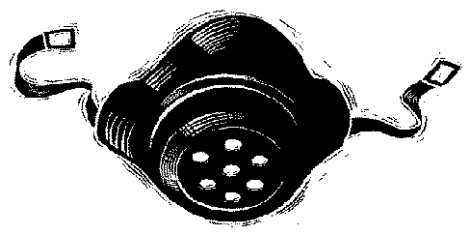


Mobility strategies for air quality management

Gaurav Dubey

**Programme Manager – Sustainable Mobility
Centre for Science and Environment**

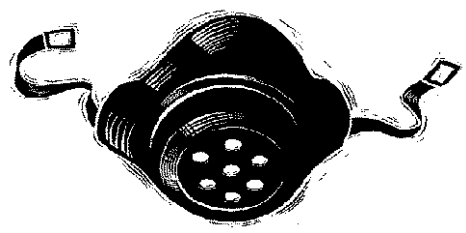
Bhubaneswar. 4th June, 2019



Mobility interventions for reducing air pollution



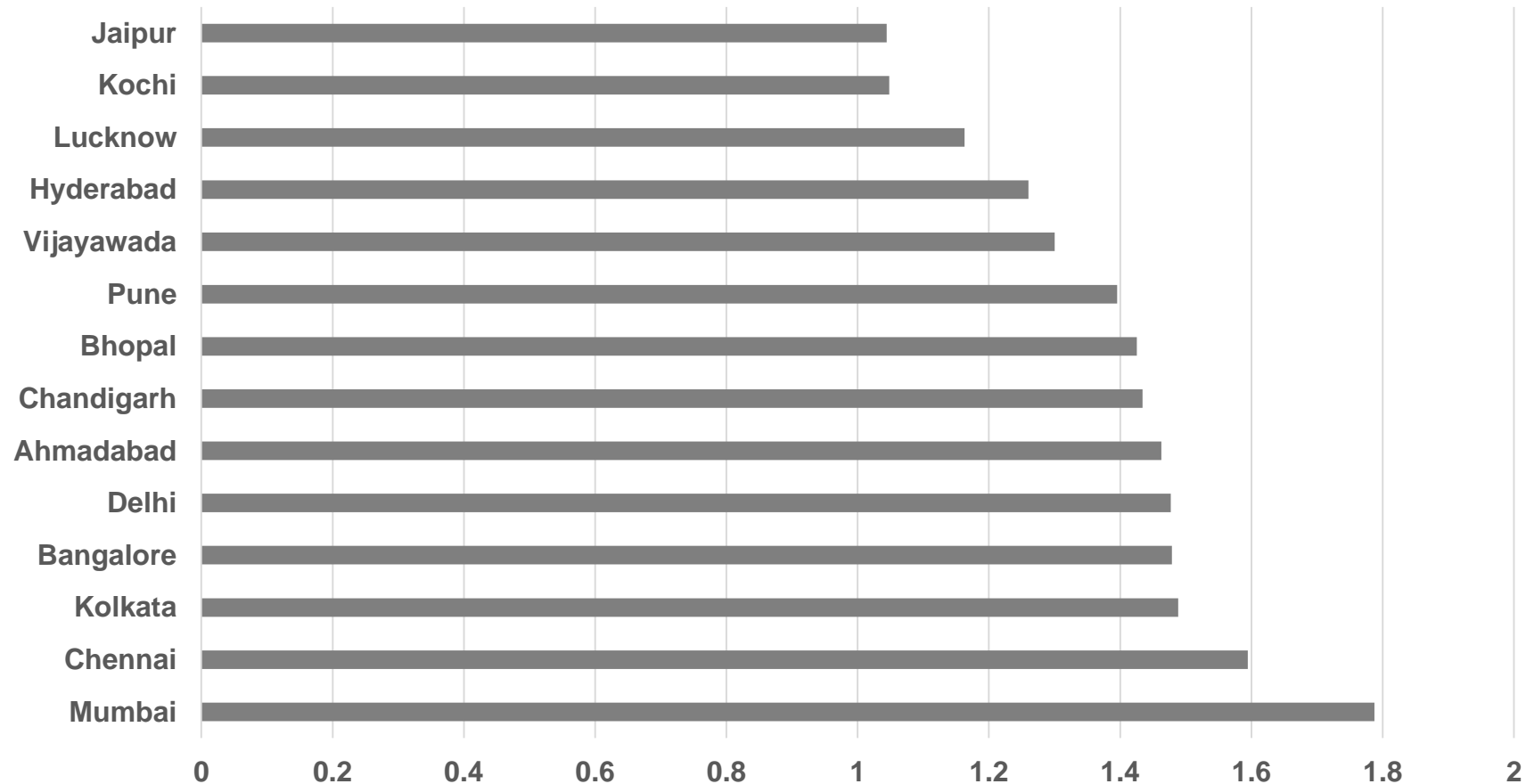
- **Population and travel demand cannot be controlled/ managed. “Trips” in cities will continue to increase.**

