CHINTAN SHIVIR

URBAN MOBILITY

KEY TAKEAWAYS

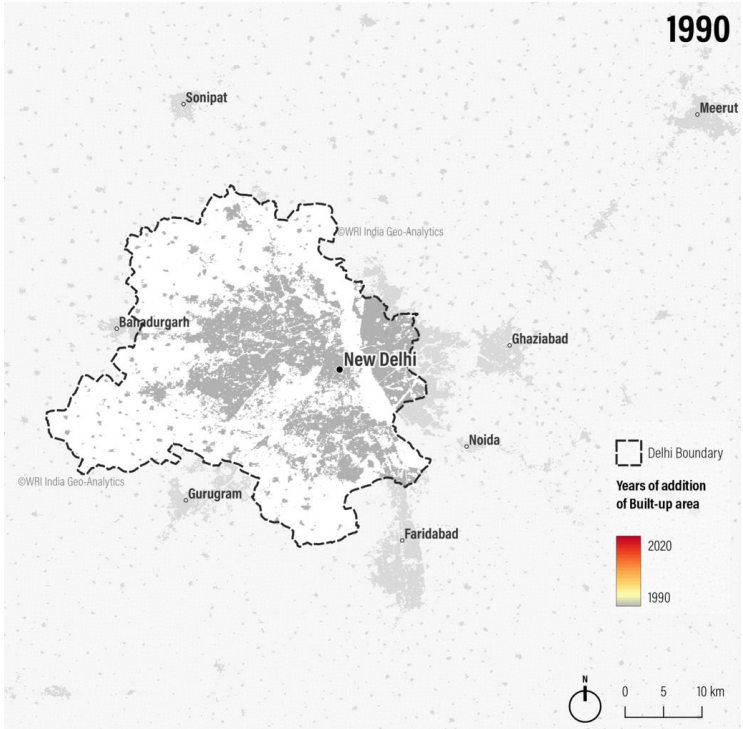
30th May 2024

AGENDA

1. India’s Urban Mobility Overview
2. Challenges in Scaling Up Public Transport
3. Summary of Finances and Governance
4. Recommendations for Urban Mobility

INDIA IS URBANISING RAPIDLY WITH DYNAMIC GROWTH ACROSS CITIES

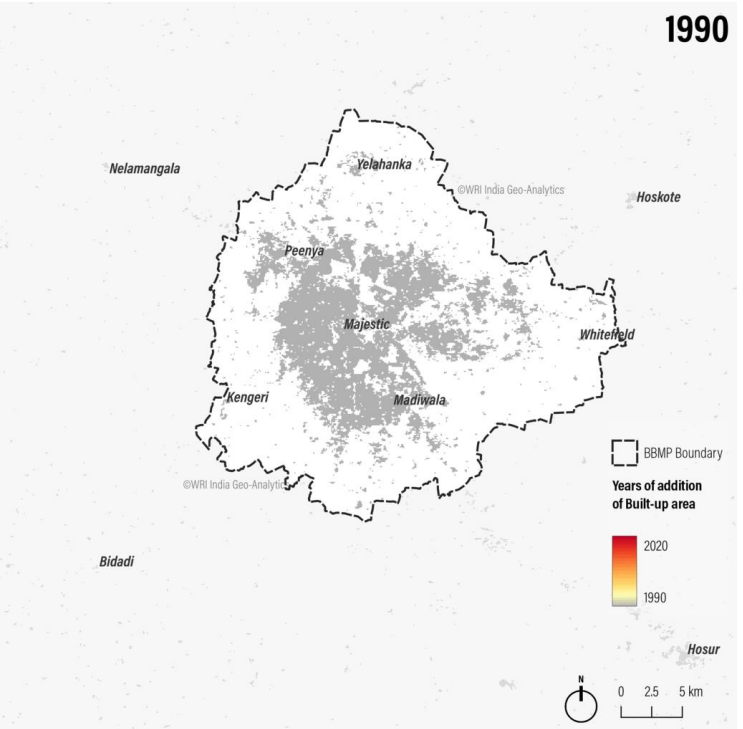
Built-up Growth in Delhi (1990 to 2020)



Data and Methods: Visualization of built-up growth in Delhi based on data from Global Human Settlement Layer (GHSL, 2023)
Analysis and visualization by Vinamra Bharadwaj (WRI India GeoAnalytics)

DISCLAIMER: This map is for illustrative purpose and does not imply the expression of any opinion on the part of WRI, concerning the legal status of any country or territory or concerning the delimitation of frontiers or boundaries.

Built-up Growth in BBMP (1990 to 2020)



Data and Methods: Visualization of built-up growth in Bruhat Bengaluru Mahanagara Palike (BBMP) based on data from Global Human Settlement Layer (GHSL, 2023)
Analysis and visualization by Vinamra Bharadwaj (WRI India GeoAnalytics)

