



Seminar on Air Pollution
CSE- Green Schools Program

Mobility: present trends and practices and future solutions



PRES ENTER ADARSHA KAPOOR



Email id: adarsha47@hotmail.com,
Ph.9818313591



Urban Designer Creative Footprints
www.creativefootprints.co.in

Coordinator, RegenLab
Trust for Regeneration of Indian Settlements

21st August 2019

PRESENTATION STRUCTURE



Mobility Issues

International and National Policy Perspective

Role of education and schools

Present Trends in the 8 selected states of India

Possible steps towards future solutions



MO BILITY IS SUES

India ranks **155th out of 178 countries** in its efforts to address environmental challenges, according to the 2014 Environmental Performance Index (EPI)

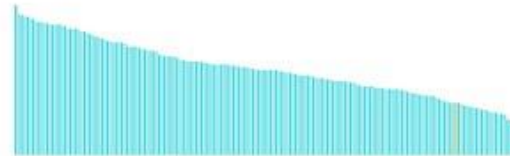
India performs the worst among other emerging economies

Context for changing planning techniques

2014 Environmental Performance Index

155

OVERALL RANK
OUT OF 178



31.23

OVERALL SCORE
OUT OF 100

+5.4%

10 YEAR TREND
OUT OF ±45.88%

\$1,530

GDP/CAPITA

1,237.0

MILLION PEOPLE

3,279,682

SQUARE KM



Water and Sanitation 26.28