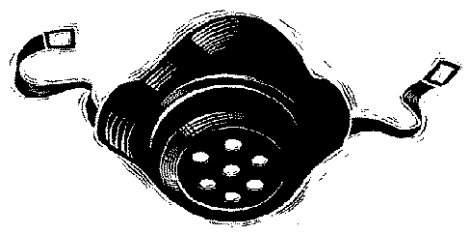


Travel demand will continue to increase as cities grow



Per capita trip rate in cities

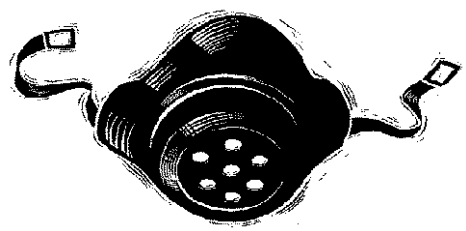




Mobility interventions for reducing air pollution



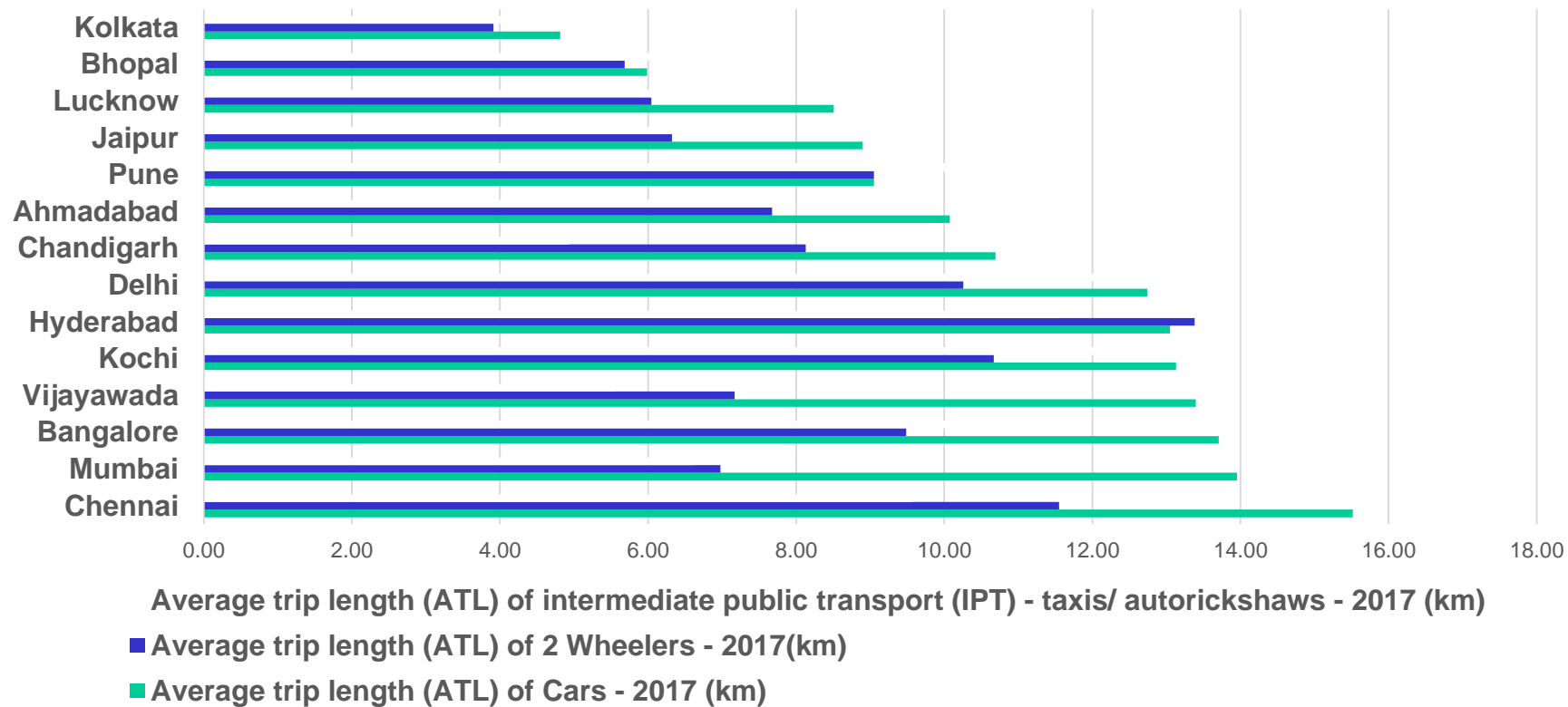
- Population and travel demand cannot be controlled/ managed. “Trips” in cities will continue to increase.
- **Nature of trips can be controlled: “how long they are” - by urban planning and design. Shorter the trips, the better off the city is.**

