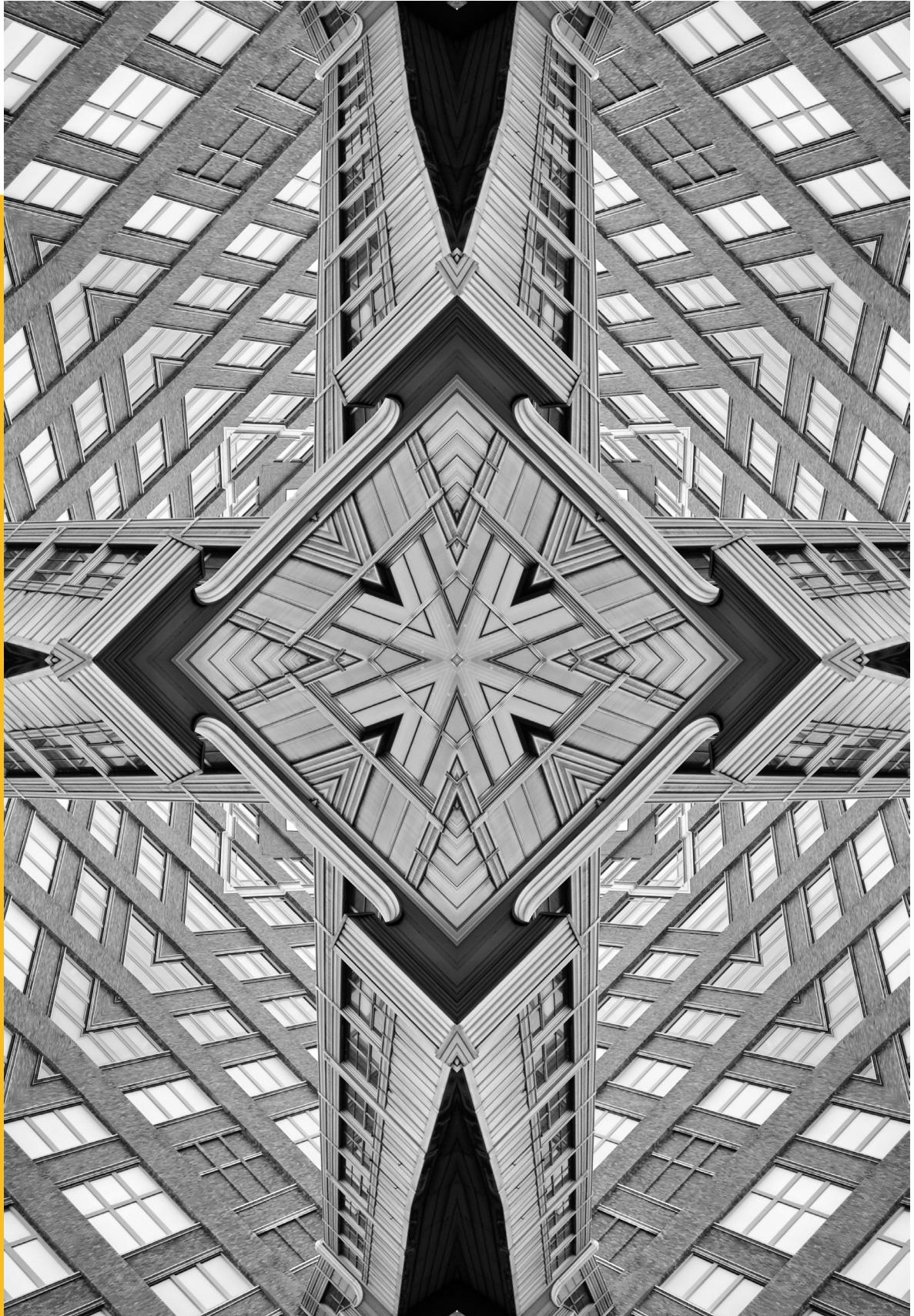


Occasional Paper



ISSUE NO. 481 JUNE 2025

© 2025 Observer Research Foundation. All rights reserved. No part of this publication may be reproduced, copied, archived, retained or transmitted through print, speech or electronic media without prior written approval from ORF.

Comprehensive Mobility Planning in Indian Cities: Challenges, Gaps, and the Way Forward

Nandan H. Dawda

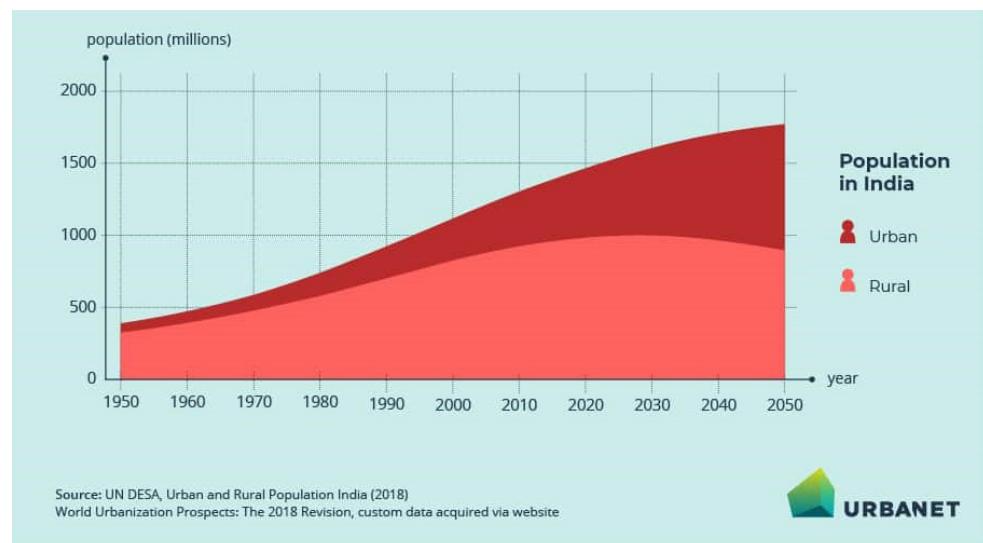
Abstract

India's rapid urbanisation is resulting in massive mobility challenges, including congestion, inadequate public transport, and poor infrastructure for non-motorised transport. To address these issues, the Government of India introduced the Comprehensive Mobility Plan (CMP) as a strategic framework that emphasises the movement of people and goods, unlike traditional transport planning focused on vehicular flow. Under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), CMPs became mandatory for cities seeking Central infrastructure funding. This paper examines the mobility plans of seven Indian cities—Ahmedabad, Surat, Greater Kochi, Nagpur, Bhubaneswar, Hyderabad, and Chennai—to evaluate their effectiveness in tackling urban transport issues. It recommends the alignment of CMPs with master plans, building institutional capacity, promoting participatory planning, and exploring innovative financing to foster resilient, low-carbon mobility systems and enhancing urban quality of life.

Introduction

In 2021, India experienced an urbanisation rate of 1.34 percent, reflecting a year-on-year growth of 1.5 percent.¹ Notably, India has surpassed China to become the most populous nation globally, with its urban population reaching approximately 475 million.² Projections suggest that by 2050, approximately 68 percent of the global population will reside in urban areas, with India expected to witness an urban influx of 416 million individuals.³ The exponential population growth of India is shown in Figure 1.

Figure 1: Projected Population of India (Urban and Rural)



Source: URBANET⁴

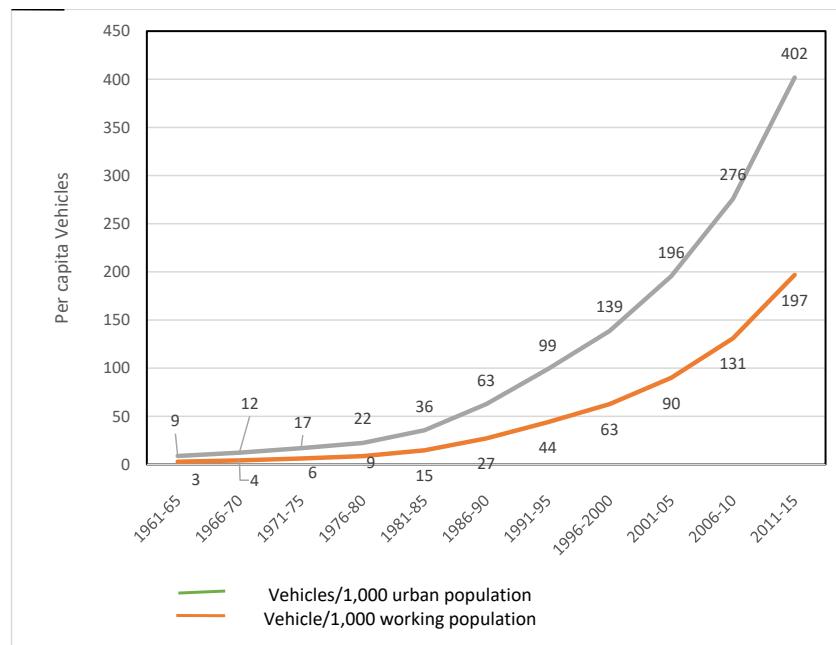
India is home to nearly 475 cities, each with a population exceeding 100,000.⁵ These cities contribute approximately 63 percent to India's gross domestic product (GDP), a proportion likely to rise to 75 percent by 2030.⁶ The operational efficiency of these urban areas is vital for sustaining India's economic growth, as any inefficiencies may impede the country's development trajectory.⁷

Introduction

Rapid urbanisation has led to various challenges, including overcrowding, housing shortages, the proliferation of slums, environmental pollution, inadequate water supply and sanitation, social inequality, poverty, traffic congestion, and deficiencies in urban transportation infrastructure.⁸

Viewed specifically from an urban transportation perspective, urbanisation, along with an increase in consumers' purchasing capacity, has led to a rise in the number of vehicles per 1,000 urban residents from nine during the period 1961–1965 to 402 in 2011–2015. Additionally, the number of vehicles per 1,000 members of the working population in India has also increased, from three in 1961–1965 to 197 in 2011–2015. (See Figure 2.)