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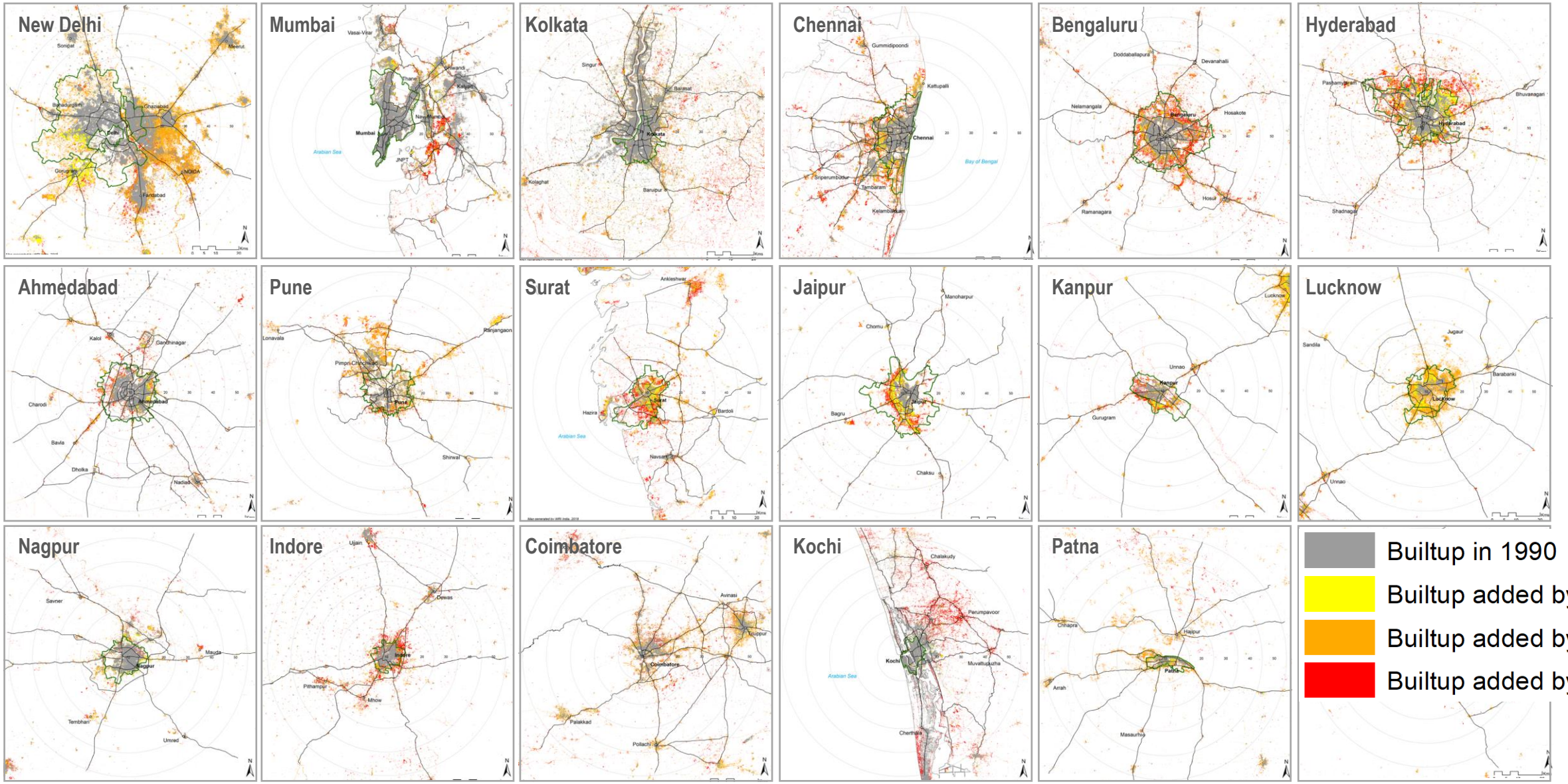
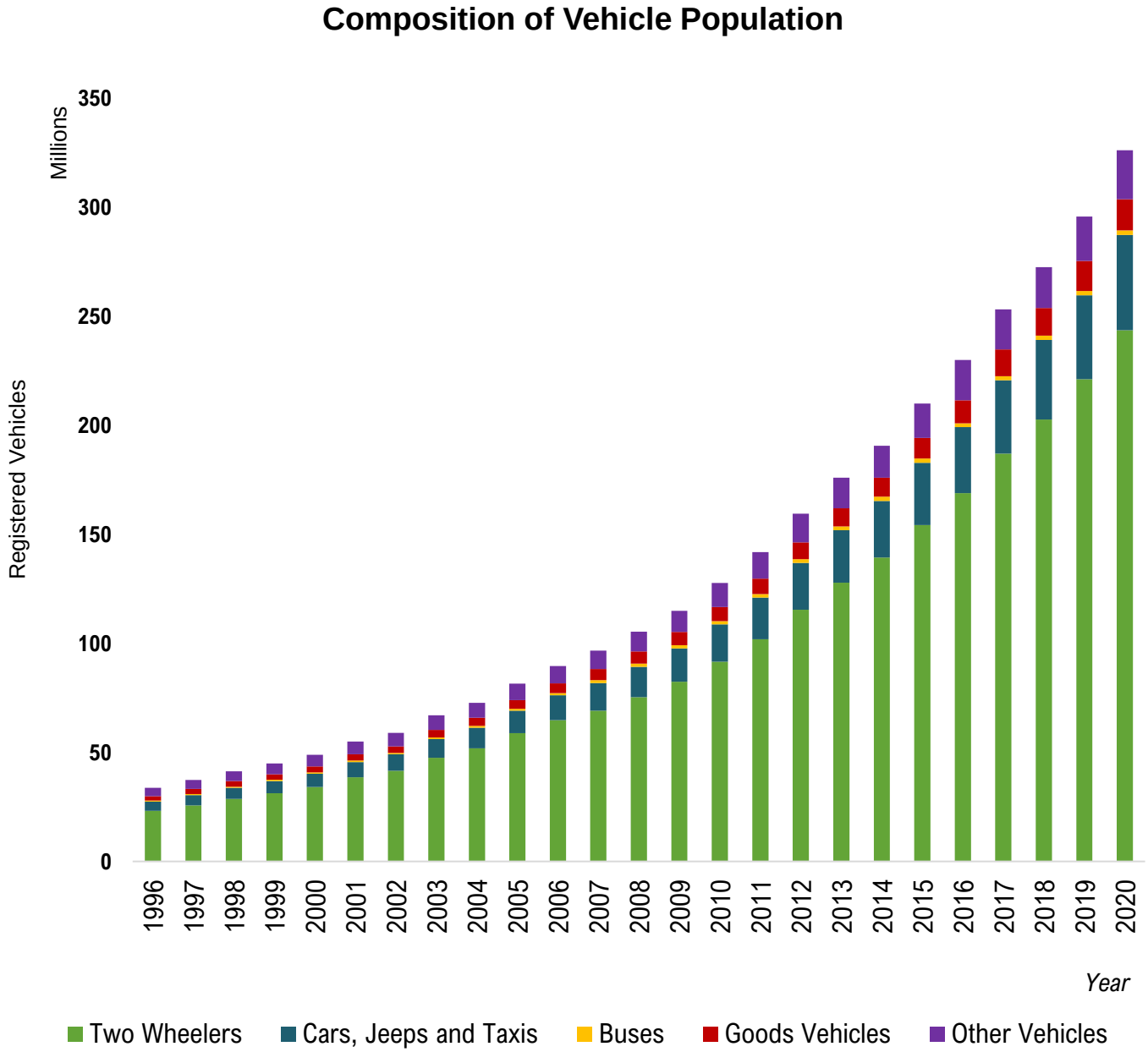
URBANIZATION TRENDS IN INDIAN CITIES



