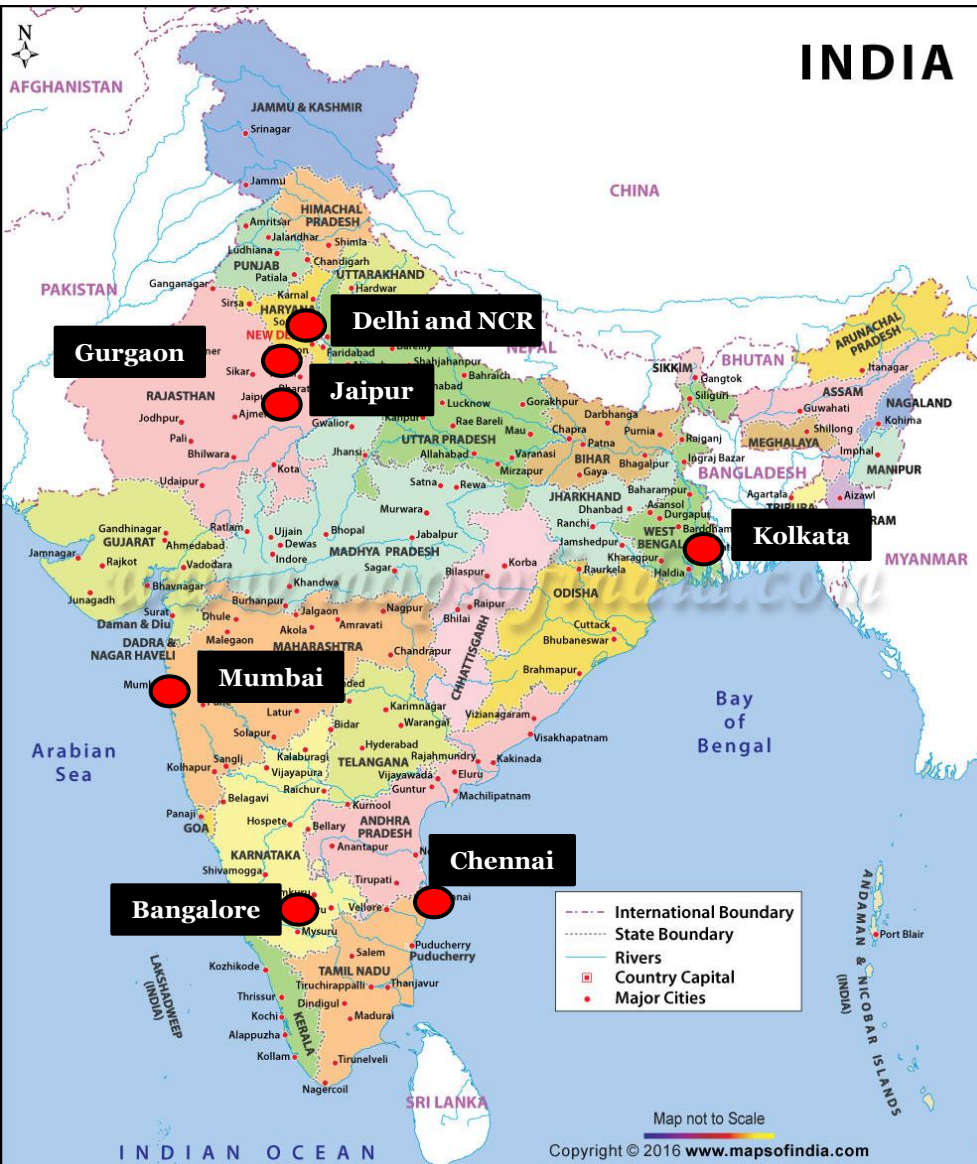
UT Financing and Institutional Strengthening

