



GAP ASSESSMENT REPORT

Assesses existing sustainable mobility policies, plans as well as guidelines in relation to infant, toddler, and caregiver-friendly mobility



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Prepared by the Institute for Transportation and Development Policy as part of the project for Transforming Urban Mobility to nurture Early Childhood Development in India.

This document is a precursor to the preparation of the policy brief that addresses the mobility needs of infants, toddlers, and caregivers in the state of Maharashtra.



The Institute of Transportation and Development Policy works around the world to design and implement high quality transport and urban development systems and policy solutions that make cities more liveable, equitable, and sustainable.



The Bernard van Leer Foundation believes that all babies and toddlers, especially the most disadvantaged, deserve a good start in life. A good start puts each individual child on the path to realising their full potential and, collectively, sets the foundation for a healthy, creative and peaceful society. BvLF is an independent foundation working worldwide to inspire and inform large scale action to improve the health and well-being of babies, toddlers, and the people who care for them. BvLF provides financial support and expertise to partners in government, civil society, and business to help test and scale effective services for young children and families.



Urban95 is the Bernard van Leer Foundation's initiative to incorporate a focus on the needs of young children and those who care for them into city design, planning, and management. It asks a simple but bold question: "If you could experience a city from 95cm – the height of a 3-year-old – what would you change?"

Transforming Urban Mobility to nurture Early Childhood Development in India



Photo:
J M Road, Pune

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Photo:
Pedestrian Plaza,
T.Nagar, Chennai

List of acronyms

Bus Rapid Transit	BRT
Civil Society Organisation	CSO
Economically Weaker Sections	EWS
Informal Public Transport	IPT
Infants, Toddlers, and Caregivers	ITC
Infant, Toddler, Caregiver-friendly Neighbourhood	ITCN
Non-Motorised Transport	NMT
Public Transport	PT
Public Bicycle-sharing System	PBS
Transit-Oriented Development	TOD
Urban Local Body	ULB
Urban Street Design Guidelines	USDG

Definitions

Accessibility	Facilities offered to people to reach social and economic opportunities, measured in terms of the time, money, comfort, and safety that is associated with reaching such opportunities.	Streets that are traffic calmed and managed, with good quality footpaths, have security on the streets, ramps for strollers, and are well-lit. They have informal play spaces within sidewalks, dedicated car-free streets (permanent or temporary), wayfinding measures at the correct height for children, cycle lanes, and safe intersections along with management of stray animals, etc.	ITC-Friendly Streets
Complete Streets	Streets that are designed to cater to the needs of all users and activities, through equitable allocation of road space. Complete streets provide safe and inclusive environments that support users of all age groups, gender, and physical dispositions. They also guarantee efficient mobility by focusing on moving people rather than vehicles, user safety, user accessibility, vitality and liveability, sensitivity to the local context, and environmental sustainability.	Conditions under which an individual is capable of travelling in the urban environment.	Mobility
ITC	The term refers to a grouping of at least two people, the youngest of whom is under five years old. The caregiver is not necessarily a mother or father—or at least, not only. Caregivers might be a nanny, or older children as well.	All forms of human-powered transport including walking and cycling.	Non-Motorised Transport
ITC-Friendly Mobility	Urban mobility that is designed to respond to the needs of Infants, Toddlers, and Caregivers (ITCs) and is <i>safe, accessible, inclusive, green, and playful</i> .	A street where formal distinctions between spaces allocated for various users is removed. The concept of shared streets is to ensure that each street user becomes progressively more aware and considerate of the others on the street. Specific design interventions can force the vehicles to slow down and match the pace of those on foot.	Shared streets
ITC-Friendly Neighbourhood	Taking the range of access for a young child as maximum one kilometre, from any one point to the other, we can define a zone that covers an area of roughly 60-80 hectares. It contains all the community facilities and amenities within easy access for a young child as identified by BvLF. Most metropolitan cities in India have an average density of 200-300 people per hectare, as defined by Urban and Regional Development Plans Formulation and Implementation (URDPFI). This corresponds to a population of twelve to fifteen thousand people living within this zone, which in Indian planning norms, equates to a 'neighbourhood unit'.	Traffic calming measures ensure pedestrian and vehicle safety by reducing the speed of motor vehicles through vertical and/or horizontal displacements, real/perceived narrowing of carriageways, material/colour changes that signal conflict point, or complete closure of streets for vehicular traffic.	Traffic calming



Photo:
Pedestrian Plaza,
T.Nagar, Chennai

01 Executive Summary

Every fifth child in the world lives in India. In 2011, out of the total 9.88 crore children residing in urban areas in India, 4.32 crore children were under the age of 6. The built environment that these young children interact with and the cities that they grow up in play a significant role in children's health and educational outcomes, as demonstrated by the work of the Bernard van Leer Foundation (BvLF). Lack of *safe*, secure, accessible, reliable, and comfortable mobility options make our cities unwelcoming for young children and their caregivers.

However, this need not be the case; cities can be re-imagined and planned to respond to the mobility needs of Infants, Toddlers, and Caregivers (ITCs). Cities around the world are changing to ensure they become ITC-friendly—Rotterdam and Tilburg have adopted progressive policies that put young children at the heart of urban mobility; Essen, Bam, and Christchurch have mandated participatory planning methods; Berlin and Barra Mansa have allocated budgets for young children-friendly activities; and, Bam and Barcelona have taken up ITC-friendly urban planning.

In India, cities such as Bhubaneswar, Udaipur, and Pune are already asking a fundamental question—if you could see the city from the height of 95 centimeters (the average height of a three year old child) what would you do differently? This perspective is spurring projects in various neighbourhoods in these cities to transform them into ITC-friendly neighbourhoods. However, the question remains, how can these interventions expand across these Indian cities, and in fact, across other cities in the country?

This report explores the various governance tools/documents—policies, plans, and guidelines—that directly and/or indirectly impacts the mobility of young children and caregivers in Indian cities. For examining the state and city level documents, this report focuses on the state of Maharashtra and the city of Pune, respectively.

This report aims to understand whether these documents address the mobility needs of ITCs comprehensively. The documents were assessed both qualitatively using a Strengths, Weaknesses, Opportunities, and Threats (SWOT) framework as well as quantitatively against ITCN objectives of the Infant, Toddler, Caregiver-friendly Neighbourhood (ITCN) framework developed by BvLF in collaboration with the Smart Cities Mission, Ministry of Housing and Urban Affairs (MoHUA). The assessment evaluates policies, plans, and guidelines against these indicators: *Safe*, *Accessible*, *Inclusive*, *Green*, and *Playful*. A limitation of this study is that the field of designing cities for ITCs is evolving, and hence the indicators may be improved or enhanced in the future.

The assessment finds that while the policies, plans, and guidelines assessed place much needed importance on the safety and inclusivity of all stakeholders, they do not cater to ITCs specifically. Accessibility and greenery are, more often than not, sub-sections in these documents and sometimes missing. Playfulness is missing in all policies and plans assessed because the documents do not consider infants and toddlers as key stakeholders.

The assessment also revealed that the level of detail of guideline documents are different from policies and plans and hence cannot be analysed with the same parameters. While the International street design guidelines by the National Association of City Transportation Officials (NACTO) addressed most gap assessment indicators, most Indian guidelines need considerable improvements to cater to the needs of ITCs.

The SWOT assessment also showed that some of the documents go into detail regarding certain provisions of the *Safe* and *Accessible* indicators such as road crossing timings and ramps at different locations. However, since young children and caregivers are not considered as primary stakeholders, the provisions do not entirely cater to their needs. *Playful* indicator is not a consideration in any document, as evident from the SWOT assessment as well.



The gap assessment report will inform the preparation of a policy brief that focuses on how early childhood development and mobility intersect in India. Mobility policies that focus on ITC would equip decision-makers to invest in sustainable mobility—walking, cycling, and public transport—with specific interventions and improvements for early childhood development.

This document will be useful to city officials who wish to improve policies, plans or guidelines being used by the city and to everyone interested in understanding how different documents can affect young children and caregivers in Indian cities (including academicians, media, and CSOs).