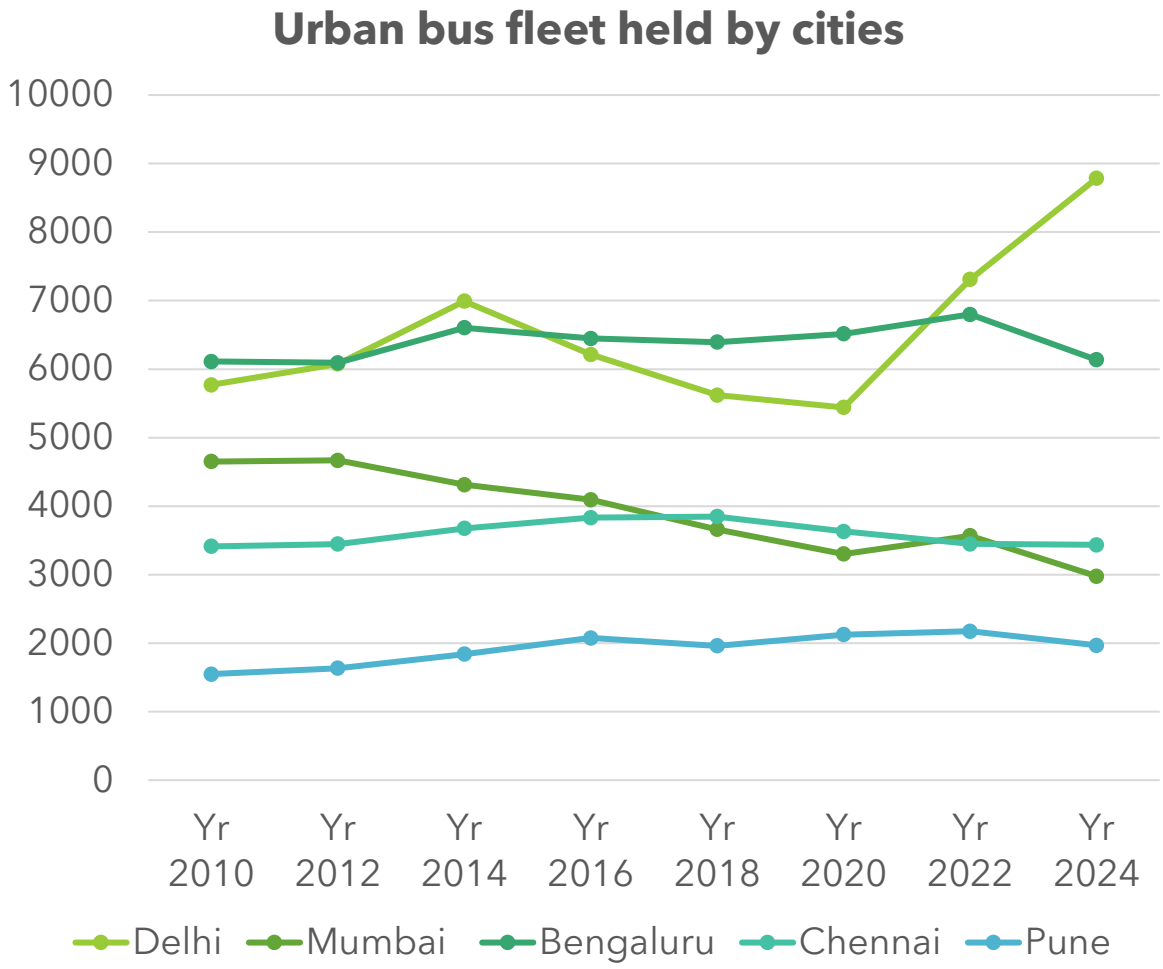
Source: 2011, European Commission JRC, Landsat (USGS / NASA): Graphics by WRI, India