Figure 2: Vehicles per 1,000 Population to Working and Urban Populations in India



Source: S. Vijayalakshmi et al.⁹

Introduction

This has led to negative externalities, including road congestion, increased traffic accidents, a shortage of parking spaces, poor air quality in urban areas, insufficient infrastructure for non-motorised transport, and an inadequate public transportation system.¹⁰ In many Indian cities, the prevailing urban transport planning approach—which has focused on constructing flyovers, managing traffic flow, improving junctions, and developing rapid transit systems—is a key contributing factor for this scenario.¹¹ This strategy has led to a fragmented and unsustainable urban transport system, characterised by short-term, reactive, and piecemeal solutions. Consequently, Indian cities continue to face persistent mobility challenges, necessitating a more holistic and sustainable approach to urban transport planning.¹²

Despite comprehensive mobility plans (CMPs) being the prerequisite for receiving Central funding for infrastructure development over a decade, their practical efficacy remains poorly studied across cities. With this background, the present study seeks to evaluate the CMPs of seven Indian cities and address the following questions:

- Who prepares the CMP and when? This aspect examines parameters such as the horizon period, the agencies involved in its development, and the previous initiatives undertaken by the city.
- What does the CMP address? This section assesses the vision, goals, and objectives articulated in the CMP document to gauge the overall direction and scope of the plan.
- How does a CMP address urban transport challenges? This analysis investigates the key strategies proposed by the CMPs to tackle urban mobility issues, with a focus on sustainable urban transport planning in Indian cities.

This paper aims to analyse and evaluate urban transport planning documents, specifically CMPs, to assess their strategic alignment, content, and implementation readiness. The focus is on document-based analysis instead of empirical investigation. While the inclusion of primary data from stakeholder consultations could offer additional depth,

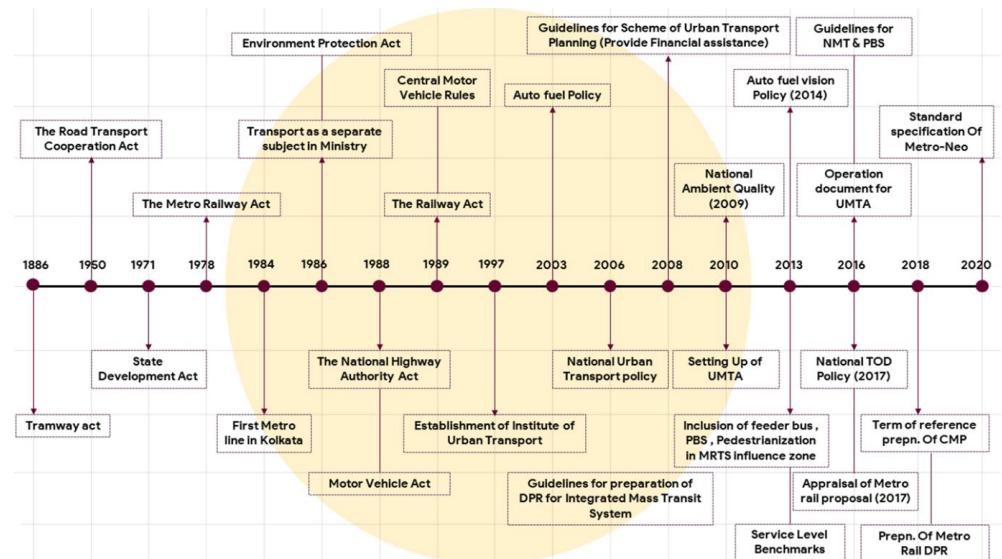
Introduction

such data collection falls outside the defined scope and methodological framework of this study. This approach was intentionally adopted to maintain consistency in evaluating planning documents across multiple cities using secondary sources. Future research could build upon this study by incorporating stakeholder perspectives to further enrich the understanding of institutional dynamics and ground-level challenges in CMP implementation.

The Evolution of CMPSs in India

Historically, transportation policies in India have prioritised vehicular movement over the development of efficient and user-centric transport systems. This approach has led to an overemphasis on private vehicle use, neglecting the potential benefits of a well-integrated and efficient public transportation system in mitigating transport-related externalities.¹³ Figure 3 shows the various urban transport planning initiatives taken by the Indian government.

Figure 3: Evolution of Urban Transport Planning in India



Source: Author's own, using various sources.¹⁴

The first landmark mission dedicated to addressing urban issues was the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), launched in 2005.¹⁵ The Mission strategically emphasised enhancing urban infrastructure efficiency, improving service delivery mechanisms, fostering community participation, and strengthening the accountability of urban local bodies (ULBs) and parastatal agencies in ensuring sustainable urban mobility.

The Evolution of CMPs in India

Following the JNNURM, the National Urban Transport Policy (NUTP), 2006 introduced a shift in urban transport planning.¹⁶ Its primary objective was to facilitate safe, affordable, efficient, comfortable, reliable, and sustainable access to employment, education, recreational facilities, and essential services for the rapidly expanding urban population.

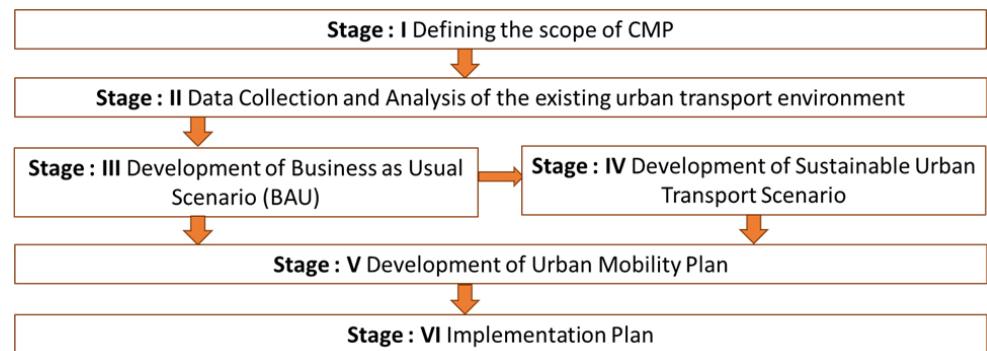
A key reform introduced under the JNNURM was the development of a CMP by each city. A CMP is a strategic framework for improving urban transportation by enhancing accessibility and mobility for both individuals and goods, designed in coordination with a city's spatial development plan.¹⁷

The primary objective of a CMP is to optimise the mobility pattern of people and goods instead of focusing solely on vehicles. It aims to address urban transport challenges by promoting efficient mobility while optimising the utilisation of existing infrastructure and improvements in public transportation systems, pedestrian pathways, and facilities for non-motorised transport (NMT). It seeks to enhance the efficiency of public and paratransit systems, ensure network connectivity, preserve pedestrian-friendly urban environments, control urban sprawl, and mitigate environmental degradation. It calls for integrating land use and transport planning, a fundamental requirement to advance the concept of smart cities.¹⁸

In line with this initiative, approximately 500 cities are set to develop their respective CMPs.¹⁹ To support ULBs in formulating effective mobility plans, the Ministry of Housing and Urban Affairs (MoHUA) in 2008 introduced a toolkit for CMP preparation,²⁰ which was subsequently revised in 2014.²¹ Additionally, in 2016, it introduced "A Toolkit for the Preparation of Low Carbon Mobility Plans" to further strengthen sustainable urban mobility strategies. MoHUA also introduced the "Terms of Reference (ToR) for the Preparation of Comprehensive Mobility Plans (CMPs)" as a directive to enhance the formulation of CMPs for Indian cities. The Terms of Reference outline a detailed five-stage methodology for preparing these plans (see Figure 4).²²

The Evolution of CMPs in India

**Figure 4: Methodology Flowchart for
CMP Preparation**



Source: ToR for preparing CMP²³

Despite these measures, the CMPs of several Indian cities highlight massive gaps in their formulation and implementation. Most of these plans are developed in isolation, with limited integration into broader city master plans.²⁴ Furthermore, they often follow a generic approach, resulting in a lack of customisation and adaptation to specific urban contexts. These CMPs fail to establish effective mechanisms for multimodal integration and propose realistic funding strategies and implementation frameworks.²⁵

Other challenges include reliance on outdated and incomplete data, non-compliance with national guidelines, and absence of a robust governance mechanism for on-ground execution.²⁶ For instance, in Nagpur, although the CMP outlines mass rapid transit corridors and intelligent traffic systems, the implementation remains fragmented due to delays in state-level approvals and lack of institutional clarity.²⁷ Similarly, in Bhubaneswar, the expansion of the Cuttack Ring Road has seen slow progress despite being identified in the CMP, mainly due to interagency coordination issues, and procedural delays in land acquisition and environmental clearances.²⁸

In Chennai, metro expansion under Phase 2 has been delayed by terrain and execution complexities, which are further exacerbated by institutional silos and the absence of a single-point coordination agency.²⁹ In Greater

The Evolution of CMPs in India

Kochi, meanwhile, despite the operationalisation of the Water Metro, the draft CMP recommends enhancements to the bus system, which are yet to be implemented due to weak institutional capacity and lack of coordinated implementation strategies.³⁰

This paper evaluates the CMPs of seven Indian cities: Ahmedabad, Surat, Greater Kochi, Nagpur, Bhubaneswar, Hyderabad, and Chennai. It will offer policy recommendations to enhance urban transport planning in India, focusing on improving the formulation of CMPs.