Setting up of UMTA across 53 cities

Permanent funding for UT financing and O&M

Sustainable transport accessibility to nearly 58% of urban population

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**

Map of India showing cities: Amritsar, Ludhiana, Jaipur, Ahmedabad, Bhopal, Kolkata, Indore, Rajkot, Raipur, Surat, Bhubaneshwar, Pune & PMPML, Vishakhapatnam, Hubli Dharwad, Chennai, Bangalore
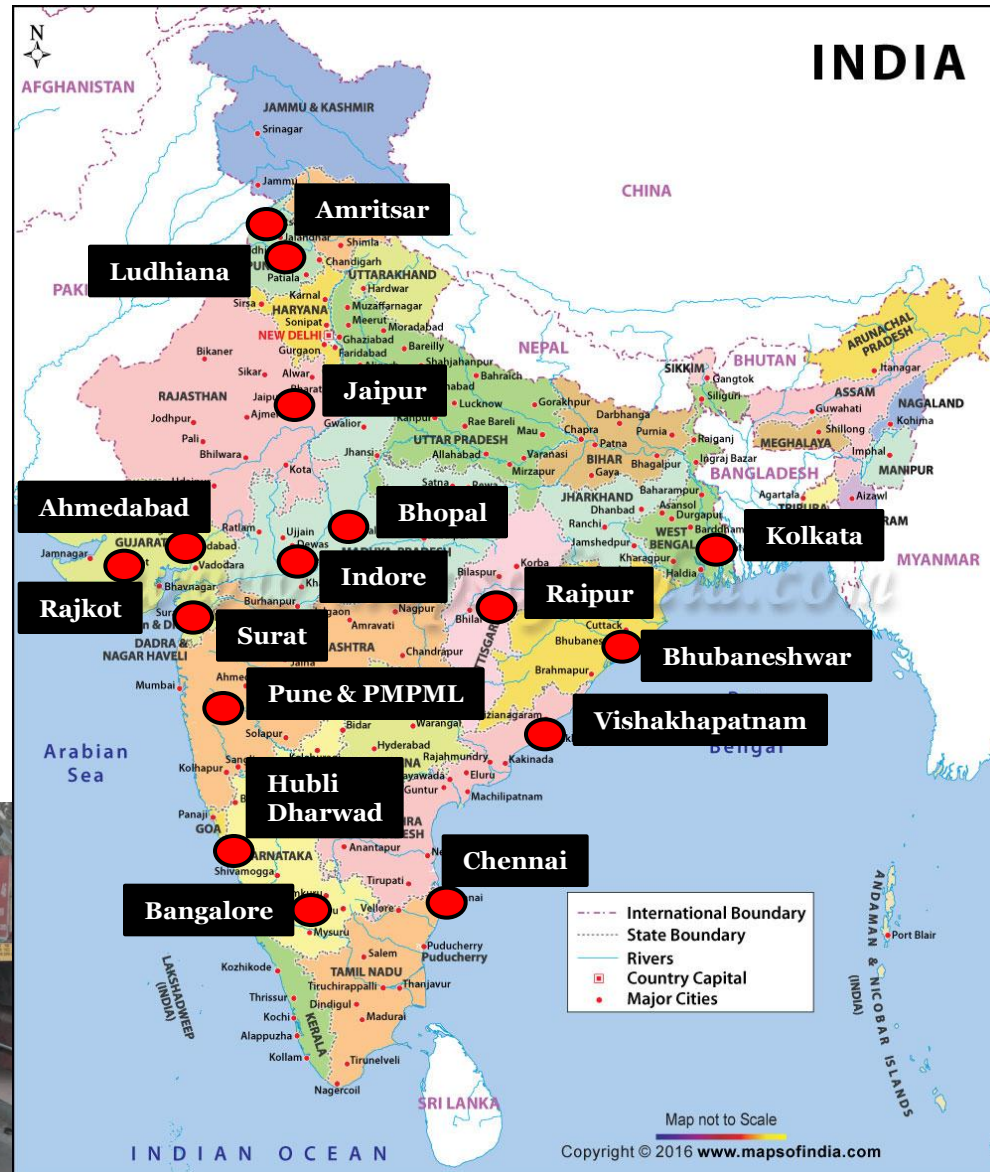
Bus Funding Scheme under JNNURM

- 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

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Times of Crippled Urban Transport Systems

BMTC 900mm Diesel

APSRTC -400mm CNG Non AC

UPSRTC 400mm Diesel Non AC

Uttarakhand 900mm Diesel

APSRTC 900mm Diesel

PMT 400mm CNG AC

Ujjain 900mm Diesel

West Bengal 900mm Diesel

Nagpur 900mm Diesel

Nanded Mini Bus Diesel

BMTC 400mm AC

Better buses, Better cities

Smart Urban Mobility

Recommendation

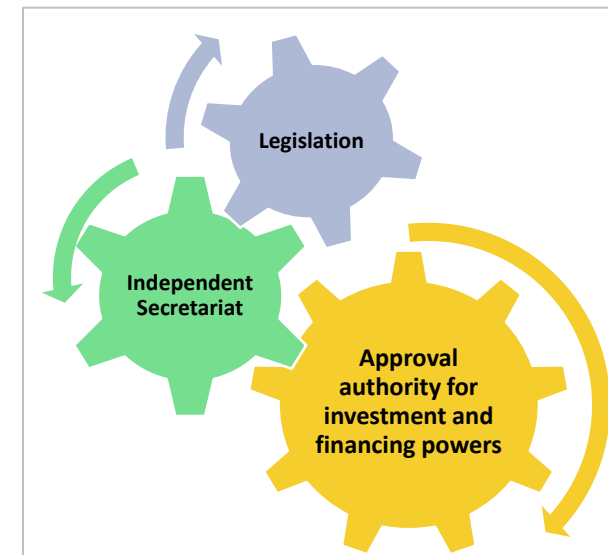|		
Legislative and administrative frameworks	Infrastructure and seamless intermodality	Safety
Training	Accessibility	Users' needs
	Environment	New business models and aggregators