WITH RISING PER CAPITA INCOME VEHICLE OWNERSHIP IS SOARING



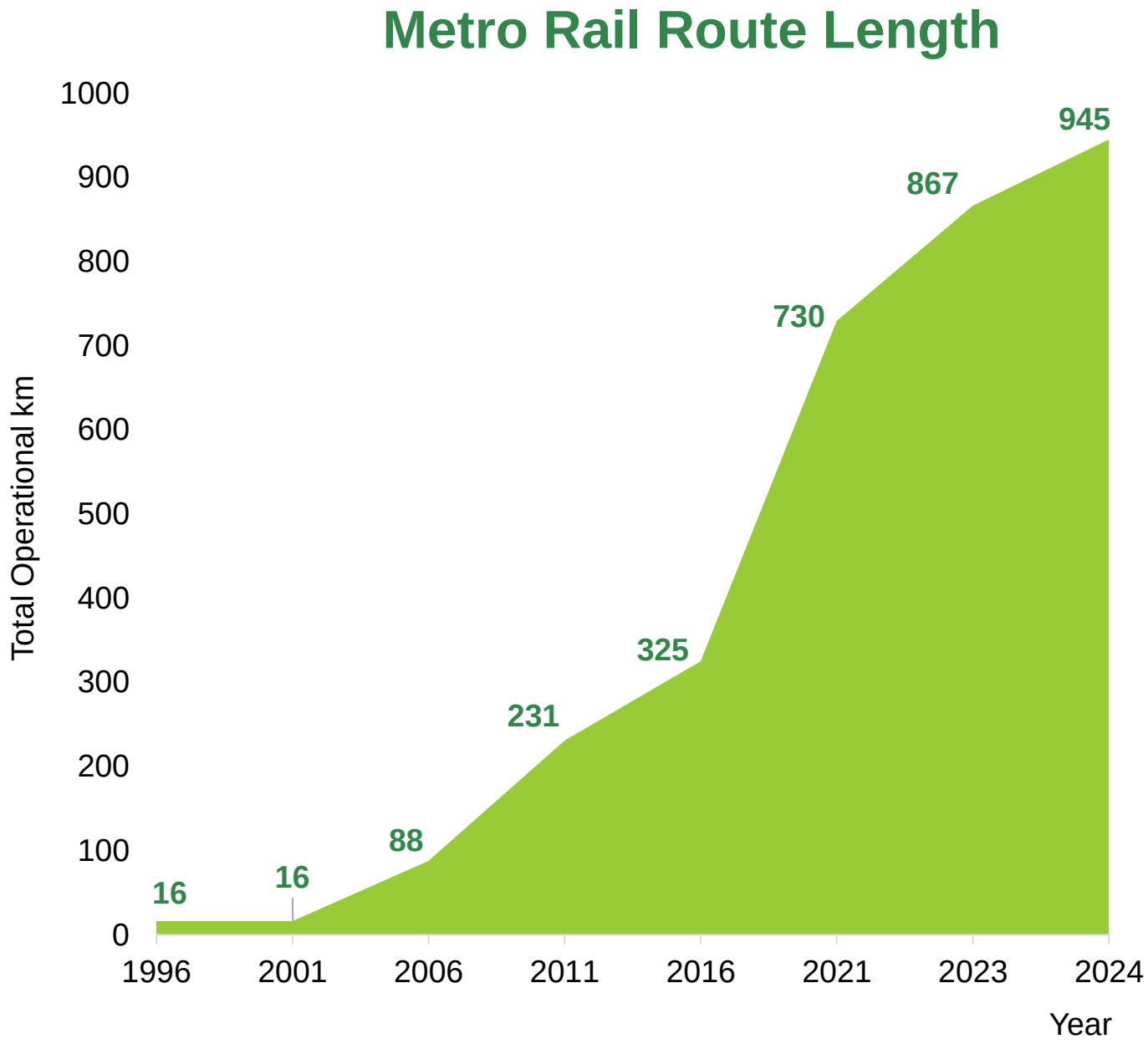
Road Transport Yearbook, 2019-20, MoRTH

NUMBER OF URBAN BUSES HAS BEEN STAGNANT, DECREASE IN BUSES PER LAKH POPULATION



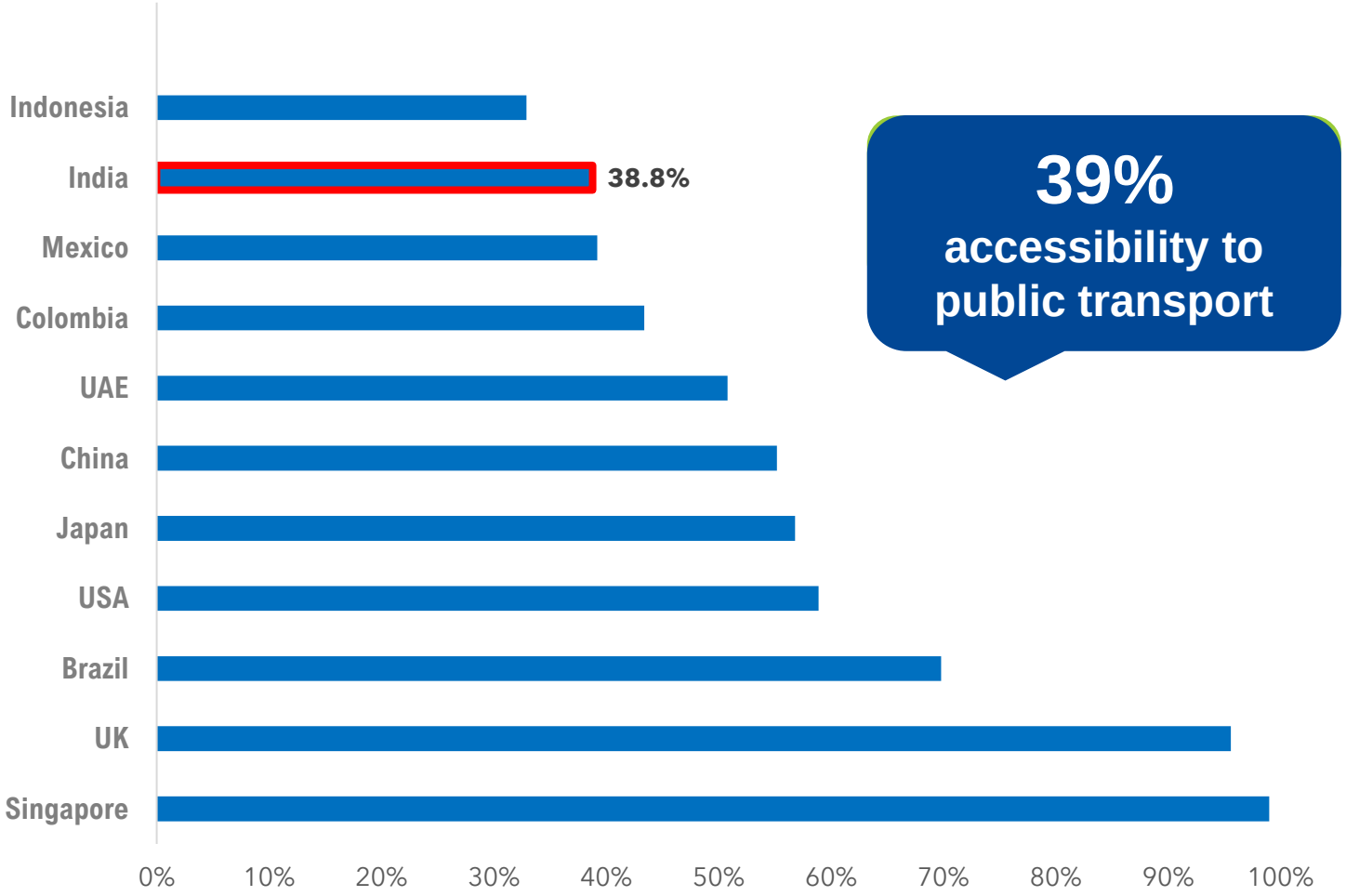
Review of the Performance of SRTUs, ASRTU