02 Introduction

Investing in early childhood development can translate into better health, greater ability to learn and work with others, prevent the achievement gap, and result in a higher rate of economic return¹. The design of cities plays a critical role in shaping these early experiences. They can be wonderful places to grow up in, rich with opportunities for learning and growth. Yet urban environments can also pose challenges for young children and their caregivers, and especially for the most vulnerable among these².

Out of the total 9.88 crore children residing in urban areas in India, 4.32 crore children were under the age of six³. On the one hand, cities provide advantages to children, such as better schools, sporting facilities, and health care. On the other hand, they also force children to deal with disadvantages such as pollution, lack of independent mobility, inadequate play spaces, and lack of recreational/public spaces. **To reduce the gaps between the disadvantaged and advantaged children, it is imperative that we plan and build our cities as sustainable and inclusive cities for ITCs.**

All infants and toddlers need the assistance of their caregiver for mobility. Often, in India, primary caregivers are women, the elderly, and older siblings, who tend to use public transport and walking as their primary mode of transport. **Women make nine out of ten trips on sustainable transport modes-walking and public transport⁴.** Unfortunately, walking and cycling infrastructure and public transport services are unsafe, of poor quality, and in some cities, non-existent.

Most streets in Indian cities prioritise automobiles and are designed around the scale of an able-bodied male adult. The lack of pedestrian facilities such as properly designed footpaths, pedestrian crossings, street lights, adequate shading combined with unreliable and unsafe public transport have deprived our young children and their caregivers safe access to the city. This is because most caregivers in our cities are either women or older people who use public and non-motorised modes of transport. Designing cities primarily for able-bodied men who own private vehicles deprives young children and caregivers of their mobility needs.



Photo:
Jhansi Rani Lakshmibai
Chowk, Pune

In India, road traffic injuries claim a disproportionate number of young lives every day. Nationally, 9,977 people under the age of 18 died in road accidents in 2018, constituting six per cent of all road accident victims⁵. With automobiles dominating streets at high speeds, it has become increasingly risky for children to cycle, walk, or play outside without being exposed to high risks of traffic accidents. In order to be young child-friendly, cities must be designed in a way that reduces risk to young children⁶ and their caregivers. Improving access to safe and cleaner forms of transport, like walking, cycling, and public transport can help reduce accident risks, along with reducing the exposure to pollutants on the streets.

More than three million children under five die each year from environment-related causes and conditions in the world⁷. More than 80 per cent of all deaths in developing countries attributable to air pollution-induced lung infections occur among children under the age of five⁸. The built environment with which a toddler interacts within their formative years plays a crucial role in shaping their development and prospects. Children are closer to the ground, where some pollutants reach peak concentrations, at a time when their brains and bodies are still developing.

¹ https://obamawhitehouse.archives.gov/sites/default/files/docs/the_economics_of_early_childhood_investments.pdf

² <https://smartnet.niua.org/sites/default/files/resources/status1.pdf>

³ http://www.mospi.gov.in/sites/default/files/publication_reports/Children%20in%20India%202018%20%E2%80%93%20A%20Statistical%20Appraisal_26oct18.pdf

⁴ Census of India, 2011

⁵ https://morth.nic.in/sites/default/files/Road_Accidednt.pdf

⁶ Status of children in Urban India, 2016

⁷ World Health Organisation. (n.d.). Retrieved March 2016, from

<http://www.who.int/en/http://www.who.int/ceh/publications/factsheets/fs284/en/>

⁸ Devra L. Davis, P. H. (1999, September). World Resources Institute. Retrieved March 2016, from http://www.wri.org/sites/default/files/pdf/urbanair_health.pdf

Newborns/ infants have 30-60 breaths per minute, versus adults with 12-18 breaths per minute, meaning that infants breathe in more pollution compared to an adult⁹. Living within 50 metres of a major road could increase the risk of lung cancer by up to 10 per cent and stunt children's growth by up to 14 per cent¹⁰. As per a study conducted by HEAL Foundation and Breathe Blue in 2015, **more than one-third of school children in four big cities of India suffer from reduced lung capacity.**

Noise pollution that young children are exposed to in the cities negatively affects their cognitive development, causing an inability to concentrate, increased psychosocial activation, nervousness, helplessness, increased stress levels and disrupted sleep, higher blood pressure, and negative effect on reading ability.

Young children need frequent, warm, and responsive interactions with loving adults and a safe and stimulating physical environment to develop their full potential¹¹. Infants and toddlers experience the city at a much smaller scale. They have limited mobility, that mostly includes travel to regular services such as day care centers, but are particularly vulnerable to pollution. Keeping these aspects as the centre of analysis, it can be seen that a city that works for young children, works for everyone.

Mobility policies, plans, and guidelines that focus on Infants, Toddlers, and Caregivers (ITC) would equip decision makers to invest in sustainable mobility—walking, cycling, and public transport—with specific interventions and improvements for childhood development. Better walking conditions integrated with active spaces would immensely increase safety, convenience, and vibrancy of public spaces. High quality public transport would improve access to childhood services such as health care, education, and play.

In our endeavour towards making cities young children and family friendly, this document analyses the gaps in existing documents that have an impact on the mobility of infants, toddlers, and their caregivers in Indian cities, specifically Pune, Maharashtra. It also acts as a precursor to a state level policy brief for Maharashtra, on becoming a lighthouse state that puts young children and their caregivers at the centre of urban development. The following sections provide the methodology, detailed gap assessment of each of the documents, and a brief conclusion which defines the next steps.

⁹ Central Pollution Control Board Ministry of Environment & Forests. (2008). Study on Ambient Air Quality, Respiratory Symptoms and Lung Function of Children in Delhi.
¹⁰ Personalising the Health Impacts of Air Pollution. King's College London. (2019) <http://www.erg.kcl.ac.uk/Research/docs/Personalised-health-impacts-Summary%20for%20Decision%20Makers.pdf>
¹¹ <https://bernardvanleer.org/news/available-now-the-urban95-starter-kit/>



Photo: Laxmi Road, Pune



Photo:
Pedestrian Plaza,
T.Nagar, Chennai

03 Objectives

The key objectives of this gap assessment study are as follows:

1. Identify existing policies, plans, and guidelines that have an impact on ITC mobility in India and specifically for the state of Maharashtra and the city of Pune.
2. Review and assess the identified documents for their strengths, weaknesses, opportunities, and threats in creating thriving environments for mobility of ITCs holistically.
3. Score the identified documents on different elements of ITC mobility to aid in understanding their performance.
4. Inform the preparation of a policy brief on urban mobility to nurture early childhood development in the state of Maharashtra, India.

04 Methodology of study



Photo:
JM Road, Pune

The documents reviewed in this report include policies, guidelines, and plans that have an impact on ITC mobility. Cross-departmental collaboration is a key requirement in order to achieve ITC-friendly cities, hence documents from all urban mobility related domains have been selected for the assessment. The selected documents range from Comprehensive Mobility Plans, to parking policies, and street design guidelines. To review state and city level documents, the state of Maharashtra and the city of Pune were selected.

The Infant, Toddler, Caregiver-Friendly Neighbourhood (ITCN) Framework and Guidelines were prepared by the Bernard van Leer Foundation in collaboration with Smart Cities Mission, MoHUA, to support the 100 Smart Cities in India to create ITC-friendly neighbourhoods. The ITCN documents explain in detail the objectives that neighbourhoods should embrace for healthy development—mental and physical—of young children. The objectives are: *Inclusive, Playful, Accessible, Green, and Safe*.

The assessment takes these objectives as gap assessment indicators for assessing the selected urban mobility documents. It answers the question of whether these indicators have been addressed comprehensively in the document. This was done through both quantitative and qualitative means. For the assessment, each indicator is further broken down into sub-indicators. A list of the sub indicators is provided in the following page. A limitation of this study is that indicators and sub-indicators of this evolving field of expertise are drawn from expert discussions and may undergo revision in the future.

On the qualitative front, Strengths, Weaknesses, Opportunities, & Threats (SWOT) approach has been adopted for the assessment of the individual documents. The former two pertain to the inherent provisions of ITC gap assessment indicators in the policies, guidelines, and plans. The latter two address the external components that might impact the purpose of the document.