Climate and Energy 35.24



Biodiversity and Habitat 39.18



INDIA



Health Impacts 50.04



Air Quality 23.24



Water Resources 10.49



Agriculture 58.4

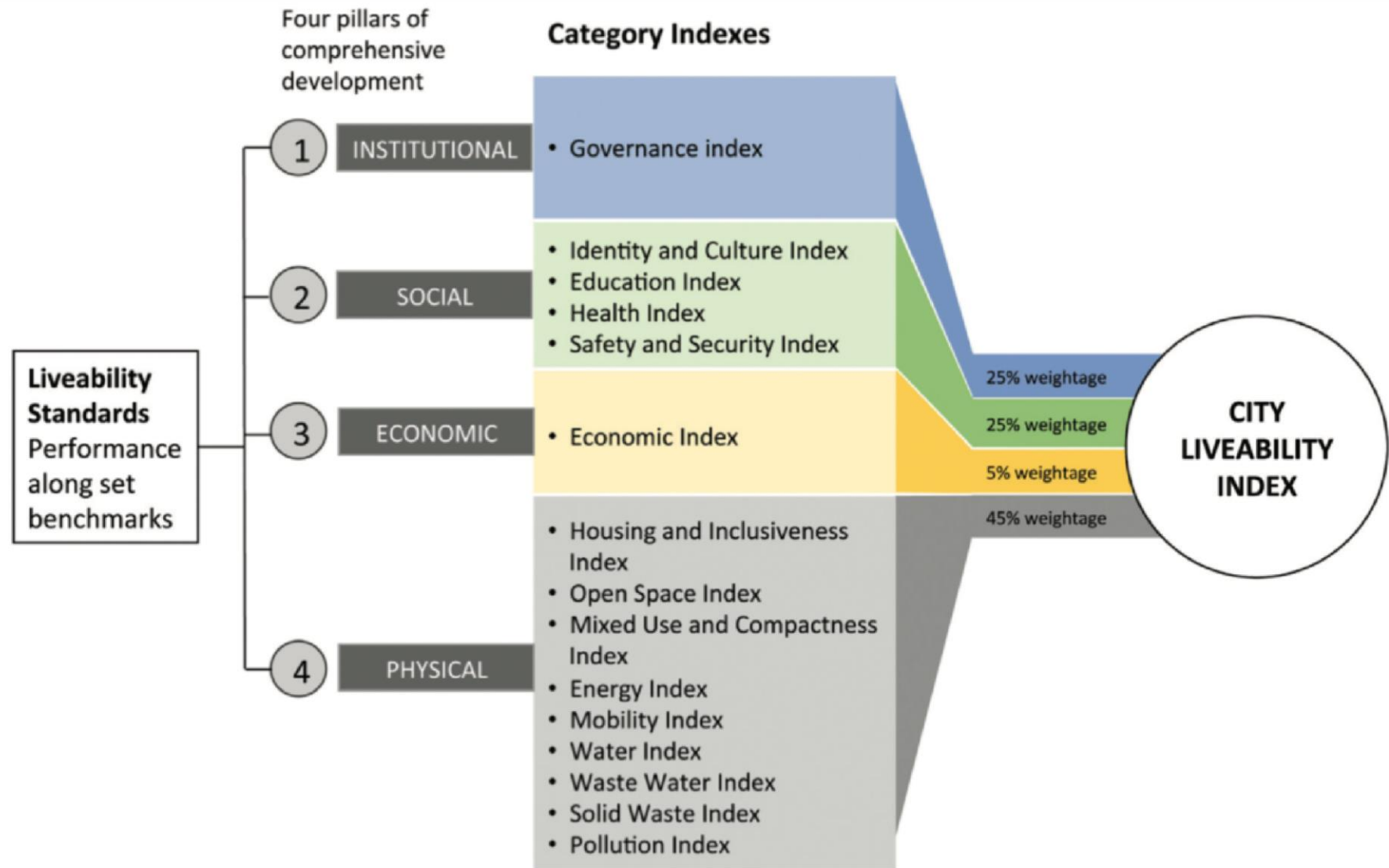


Forests 35.07



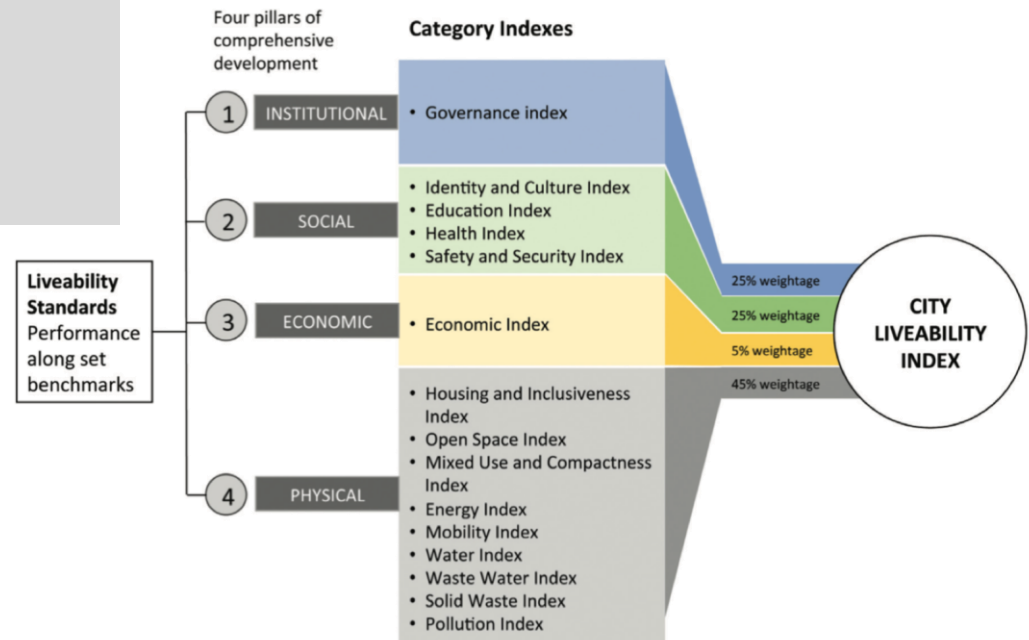
Fisheries 22.64

Liveability Index

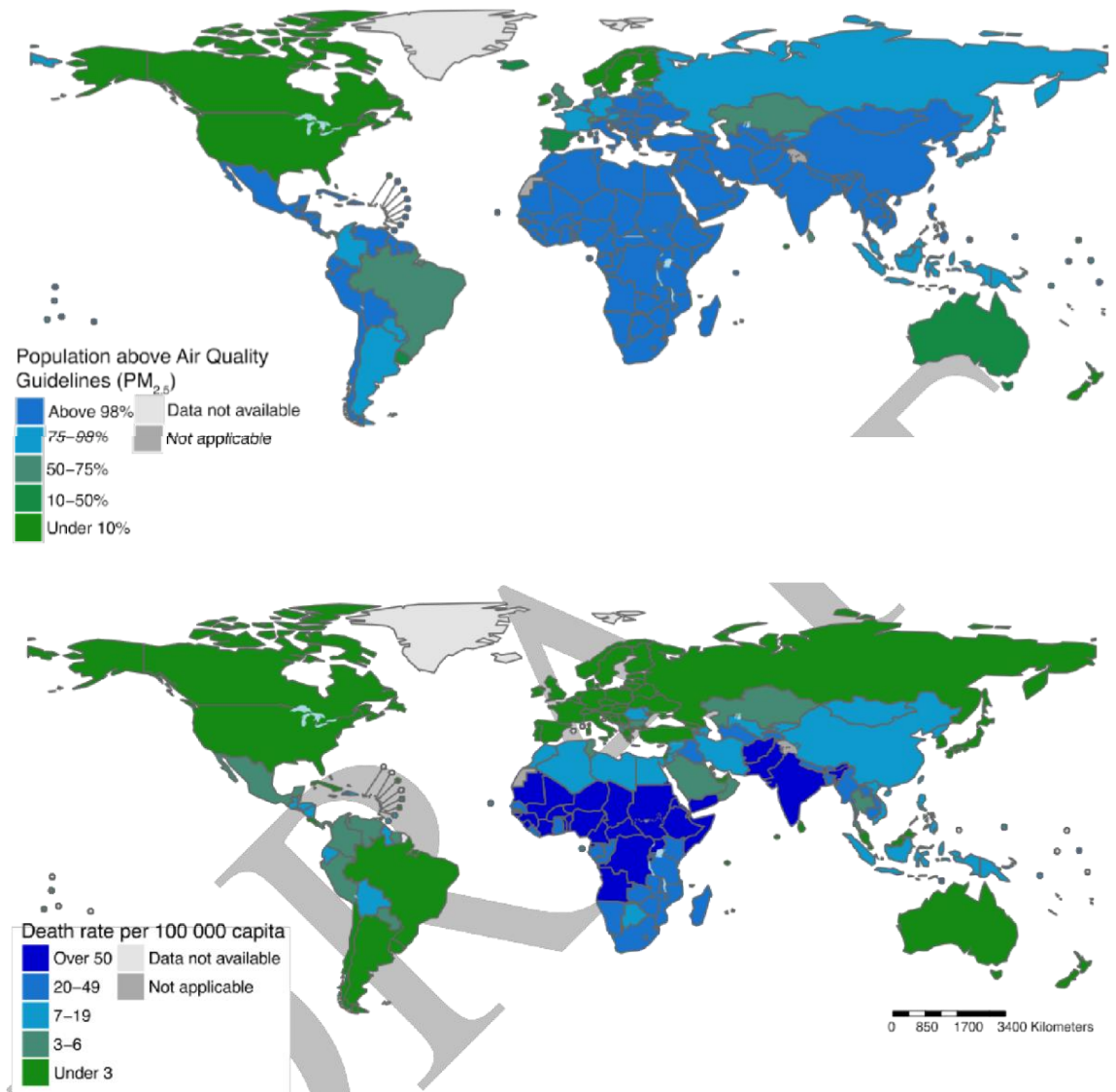


Impacts of Mobility Choice on Liveability

- Housing and Inclusiveness Index
- **Open Space Index**
- **Mixed Use and Compactness Index**
- Energy Index
- **Mobility Index**
- Water Index
- Waste Water Index
- Solid Waste Index



Future of our children, if we do not take actions now



Source: Air Pollution and Child Health: Prescribing Clean Air, 2018

Impacts on Child's health

Health Impacts of Air Pollution

- Adverse Birth Outcomes
- Infant mortality
- Neurodevelopment
- Childhood obesity
- Lung function
- ALRI, including pneumonia
- Asthma
- Otitis media
- Childhood cancers



“Lifting lifelong burdens: Exposure to air pollution can alter children’s trajectory through life, pushing them onto a path of suffering, illness and challenge. But this is preventable.”