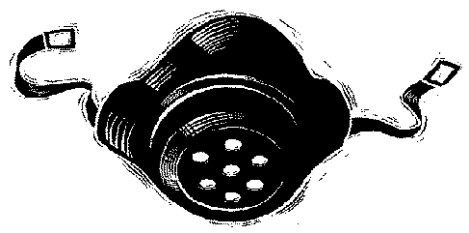


But trip lengths can be controlled – create Compact cities



Average trip lengths in cities

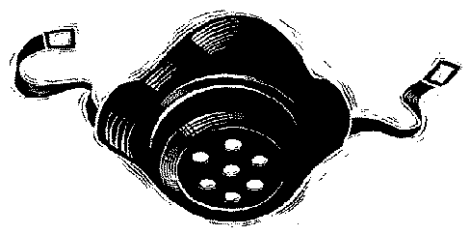




Mobility interventions for reducing air pollution



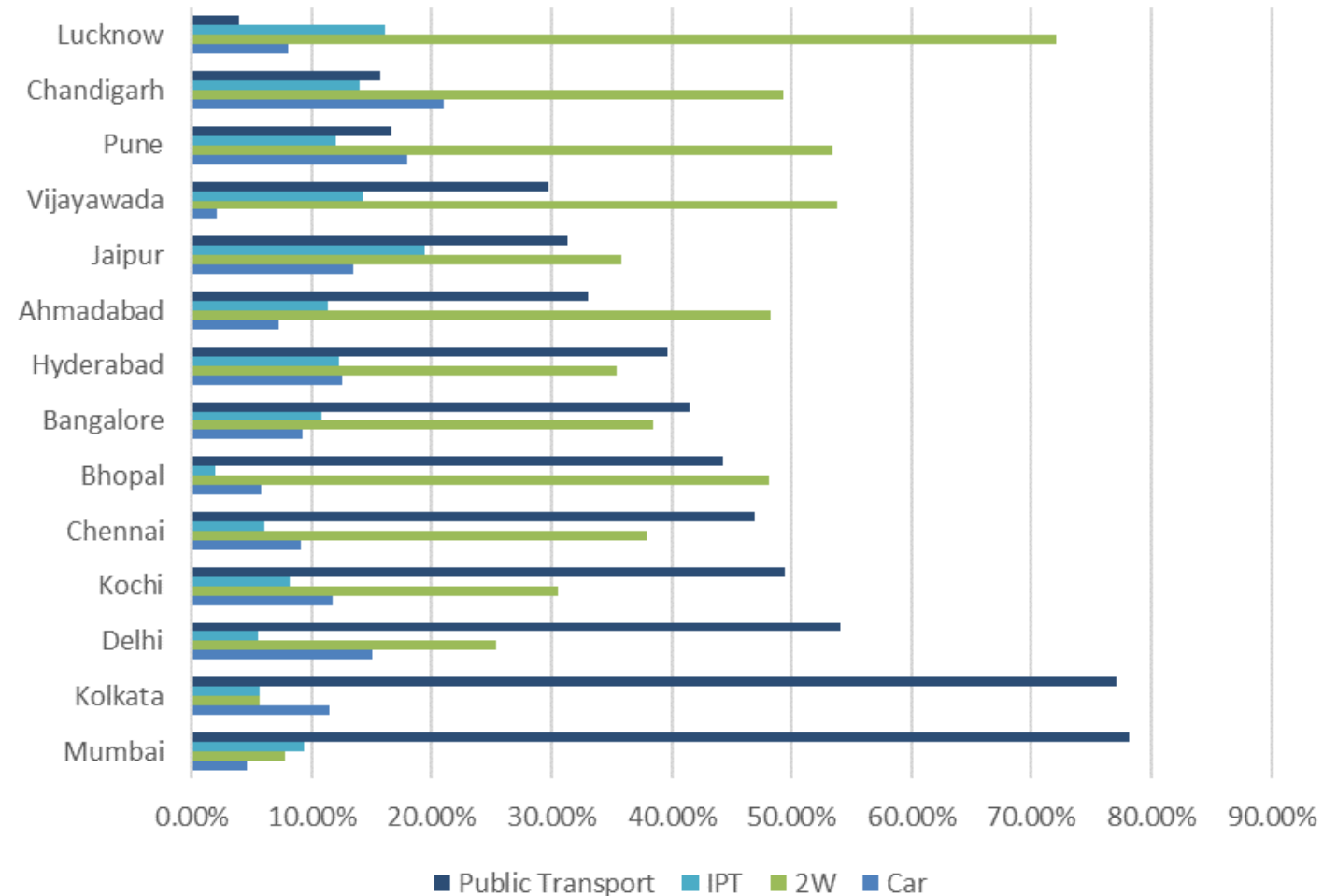
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- **Type of trips can be managed: the more the share of public transport and non-motorised modes (walking, cycling), lesser the air pollution.**



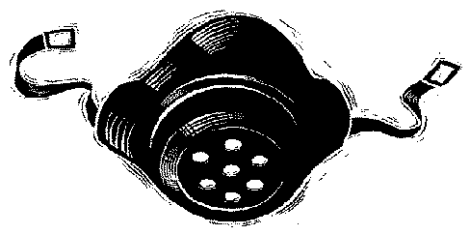
Mode shares can be improved: promote public transport, walking and cycling