The strengths of the document are direct/indirect presence of the indicators (*Inclusive, Playful, Accessible, Green, Safe*) or mandate(s) to make provisions. The weaknesses are the absence of the same. The opportunities are the framework that the document opens up, whether in terms of legal provisions or political advantages. Threats include external risks, such as lack of supporting legislation or other inhibiting factors. On the quantitative front, a two-step process has been adopted. The first step to assess a document is to score it against each of the ITC gap assessment indicators, based on its sub components. The second step is to rate the documents against the gap assessment indicators based on the score. Owing to the difference in the level of detail, the sub-indicators and the rating process for the guidelines are different from those of policies and plans. The sub-indicators have been listed in the next page.

Documents reviewed

Indicators for assessment

Methodology for assessment

Sub-indicators for assessment of Policies, Plans, and Guidelines:

Policy / Plan elements	Gap assessment indicators	Design elements	
Even and thorough implementation of interventions Transparent processes Listening and responding to needs of residents through engagement Objective, informed by data Fair to all, not just "owners"	Inclusive	Shared-space streets	Use of urban leftovers
		Pop-up playing	Pocket green
		Use of semi-private spaces	Toilets and Drinking Water
		Benches	Community gardens
Attention focusing (not grabbing) Enveloping and protecting from distraction Challenging Committed to art/culture Authored by and memorializing of the childhoods belonging to it	Playful	Temporary street closure	Resting/Nursing Booths
		Ground cover materials and colours	Engaging with street art
		Provision of adequate parks, tot-lots, playgrounds	
		Playful furniture Sidewalk games Amount and combinations of uses/ activities	
Clusters of services/convenient Legible Free of physical and virtual obstacles Predictable and dependable, well-communicated services Flexible	Accessible	Density and proximity of community facilities	Entrances and Ramps for ITC
		Public Building interface	Daycare
		Furniture for ITC	Benches
		Continuous borders and planters Play Equipment	
Comfortable and protected from the elements Quiet Wild and bio-diverse Renewable and non-carbon energy sources Future-oriented, green technologies	Green	Street Planting	Use of renewables
		Air Pollution measures	Natural Play Elements
		Groundcover in parks, adding green	Surface drainage and rainwater harvesting
		Noise control	Solid waste management
Safe to walk/ bike while daydreaming/ mentally distracted Slow Structured, demarcated, space is assigned Respectful of privacy Eyes on the street, trust of neighbours	Safe	Shading and cooling elements	
		Active facade along Routing	Lighting
		Recommended street widths	Protective elements from traffic
		Fencing/ Permeable Perimeter Cycling Lanes Children Wayfinding Parking Types	Legibility and sightlines Camera monitoring Protection from Strays

The sub-indicators for the policies and plans cannot be defined as either present or absent, owing to the complexity of a policy/plan document. Hence, the process is broken down into scoring and then rating (each indicator and the whole document). The policy elements are first scored on a scale of 0-3. The following table explains the scoring:

Gap assessment sub-components scoring scale	Score	Description
0	Absolutely no mention in the policy	
1	Mentioned but not described	
2	Mentioned and detailed but not mandated	
3	Mentioned, detailed, and mandated	

The highest score that each gap assessment indicator can get is 15, if each of the 5 sub-indicators are mentioned, detailed and mandated. The lowest score that each indicator can get is 0, if none of the sub-indicators are even mentioned. This scoring informs the rating of the document in relation to its alignment with ITC-friendly mobility as explained in the following table:

Gap assessment indicator rating scale for policies / plans	Alignment	Description
No alignment	The indicator is scored 7 or lesser (the scoring is in the range of 0-49%)	
Weak alignment	The indicator is scored between 8-11 (the scoring is in the range of 50-74%)	
Average alignment	The indicator is scored between 12-14 (the scoring is in the range of 75-99%)	
Strong alignment	The indicator is scored 15 (the scoring is 100%)	

Since the number of sub-components under each of the gap assessment indicators are the same, a sum of the scores of all the indicators is taken as a comprehensive score of the document. In this case, the maximum score for a document can be 75 (full score of 15 for all the indicators summed together). This score is used to rate the document in relation to its alignment with ITC-friendly mobility as per the following table:

Comprehensive rating scale of the policy / plan documents	Alignment	Description
No alignment	The document scores less than 36 (the score is in the range of 0-49%)	
Weak alignment	The document scores between 37-55 (the score is in the range of 50-74%)	
Average alignment	The document scores between 56-74 (the score is in the range of 75-99%)	
Strong alignment	The document scores 75 (the score is 100%)	

Indicator rating for policies & plans

Comprehensive rating for policies & plans

Indicator rating for guidelines

The design elements for the guidelines are scored as 1 or 0 based on whether it is present or absent. Since the number of elements varies between indicators, the percentage of the scores of the elements is taken as the score of the indicator. This is done in order to ensure that irrespective of the number of sub-indicators, there is comparability across the indicators. The following four point scale has been adopted to rate each of the gap assessment indicators:

Gap assessment indicator rating scale for guidelines	No alignment	0-49% of the ITC-friendly design elements are included in the document.
	Weak alignment	50-74% of the ITC-friendly design elements are included in the document.
	Average alignment	75-99% of the ITC-friendly design elements are included in the document.
	Strong alignment	100% of the ITC-friendly design elements are included in the document.

The comprehensive rating is arrived at by taking an average of the percentage of ITC-friendly design elements present under each gap assessment indicator. The average is taken, instead of the actual number of design elements present, in order to ensure that equal weightage is given to all gap assessment indicators. However, the number of sub-indicators under gap assessment indicators are different, meaning that the effort required to attain the same score would vary for different indicators. In this case, the maximum score that a document can get is 100. The following table provides the details:

Comprehensive rating scale of the guidelines documents	No alignment	The document scores less than 49%
	Weak alignment	The document scores between 50-74%
	Average alignment	The document scores between 75-99%
	Strong alignment	The document scores 100%

Rating	Rationale	Policy / Plan / Guideline
No alignment	No sub-indicators are mentioned	The document ignores ITC-friendly mobility requirements
Weak alignment	Few sub-indicators mentioned, mandated or detailed	The Indicator partially support the aspects related to ITC-friendly mobility
Average alignment	Majority of sub indicators are mentioned, mandated, or detailed	The document supports majority of aspects related to ITC-friendly mobility
Strong alignment	All sub indicators are mentioned, mandated & detailed	The document completely supports ITC-friendly mobility

Comprehensive rating for guidelines

Comprehensive rationale for rating



Photo:
Pedestrian Plaza,
T.Nagar, Chennai

The final output of the comprehensive gap assessment can be summed up as:

1. SWOT analysis of each of the documents with qualitative assessment and avenues for improvement.
2. A table that would bring together all the assessed documents with over-all ratings and indicator specific ratings to present its alignment with the ITC-friendly mobility indicators.

The scope of the study is to assess the gaps in the existing documents so as to inform the preparation of a policy brief. The assessment is limited to identifying gaps in the documents and does not delve into the implementation of the same. While the external threats and opportunities are identified, they are not the focus of the assessment and only inform the larger understanding around it.



Photo:
Pedestrian Plaza,
T.Nagar, Chennai

05 Gap Assessment

The gap assessment section is divided into three parts.

The first part includes national, state, and city policies that impact ITC mobility.

The second part includes mobility plans that have been prepared for the city of Pune.

The last part includes global and national guidelines on street redesign and mobility planning.

As mentioned in the above section, the quantitative methodology of scoring and ranking for the policies and plans is the same, while it is different for guidelines.

Policies

National Transit-Oriented Development Policy (2017)

The policy was developed by the Ministry of Urban Development (Currently MoHUA) to promote neighbourhoods which enable people to live within walking or cycling distance from transit corridors. It provides guidance to states and cities on formulating Transit-Oriented Development (TOD) planning strategies. The policy focuses on high-density development of neighbourhoods within a 500-800 metres walking distance from mass transit corridors in the city. It also includes increasing the accessibility of the transit stations by creating Non-Motorised Transport (NMT) infrastructure and dense network of streets.