Source: Air Pollution and Child Health: Prescribing Clean Air, 2018



INTERNATIO NA L A ND NATIO NA L PO LIC Y PERS PEC TIV E

International shift towards sustainable city planning



SUSTAINABLE DEVELOPMENT GOALS



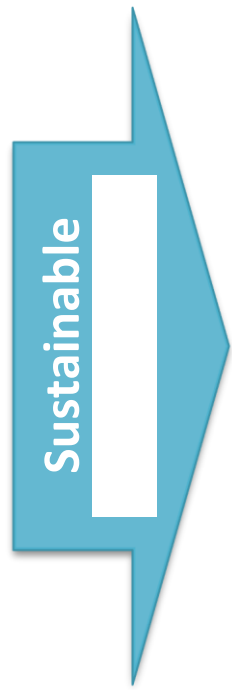
International shift towards sustainable city planning



SUSTAINABLE DEVELOPMENT GOALS



National Policy perspective





Approach to Sustainable Mobility

Principles for Transport in Urban Life: Better Together

Successful sustainable cities in the twenty-first century will prioritize people by integrating transport and urban development. Making this happen means putting the *Our Cities Ourselves* principles into practice to create vibrant, low-carbon cities where people want to live and work.

The *Our Cities Ourselves* principles show how the future of transport in urban life lies in reinforcing the complementary nature of sustainable urban transport and urban development. In the face of rapid urbanization and climate change, the future of transport in urban life will depend not only on these principles, but how they work together.