METRO RAIL GROWTH, OVER THE PAST DECADE, HAS BEEN EXPONENTIAL



Improving Metro Access in India: Evidence from Three Cities, WRI India

INDEXING URBAN MOBILITY



39%
accessibility to public transport

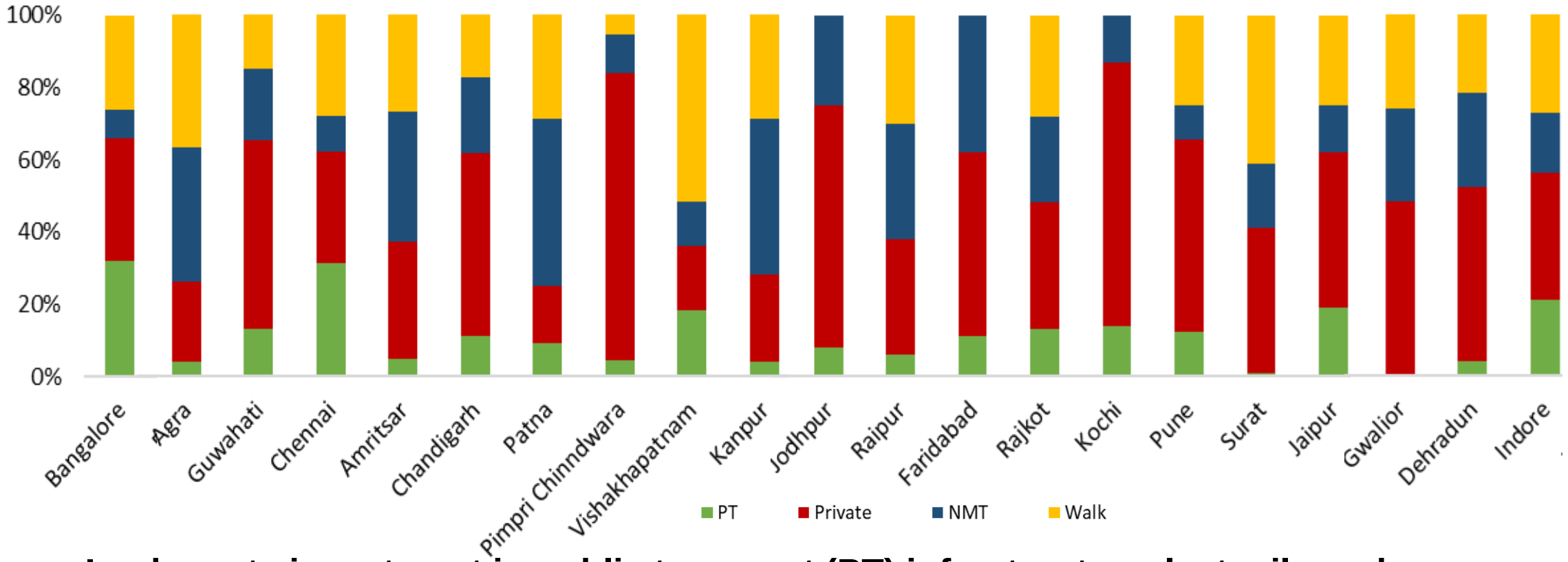
Percentage of urban population with accessible public transport
Population within 500m of public transport & 1000m from Mass Transport