Strengths

The policy advocates for development of safe neighbourhoods with special attention to safety of women, children, senior citizens, and people with different abilities by allowing necessary amendments to the building bye laws. As one of the objectives, it specifies the integration of the Economically Weaker Sections (EWS) and affordable housing within the influence zone of transport corridors. Another objective is the provision of all kinds of recreational/entertainment/open spaces, required for a good quality of life in the influential area. The TOD policy promotes the creation of safe cities for children by highlighting the need to provide access to schools/day care centers within a walking distance and limiting traffic speed to 20 kmph on streets primarily designed for movement of pedestrians and NMT (and streets below 12 m RoW). The progressive policy ensures creation of active streets by promoting mixed land use, transparent frontage, and street vendors. Some other provisions mandated in the policy include provision of open spaces as per Urban and Regional Development Plans Formulation and Implementation (URDPFI) guidelines, notification of TOD policy as part of Master Plan/Development plan of the city, adoption of renewable sources of energy etc.

Weaknesses & Threats

The TOD policy is quite comprehensive in its neighbourhood planning approach, but there is scope to improve the policy further by including provisions to make neighbourhoods more playful for infants and toddlers and introducing objective data-driven goals for cities.

Opportunities

Being a progressive national level policy, it provides good guidance to states and cities to draft their own TOD policies and plans. By taking guidance from this policy, the state/city policies and plans will have the potential to address child-friendly city-planning at neighbourhood/local level in statutory documents like master plans.

Inferences

The document scores high on the *Inclusive* and *Safe* indicators because of its special focus on developing neighbourhoods that are safe for women, children, senior citizens, and people with disabilities. It scores comparatively low on the *Accessible* and *Green* indicators, and lacks any provisions for the *Playful* indicator.

Policy rating against gap assessment indicators

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	13	00	09	09	12	43
Rating	Average alignment	No alignment	Weak alignment	Weak alignment	Average alignment	Weak alignment

National Urban Transport Policy (2006)

The National Urban Transport Policy (NUTP) was approved by the Government of India to tackle urban mobility issues and ensure a safe, affordable, comfortable, reliable, and sustainable access to urban mobility in the coming decades. It provides for integrated land use and transport plans in cities, coordinated planning for urban transport, people-oriented equitable allocation of road space, and capital support in the form of one-time viability gap financing. The policy focuses on promoting non-motorised transport and public transport, restraining car use, and supporting clean fuel and vehicle technology. It highlights the importance of private sector participation and pilot projects in cities to establish models of best practices.

Strengths

The policy was revolutionary since it was the first time that a transport policy had its central focus on more equitable allocation of road space for people, rather than vehicles. One of the strong points of the policy is that it has provisions to encourage greater use of public transport and non-motorised modes by offering central financial assistance to cities. The policy prioritises safe and equitable access to educational and recreational facilities. It also has provisions for integrating the Economically Weaker Sections (EWS) and affordable housing around transit. The policy specifically points at urban sprawl leading to increasing travel distances and explosive growth in motor vehicles as a problem. It acknowledges that walking and cycling have become extremely risky and that air pollution has to be curbed immediately. It also requires that mobility planning be integrated into the process of master planning.

Weaknesses & Threats

The policy does not identify young children and caregivers as stakeholders. While it talks about improving mobility, it does not specify any provisions for access to pre-schools, anganwadis, or play areas. The central financial assistance is only provided for infrastructure and the cities are expected to bear the operational and rolling stock costs that will ultimately be put on the users.

Opportunities

The policy is linked to funding from the central government and has a strong standing in the states. It makes suitable provisions to amend the Motor Vehicles Act to ease the process of implementation, setting a precedent for other such amendments. Instead of providing a one-size-fits-all solution, it allows cities to decide what works best for them by making provisions for cities to implement localised solutions. It calls for the setting up of the Unified Metropolitan Transport Authority (UMTA) in all million plus cities, for better coordination between departments and provides for institutional and individual skill development.

Inferences

The document scores comparatively high only on the *Inclusive* indicator owing to its decentralised approach, focus on educational and recreational facilities, and affordability for economically weaker sections. It scores low on *Accessible*, *Green*, and *Safe* indicators. The document misses any provisions for the *Playful* indicator.

Policy rating against gap assessment indicators

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	09	00	02	05	06	22
Rating	Weak alignment	No alignment	No alignment	No alignment	No alignment	No alignment

Maharashtra State Urban Transport Policy (upcoming)

The Maharashtra State Urban Transport Policy promotes sustainable transport and discourages the use of private motorised vehicles across cities in Maharashtra. It also promotes the need for transit-oriented development and local area planning. The policy mentions the need for an institutional structure and funding that is conducive to achieve the goal of a sustainable transport future.

Strengths

The policy aims at safe, reliable, and comfortable transport for all kinds of users. It promotes walking, cycling, and public transport in all cities. It also has provisions to manage travel demand and goods movement, thus freeing up space for pedestrians and cyclists. The policy also encourages compact communities that are oriented towards the transit system of the city and prioritises funding for sustainable transport related projects. It calls for universal accessibility and makes provisions for different levels of user fees charged for public transport, paratransit or taxis, and personal motor vehicles.

Weaknesses & Threats

Children and caregivers have not been considered as specific stakeholders in the policy formulation process. The monitoring data to be collected is not required to be disaggregated based on gender or age, thus making data-based decision making about ITCs difficult.

Opportunities

However, the policy encourages cities to find their own solutions for their contextual problems. It provides for incentives and public outreach via car-free days. The state also aims to build capacity by creating policy guidelines for the cities. It calls for the creation of a Strategic Mobility Plan (SMP) and the creation of UMTA. Since the policy has not been adopted yet, there is still scope to advocate for changes in it, such as gender- and age-disaggregated data collection.

Inferences

The document scores high on *Inclusive* and *Safe* indicators because of its focus on public outreach and focus on safety of the citizens. It scored low on *Accessible* indicator, and lacks provisions for *Playful* and *Green* indicators.

Policy rating against gap assessment indicators

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	13	00	06	00	12	31
Rating	Strong alignment	No alignment	No alignment	No alignment	Average alignment	No alignment

Transit-Oriented Development Regulations, Pune (2019)

The Transit-Oriented Development regulations were first inserted in the Development Control and Promotion Regulations (DCPR) of Pune Municipal Corporation in 2017, and modified in 2018 and in 2019. The regulations are applicable in 'TOD Zones' of 500m radius area delineated around the upcoming Metro stations. The TOD regulations are intended to provide greater access to citizens for the mass rapid transit by creating high density neighbourhoods with improved NMT infrastructure and last mile connectivity. These progressive guidelines focus on building guidelines, orientations, built densities, land use, and other TOD neighbourhood level regulations.

The regulations at the very beginning prioritise 'complete streets' as a key component for successful TOD. Importantly, the document recommends timelines and impact assessment studies for the implementation process. It includes recommendations for preparing an Integrated Mobility Plan envisaging interlinkages between different modes of mass transport, parking management, non-motorised transport network, last mile connectivity, traffic calming, interconnected street networking etc. The regulations also focus on creating mixed land use and reducing parking in the TOD zones, which can reduce vehicular trips, congestion, and pollution. Other building level regulations on permissible floor space index, compound walls, orientation, and projections will further help in creating safer, active, and liveable neighbourhoods.

Some of the regulations like incentives on additional parking provisions can have negative impacts on the whole idea of a TOD zone. Inclusive housing is not allowed in the TOD zones and marginalised communities are not actively engaged during the community engagement activities. There are no provisions for making the TOD zones child friendly in terms of playfulness and inclusivity. Inclusion of guidelines on recreational spaces, infant and toddler friendly infrastructure, and improving green cover in the zones can help in creating more vibrant and playful neighbourhoods.

The Maharashtra Town Planning Department has already undertaken extensive steps to include citizens, experts and other stakeholder suggestions for refining the document. The Transit-Oriented Development regulations provide an excellent opportunity for creating ITC-friendly neighbourhoods by adding layers of ITC specific guidelines. The TOD impact assessment studies and integrated mobility plans can include ITC as a stakeholder and provide inputs for further refining the regulations.