Compact

In a compact city, activities are located closer to one another, requiring less time and energy to connect. When all the principles are applied collectively, a thriving compact city is created.



Densify

By building up instead of out, cities absorb urban growth in a more compact way. Density supports a lively mix of activities and better transport services, but also requires that the transport systems can handle the increase in people.



Transit

Public transit connects and integrates more distant parts of the city. Transit corridors are the natural places where densification should begin. High quality transit is critical to create a prosperous and equitable city that is easily accessible by all.



Connect

A city needs a tight network of streets and paths for pedestrians and cyclists as well as public transit. Creating highly permeable places allows for a variety of mobility options that make trips more direct.



Mix

A connected city becomes more animated when there is a mix of activities along the streets and paths. Different uses encourage shorter trips and more lively neighborhoods.



Cycle

Like mixed uses, cycling activates streets and provides people with an efficient and convenient way to travel for medium distances. Cycling increases a person's access to a larger area, as well as increases the coverage of transit.



Shift

With the above principles in place, getting people out of their cars becomes easier but is not enough. Pricing and traffic reduction tools encourage people to shift away from cars.



Walk

When all the principles come together, the results are most keenly felt by the pedestrian. Vibrant, active streets where people feel safe are fundamental to the successful twenty-first century city.

Source: ITDP

Approach to Sustainable Mobility



Source: Singapore Land Transport Master Plan

Provisions for Sustainable Mobility

walk

High quality, unobstructed pedestrian footpaths provide basic mobility for all. Furniture, landscaping elements, and active building edges transform walkways into vibrant public spaces.

► Leave at least 2 m of clear space to ensure that footpaths are accessible to all.

► Use speed table crossings to reduce motor vehicle speeds.

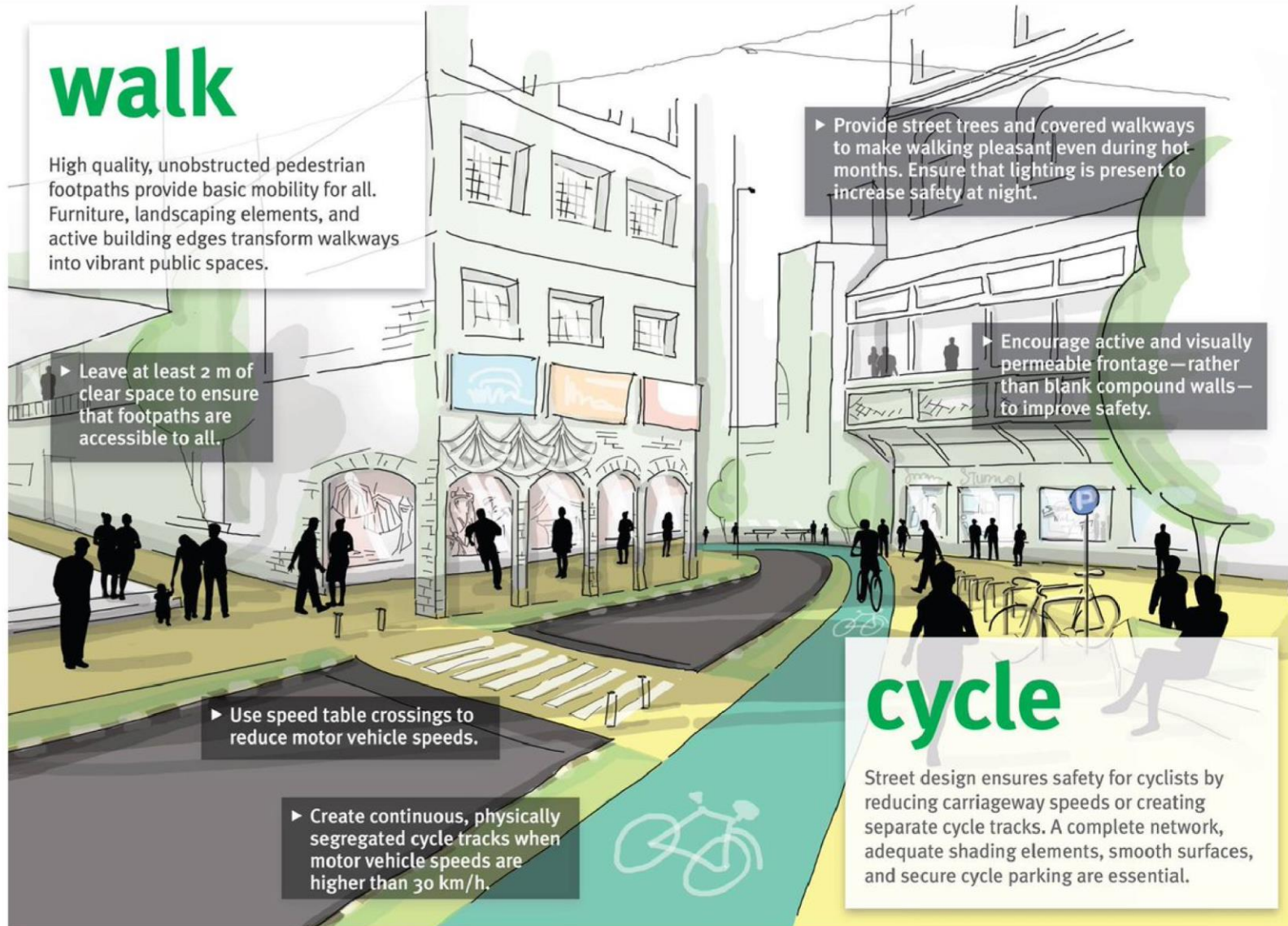
► Create continuous, physically segregated cycle tracks when motor vehicle speeds are higher than 30 km/h.