Mode shares in cities



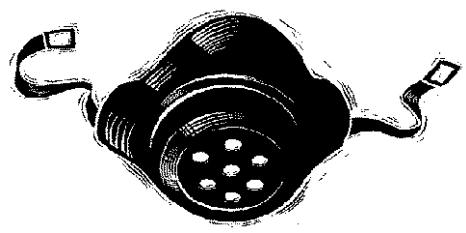
Source: CSE Compila



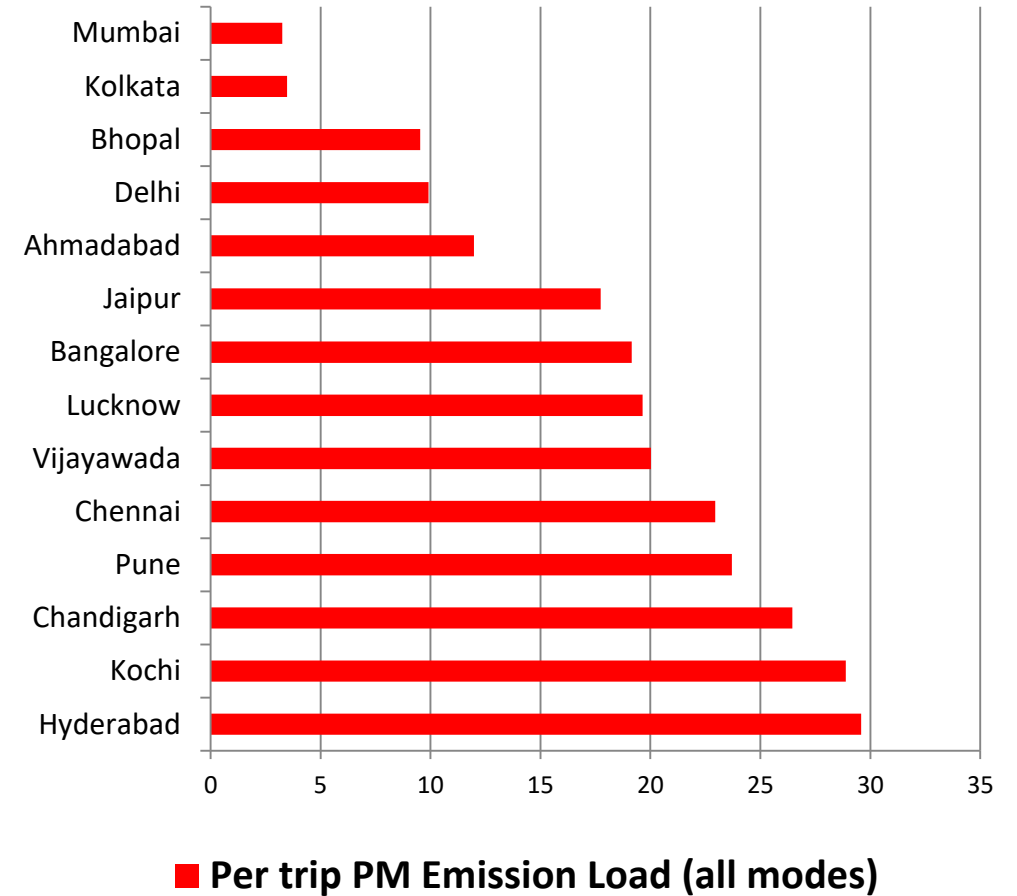