The document scores very high on the *Inclusive* indicator because of the number of stakeholder discussions that are conducted. It scores relatively high on the *Accessible* and *Safe* indicators but does not include any provisions of the *Playful* indicator.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	14	00	11	08	12	45
Rating	Average alignment	No alignment	Weak alignment	Weak alignment	Average alignment	Weak alignment

Strengths

Weaknesses & Threats

Opportunities

Inferences

Policy rating against gap assessment indicators

Parking Policy for Pune city (2018)

The policy was adopted by Pune Municipal Corporation with a vision of creating a better environment in the city while encouraging the citizens to use public transport and discouraging the use of private vehicles. It emphasises efficient operations of all aspects of parking management, maintenance, availability, integrating with other modes, traffic safety, and enforcement. The policy provides design guidelines and standards for provision of on-street parking, use of technology, and enforcement.

Strengths

The document has a progressive approach towards parking management, recognising that free parking is not a right. It clearly highlights the equitable use of road space prioritising pedestrians, cyclists, and public transport users. The policy specifically mentions the provision of bicycle parking at suitable locations, as in the Pune bicycle plan and free parking for persons with disabilities. It also mentions parking fee exemptions for intermediate public transport (autos and rickshaws), emergency vehicles, bicycles, school buses, and all types of Pune Mahanagar Parivahan Mahamandal Limited (PMPML) buses when parked in designated lots meant for their parking. One of the key objectives of the document is to transform at least 10 per cent of on-street parking spaces into public open spaces or non-motorised transport infrastructure, which if implemented can provide essential open spaces for children.

Weaknesses & Threats

The document does not have any dedicated clauses pertaining to ITCs. Although it mentions adding more parking near hospitals, heritage areas, railway stations, and other zones, there is no mention of reducing or restricting parking near play schools or educational institutes. There are also no provisions for pregnant women or vehicles with young children in them. The policy does not exclude informal school vans or school autos from the required payments.

Opportunities

The policy promotes active citizen engagement thereby providing an opportunity for people to voice their concerns. It provides strong linkages with the NUTP, Pune comprehensive mobility plan and other legal standards of the city adding value to ease implementation. It mandates that the surplus revenue generated from parking go directly in the Urban Transport Fund (UTF) that can be used to improve non-motorised and public transport facilities.

Inferences

The document scores comparatively high on the *Inclusive* indicator owing to its active promotion of citizen engagement and other provisions. It scores low on *Accessible* and *Safe* indicators because not all provisions of this indicator are addressed. It lacks any aspects of *Playful* and *Green* indicators.

Policy rating against gap assessment indicators

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	10	00	06	00	06	22
Rating	Weak alignment	No alignment	No alignment	Weak alignment	No alignment	No alignment

Walk Smart (2016)

The Walk Smart policy was drafted with the vision of making Pune a pedestrian-friendly city. It provides design guidelines for creation of footpaths, safe crossings, streamlining carriageways, creating pedestrian-only areas, and restricting vehicle speeds. The focus is on prioritising pedestrians and cyclists over vehicles.

One of the key aspects of the policy is to envision footpaths as vibrant public spaces, including amenities such as benches, shelters, waste bins, landscaping, shade giving tree plantation, etc. without creating hindrances for pedestrians. It specifically acknowledges that senior citizens, people with disabilities, women, and children are the most vulnerable because of poor walking facilities. It stresses the need for road crossings to be in stages, making it safer, comfortable, and convenient for young children and caregivers to cross wider roads. It mandates universally accessible infrastructure on all roads, and calls for awareness creation and enforcement for traffic discipline. The policy also specifically discourages free left turns ensuring safer pedestrian crossing.

However, the policy does not consider ITCs as stakeholders in developing streets, especially around priority zones such as preschools and anganwadis. Further, it does not mention the need to provide basic amenities such as public toilets, feeding rooms, changing rooms, etc. for caregivers and young children. While it provides specific calculations for pedestrian crossing signals, it does not cater to the requirements of ITCs (the walking speed of a toddler being slower than the speed used in the document for calculations). While the policy covers safety, shade, inclusivity, and accessibility in varying levels of detail, playfulness on streets has been overlooked.

As the policy considers children as key stakeholders, there is a strong scope to advocate for the needs of ITCs at later stages. It ensures pedestrians are prioritised throughout the city and hence a case of pedestrian only zones around priority areas such as pre-school, anganwadis, parks and health care centers can be made within the scope of the policy.

The document scores high on the *Safe* indicator because it addresses all the sub-indicators. The document identifies women and children as the most vulnerable to poor walking facilities. It does not focus extensively on the *Inclusive* and *Accessible* indicators but addresses amenities on the streets and continuous walking environment. It scores very low on the *Green* indicator and lacks any aspects of the *Playful* indicators.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	09	00	09	03	14	35
Rating	Weak alignment	No alignment	Weak alignment	No alignment	Average alignment	No alignment

Strengths

Weaknesses & Threats

Opportunities

Inferences

Policy rating against gap assessment indicators

Pune Smart City Proposal (2015)

The proposal extensively talks about improved mobility through buses, improved bus stops, e-rickshaws, non-motorised transport facilities, Public Bicycle Sharing (PBS), redesigning of junctions, and universal accessibility. It also aims at increasing open public spaces, creating interconnected gardens, riverfront promenades, and vehicle free roads. It stresses on ICT solutions and assumes that the high IT sector population will be able to adopt these solutions very easily.

Strengths

The proposal specifically talks about the safety of children, women, and elderly people. This is addressed through CCTV surveillance, remote monitoring technology, citizens participation, and dedicated children safety zones with wireless infrastructure. The proposal itself is built on extensive public consultation. It proposes redesigning footpaths and cycle tracks and the use of e-buses to reduce pollution levels. It calls for densification of neighbourhoods, making all proposed parks accessible through walking (with provision of footpaths), and making public transit stops within ten minute walking distances for all people.

Weaknesses & Threats

The proposal addresses universal accessibility as a principle but does not provide tangible outcomes as to how it will be achieved. Child-friendly aspects are not included in the street, junction and footpath redesign proposals. Parks are not envisioned as young children-friendly spaces. There are also concerns, expressed in the document itself, that the ICT solutions that have been proposed will not reach all the citizens, especially the economically and socially marginalised groups with no access to technology. The two biggest threats in the proposal include, one, the area of intervention is limited to the Area Based Development (ABD) zone, and secondly, the funding is limited to a short period, as is the case with all smart cities.

Opportunities

The document proposes the creation of a number of parks, public spaces, and riverfront development projects that can be made child-friendly with the right focus. The convergence of the proposal with other schemes existing in the country provides a window to continue the work even after the funding period is over and scale up across Pune. The proposal also encourages mode shift to NMT and PT modes reducing pollution and making streets more friendly to the needs of ITC. The proposed street traffic management system can reduce travel time, thus ensuring that caregivers get to spend more time with young children.

Inferences

The document scores comparatively high on the *Safe, Green, and Inclusive* indicators because it considers schools and health care centers as core infrastructure and specifically addresses safety of children, women, and elderly people. It is built on public consultations and mentions how all parks have to be made accessible by walking. It scores low on the *Accessible* indicator owing to the lack of focus on its sub-indicators and lacks any aspects of the *Playful* indicator.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	09	00	06	09	10	34
Rating	Weak alignment	No alignment	No alignment	Weak alignment	Weak alignment	No alignment

Policy rating against gap assessment indicators

Coimbatore Street Design & Management Policy (2017)

The Coimbatore Street Design and Management Policy 2017 lays the vision towards a non-motorised and public transport based future. The policy includes a step-by-step guide on how the envisioned transport future will be achieved over a 15-year period. It includes broad goals to improve walking and cycling which are to be achieved in short, medium, and long term period.

The policy elaborates the need for appropriate institutional structure, budget plan, and performance measurement for successful implementation. It includes various design standards for walking and cycling facilities. The policy also highlights the need for a robust on-street parking management, vending management, and enforcement. It provides a focus on high quality public transport and reduction in the number of Personal Motor Vehicles (PMVs) used in the city. The policy calls for compact cities and limits block sizes in new developments. It aims to reduce traffic accidents as well as improve environmental friendliness, and makes specific provisions for creating pedestrian- and cyclist-only streets and greenways. The policy also provides guidelines to ensure active streets, multi-modal interchanges, and wayfinding measures. The policy was drafted prior to national level schemes such as Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and the Smart Cities Mission, and ensures that funding is provided from the urban local body so that the city has control over its finances.