► Provide street trees and covered walkways to make walking pleasant even during hot months. Ensure that lighting is present to increase safety at night.

► Encourage active and visually permeable frontage—rather than blank compound walls—to improve safety.

cycle

Street design ensures safety for cyclists by reducing carriageway speeds or creating separate cycle tracks. A complete network, adequate shading elements, smooth surfaces, and secure cycle parking are essential.

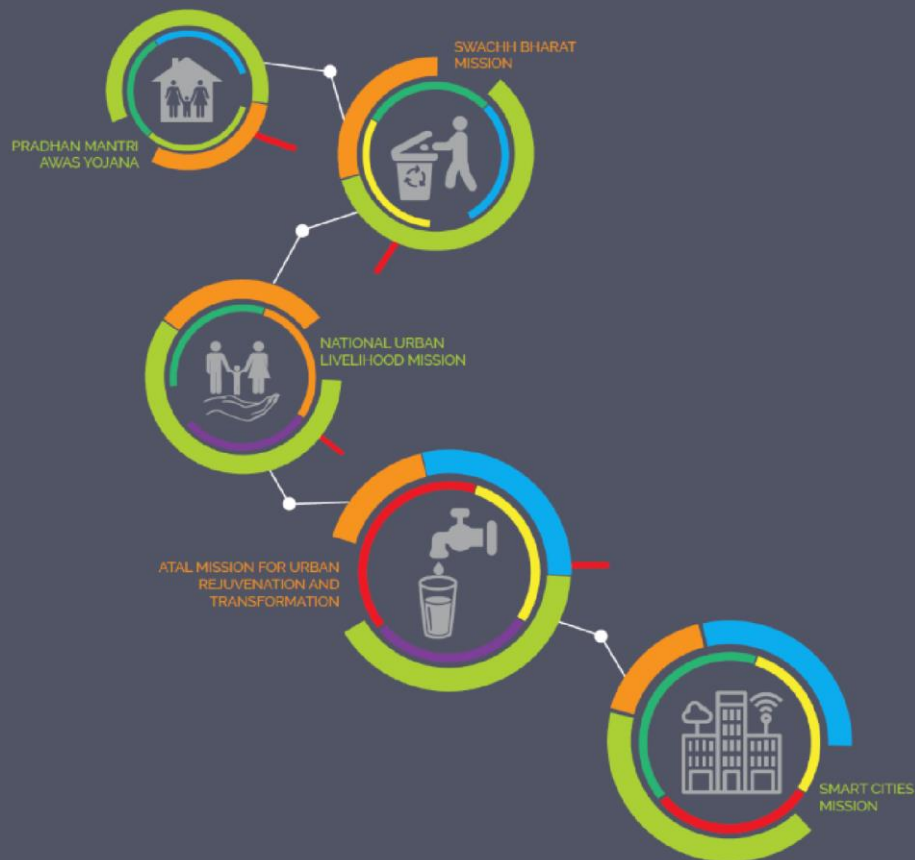


Provisions for Sustainable Mobility



CHILDREN in the urban vision of India

(Assessing the current urban missions of India on
their responsiveness to the needs of children)



Child Friendly Smart City Initiative





ROLE OF EDUCATIONAL SCHOOLS

Need for educating children about impacts of air pollution



- Kids are the future
- Kids can be the ambassadors of change
- Parent's are most concerned about kids
- Schools lay the foundation of good habits.