Selection of Study Areas

The selection of seven cities as case studies was based on the need to encompass typological heterogeneity and geographical representativeness while ensuring the accessibility of essential data for a rigorous comparative evaluation of their respective CMPs. These cities exhibit considerable divergence across key demographic and infrastructural parameters, including population (ranging from approximately 0.8 million inhabitants in Bhubaneswar to 11.2 million in Chennai), spatial extent (ranging from 252 square kilometres in Bhubaneswar to 6,852 square kilometres in Hyderabad), and the length of their extant road networks (varying from 1,168 kilometres in Kochi to 6,010 kilometres in Chennai). This heterogeneity permits a multiscalar investigation into the urban mobility strategies implemented.

Furthermore, modal share was another criterion considered as the data revealed disparate transportation characteristics among the selected cities. Notably, the utilisation of non-motorised transport (NMT) modes is most prevalent in Surat (43 percent) and Greater Kochi (42 percent), signifying a substantial potential for the advancement of NMT infrastructure within these contexts. Conversely, public transport (PT) patronage is most pronounced in Hyderabad (31 percent) and Chennai (28.2 percent), highlighting their reliance on mass transit systems. The cities also represent a spectrum of urban development phases and the maturity of their transport planning endeavours—from cities with established and operational metropolitan rail networks (e.g., Chennai, Hyderabad, and Ahmedabad) to those where such systems remain in the preliminary planning stages (e.g., Bhubaneswar). Moreover, incorporating cities with distinct road network configurations (e.g., ring-radial versus fragmented grid patterns) and varying degrees of infrastructural complexity enhances the analytical depth of CMPs in addressing diverse urban morphologies.

To capture the diverse approaches adopted across Indian cities in urban transport planning, the study did not limit the analysis strictly to finalised comprehensive mobility plans. Instead, a broader range of mobility planning documents was considered to reflect the contextual and institutional variations in how cities conceptualise and implement their mobility strategies. For Bhubaneswar, the *Low Carbon Mobility Plan* was

Selection of Study Areas

selected, as it serves the functional role of a CMP by outlining sustainable transport interventions aligned with the city's mobility and environmental objectives.

In the case of Ahmedabad, the *Integrated Mobility Plan* was included due to its comprehensive scope and alignment with the principles of a CMP, addressing multimodal integration, infrastructure planning, and policy direction. For Greater Kochi, the *draft CMP* was considered appropriate for analysis, as it represents the most recent and relevant planning effort, reflecting current priorities, stakeholder consultations, and strategic mobility directions, despite not yet being finalised. This inclusive approach allows for a more representative and nuanced evaluation of mobility planning practices across diverse urban contexts.

The key characteristics of the selected cities are presented in Table 1.

Table 1: Characteristics of Case Cities

Cities	City Characteristics		Modal Share (%)							Road Characteristics	
	Population (in millions)	Area (km ²)	2W	4W	NMT	PT	IPT	Other	Road pattern	Road length (km)	
Bhubaneswar	0.8	252	53	7	12	10	16	2	Ring radial	1,600	
Nagpur	2.9	1,550	65	9	3	10	10	3	Ring radial	1,907	
Ahmedabad	8.2	4,708	27	4	47	13	5	4	Ring radial	5,868	
Surat	7.3	1,351	36	2	43	1	10	9	Ring radial	2,578	
Chennai	11.2	1,189	29.6	7.1	26	28.2	7.1	2	Ring radial	6,010	
Hyderabad	10.2	6,852	42	9	4	31	10	4	Ring radial	4,900	
Greater Kochi	2.1	632	26	10	15	42	4	3	Broken, grid iron	1,168	

Source: Author's own, using various secondary sources

Selection of Study Areas

The population and geographical expanse of these cities were sourced from the 2011 Census. However, to determine the modal share of transportation within these cities, efforts were made to acquire the most up-to-date and pertinent data available. To this end, contemporary government publications, such as the Comprehensive Mobility Plan and the City Development Plan, along with other relevant documents, were meticulously chosen and studied. It is important to note that the data presented in Table 1 covers the 2011-2022-time frame.

Fragmented Planning Approach

Table 2 illustrates a comprehensive analysis for the first research question about who prepares the CMP and when.

Table 2: Horizon Period, Agencies Involved, and Past Efforts

City	Year	Horizon Period (Years)	Agency	Agencies Involved	Past Efforts
Bhubaneswar	2018	20	Bhubaneswar Development Authority (BDA)	<ul style="list-style-type: none">• Bhubaneswar Development Authority (BDA)• Bhubaneswar Municipal Corporation (BMC)• Capital Region Urban Transport (CRUT)• Traffic Police	<ul style="list-style-type: none">• City Development Plan (CDP) for Bhubaneshwar (2010)• Bhubaneswar Smart City Proposal (2016)
Greater Kochi	2017	30	Kochi Metro Rail Limited (KMRL)	<ul style="list-style-type: none">• Greater Cochin Development Authority• Cochin Municipal Corporation• State Urban Development Department• Kerala Police• Public Works Department	<ul style="list-style-type: none">• Vyttila Mobility Hub Project (2012)• CMP for Kochi (2012)

Fragmented Planning Approach

City	Year	Horizon Period (Years)	Agency	Agencies Involved	Past Efforts
Chennai	2018	30	Chennai Metropolitan Development Authority (CMDA)	<ul style="list-style-type: none"> Chennai Unified Metropolitan Transport Authority (CUMTA) Public Works Department National Highway Authority of India Municipal Corporation Traffic Police 	<ul style="list-style-type: none"> Chennai Comprehensive Transportation Study (2010) Chennai City Partnership Project (2022)
Surat	2016	30	Surat Municipal Corporation (SMC)	<ul style="list-style-type: none"> Urban Development Department, Gujarat Transport Department, Gujarat Surat Urban Development Authority (SUDA) Khajod Urban Development Authority (KUDA) Surat Municipal Corporation Traffic Police 	<ul style="list-style-type: none"> CMP for Surat (2008) Comprehensive Traffic and Transportation Studies (2006)

Fragmented Planning Approach

City	Year	Horizon Period (Years)	Agency	Agencies Involved	Past Efforts
Nagpur	2018	20	Nagpur Municipal Corporation (NMC)	<ul style="list-style-type: none"> Housing and Urban Planning Department State Urban Development Department Public Works Department National Highway Authority of India (NHAI) Superintendent of Police-Traffic, Nagpur Nagpur Development Authority (NDA) 	<ul style="list-style-type: none"> Non-Motorised Transport (NMT) Policy Nagpur Smart City Plan Integrated Transport System (ITS) Project
Ahmedabad	2017	20	Ahmedabad Municipal Corporation (AMC)	<ul style="list-style-type: none"> Urban Development Department, Gujarat Transport Department, Gujarat Ahmedabad Urban Development Authority (AUDA) Gandhinagar Urban Development Authority (GUDA) Ahmedabad Municipal Corporation Traffic Police Gujarat State Road Transport Corporation (GSRTC) 	<ul style="list-style-type: none"> Ahmedabad Mobility Plan (2006–2011) Janmarg–Ahmedabad Bus Rapid Transit System (BRTS) Plan (2009)

Fragmented Planning Approach

City	Year	Horizon Period (Years)	Agency	Agencies Involved	Past Efforts
Hyderabad	2013	30	Hyderabad Metropolitan Development Authority (HMDA)	<ul style="list-style-type: none"> • Hyderabad Metropolitan Development Authority (HMDA) • Greater Hyderabad Municipal Corporation (GHMC) • Telangana State Road Transport Corporation (TSRTC) • Hyderabad Metro Rail Limited (HMRL) • South Central Railway (SCR) 	<ul style="list-style-type: none"> • Integrated Multimodal Transit System (IMTS) • Non-Motorised Transport (NMT) • Traffic Management

Source: Compiled using various documents: CMP Bhubaneswar,³¹ CMP Greater Kochi,³² CMP Chennai,³³ CMP Surat,³⁴ CMP Nagpur,³⁵ CMP Ahmedabad,³⁶ CMP Hyderabad,³⁷ CEPT Portfolio M23³⁸

Note: The initiatives highlighted here represent select efforts undertaken by urban local bodies (ULBs) under various schemes and missions as well as by policy think tanks. The list is not exhaustive.

The comparative analysis reveals critical issues around the timings and the responsible entities involved in the preparation of the CMPs.