The document however does not mention infants, toddlers, and caregivers as stakeholders and lacks specific guidelines to fulfill their needs. It provides for a cycle sharing system but without provisions for toddlers and caregivers to access the cycles. The signal phases are directed to be adequate but do not specifically mention that they have to be responsive to the walking speed of toddlers.

The NMT facilities are to be inclusive irrespective of age. Hence, the needs of ITCs can be brought up at a later stage. As the policy aims for community participation, ITCs have an opportunity of making their voices heard. The streets are envisioned as active spaces where young children and caregivers can participate. The policy calls for collaboration with other departments and stakeholders making the process participatory. It calls for the formation of a Unified Metropolitan Transport Authority (UMTA) and regular collection of data on the profile of road users (including age and gender). This could open up opportunities of advocating for the needs of ITCs.

The document scores very high on the *Inclusive* indicator because it addresses NMT provisions across all ages and aims for community participation. It also addresses budgetary and institutional needs for NMT infrastructure. It scores high on *Accessible* and *Safe* indicators and includes various design standards for the same. It scores low on the *Green* indicator and lacks any aspects of the *Playful* indicator.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	15	00	11	09	12	47
Rating	Strong alignment	No alignment	Weak alignment	Weak alignment	Average alignment	Weak alignment

Strengths

Weaknesses & Threats

Opportunities

Inferences

Policy rating against gap assessment indicators

Chennai Non-Motorised Transport Policy (2014)

The policy aims to arrest the current decline in walking and cycling in the city by creating a safe and pleasant network of footpaths, cycle tracks, greenways and other Non Motorised Transport (NMT) facilities. The policy mandates that a minimum of 60 per cent of the corporation's transport budget is allocated to construct and maintain NMT infrastructure. This reflects a clear demonstration of the corporation's commitment to creating safe streets that consider the needs of all users.

Strengths

The strength of the policy lies in its structure towards prioritising walking and cycling through different layers, which include physical design principles and street design standards, a social layer addressing the need for public awareness, and an economical layer addressing the need to mandate a sustainable transport budget. More specifically, the policy calls for capacity building of the corporation leadership to ensure low-cost mobility options, highlights gender equity in access to streets, and focuses on improving black spots where high traffic accidents occur. It mandates provision of green spaces and pedestrian only zones near schools, market streets, historic, and cultural areas. It further promotes facilities like water point and public toilets on the streets for the comfort of the users.

Weaknesses & Threats

While the component of accessibility has been adequately addressed, other principles of ITC-friendly cities, like facilitating spaces that are playful, have not been addressed. Infants, toddlers, and caregivers have not been identified as specific stakeholders in the policy. The provisions of the public bicycle sharing system are also not responsive to the needs of toddlers and caregivers. Though the policy states the need for signal phasing to include adequate time for pedestrians, it does not identify toddlers as key stakeholders.

Opportunities

The policy necessitates community participation, where the needs of ITCs can be heard and incorporated. The policy imagines streets as attractive and safe spaces implying that playful aspects can be included in the street designs. It prioritises street amenities such as seating over parking and making more space available for the comfort of families with young children. It pushes all agencies to limit block sizes and provides building regulations to ensure that the streets are truly open and safe. The policy also makes provisions for having incentives for private motor vehicle users to shift to NMT modes.

Inferences

The document scores very high on the *Inclusive* indicator because it necessitates community participation. It scores high on the *Accessible*, *Green*, and *Safe* indicators because it prioritises pedestrians specifically on improving accident prone spots, at-grade crossings, pedestrian only spaces, green spaces, public toilets, and access to drinking water. Though it provides for reducing visual clutter, it does not make any provisions for the *Playful* indicators.

Policy rating against gap assessment indicators

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	15	00	12	12	12	51
Rating	Strong alignment	No alignment	Strong alignment	Strong alignment	Strong alignment	Weak alignment

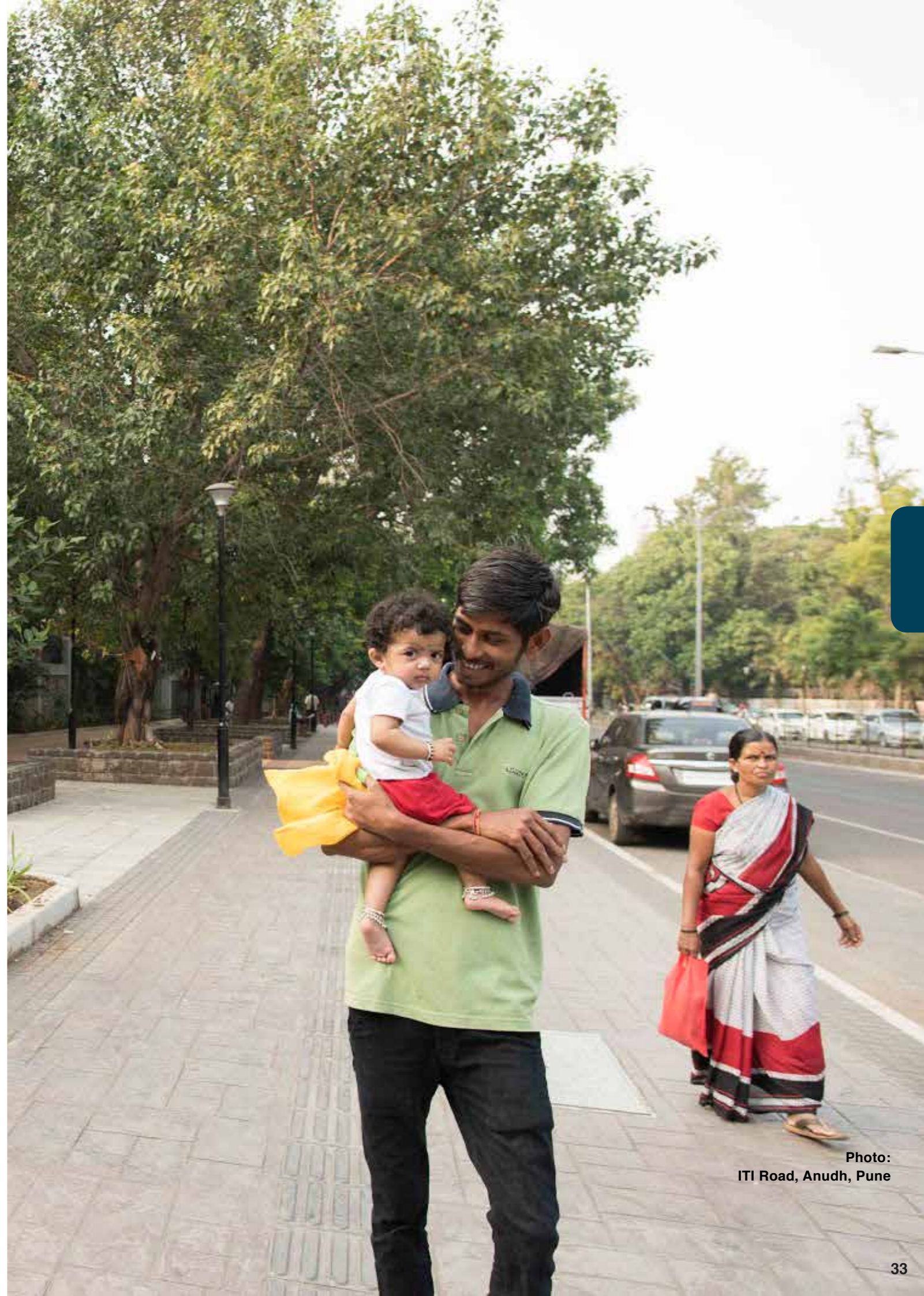


Photo: ITI Road, Anudh, Pune

Development Plans

Comprehensive Bicycle Master Plan, Pune (2017)

The Comprehensive Bicycle Master Plan (CBP) was adopted by Pune Municipal Corporation with a vision of making Pune a bicycle-friendly city. The document details steps which will encourage and promote cycling as well as help in increasing cycling modal share from the current 9 per cent to 25 per cent by 2031. The steps include institutional reforms, creating design guidelines with a network plan, expanding PBS (Public Bicycle-sharing System), and integrating cycling with public transport. It also covers other important stages for effective implementation of bicycle plans—such as enforcement, outreach, and monitoring and evaluation—which are crucial in garnering the support and educating the citizens of the city.