Schools can act as the epicenter of sensitization programs



Ways for sensitizing kids:

- Conducting exhibitions
- Conducting campaigns
- Organizing trips on public transport and cycling



PRES ENT TREND S IN TH E 8 S ELEC TED STATES O F IND IA

Case of Bhubaneswar- Odisha

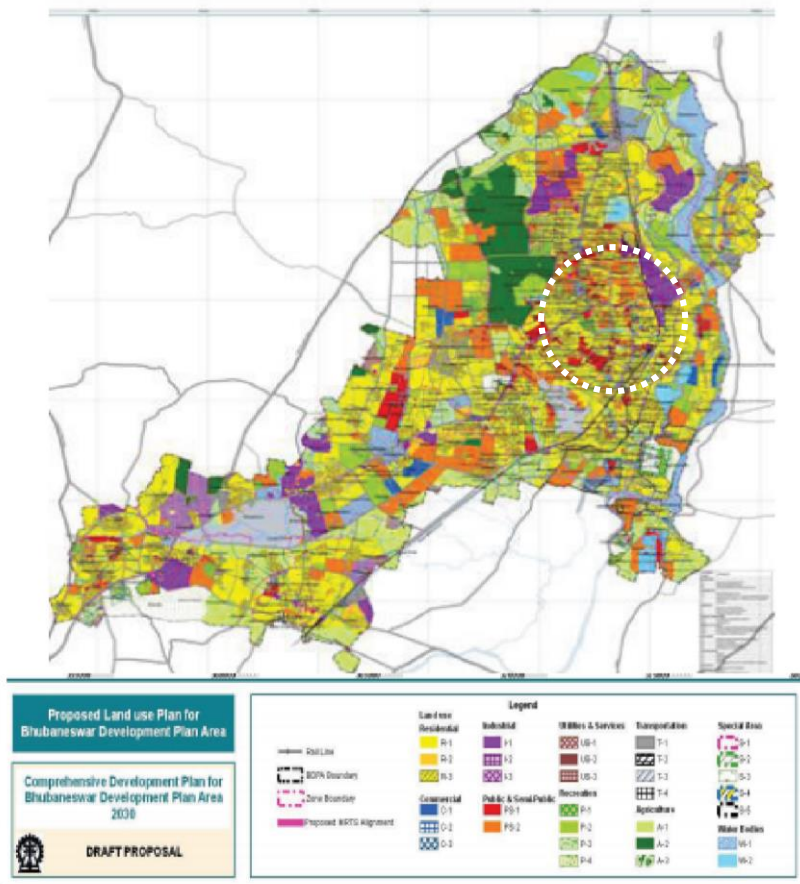
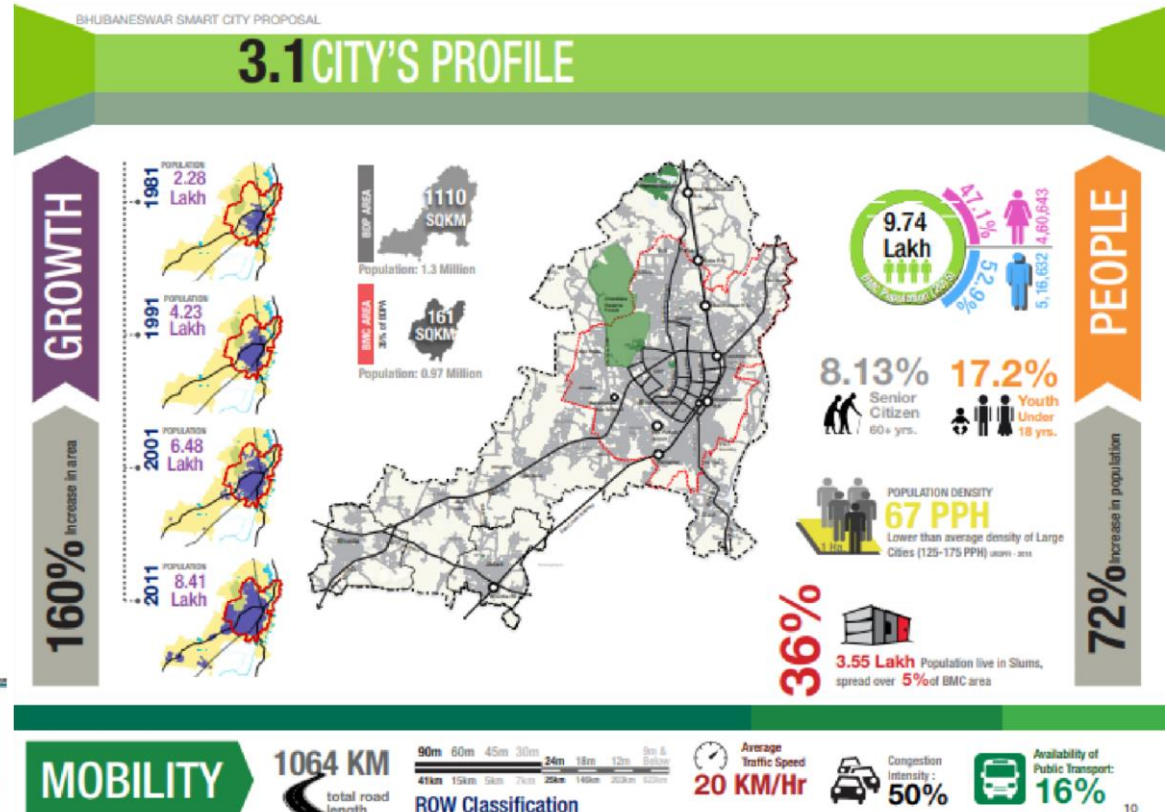