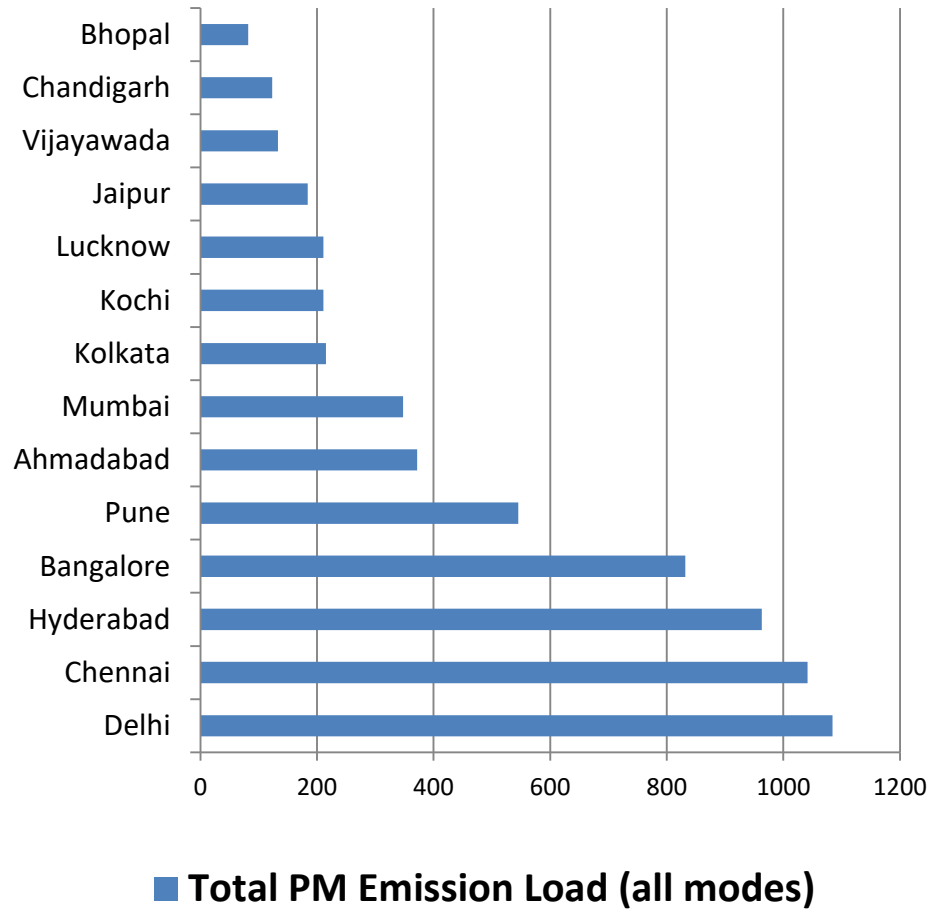
Mobility interventions for reducing air pollution