Strengths

The plan highlights integration with Urban Street Design Guidelines (USDG) and parking management. It provides templates for street design incorporating the needs of cyclists by identifying different types of cycling infrastructure—such as bicycle tracks, bicycle lanes, traffic calming measures, and shared streets—on different typologies of streets to create a city-wide cycling network. The key concerns addressed for a smooth cycling experience includes road safety, directness, problems with flyovers, and also the location of street furniture.

Weaknesses & Threats

While the plan acknowledges cycling as a key mode of school transport and calls for setting up of public bicycle sharing stations near schools, it does not cater specifically to the needs of ITCs. The plan highlights school related surveys as well as school based learning for cycling, but does not specify that the learning should begin at a young age for the child.

Opportunities

The Comprehensive Bicycle Master Plan empowers the citizens to demand the cycling infrastructure and mandates the authorities to adhere to the recommendations of the plan when designing any future streets. This provides an opportunity for citizens to demand child-friendly provisions in the plan. The city has proposed that the cycle plan be incorporated as part of Pune's Development Plan. This will strengthen it further. It calls for partnerships with schools to improve cycling usage amongst children. The creation of cycle-only greenways, as envisioned in the document, can also become an avenue to incorporate young children-friendly aspects. The plan provides a great opportunity to integrate cycling infrastructure with street design and public transport.

Inferences

The document scores high in both *Inclusive* and *Safe* indicators because it considers safety as an integral part of the plan and empowers citizens to demand cycling infrastructure. It makes a few provisions for *Accessible* and *Green* indicators but misses out on aspects of the *Playful* indicator.

Plan rating against gap assessment indicators

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	14	00	07	05	13	39
Rating	Average alignment	No alignment	No alignment	Weak alignment	Average alignment	Weak alignment

Revised City Development Plan for Pune (2012)

The development plan for Pune provides a vision with safety, sustainability, and liveability at its core along with a detailed strategic framework for planning and governance to ensure implementation. Mobility is one of the key sections in the document along with education, health, and infrastructure.

The plan specifically focuses on integrating land use, transport, and infrastructure. It refers to the NUTP and identifies that the core principle of the national policy is moving people and not vehicles. It criticises increased dependence on PMVs and calls for improvements to the Bus Rapid Transit (BRT) in the city. It specifically identifies that autos are used as a transport for children to get to schools.

However, the plan does not incorporate the needs of children and caregivers, especially at the neighbourhood level. The plan does not ensure access to recreational and educational facilities at that level as well. The principles of compactness and walkability are not considered in the document. Despite the city vision of sustainable transport, the development plan has proposed large investments in infrastructure that primarily caters to private motor vehicles, including construction of flyovers and road expansion making the streets unsafe for young children. There is no integration in terms of the fare structure, making it more difficult for caregivers to travel in the city while making multiple stops.

The plan ensured stakeholder consultation at various stages of planning, providing an opportunity for ITCs to make their voices heard. It calls for inter-departmental coordination and envisions 60 per cent of transport investment going into public and mass transit modes. It acknowledges that road improvements are not a long term solution.

The high score for *Inclusive* in the document is owing to the specific considerations of most of the sub-indicators. It has few aspects of the *Green* indicator, but completely misses out on accounting for *Playful*, *Accessible*, and *Safe* indicators.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	13	00	00	02	00	15
Rating	Average alignment	No alignment	No alignment	Weak alignment	No alignment	No alignment

Strengths

Weaknesses & Threats

Opportunities

Inferences

Plan rating against gap assessment indicators

Comprehensive Mobility Plan for Pune City (2008)

The Comprehensive Mobility Plan for Pune aims at addressing the problem of traffic growth of private motorised vehicles, and suggests a direction for the multi-modal transport system of Pune with emphasis on sustainable transport modes. The plan identifies safety of pedestrians and cyclists as a major concern, and claims that it was addressed with the recommendation of a bicycle plan for the city (which the city has already worked on), thus creating a network of walking-friendly pathways and ensuring traffic calming measures on local streets.

Strengths

The mobility plan was prepared through a participatory process. The suggestions from the stakeholder workshops and meetings were incorporated in the development of the mobility plan. The plan goes on to rank different aspects of mobility—such as safety, walkability, access to public transport, and parking—based on the service level benchmarks and the need for improvements.

Weaknesses & Threats

The comprehensive mobility plan fell short on delivering on the specific needs of infants, toddlers, and caregivers. Only employment generating land use options have been considered for expansion in transit corridors, with no consideration given to educational, healthcare, and recreational facilities. While the plan collected extensive data on user behaviour and mode choice, it did not collect any data to indicate the travel characteristics and needs of young children and caregivers. The overemphasis on grade-separated facilities like foot-over bridge has also made crossing intersections uncomfortable and challenging for children and caregivers.

Opportunities

The plan is required to be prepared every five years and hence, there is a constant scope for improvement. The city has already pioneered work in walking, cycling, and public transport improvements and has set good examples which can be expanded and improved. It also links strongly to other existing policies, programmes, and schemes making it well integrated in the institutions.

Inferences

The document scores very high on the *Inclusive* indicator because it ensures participatory preparation of the plan and mandates it in the future. It scores lower on the *Accessible* and *Safe* indicators as it only considered employment generating land use options and did not collect data in particular reference to ITCs. It does not cover aspects of the *Playful* indicator.

Plan rating against gap assessment indicators

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	15	00	03	00	06	24
Rating	Strong alignment	No alignment	No alignment	No alignment	No alignment	No alignment



Photo: J M Road, Pune

Design Guidelines

Urban Street Design Guide, NACTO (2013)

The Urban Street Design Guide charts principles and best practices of street design. The guide focuses on the design tools to make streets safer, more liveable, and economically vibrant. It outlines both a clear vision for complete streets and a detailed design roadmap.

Strengths

The design guidelines address the components of mobility through various planning and urban design elements. The document provides a comprehensive guide to design an ITC-friendly city. Most topics and treatments in the guide have been divided into three levels of guidance—critical features, recommended features, and optional features—making it easier for a government authority to implement selected features according to their need. It also identifies that streets can be designed flexibly depending on their character and provides best case practices from across the world to showcase implementation of certain elements. The document identifies that streets are public spaces, and identifies a strong correlation between street improvements and increased business opportunities. Creating a comfortable environment for users is an essential part of the guide, and it looks at streets as ecosystems with a focus on the need to provide plantations throughout the walking environment.

Weaknesses & Threats

While the guidelines provide for the creation of parklets, temporary street closures, and public plazas, the primary aim of these is not to respond to the needs of young children. Hence, the street design elements outlined in the guidelines missed out on some specific design elements that would make it more inclusive for infants, toddlers, and caregivers.

Opportunities

The NACTO guidelines are one of the most young children-friendly guidelines available right now. With the inclusion of some specific elements for the needs of the caregivers, these guidelines can truly direct the cities in designing spaces that are inclusive, playful, accessible, green, and safe for ITC. The document also urges the local authorities to use the design guidelines as a basis for the creation of local standards—ensuring internal design consensus between different local agencies in the years to come.

Inferences

The document includes all aspects of the *Playful* indicator and is the only analysed document to do so. It scores high on all other aspects as well only falling short in the *Accessible* indicator because it fails to recognise that certain provisions such as parks and parklets are specifically for ITCs.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	80%	100%	75%	89%	91%	87%
Rating	Average alignment	Strong alignment	Average alignment	Average alignment	Average alignment	Average alignment

Guideline rating against gap assessment indicators

Indian Road Congress (IRC) Guidelines on Urban Streets

The Indian Road Congress (IRC) prepares standard specifications and code of practice for transport in India. Three of their documents have a direct impact on ITC mobility. The first one, IRC:103-2012, is a set of national level pedestrian guidelines. It gives directions on footpath design and other pedestrian facilities which are part of street designs. It includes standards that provide universal accessibility and inclusivity. The second document, IRC:124-2017, is a national level design guideline on planning and implementation of the Bus Rapid Transit (BRT) system for Indian cities. The third guideline, IRC:SP:117-2018, explains the concept of universal accessibility holistically by focusing on the needs of persons with disabilities, as well as, accessibility of caregivers with prams, pregnant women, and the elderly.