Figure 4.7 Comprehensive Development Plan- 2010 for BDPA
Source: Draft CDP for BDPA-2030 (2008)

Bhubaneswar City Master Plan encouraged private vehicle use

Had been trying to introduce BRT for a decade.

Smart City Scheme provided opportunity to prioritize sustainable urban development



Case of Bhubaneshwar- Odisha

Planning for Transit Oriented Development



SATYA NAGAR INSTIUTIONAL CORE
40 Acres of institutional space promoting commercial, education and business

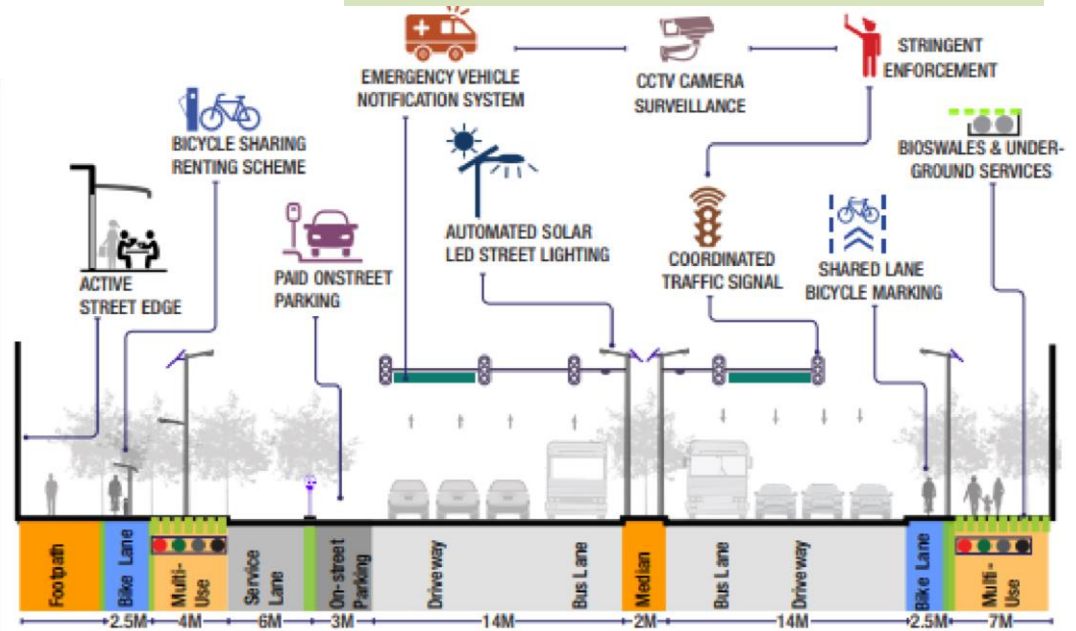


KEY COMPONENTS

Smart Waste Bins | Non Vehicle Zones | Mixed-use Multilevel Car Parking | Integrated Housing Societies | Street Vendor's Market | High End Hotels | Office and Commercial Space