- There is considerable variation in the temporal horizons of CMPs, ranging from two to three decades. This inconsistency poses challenges for long-term mobility planning and hinders seamless integration with national policy frameworks.
- The development of a CMP involves multiple agencies, as shown in Table 2. The lack of effective interagency coordination among key stakeholders—such as municipal corporations, urban development authorities, and traffic police—present challenges.
- The limited participation of essential stakeholders, including public transport operators, environmental agencies, and local communities,

Fragmented Planning Approach

represents a crucial gap in the CMP development process. Although cities have previously undertaken urban transport initiatives, such as smart city plans, NMT policies, and traffic studies, these efforts are not always systematically integrated into current CMP preparation.

Table 3 highlights the analysis of the second research question, examining what the CMP aims to address. The findings reveal a lack of synergy between the visions, goals, and objectives of the seven CMPs.

Table 3: Visions, Goals, and Objectives of the CMPs

City	Vision	Goals	Objectives
Bhubaneswar	A transit-oriented city that is well connected and climate-resilient, and which promotes inclusive, safe and clean mobility choices while reducing GHG emissions.	<ul style="list-style-type: none">Promotion of transit stations for transport modesDecrease unnecessary travel by fostering mixed-use areas that combine housing, educational, recreational opportunities with socioeconomic diversity, fostering a liveable city.Strengthen NMT, safe intersections, and green public places.Low-emission transport, walking and cycling, and affordable public transport	<ul style="list-style-type: none">Promotion of transit stations for transport mode changes between cyclists, pedestrians and public transport, creating a compact urban form and a transit-oriented city.Decrease unnecessary travel by fostering mixed-use areas that combine housing, educational, recreational opportunities with socioeconomic diversity, fostering a liveable city.Strengthen NMT, safe intersections, and green public places and corridors for a child-friendly city.Low-emission transport, walking and cycling, and affordable public transport to reduce air pollution and GHG emissions, creating an eco-city.

Fragmented Planning Approach

City	Vision	Goals	Objectives
Greater Kochi	Establishing a planned urban transport system that is safe, reliable, universal, accessible, and sustainable	<ul style="list-style-type: none">• Public transit system in conformity with land use• Safety for pedestrians and cyclists• Traffic and transport solutions, and parking system to reduce demand for private vehicles	<ul style="list-style-type: none">• To develop a perspective plan for sustainable urban transport over a 20-year planning horizon.• To develop and evaluate transport strategies that integrate land use and mobility options that are cost-effective, equitable, and also environment-friendly.• To suggest immediate/short-/medium-/long-term projects to meet the mobility needs of the city—both present and future.• To ensure the most appropriate, sustainable, and cost-effective implementation programme for the urban mass transit sector.

Fragmented Planning Approach

City	Vision	Goals	Objectives
Chennai	An efficient and sustainable system that provides integrated, safe, and convenient mobility to people of all abilities as well as goods.	<ul style="list-style-type: none">Develop a public transit system in conformity with the land use that is accessible, efficient, and effectiveSafety and mobility of pedestrians, and the development of parking solutionsTraffic and transportation solutions that are environmentally sustainable, economically and financially viable	<ul style="list-style-type: none">To illustrate a basic plan for urban development, and include a list of proposed urban land use and transport measures to be implemented within a time span of 30 years.To ensure the most appropriate, sustainable, and cost-effective implementation programme for the urban transport sector.To identify feasible short-, medium-, and long-term traffic management measures and transport infrastructure to facilitate the safe and efficient movement of people.

Fragmented Planning Approach

City	Vision	Goals	Objectives
Surat	Safe, Sustainable, Accessible, Reliable, Advanced Low-Carbon Mobility in Surat (SARAL)	<ul style="list-style-type: none">Promote low-carbon mobility.Bring advanced technological applications in transport.Enhance accessibility, provide safe and sustainable transport.Reliable multimodal transport	<ul style="list-style-type: none">Improved safety for all modes of transport: The CMP aims to create a safer transportation system by reducing accidents, improving road infrastructure, and implementing measures to ensure the safety of pedestrians, cyclists, and motorists.Enhanced accessibility: The plan aims to make the transportation system more accessible by improving public transport services, developing NMT infrastructure, and making the system more inclusive for people with disability.Promote sustainable transport: The CMP aims to promote sustainable transport options by encouraging the use of public transport, promoting walking and cycling, and reducing the use of private vehicles.

Fragmented Planning Approach

City	Vision	Goals	Objectives
Nagpur	A systematically planned urban transport system for the mobility of people and goods that is safe, efficient, economical, and sustainable, and supports economic development	<ul style="list-style-type: none"> • A public transit system in conformity with land use • Ensure safety and mobility of pedestrians and cyclists by designing streets and areas that are NMT-friendly. • Develop traffic and transport solutions. • Introduce a parking policy that discourages the demand for parking and the need for the private mode of transport; facilitate organised parking. 	<ul style="list-style-type: none"> • Develop a public transit system in conformity with land use that is accessible, efficient, and effective. • Ensure the safety and mobility of pedestrians and cyclists by designing streets and areas that make a more desirable, liveable city for residents and visitors, and support the public transport system. • Develop traffic and transport solutions that are economically and financially viable, and environmentally sustainable for efficient and effective movement of people and goods. • Develop a parking system that reduces the demand for parking and the need for the private mode of transport, and also facilitates organised parking for various types of vehicles.

Fragmented Planning Approach

City	Vision	Goals	Objectives
Ahmedabad	Integrate the city structure and transport system towards greater accessibility with efficient mobility and lower carbon emissions.	<ul style="list-style-type: none">Develop transportation infrastructure for supporting the economic development envisaged.Facilitate efficient movement of people and goods by improving the transportation network and by also providing more transportation choices.Provide a sustainable and safer transportation system by focusing on NMT and PT modes.	<ul style="list-style-type: none">The CMP aims to develop a comprehensive and integrated mobility plan that takes into account all modes of transportation, such as walking, cycling, public transport, and private vehicles.The plan aims to reduce traffic congestion by promoting the use of public transport, walking, and cycling, and by improving the road network and traffic management systems.The CMP aims to improve the quality and accessibility of public transport by introducing new services, enhancing the existing ones, and integrating these with other modes of transport.The plan aims to promote non-motorised transport, such as walking and cycling, by providing safe and convenient infrastructure, and by holding awareness campaigns.

Fragmented Planning Approach

City	Vision	Goals	Objectives
Hyderabad	Develop various land use and transport scenarios for the horizon year 2041, forecast the travel demand, and develop alternative transport strategies.	<ul style="list-style-type: none"> To understand the current shifts in travel demand and characteristics To forecast future demands and characteristics To work out a comprehensive traffic and transportation plan for the metropolitan area 	<ul style="list-style-type: none"> To improve the efficiency and effectiveness of the transportation system by providing safe, affordable, reliable, and sustainable transport options to all citizens. To reduce congestion on the roads and enhance the overall mobility of people and goods within the city. To promote the use of public transportation and non-motorised modes of transport, such as walking and cycling, to reduce reliance on private vehicles and minimise environmental impact. To improve the accessibility of different parts of the city to ensure equitable access to transportation services. To enhance the quality of life by improving air quality, reducing noise pollution, and promoting active and healthy lifestyles.

Source: Compiled using various documents: CMP Bhubaneswar,³⁹ CMP Greater Kochi,⁴⁰ CMP Chennai,⁴¹ CMP Surat,⁴² CMP Nagpur,⁴³ CMP Ahmedabad,⁴⁴ CMP Hyderabad,⁴⁵ CEPT Portfolio M23⁴⁶

Fragmented Planning Approach

An analysis of the visions, goals, and objectives of the various CMPs reveal the following issues.

- Most of the CMPs present forward-looking visions, emphasising sustainability, accessibility, and efficiency. While Bhubaneswar, Surat, and Ahmedabad prioritise low-carbon and transit-oriented development principles, demonstrating a commitment to environmentally sustainable urban mobility, Hyderabad focuses on data-driven planning with a strong accent on land use and transport scenario forecasting. It can be stated that the vision statement has a spectrum of focus areas based on the needs of the city.
- All CMPs prioritise sustainable transport modes, including non-motorised transport (NMT), public transport (PT), and transit-oriented development (TOD). Bhubaneswar, Surat, and Ahmedabad explicitly advocate for walking, cycling, and low-emission mobility options. However, other cities, such as Greater Kochi and Nagpur, focus on transport-land use integration and traffic management.
- A well-integrated land use and transport framework is crucial for sustainable urban mobility. Chennai, Nagpur, and Ahmedabad emphasise integrating transport infrastructure and land use planning to enhance efficiency. However, many plans fail to thoroughly explore the potential of mixed-use development and high-density corridors, both of which are essential for minimising urban sprawl and improving first- and last-mile connectivity.
- The CMPs of Bhubaneswar, Greater Kochi, and Surat include specific goals for improving street design and developing pedestrian- and cyclist-friendly infrastructure. However, all these CMPs do not address safety measures. Furthermore, while accessibility for people with disability is mentioned in some plans (e.g., in those for Chennai and Hyderabad), a strong commitment to equitable transport solutions for marginalised communities remains largely absent.
- Most CMPs outline short-, medium-, and long-term goals and objectives; the level of detail in their implementation strategies varies considerably. For example, Hyderabad emphasises forecasting and alternative scenarios but lacks an implementation roadmap. Likewise, the CMPs of Surat and Ahmedabad provide limited clarity on governance frameworks, funding mechanisms, and robust monitoring

Fragmented Planning Approach

strategies. Additionally, the complexity of approval processes, challenges associated with land acquisition, financing constraints, and various technical hurdles inherent in urban infrastructure development have collectively contributed to delays. Consequently, a considerable time lag exists between the initial planning and the actual commencement of metro rail services. A summary of these time lags across selected cities is presented in Table 4.