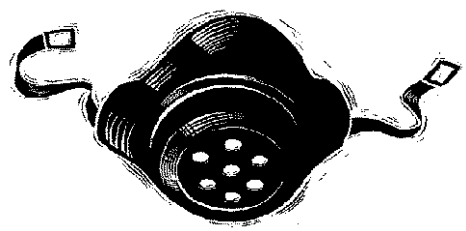


- **Population and travel demand cannot be controlled/ managed. “Trips” in cities will continue to increase.**
- **Nature of trips can be influenced: how long they are, by urban planning and design. Shorter the trips, the better off the city is.**
- **Type of trips can be managed: the more the share of public transport and non-motorised modes (walking, cycling), lesser the air pollution.**
- **Hence the imperative to develop public transport systems, provide for non-motorized transport and reduce private vehicle usage.**

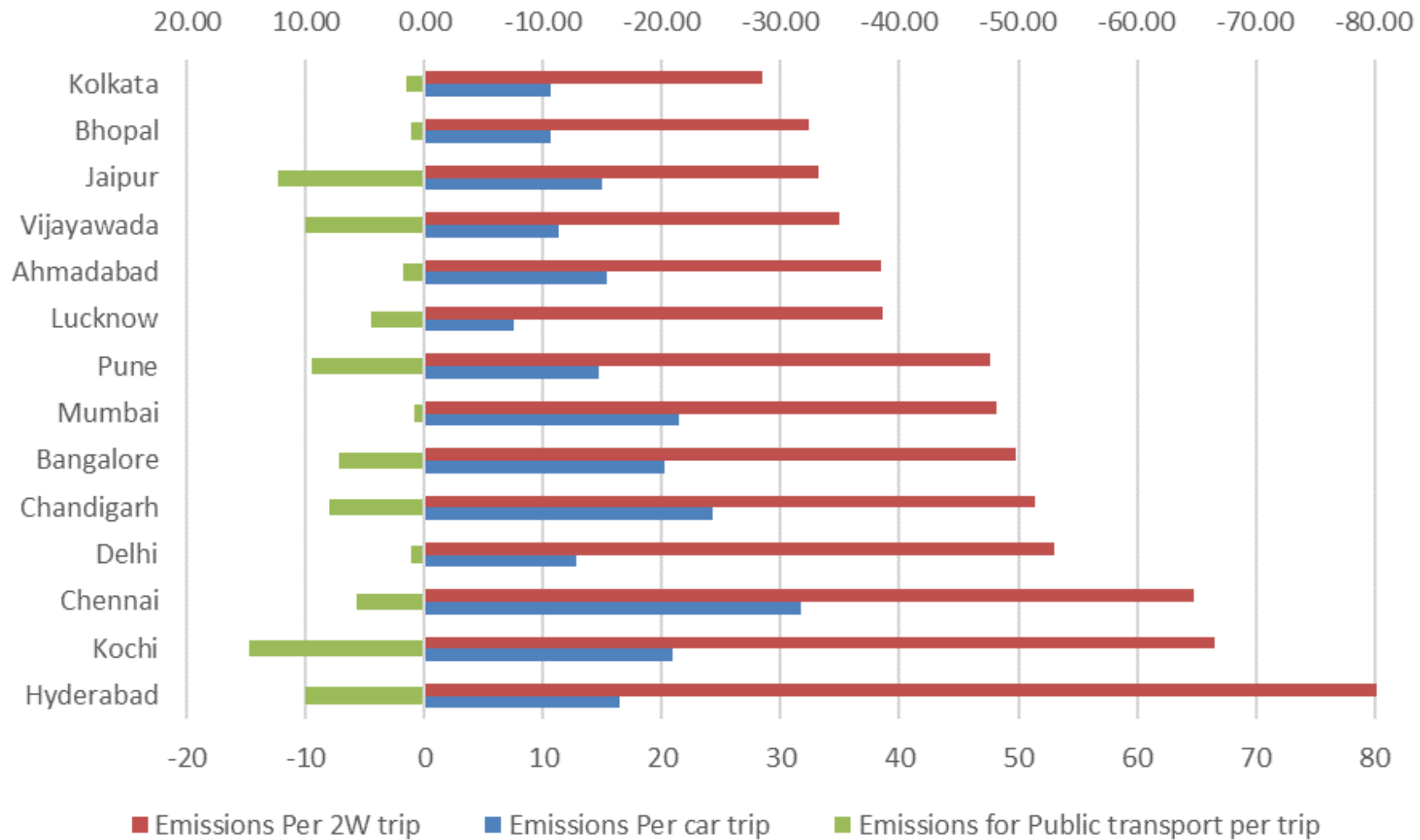


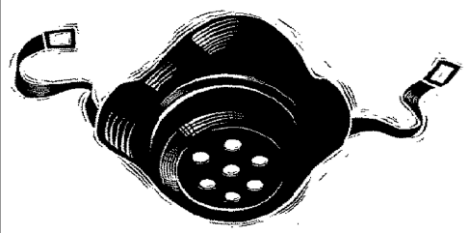
Total Vs Per trip PM emissions





Per trip emissions

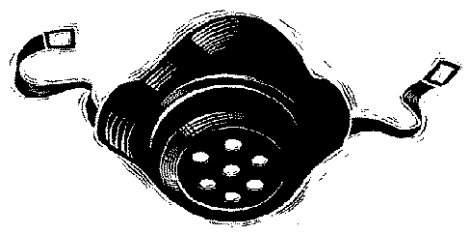




Fundamentals of mobility strategies controlling air pollutant emissions from motor vehicles



- Improve modal share with public transport and para transit & multi-modal integration; Transition to electric mobility**
- Walking and cycling strategy with feeder systems for last mile connectivity**
- Link with urban planning and design to reduce travel needs and distances**
- Restraint measures for personal vehicles usage – (parking policy, road and congestion pricing, low emissions zones, tax measures etc)**