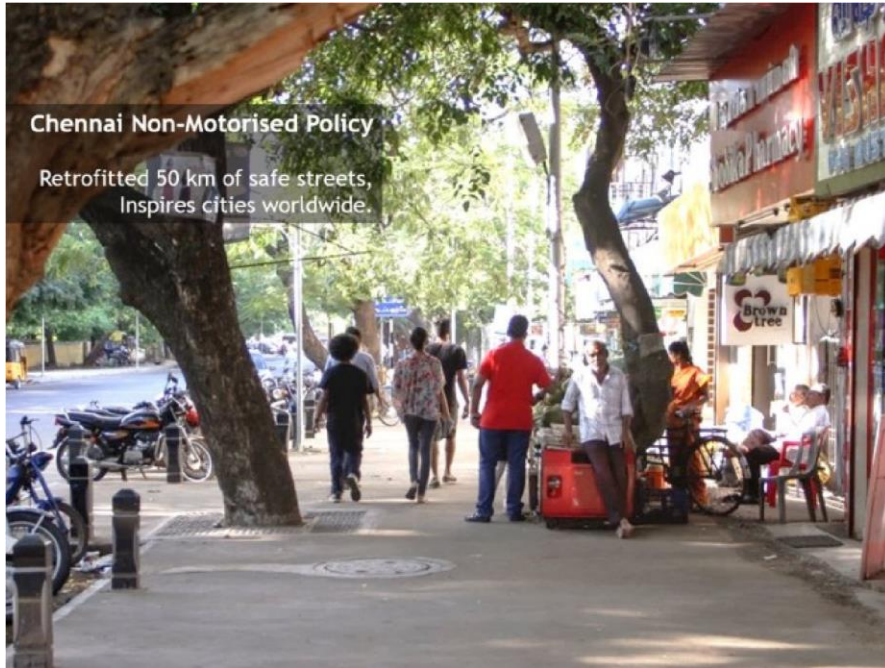
Urban Renewal

Planning for Complete streets



Bicycle Sharing Scheme

Case of Chennai- Tamil Nadu

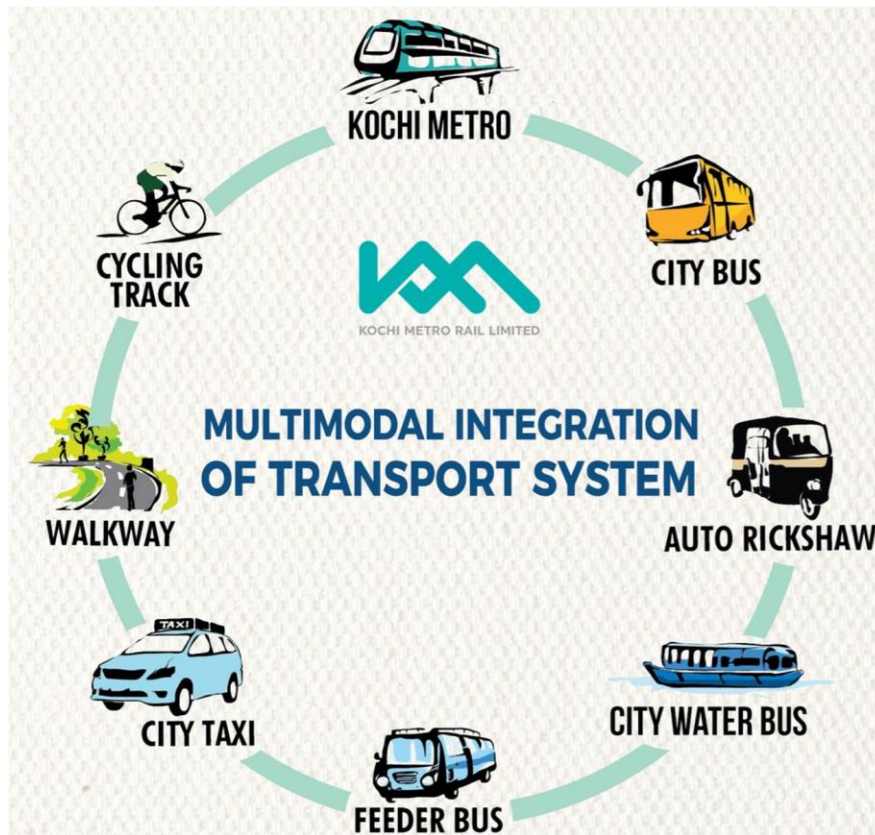


Chennai is:

- Improving Public Transport
- Improving streets with better pedestrian facilities



Case of Kochi- Kerala





Case of Kochi- Kerala

Comprehensive Street improvements with priority to Non Motorised Transport

Public Bicycle Sharing Scheme



Case of Bengaluru- Karnataka

Bengaluru footpaths are being upgraded with better facilities.





**STEPS TOWARDS SUSTAINABLE MOBILITY
THROUGH SCHOOLS AND EDUCATION**

Schools can conduct awareness programs with kids and parents



Schools can include cycling as sports



Schools can provide space for bicycle and bus parking



Schools can demand traffic calming in and around