Table 4: Time Lag from Initial Planning to Commencement of Metro Rail Services

City	Planning Initiated	Construction Approval	Commencement of First-Phase Operations	Time Gap (Years)
Bhubaneswar ^{47,48}	2023	November 2023	Expected by 2027	-
Nagpur ^{49,50}	2013	August 2014	8 March 2019	6
Ahmedabad ^{51,52}	2014	October 2013	6 March 2019	5
Surat ^{53,54}	2012	March 2019	Expected by December 2027	15
Chennai ^{55,56}	2007	November 2007	29 June 2015	8
Hyderabad ^{57,58}	2006	2010	29 November, 2017	11
Kochi ^{59,60}	2004	July 2012	17 June, 2017	13

- Nagpur, Greater Kochi, and Chennai include parking policies aimed at discouraging private vehicle use and promoting organised parking solutions. However, robust congestion management solutions beyond public transport promotion remain limited. A more holistic approach is required, incorporating strategies such as congestion pricing, smart traffic management, and intelligent transport systems (ITS) to effectively address urban mobility challenges.

Fragmented Planning Approach

- While sustainability is a common theme across CMPs, only a few cities explicitly address air pollution, vehicular emissions, and noise pollution as urban transport concerns. While Bhubaneswar and Surat integrate climate resilience into their transport planning, others lack detailed strategies for monitoring and mitigating environmental impacts. For instance, the Bhubaneswar Comprehensive Mobility Plan (CMP) strategically incorporates climate change resilience into its transport planning framework through the synergistic application of low-emission methodologies and infrastructural modifications. These interventions are designed to augment the city's adaptive capacity against risks precipitated by climatic shifts.

A central tenet of this approach is the establishment of a climate-resilient transport network, involving the re-engineering of essential vehicular arteries with enhanced drainage systems, robust viaduct constructions, and fortified road surfaces designed to endure severe meteorological phenomena. Furthermore, the CMP advocates for the augmentation of non-motorised transport (NMT) infrastructure, encompassing the development of 120 kilometres of pedestrian-oriented pathways and 40 kilometres of exclusive, segregated cycling routes, with the dual objectives of fostering low-carbon transit and mitigating urban heat island effects. Moreover, the plan underscores a commitment to transitioning towards cleaner energy sources via the acquisition of 50 battery-electric buses and the formulation of a supportive electric mobility directive in partnership with the International Finance Corporation (IFC).

The envisioned Multimodal Transit Centre (MMTC) represents another pivotal undertaking, intended to integrate diverse public and paratransit modalities while prioritising energy efficiency and climate-adaptive infrastructure design. Complementarily, transit-oriented development (TOD) strategies are being devised to encourage high-density, mixed-use urban configurations that curtail travel distances and bolster sustainable mobility paradigms. Cumulatively, these integrated strategies establish Bhubaneswar's CMP as a progressive blueprint that fundamentally integrates climate resilience within the domain of urban mobility planning.

Tackling Urban Transport Challenges

The CMPs of the seven cities have strategised their approach to addressing their transport challenges under the following domains: integrated land use transport system; comprehensive road network planning; integrated multimodal public transport system; NMT facilities; parking management; and intelligent transport system facilities. The detailed strategies proposed by each city under the domains are shown in Table 5.

Table 5: Strategies Proposed in the CMPs of the Select Cities

City	Integrated Land Use Transport System	Comprehensive Road Network Planning	Integrated Multimodal Public Transport System	Non-Motorised Transport	Parking Management	Intelligent Transport System Facilities
Bhubaneswar	<ul style="list-style-type: none"> Identifying areas for TOD Multimodal transit 	NA	<ul style="list-style-type: none"> 780 buses on 25 routes with 500 e-rickshaws 10 multimodal terminals 	<ul style="list-style-type: none"> 400 km of footpath on transit corridor 120 km of cycle lanes 	<ul style="list-style-type: none"> Off-street parking facilities Real-time information system for parking 	NA
Greater Kochi	<ul style="list-style-type: none"> Balanced spatial growth Minimising land requirements for transport Transit-oriented growth Minimising the need to travel 	<ul style="list-style-type: none"> Mobility corridors Ring-radial network pattern Flyovers, underpasses 	<ul style="list-style-type: none"> Route rationalisation Bus augmentation Multimodal integration 	<ul style="list-style-type: none"> Pedestrian-only plaza and streets Cycle tracks Public bike-sharing system 	NA	<ul style="list-style-type: none"> Smart signalling at intersections Real-time information systems for public transport Integrated ticketing system Smart parking technologies
Chennai	<ul style="list-style-type: none"> Promoting balanced spatial growth Promoting transit-oriented growth Minimising the need to travel 	<ul style="list-style-type: none"> Road widening/upgrade Development of missing links/new links/ring roads Road infrastructure development 	<ul style="list-style-type: none"> Rationalisation of route Development of mass rapid transit systems Intermodal mobility hubs and bus stops Public participation and campaigning programmes First- and last-mile connectivity 	<ul style="list-style-type: none"> Pedestrian crossing infrastructure Pedestrian mall facilities Development of cycle-friendly streets 	<ul style="list-style-type: none"> Designated parking spaces and pricing Parking standards near transit stations Shared parking 	NA

City	Integrated Land Use Transport System	Comprehensive Road Network Planning	Integrated Multimodal Public Transport System	Non-Motorised Transport	Parking Management	Intelligent Transport System Facilities
Hyderabad	<ul style="list-style-type: none"> Transit-oriented growth Minimising the need to travel 	NA	NA	<ul style="list-style-type: none"> Public bike-sharing system 	<ul style="list-style-type: none"> Off-street parking facilities On-street parking pricing 	<ul style="list-style-type: none"> Smart parking technologies Smart signalling at intersections
Nagpur	NA	<ul style="list-style-type: none"> Ring radial network pattern 	<ul style="list-style-type: none"> Mass rapid transit corridors City bus system improvement Multimodal transit hubs 	<ul style="list-style-type: none"> Construction of footpaths Construction of cycle tracks Public bike-sharing scheme 	<ul style="list-style-type: none"> Off-street parking facilities On-street parking pricing Restriction of on-street parking on certain corridors 	<ul style="list-style-type: none"> Automatic fare collection system (AFCS) Electronic ticketing machine (ETM)
Ahmedabad	<ul style="list-style-type: none"> Balanced spatial growth Minimising land requirements for transport Transit-oriented growth Minimising the need to travel 	<ul style="list-style-type: none"> Mobility corridors Ring-radial network pattern Flyovers, underpasses 	<ul style="list-style-type: none"> Route rationalisation Bus fleet augmentation Multimodal integration 	<ul style="list-style-type: none"> Pedestrian-only plaza and streets Cycle tracks Public bike-sharing system Clean footpaths 	NA	<ul style="list-style-type: none"> Smart signalling at intersections Real-time information systems for public transport Integrated ticketing system Smart parking technologies

City	Integrated Land Use Transport System	Comprehensive Road Network Planning	Integrated Multimodal Public Transport System	Non-Motorised Transport	Parking Management	Intelligent Transport System Facilities
Surat	<ul style="list-style-type: none"> Transit-oriented development Integrated multimodal public transport Accessibility improvements Redevelopment and revitalisation of vacated industrial areas 	<ul style="list-style-type: none"> Transit-ready streets Roadway design considering adjoining land use pattern and Road upgrade to create complete streets Proposed rights of way (RoWs) Proposed river bridges, rail underbridges/rail overbridges 	<ul style="list-style-type: none"> Rapid transit corridor Electric buses Fare integration 	<ul style="list-style-type: none"> The roads along which footpaths are to be added or widened are selected based on priority. Renovation of existing wide footpaths Awareness campaigns and initiatives Bicycle-sharing systems 	<ul style="list-style-type: none"> Demand management through pricing and other means Reduce private vehicle usage and dependency through travel demand management (TDM) strategies. 	<ul style="list-style-type: none"> Automated fare collection system Automated vehicle location system Vehicle scheduling and dispatch system Passenger information system

Source: Compiled using various documents: CMP Bhubaneswar,⁶¹ CMP Greater Kochi,⁶² CMP Chennai,⁶³ CMP Surat,⁶⁴ CMP Nagpur,⁶⁵ CMP Ahmedabad,⁶⁶ CMP Hyderabad,⁶⁷ CEPT Portfolio M23⁶⁸

Tackling Urban Transport Challenges

A comparison of the urban transport strategies proposed in the CMPs of the seven Indian cities reveals distinct approaches and varying levels of comprehensiveness:

- Bhubaneswar, Greater Kochi, Chennai, Ahmedabad, and Surat prioritise TOD and balanced spatial growth to minimise travel demand and mitigate urban sprawl. This approach fosters compact, walkable urban environments with enhanced accessibility to public transport. Nagpur, however, lacks a clearly defined TOD strategy, highlighting a gap in integrating transportation planning with urban development. Hyderabad and Surat demonstrate a more comprehensive redevelopment approach by integrating TOD with the revitalisation of vacated industrial areas.
- Besides Bhubaneswar and Hyderabad, all other cities incorporate comprehensive road network planning, including strategies such as mobility corridors, ring-radial network patterns, and road widening/upgradation. Surat and Chennai distinguish themselves by designing ‘transit-ready streets’ and considering land use during road upgrades, ensuring pedestrian-friendly infrastructure.
- Cities prioritise multimodal integration to improve connectivity across different transport modes. Bhubaneswar, Nagpur, and Surat plan to expand their bus systems and rapid transit corridors, with Surat specifically promoting electric buses and fare integration. Chennai and Greater Kochi adopt route rationalisation strategies to enhance bus efficiency. Hyderabad, however, lacks clear strategies for multimodal transport integration, which may hinder seamless connectivity across transit modes.
- Cities such as Bhubaneswar, Surat, Greater Kochi, and Ahmedabad emphasise pedestrian-friendly infrastructure, footpath construction, and public bike-sharing systems. Chennai introduces pedestrian malls and cycle-friendly streets, enhancing walkability. Hyderabad, however, does not clearly outline NMT strategies, missing an opportunity to promote sustainable and active mobility. While several cities propose cycle tracks and pedestrian plazas, there is a lack of uniformity in design standards and safety measures for vulnerable road users.

Tackling Urban Transport Challenges

- Most cities acknowledge the need for structured parking management. Bhubaneswar and Nagpur propose off-street parking and on-street parking pricing while Chennai, Hyderabad, and Ahmedabad seek to integrate smart parking technologies for efficient space utilisation. Surat adopts TDM strategies to reduce private vehicle dependency. However, few cities integrate strict parking regulations to effectively discourage excessive private vehicle use.
- Cities such as Greater Kochi, Ahmedabad, and Surat propose real-time information systems, automated fare collection, and vehicle location tracking to improve efficiency. Surat and Nagpur further propose passenger information systems and electronic ticketing. Bhubaneswar, however, lacks effective ITS strategies, which could limit operational efficiency and passenger convenience in the long term.
- All CMPs lack robust implementation frameworks and roadmaps, and well-defined and time-bound milestones. Bhubaneswar, for instance, outlines sustainable goals without providing a comprehensive roadmap with a staged approach for achieving them. The Greater Kochi plan discusses parking management systems but lacks specific project-level details. The Chennai CMP proposes potential funding sources but fails to provide comprehensive step-by-step project implementation plans. The Ahmedabad CMP details various strategies but neglects to address the governance aspects necessary for managing the urban transport system. The Nagpur CMP provides details of strategies but lacks clarity regarding the implementation timelines for long-term measures. Finally, the Hyderabad CMP discusses curb side as well as on-street parking policies and the need for more traffic control devices without outlining their specific implementation mechanisms or providing a detailed analysis of the proposed measures.

Key Findings

- The comparative evaluation of the CMPs highlights a lack of clarity in defining their vision and objectives. While the vision statements incorporate aspirational terms such as “inclusive”, “safe”, “reliable”, “integrated”, “sustainable”, and “efficient”, the goals emphasise key priorities, including “enhancing public transportation”, “promoting low-carbon mobility”, “reducing travel demand”, “strengthening NMT infrastructure”, and “developing efficient multimodal transport systems”. However, the CMPs lack concrete, actionable strategies for their effective implementation. A critical shortcoming is the gap between the proposed recommendations and their translation into tangible, executable projects, thereby limiting the CMPs’ practical impact on urban mobility improvements.⁶⁹
- A shortcoming in the CMPs is the insufficient integration with other key city planning documents, such as master plans and city development plans. The coordination between strategies outlined in the CMPs and broader urban planning frameworks remains inadequately addressed. For example, Surat’s Development Plan 2035, formulated by the Surat Development Authority, and the CMP 2046, prepared by CEPT University, are presented as independent documents, leading to discrepancies in their respective proposals.⁷⁰ This lack of synchronisation raises concerns regarding the effective alignment of transportation planning with overall urban development objectives. Furthermore, the differing time horizons of these plans further exacerbate inconsistencies in their implementation.
- One of the most critical shortcomings is the lack of strategic recommendations for the development of supporting infrastructure for non-motorised transport (NMT). Despite its fundamental role in enhancing urban mobility, provisions for essential roadside elements, such as designated spaces for street vendors, are largely overlooked in most CMPs. Furthermore, there is a notable absence of well-defined NMT proposals as well as the necessary institutional mechanisms required for their effective execution. Addressing these deficiencies is imperative to ensure the successful integration of NMT into the broader urban transport landscape.

Key Findings

Essential elements—such as user safety and security, universal accessibility, enhancements to existing public transportation services, seamless integration between public and paratransit systems, improved accessibility to transit networks, incorporation of information and communication technology (ICT) into mobility solutions, effective parking management, and transition to sustainable fuel alternatives—are either inadequately addressed or entirely overlooked in these plans. Strengthening these aspects is imperative to ensure the development of a comprehensive, inclusive, and future-ready urban mobility framework.

The Way Forward

- A CMP is a strategic blueprint for urban transportation, outlining a range of potential initiatives and interventions to enhance mobility infrastructure. However, its effectiveness is contingent upon the extent to which it holistically addresses all facets of the urban transport ecosystem. Leveraging past experiences and incorporating insights from previous mobility initiatives can strengthen the planning process and improve the effectiveness of CMPs in addressing urban transport challenges. To ensure a well-structured and targeted approach, it is essential to develop specialised plans for key subsystems, including NMT,⁷¹ parking management,⁷² TOD,⁷³ and freight mobility. These domain-specific frameworks facilitate a more detailed assessment of the necessary measures, enabling seamless implementation of proposed strategies and ensuring a cohesive and sustainable urban mobility system.
- The effective implementation of CMPs requires ULBs to have a deep understanding of prevailing transportation challenges and the ability to translate strategic recommendations into actionable urban initiatives. To achieve this, it is imperative to strengthen institutional capacity through targeted training programmes and skill development initiatives for municipal authorities. These efforts will ensure that officials are adequately equipped with the expertise needed to manage the complexities of executing proposed interventions within dynamic urban environments. Additionally, establishing a centralised coordinating body can enhance the efficiency and implementation of CMPs.
- To enhance the effectiveness of urban planning, it is essential for cities to actively engage both the community and domain experts throughout the planning and implementation processes. Institutionalising participatory planning mechanisms can enhance stakeholder engagement, ensuring that mobility plans are both contextually relevant and widely accepted. This can be achieved through structured stakeholder consultations, including focus group discussions at key stages of decision-making. Additionally, dissemination of relevant information in accessible formats, such as simplified reports and informational brochures, is crucial. Such

The Way Forward

an approach promotes broader public participation, ensuring that diverse user groups are well-informed and meaningfully involved in shaping a city's urban transport strategy.

- For CMPs to be effective, they must be seamlessly integrated with relevant urban development plans, policies, and strategies. This alignment would ensure that CMPs integrate seamlessly into the city's long-term mobility vision instead of operating in isolation. Additionally, establishing these plans at consistent and predefined intervals is crucial for systematically assessing the city's progress towards sustainable transportation objectives. Achieving these goals requires a robust legal framework that reinforces the implementation process, ensuring accountability and fostering a resilient and sustainable urban mobility system. Standardising the horizon period across cities can facilitate a more coherent approach to urban mobility development. It is imperative that the relevant planning authorities adopt a collaborative and integrated approach to ensure consistency in vision, policy directives, and execution timelines, thereby fostering more cohesive and efficient urban planning in cities.
- Successful implementation of urban transport projects outlined in CMPs hinges on securing adequate and sustainable funding sources. ULBs face financial constraints and must explore diverse financing mechanisms beyond traditional sources. Public-private partnerships (PPPs) offer a promising avenue, enabling collaboration between public and private entities to share risks and leverage private sector expertise and investment, as exemplified by the Gautrain rapid rail system in South Africa.⁷⁴ Green bonds provide a mechanism to attract socially responsible investors by channelling funds towards environmentally sustainable transport initiatives, with cities like Paris successfully issuing green bonds to finance urban transport projects.⁷⁵ Value capture financing (VCF) allows ULBs to harness increasing property values driven by improved infrastructure through mechanisms such as land value taxes and development charges, as demonstrated by successful implementations in Hong Kong and Delhi.⁷⁶ Land-based financing leverages the development potential of publicly owned land around transit hubs, generating revenue through

The Way Forward

commercial development, as demonstrated by Mumbai's transit-oriented development (TOD) model.⁷⁷ Tax increment financing (TIF), used in several US cities, leverages future tax revenue from increased property values within designated districts to finance infrastructure improvements.⁷⁸ By strategically combining these innovative financing mechanisms, ULBs can effectively address funding gaps, mitigate project risks, and ensure the long-term sustainability of urban transport projects, ultimately enhancing mobility and improving the quality of life for urban residents.