Share of urban population with convenient access to public transport, 2020

Source: United Nations; Clean Bus Report, 2022, European Commission

CURRENT CHALLENGES

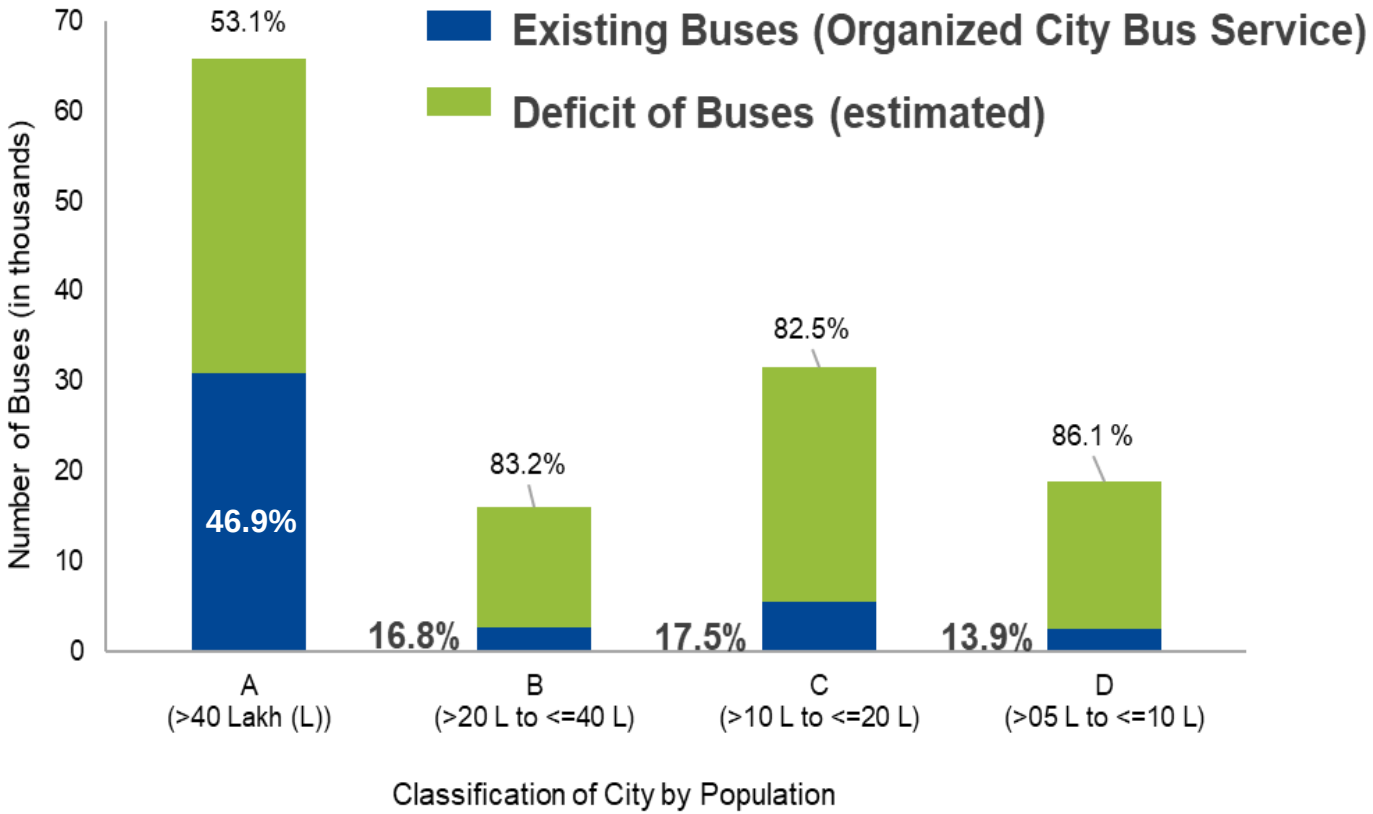
MODAL SHARE OF INDIAN CITIES



Inadequate investment in public transport (PT) infrastructure, last mile and non-motorized transport (NMT) has resulted in increased usage of private vehicles, further leading to congestion, pollution and socio-economic losses.

Source: Comprehensive Mobility Data

CURRENT GAPS - Buses



Source: Gap Estimated as per SLB, MoHUA, 2013

There is an immediate requirement for at least 1 lakh buses

Smaller Cities have Higher Deficit

REASON FOR DEFICIT

- **Lack of consistent viability gap funding**
- **Bus agencies face revenue challenges due to declining ridership, high costs and limited technology adoption**