Public transport and multi-modal integration



Introduce a city bus system of appropriate fleet size and desirable bus type

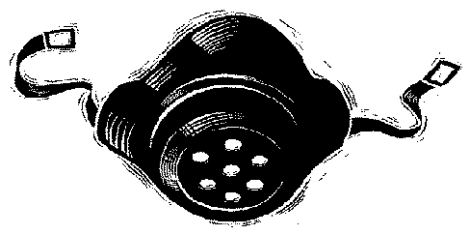
GPS tracking

ETVMs for fare collection and Passenger Information Systems

Develop passenger information system

Implement electric bus programme

Multi-modal integration – physical integration, and fare integration



Smaller cities: Public transport and multi-modal integration

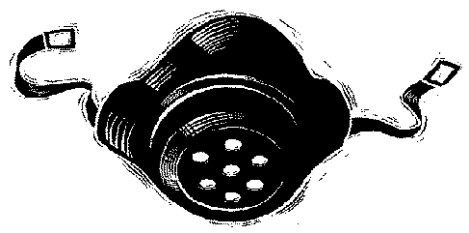


Reorganise intermediate public transport (IPT) – autos, shuttle, taxis

Link electric vehicle programme with IPT

Bus system for longer trunk routes

High street density with well designed pavements and cycling facilities and adequate protection for the pedestrians and cyclists for safe access



Non-motorised public transport and last mile connectivity



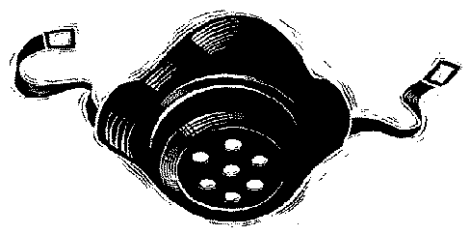
Implement zonal plan for developing NMT network

Adopt and implement street design guidelines

Compact city development

City Master Plan to promote compact urban form to contain urban sprawl, and reduce distances and emissions.

Promote planned mixed use development



Parking Policy: A Roadmap

Need demand management measures to reduce vehicles miles travelled and emissions



Parking policy as a travel demand management

Implement parking area management plan to

Identify and demarcate legal parking areas;

Penalise illegal parking;

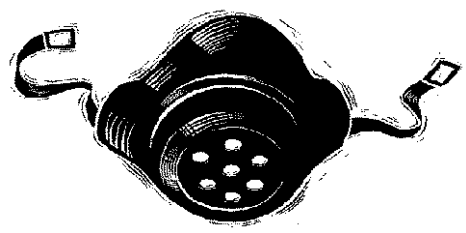
Introduce variable parking pricing;

Promote shared, priced and public parking

Prevent parking encroachment in green areas etc

Parking revenue for local area development

IT based parking area management and reform of contractual agreement



Effectively priced parking can make a difference



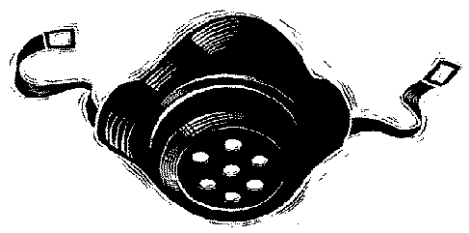
No meters
Grosvenor square, London



Meters

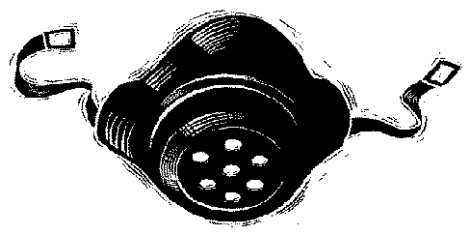


Prices quadrupled



NMT promotion also requires Parking Policy





To sum up...

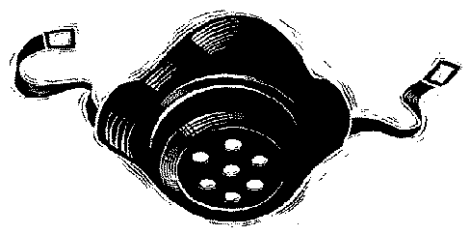


Important to reduce trip lengths and improve modal share of public transport and non-motorized transport

Reducing trip lengths possible through compact city design, mixed use and paying attention to walking and cycling facilities

Improving modal share possible by expanding and modernizing public transport system and ensuring integration of all modes

Reducing private vehicle usage through parking management critical to ensure the success of other measures



Thank you

gaurav@cseindia.org