Conclusion

This evaluation of comprehensive mobility plans across seven Indian cities reveals shortcomings in their formulation and implementation. While these plans articulate ambitious goals for sustainable urban mobility, their effectiveness is hindered by a number of critical factors. Notably, a lack of robust implementation strategies, characterised by a disconnect between proposed interventions and their operationalisation, impedes the translation of plans into tangible outcomes. This is exacerbated by weak interagency coordination, limited public participation, and inadequate integration with broader urban planning initiatives.

Addressing these challenges requires a multipronged approach. Strengthening institutional capacities within urban local bodies is crucial for fostering effective collaboration between stakeholders and ensuring the periodic review and revision of CMPs. Diversifying funding sources through innovative mechanisms such as value capture financing, public-private partnerships, and green bonds is essential to secure the financial resources necessary for implementing ambitious transport projects.

By overcoming these challenges and adopting a more integrated and participatory approach to urban transport planning, Indian cities can develop and implement effective CMPs that enhance connectivity, reduce congestion, and foster equitable access to transport services. This can fuel the development of more resilient, efficient, and inclusive urban transport systems that support sustainable urban growth. 

Nandan H. Dawda is Fellow, Urban Studies, ORF

Endnotes

- 1 “India's Rate of Urbanization (2010 - 2021, %),” Global Data, <https://www.globaldata.com/data-insights/macroeconomic/urbanization-rate-in-india-2096096/#:~:text=India%20had%20an%20urbanization%20rate%20of%201.34%25%20in%202021.,2011%2C%20between%202010%20and%202021>
- 2 Sounak Mukhopadhyay, “India Has Surpassed China to Become the Most Populous Country in the World, as Per Estimates,” *Mint*, January 18, 2023, <https://www.livemint.com/news/india/india-has-surpassed-china-to-become-the-most-populous-country-in-the-world-as-per-estimates-11674022881859.html>
- 3 Department of Economic and Social Affairs, *World Population Prospects 2024* (United Nations, 2024), <https://population.un.org/wpp/>
- 4 “Infographics: Urbanisation and Urban Development in India,” Urbanet, July 31, 2018, <https://www.urbanet.info/urbanisation-in-india-infographics/>
- 5 National Safai Karamcharis Finance & Development Corporation, *Cities with Population 1 Lakh and above as Census 2011*, https://nskfdc.nic.in/writereaddata/files/1Lakh_and_Above.xlsx
- 6 NITI Aayog, *Reforms in Urban Planning Capacity in India*, New Delhi, 2021, <https://www.niti.gov.in/sites/default/files/2021-09/UrbanPlanningCapacity-in-India-16092021.pdf>
- 7 Nandan Dawda et.al., Efficiency Based Evaluation of Public Transport and Paratransit Systems with a View to Integrate Transportation, *Transportation Research Record: Journal of the Transportation Research Board* 2675, no 3 (2021), <https://journals.sagepub.com/doi/abs/10.1177/0361198120980322>
- 8 World Resources Institute, *The Realities of Current Urbanization in the Global South*, Washington, DC, <https://publications.wri.org/transformations-equitable-sustainable-cities/current-urbanization-global-south-realities>
- 9 S Vijayalakshmi and Krishna Raj, *Economic and Environmental Cost of Traffic Congestion in India* (Routledge: Taylor and Francis Group, 2024), 11. https://api.pageplace.de/preview/DT0400.9781003827450_A47339417/preview-9781003827450_A47339417.pdf
- 10 Hardik Gajera et.al., “Evaluating Operational Performance of City Bus Transit Service Using TCQSM Guidelines: A Case Study of Surat City,” *Journal of the Eastern Asia Society for Transportation Studies* 13 (2019), https://www.jstage.jst.go.jp/article/easts/13/0/13_1361/_pdf
- 11 Nandan Dawda et al., “Multimodal of Lateral Transport System: A Case Study of Successful Cities Worldwide,” in *Innovative Research in Transportation Infrastructure, Lecture Notes in Intelligent Transportation and Infrastructure*, ed. Dipankar Deb and Valentina E. Balas et al. (Springer Nature Singapore Pte Ltd, 2019), https://www.researchgate.net/profile/Smit-Thakkar-2/publication/327545601_Exploring_

Endnotes

- Performance_of_Intercity_Expressway_UsingITS-Based_Technology_Proceedings_ofICIIF_2018/links/5e570313299bf1bdb83e57a1/Exploring-Performance-of-Intercity-Expressway-UsingITS-Based-Technology-Proceedings-of-ICIIF-2018.pdf#page=106
- 12 Nandan H Dawda et.al., “Synthesizing the Evolution of Multimodal Transportation Planning Milestones in Indian Cities,” *Procedia Computer Science* 184 (2021), <https://www.sciencedirect.com/science/article/pii/S187705092100692X>
 - 13 Dawda et.al., “Synthesizing the Evolution of Multimodal Transportation Planning Milestones in Indian Cities”
 - 14 Dawda et.al., “Synthesizing the Evolution of Multimodal Transportation Planning Milestones in Indian Cities”
 - 15 Ministry of Urban Development, *Jawaharlal Nehru National Urban Renewal Mission*, 2008, [https://mohua.gov.in/upload/uploadfiles/files/1Mission%20Overview%20English\(1\).pdf](https://mohua.gov.in/upload/uploadfiles/files/1Mission%20Overview%20English(1).pdf)
 - 16 Ministry of Urban Development, *National Urban Transport Policy*, 2014, https://www.changing-transport.org/wp-content/uploads/E_K_NUMP_India_2014_EN.pdf
 - 17 Green Growth Best Practice Case Study Series, *Reform-Linked Funding in the Jawaharlal Nehru National Urban Renewal Mission in India*, Green Growth Best Practice, 2014, https://www.greenpolicyplatform.org/sites/default/files/downloads/best-practices/GGBP%20Case%20Study%20Series_India_Reform-Linked%20Funding%20JNNURM.pdf
 - 18 Nandan H Dawda, “Overcoming Inconsistencies in Comprehensive Mobility Plans of Indian Cities,” Observer Research Foundation, February 27, 2024, <https://www.orfonline.org/expert-speak/overcoming-inconsistencies-in-comprehensive-mobility-plans-of-indian-cities>
 - 19 “Government Preparing Comprehensive Mobility Plans for 500 Cities,” *The Economic Times*, October 10, 2014, <https://economictimes.indiatimes.com/news/economy/infrastructure/government-preparing-comprehensive-mobility-plans-for-500-cities/articleshow/44775602.cms?from=mdr>
 - 20 Ministry of Urban Development, *Toolkit for Preparation of Comprehensive Mobility Plans*, 2008, <https://mohua.gov.in/upload/uploadfiles/files/CMP%20Report%20Revised.pdf>
 - 21 Ministry of Urban Development, *Preparing a Comprehensive Mobility Plan (CMP)—A Toolkit (Revised)*, 2014, <https://mohua.gov.in/upload/uploadfiles/files/CMP%20Report%20Revised.pdf>
 - 22 Ministry of Housing and Urban Affairs, *Term of Reference for Preparing Comprehensive Mobility Plan*, 2018, <https://mohua.gov.in/upload/uploadfiles/files/ToR%20for%20preparation%20of%20CMP.pdf>

Endnotes

- 23 Ministry of Housing and Urban Affairs, *Term of Reference for Preparing Comprehensive Mobility Plan*
- 24 Nikhil Ali, “Navigating Ambiguity: The Dichotomy Between Development and Transport Plans in Urban Mobility Services,” Centre for Public Policy Research, August 21, 2023, <https://www.cppr.in/articles/navigating-ambiguity-the-dichotomy-between-development-and-transport-plans-in-urban-mobility-services>
- 25 Amit Bhatt, “Gurugram Draft Mobility Plan Must Address Regional Connectivity Issues,” *Hindustan Times*, October 1, 2019, https://www.hindustantimes.com/cities/gurugram-draft-mobility-plan-must-address-regional-connectivity-issues/story-Ag9Dyx97MaQWMZXJTakfyI.html?utm_source=chatgpt.com
- 26 Ashish Verma, “Bengaluru’s Mobility Plan Has Major Drawbacks, Says IISc Review,” *Citizen Matters*, January 14, 2020, https://citizenmatters.in/bengaluru-comprehensive-mobility-plan-drawbacks-iisc-review-mode-share-walking-road-capacity/?utm_source=chatgpt.com
- 27 Ved Ghulghule, “Rs. 18,585 Cr Mobility Masterplan Set to Zoom City into Future,” *The Times of India*, May 15, 2025, http://timesofindia.indiatimes.com/articleshow/121171032.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
- 28 “Plan to Expand Cuttack Ring Road into Six-Lane Corridor,” *The Times of India*, May 14, 2025, <https://timesofindia.indiatimes.com/city/bhubaneswar/plan-to-expand-cuttack-ring-road-into-six-lane-corridor/articleshow/121169225.cms>
- 29 “CMRL Phase 2: 11th Tunnel Breakthrough after Delays, Tough Terrain at Perambur,” *The Times of India*, May 14, 2025, <https://timesofindia.indiatimes.com/city/chennai/cmrl-phase-2-11th-tunnel-breakthrough-after-delays-tough-terrain-at-perambur/articleshow/121169710.cms>
- 30 John L. Paul, “Draft CMP Recommends 2,381 Buses in Greater Kochi Region by 2051,” *The Hindu*, August 1, 2024, <https://www.thehindu.com/news/cities/Kochi/draft-cmp-recommends-2381-buses-in-greater-kochi-region-by-2051/article68473678.ece>
- 31 GFA Consulting Group, *Low-Carbon Mobility Plan for Bhubaneswar 2040*, 2020
- 32 Kochi Metro Rail Limited, *Comprehensive Mobility Plan for Kochi*, 2024
- 33 Chennai Metro Rail Limited, *Comprehensive Mobility Plan for Chennai Metropolitan Area*, 2019, <https://www.cmdachennai.gov.in/pdfs/ComprehensiveMobilityPlan-CMA.pdf>
- 34 Surat Municipal Corporation, *Surat 2046-Comprehensive Mobility Plan*, 2018, <https://www.suratmunicipal.gov.in/Content/Documents/Departments/BRTS/CMP.pdf?ver=1721>
- 35 Nagpur Municipal Corporation, *Comprehensive Mobility Plan for Nagpur*, 2018, <https://www.metrorailnagpur.com/pdf/updated-CMP-of-Nagpur-City.pdf>