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

Legislation

Independent Secretariat

Approval authority for investment and financing powers

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Need of Effective Coordination

Supply management

Road network, roundabouts, Intersections, traffic lights, etc

Public transport including inter city

Feeder systems

Bus stops and terminals

Footpaths & cycle tracks

Parking spaces

Freight mobility and infrastructure

Motorized and non motorized vehicles

Para-transit

Traffic management & control system

Effective Coordination

City /Regional Transport System

Demand management

Infrastructure and seamless intermodality

Components	Institutional Integration	Physical Integration	Operation Integration	Fare Integration	Information Integration
Public Transport	Setting up of UMTA	Bus Stop	Route network Planning	One ticket for all means of transport	Intermodal real time passenger information systems
		Bus terminal			
		Metro Station	Service Plan		
		Intermediate Public Transport (IPT) Stop			
		Multi-Modal Hub			
Transport Network		Road Network	Not Applicable		
		Intersection			
		Parking			
Non- Motorized transport		Cycle Track and Parking Station	Not Applicable		
		Footpath			

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> 1Million*;

  - ✓ Add rail transit @ 10 km/ Million Population

    - ✓ start planning >2 Million and start construction > 3 Million

  - ✓ Improve and upgrade IPT vehicles and services.

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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
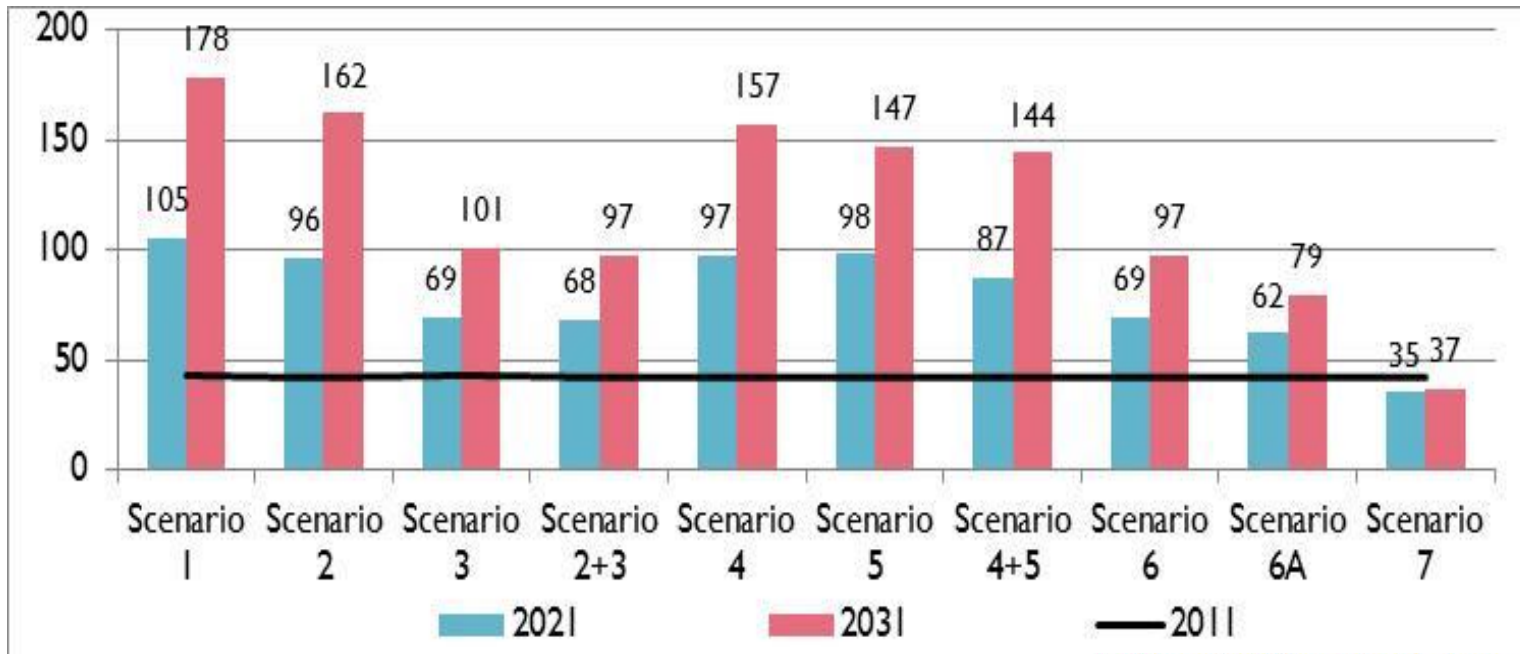
Annual Emissions –CO2 (Million Metric Tonnes)

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)

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Delhi govt will buy electric buses to counter pollution

Faizan Haidar, Hindustan Times, New Delhi | Updated: May 09, 2016 22:03 IST

"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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Training room (1) with U shape seating arrangement

IUT Member library with reading tables

Training room (2) with group seating arrangemen

IUT administration section