EXISTING FINANCIAL SUMMARY AND GAPS - BUSES

Bus Requirement by 2029

~ 1,54,850

Total Buses required in 3L+ population cities to achieve LOS-1 as per SLB

~ 1,23,800

New buses to be inducted including replacement of old buses

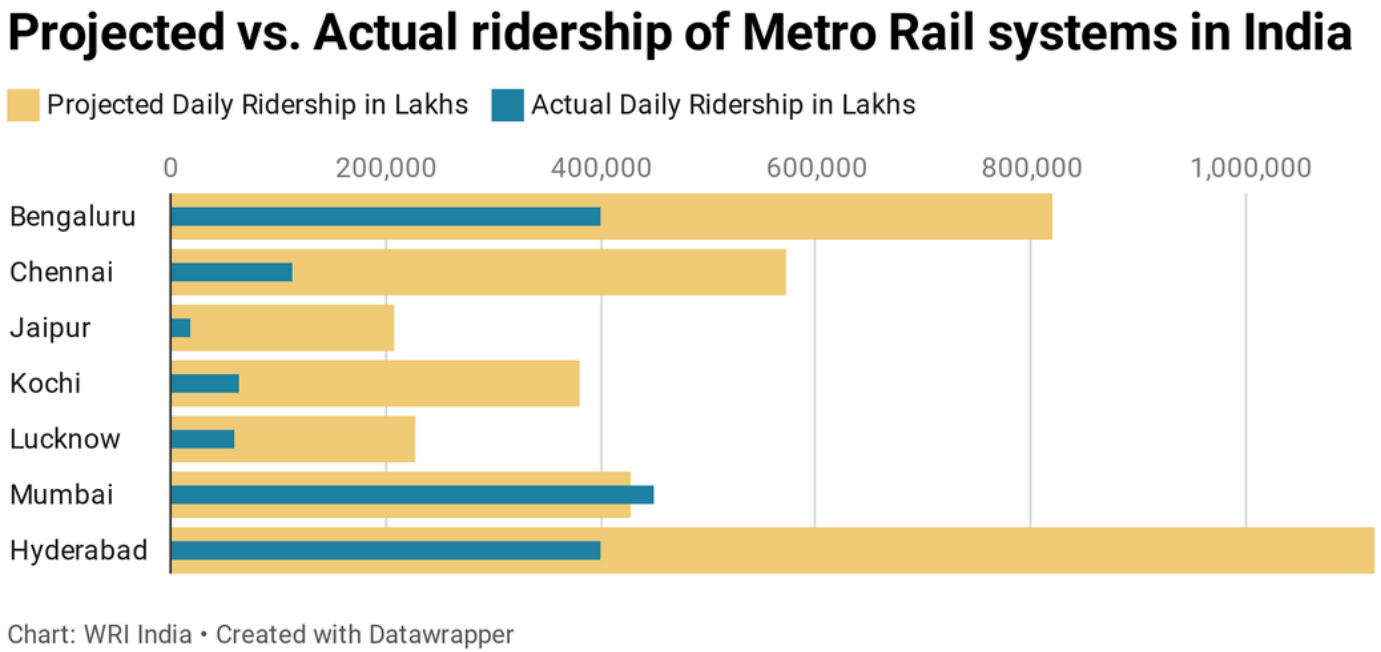
₹ 79,500 Crore

of investment required by 2029 annually
for operating 1,54,850 buses

Data Source: STUs Profile and Performance 2019 – 2020

Calculations based on Opex cost of ₹80 and daily assured km of 160 km

CURRENT GAPS - Metro



Current Challenges

- **Low Ridership than estimated in DPRs**

  Lack of Last Mile Access

  Delayed realization of TOD

- **Optimum sharing of risk between the Government and Concessionaire to strengthen PPP**

EXISTING FINANCIAL SUMMARY AND GAPS – METRO RAIL

Metrorail Requirement by 2029

~ 2,595 km

Total metro rail length required in 20 L+ population cities

~ 711 km

of new metro lines to plan

~₹ 6,37,300 Crore

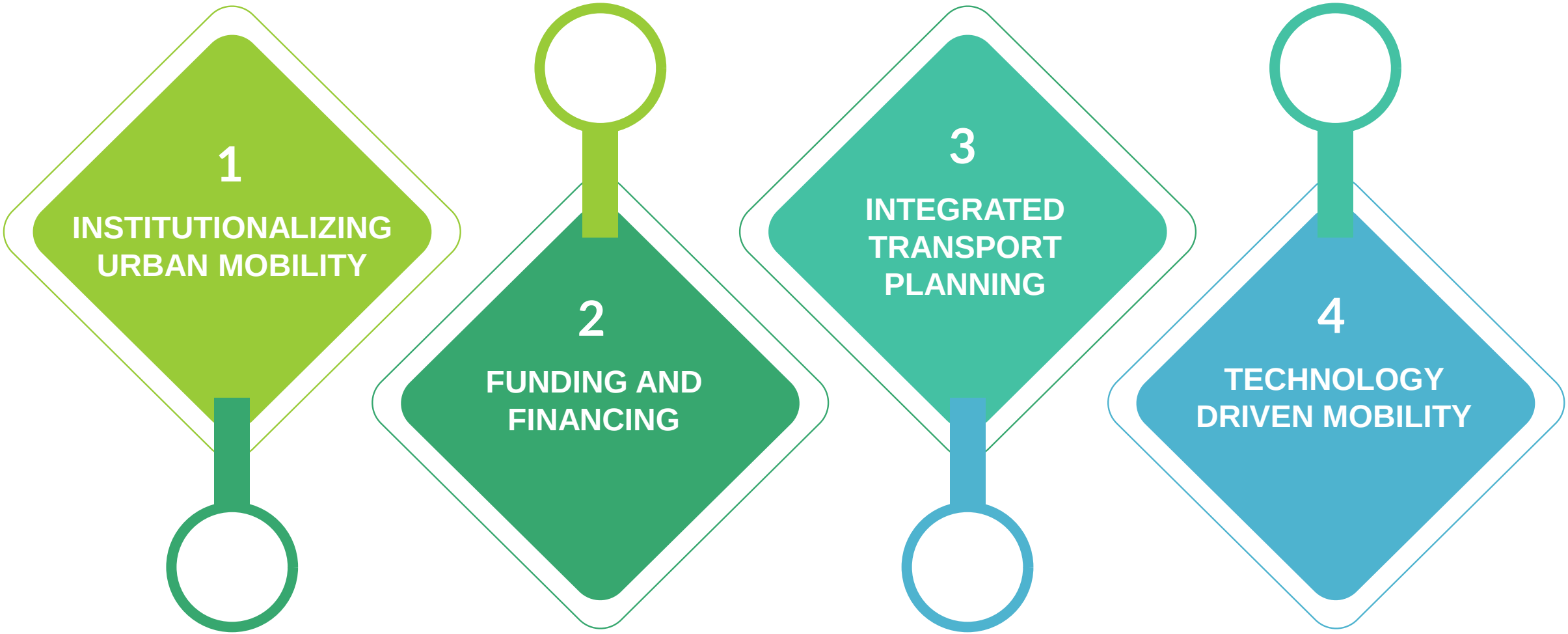
of investment required to construct additional 1,650 km MRT.