Endnotes

- 36 Ahmedabad Urban Development Authority, *Integrated Mobility Plan for Greater Ahmedabad*, 2017
- 37 Hyderabad Metropolitan Development Authority, *Comprehensive Mobility Plan of Greater Hyderabad*, 2013
- 38 Shalini Sinha, Nitika Bhakuni et al., “Strategic Plan for Urban Transport System-Surat 2043” (Presentation, 2023), <https://portfolio.cept.ac.in/2023/S/fp/strategic-plan-for-urban-transport-system-ut4003-spring-2023>
- 39 “Low-Carbon Mobility Plan for Bhubaneswar 2040, 2020”
- 40 Kochi Metro Rail Limited, *Comprehensive Mobility Plan for Kochi*
- 41 Chennai Metro Rail Limited, *Comprehensive Mobility Plan for Chennai Metropolitan Area*
- 42 Surat Municipal Corporation, *Surat 2046: Comprehensive Mobility Plan*
- 43 Nagpur Municipal Corporation, *Comprehensive Mobility Plan for Nagpur*
- 44 Ahmedabad Urban Development Authority, *Integrated Mobility Plan for Greater Ahmedabad*
- 45 Hyderabad Metropolitan Development Authority, *Comprehensive Mobility Plan of Greater Hyderabad*
- 46 “Strategic Plan for Urban Transport System, 2023”
- 47 “Construction Work Commenced for Bhubaneswar Metro Phase 1 Project,” *Metro Rail Today*, April 1, 2024, <https://metrorailtoday.com/news/construction-work-commenced-for-bhubaneswar-metro-phase-1-project>
- 48 “Bhubaneswar Metro Phase 1 Approved with DMRC as Consultant,” *The Metro Rail Guy*, November 13, 2023, <https://themetrorailguy.com/2023/11/16/bhubaneswar-metro-phase-1-approved-with-dmrc-as-consultant/>
- 49 Nagpur Metro Rail Project, “Phase 1 Project Updates,” <https://www.metrorailnagpur.com/Project-Updates>
- 50 Amit Mishra, “Nagpur Metro: Phase-I of Metro Project Completed, to Be Inaugurated on 11 December,” *Swarajya*, December 6, 2022, <https://swarajyamag.com/news-headlines/nagpur-metro-rail-phase-1-project-completed-to-be-inaugurated-on-11-december>
- 51 Sangeeta Singh, “Ahmedabad Metro: Project Details, Routes, Fares and Other Details,” *Metro Rail Today*, September 17, 2020, <https://metrorailtoday.com/article/ahmedabad-metro-project-information-routes-fares-and-other-details>

Endnotes

- 52 “Ahmedabad Metro – Information, Route Maps, Fares, Tenders & Updates,” *The Metro Rail Guy*, <https://themetrorailguy.com/ahmedabad-metro-information-map-updates/>
- 53 “Surat Metro – Information, Route Maps, Fares, Tenders & Updates,” *The Metro Rail Guy*, <https://themetrorailguy.com/surat-metro-information-route-maps-fares-tenders-updates/>
- 54 Surat Municipal Corporation, “Projects under Planning/Tendering,” <https://www.suratmunicipal.gov.in/Departments/ProjectsUnderPlanningTendering>
- 55 Chennai Metro Rail Limited, “Project Status,” <https://chennaimetrorail.org/project-status/>
- 56 “CMRL Phase 2: 11th Tunnel Breakthrough after Delays, Tough Terrain at Perambur”
- 57 Hyderabad Metro Rail Limited, “About HMRL,” <https://hmrl.co.in/about-hmrl/>
- 58 PPIAF Global Infrastructure Hub, “Hyderabad Metro Rail,” <https://infrastructuredeliverymodels.github.org/case-studies/hyderabad-metro-rail/>
- 59 Delhi Metro Rail Corporation Limited, *Detailed Project Report of Kochi Metro*, August 2011, <https://kochimetro.org/wp-content/uploads/dpr.pdf>
- 60 Railway Technology, “Kochi Metro, Kerala, India,” <https://www.railway-technology.com/projects/kochi-metro/>
- 61 “Low-Carbon Mobility Plan for Bhubaneswar 2040, 2020”
- 62 Kochi Metro Rail Limited, *Comprehensive Mobility Plan for Kochi*
- 63 Chennai Metro Rail Limited, *Comprehensive Mobility Plan for Chennai Metropolitan Area*
- 64 Surat Municipal Corporation, *Surat 2046: Comprehensive Mobility Plan*
- 65 Nagpur Municipal Corporation, *Comprehensive Mobility Plan for Nagpur*
- 66 Ahmedabad Urban Development Authority, *Integrated Mobility Plan for Greater Ahmedabad*
- 67 Hyderabad Metropolitan Development Authority, *Comprehensive Mobility Plan of Greater Hyderabad*
- 68 “Strategic Plan for Urban Transport System, 2023”
- 69 Dawda, “Overcoming Inconsistencies in Comprehensive Mobility Plans of Indian Cities”
- 70 Ali, “Navigating Ambiguity: The Dichotomy between Development and Transport Plans in Urban Mobility Services”

Endnotes

- 71 Ministry of Housing and Urban Affairs, *Training Manual on Non-Motorised Transport Network in City*, <https://niua.in/c-cube/sites/all/themes/zap/assets/pdf/MOBILITY%20&%20AIR%20QTY/MAQ3%20-%20NMT.pdf>
- 72 Centre for Science and Environment, *Pampering Parking: How to Manage Urban India's Parking Needs*, 2018, <https://www.cscindia.org/pamp-ering-parking-8483#:~:text=February%2014%2C%202018&text=Conventional%20parking%20policy%20aims%20to,minimum%20number%20of%20parking%20slots.>
- 73 National Institute of Urban Affairs, *Transit Oriented Development for Indian Cities*, <https://niua.org/tod/todfisc/book.php?book=1§ion=3#:~:text=Transit%20Oriented%20Development%20encourages%20compact,socially%2Dmixed%20neighbourhoods%20in%20cities.>
- 74 Gautrain, *Financial Model of the Gautrain Rapid Rail Link Public Private Partnership*, Gautrain Management Agency, 2015, https://gma.gautrain.co.za/Style%20Library/Branding/Doc/GMA%20Case%20Study_Financial%20Model_S.pdf
- 75 “Climate Bond Financing Urban Adaptation Actions to Reduce Heat Stress in Paris, France,” *Climate Adapt*, <https://climate-adapt.eea.europa.eu/en/metadata/case-studies/climate-bond-financing-adaptation-actions-in-paris#:~:text=In%20terms%20of%20funding%2C%20the,the%20bond%2C%20involving%2030%20investors.>
- 76 National Institute of Urban Affairs, *Value Capture Finance in Transit Oriented Development: A Guide to Implementation*
- 77 Lubaina Rangwala et.al., *Shifting the TOD Discourse from Intensification of Built-up Area to Regulations Managing High People Densities in Mumbai's Development Plan Revision*, WRI India-Ross Center, Washington DC, 2014, <https://www.wricitiesindia.org/sites/default/files/Shifting%20the%20TOD%20Discourse%20from%20Intensification%20of%20Built-up%20Area%20.pdf>
- 78 Chicago Planning and Development, “Tax Increment Financing,” [https://www.chicago.gov/city/en/depts/dcd/provdrs/tif.html#:~:text=Tax%20Increment%20Financing%20\(TIF\)%20is%20a%20special,public%20and%20private%20investment%20across%20the%20city.](https://www.chicago.gov/city/en/depts/dcd/provdrs/tif.html#:~:text=Tax%20Increment%20Financing%20(TIF)%20is%20a%20special,public%20and%20private%20investment%20across%20the%20city.)

Images used in this paper are from Getty Images/Busà Photography (cover and page 2) and Getty Images/Otto Stadler (back page).



OBSERVER
RESEARCH
FOUNDATION

Ideas . Forums . Leadership . Impact

**20, Rouse Avenue Institutional Area,
New Delhi - 110 002, INDIA**

Ph. : +91-11-35332000. Fax : +91-11-35332005
E-mail: contactus@orfonline.org
Website: www.orfonline.org