Data Source: STUs Profile and Performance 2019 – 2020

Calculations based on Opex cost of ₹80 and daily assured km of 160 km

DELIBERATED THEMES

Pillars for sustainable growth of Urban Mobility



WAY FORWARD FOR INDIA'S URBAN MOBILITY

RECOMMENDATIONS : INSTITUTIONALIZING PUBLIC TRANSPORT

Establish an Urban Transport Authority

- Unified Metropolitan Transport Authority (UMTA) to anchor policies, planning, and monitoring of all Urban Mobility projects.
- Create a legislative support to set up a financially backed, accountable UMTA.
- Direct all Urban Transport Fund (UTF) through UMTA.

Phase-wise Institutionalization of Urban Transport Authority

- Hereafter, UMTA to coordinate and conduct planning for urban mobility project.
- Eventually, within 3 years, it should shape up as a fully-fledged unified authority backed by legislative support for all urban transport needs.

RECOMMENDATIONS : INSTITUTIONALIZING PUBLIC TRANSPORT

Transport planning division in all Municipal Corporations

- Mandate of dedicated Urban Transport Cell (UTC) in all Million+ cities.
- UTC to onboard transport planners, transport engineers, data scientist, environment scientist, road safety advisor, contract management advisor to support Urban Mobility projects.
- Periodic capacity building should be undertaken for all levels of officers.

Comprehensive Mobility Plans to be deemed foundational for all urban transport projects

- CMPs must be acknowledged by all transport authorities involved in implementing, managing and financing projects.
- Nodal authority chaired at state level to ensure inputs of CMP, city development plan, and economic development plan feed into each other.

RECOMMENDATIONS : FUNDING AND FINANCING (1/2)

Funding Urban Transport

- State and Center should jointly fund for fixed infrastructure & operational VGF.
- Create consistent funding mechanism for PT at State and Union level.
- Mandate periodic fare revision policy. Public Transport Authroity to compensate for delay in revision and discounts.

Urban Transport Fund (UTF)

- Create 3-Tier UTF at City – State – Union level
- Revenue alignment

City – UTF

- parking charges,
- land use change fee,
- land value capture,
- sale of FSI – TDRs,
- share of property tax,
- betterment levy
- environment cess

State – UTF

- share of vehicle tax,
- share of stamp duty,
- development charges at higher rate,
- Fuel cess

National – UTF

- Fuel cess,
- Grants

RECOMMENDATIONS : FUNDING AND FINANCING (2/2)

Financing Urban Transport

- Leveraging private sector financing through PPP model. New business models to be explored like leasing, HAM, service contracts, etc.
- Inclusion of buses & charging under infrastructure sub-sector
- Inclusion of PT under priority sector lending
- Formulate credit rating for Public Transport Authorities (PTAs) enabling access for affordable finance to PTAs as well as PPP service provider.
- Sector regulator for fare setting and dispute resolution for attracting PPP finances.

Urban Transport Finance Corporations (UTFC)

- Create UTFC to facilitate low-cost finance for PTAs (like IREDA for renewable energy projects, IRFC for Railways).

RECOMMENDATIONS : INTEGRATED TRANSPORT PLANNING (1/2)

Integrated Planning Approach

- **Comprehensive Mobility Plan (CMP) for all Million+ Cities to be prepared in 1 year** prioritizing public transport, non-motorized transport (NMT) and pedestrian facilities.
- Mobility data (not more than 3-year-old) and transport model of CMP should be an input for Detailed Project Report (DPR) for all mobility project.
- DPRs to incorporate alternate analysis, financing model and IRR.
- Review and update CMP and long-term policies on urban mobility every 5-years.

Transit Oriented Development (TOD)

- **TOD principles to be adopted in Development Plan by all Million+ Cities**.
- Preparation of Local Area Plan (LAP) by concerned planning authority.
- Utilization of air-space above transit hubs/stations for TOD.
- Incentives for timebound implementation of TOD.
- Conduct periodic impact assessment of outcomes; review & update policy.

RECOMMENDATIONS : INTEGRATED TRANSPORT PLANNING (2/2)

Last Mile Connectivity (LMC)

- **Mandate LMC design in Mass Transit Plans**
- Metro DPR to include LMC and feeder buses as package with service standards. EFC and Cabinet approval linked to comprehensive proposal.
- Plan LMC for PT influence area up to 500m/1000m from stations
- Consent of ULB for implementing LMC to avail funds under mass transit
- Design for universal access, safety and user experience.

Cohesive Policies

- **All urban transport policies to disincentivize private modes and support public transport and NMT**.
- Mandate to evolve and enforce parking policy.
- Development Control Regulation (DCR) to improve walkability.
- Cities to adopt congestion charges from private vehicles.

RECOMMENDATIONS : TECHNOLOGY (1/2)

Technology Integration in Urban Transport

- Integration of ITMS and Fare System in city
- Integrate fare across all modes in a city
- Scaling-up adoption of National Common Mobility Card (NCMC)

Leverage Power of OPEN Data in Urban Transport

- Open Transit Data Policy to be adopted by PTAs.
- Available data immediately to be opened for public. GoI to link release of funds.
- GoI to develop Open data standards and communication protocols for better integration and interoperability.
- For service discovery, journey planning and payments.

RECOMMENDATIONS : TECHNOLOGY (2/2)

Leveraging Advance Technology for Assessing and Managing Demand

- Develop a framework to use telecom or GPS data to assess travel pattern
- Using CCTV footage for travel demand management on urban roads

THANK YOU

Courtesy to State Government, UTs, Municipal Corporation, Metro Corporations, State Transport Undertakings, and Experts from CEPT, IIT, WRI India and ICCT.