Strengths

IRC:103-2012 has a section on school improvement zones. It includes specific guidelines towards the safety of children, such as safe routes to school, school drop-off zones, school zone signages, guardrails, and wide pedestrian crossings. It also mentions that traffic signal timings need to be adjusted near educational and recreational areas. Other design recommendations in public transport that ensure accessibility to ITCs have been addressed in IRC:124-2017 through elements such as level boarding of buses from the BRT station, access ramps, etc. The guidelines also mention the need to provide reserved seats for caregivers with young children on the bus. IRC:SP:117-2018 acknowledges the need to make relevant provisions as toddlers and children lack orientation and wayfinding, have navigation difficulties, and experience fatigue.

Weaknesses & Threats

Although the IRC:103-2012 document mentions the needs of children broadly, it does not cater specifically to infants, toddlers, and caregivers. The document does not include guidance on how to plan safe routes to school. While provisions for street furniture and street material are made, there is no mention of the aspect of playfulness. IRC:124-2017 guidelines also lack playful aspects in the BRT planning, and do not have any provisions integrating the BRT system with places frequented by ITCs.

Opportunities

IRC is currently revising some of its existing manuals and guidelines pertaining to urban streets. There is an opportunity to make revisions that are sensitive towards the needs of ITCs. IRC documents are referred by engineers and designers during planning, design, and implementation of streets thus providing a larger scope for implementation.

Inferences

The document covers the *Safe* indicator well but does not cover the *Accessible* and *Green* indicators in-depth. Though the *Inclusive* indicator is scored less, the document does consider ITCs as stakeholders. It does not incorporate the design elements for the *Playful* indicator.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	50%	00%	38%	56%	73%	43%
Rating	Weak alignment	No alignment	No alignment	Weak alignment	Weak alignment	Weak alignment

Guideline rating against gap assessment indicators

Complete Streets Design Workbook, ITDP (2019)

The Complete Streets Design Workbook is part of the Complete Streets Framework Toolkit launched by the Ministry of Housing and Urban Affairs, under the Smart Cities Mission. The document is a comprehensive urban street design guidelines for Indian cities. The guidelines are contextual to Indian cities and address the distinct character of Indian streets. It includes various design guidelines on footpaths, street furniture, bus stops, on-street parking, pedestrian crossings, intersections, landscape, and other street materials. It also recommends street sections for different right-of-way widths. It gives a step-by-step process on how to design or redesign urban streets based on complete streets principles.

Strengths

The guidelines address inclusivity through the need for the design of complete streets to provide safe and inclusive environments that support users of all age groups, genders, and physical dispositions. The document also acknowledges children as a user group. However, it does not specifically address the needs of ITCs while recommending the various design elements for a complete street. It includes and illustrates specific design guidelines around school entry and exit. The guidelines on universal accessibility also ensure accessibility to prams. The need to provide green spaces along streets to ensure a comfortable walking experience for all users has been mentioned.

Weaknesses & Threats

The guidelines do not state the need for playful elements on streets though they briefly state the example of child-friendly flooring materials in play areas. However, the document could have covered the need for accessibility and safety better through various design solutions. The guidelines only touch upon aspects of playfulness and do not cover them in detail.

Opportunities

Ensuring that women, children, and elderly are an important user group of the streets, the document creates scope for street design to be responsive to their needs. The guideline addresses the need for public participation where the needs of ITC can be included. Since the Complete Streets Design Workbook is a guidance document for the 100 smart cities, there is value in specifically addressing the needs of ITC through incorporating specific design elements.

Inferences

The document scores well on indicators of *Safe* and *Accessible* because it acknowledges children as a user group and makes safe design provisions for them. While it scores low on *Green* and *Inclusive*, it has certain provisions for the same. It scores the least on the *Playful* indicator because very few aspects of playfulness are included in the document.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	50%	33%	63%	56%	73%	55%
Rating	Weak alignment	No alignment	Weak alignment	Weak alignment	Weak alignment	Weak alignment

Guideline rating against gap assessment indicators

Urban Street Design Guidelines, Pune (2016)

The Urban Street Design Guidelines for Pune define the process for designing streets, provide design templates for streets of different right-of-way widths, and highlight the standards for street elements. The guidelines are based on the key principles of safety, equitable allocation of road space, convenience, and ecological sustainability. The document categorises various elements of streets under: street elements, safety elements and multi-utility zones.

The document addresses the need for safe and accessible streets through guidelines on designing footpaths, intersections, pedestrian crossings, and other street design elements. It recommends the inclusion of shade and shelter to improve the comfort of the users. It also ensures universal accessibility and barrier-free design. It also highlights the need to provide public toilets for children, women, and elderly.

However, the document does not explicitly identify ITC as a key stakeholder in street design. It also does not mention specific design elements, like playful elements, necessary to address the needs of ITC. The street furniture details provided in the document do not incorporate the specific needs of young children either.

Many streets in Pune are being retrofitted as per USDG and thus it provides a great opportunity to include ITC-friendly features as part of the design. It provides for stakeholder consultations at the planning stage where ITC needs can be included.

The document scores well on the *Safe* indicator because of the focus on the design on footpaths, intersection, crossings, and other design elements. It scores low on the *Inclusive* and *Green* indicators but makes certain provisions for public toilets, universal accessibility, and comfort. It does not incorporate the design elements for the *Playful* indicator.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	50%	00%	38%	56%	73%	43%
Rating	Weak alignment	No alignment	No alignment	Weak alignment	Weak alignment	Weak alignment

Strengths

Weaknesses & Threats

Opportunities

Inferences

Guideline rating against gap assessment indicators

Better Streets, Better Cities, ITDP (2011)

The Better Streets, Better Cities document is a guide to street design in urban India, and illustrates ways in which good design can help create safer streets and more liveable public spaces. The guide discusses street elements, such as footpaths, cycle tracks, medians, and spaces for street vending, covering the importance of each element as well as the design criteria and implementation challenges. The guide uses design templates for various right-of-way widths and intersections, explaining the process of street design. It serves as a reference manual for municipal governments, practitioners, design consultants, and academic institutions.

Strengths

The document recommends traffic calming elements and slow zones in places where large numbers of children are present, such as schools, parks, and residential areas, to ensure their safety, by improving the liveability. Specific guidelines to ensure safety in the form of crossings, bollards, lighting etc. have also been addressed. The document highlights the need for landscaping in streetscape to be an integral component and explains the design criteria and standards for the same.

Weaknesses & Threats

The document does not highlight specific design elements that cater to the needs of infants, toddlers, and caregivers. It does not mention the need for playful elements on the streets.

Opportunities

The pedestrian and activity surveys recommended could look at identifying the concerns of ITC. As the document clearly states that streets have to be made safe for children, the needs of ITC can be incorporated into the design stages.

Inferences

The document scores well in the *Safe* indicator because of its focus on street design elements that enhance road safety and on places where children are present in large numbers. It falls short in *Green* and *Inclusive* indicators but identifies landscaping as an important component. It does not incorporate the design elements for the *Playful* indicator.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	50%	00%	38%	56%	73%	43%
Rating	Weak alignment	No alignment	No alignment	Weak alignment	Weak alignment	Weak alignment

Guideline rating against gap assessment indicators

UTTIPEC Guidelines for Street Design, Delhi (2010)

The Unified Traffic and Transportation Infrastructure Planning and Engineering Center (UTTIPEC) Street Design Guidelines document provides design guidelines for complete streets and pedestrian facilities for Delhi. It was developed by the Delhi Development Authority and began with a vision of people oriented streets for the city. It includes design standards on footpaths, pedestrian crossings, cycle infrastructure, street furniture, street utilities and services, universal accessibility features, and materials. Along with street design standards, it also gives guidelines on bus rapid transit systems, bus lanes, and high occupancy vehicle lanes for efficient use of road space. Street design sections for various right of ways have also been included in the document. The guideline clearly identifies the need to create active and liveable streets, while preserving the local social and economic street activities that take place in the city.

UTTIPEC guidelines also specifically address the needs of ITCs by highlighting the need to design streets for strollers, under universal accessibility. It considers children as an important stakeholder in urban landscape awareness programs and stresses the need for safe pedestrian crossings and traffic calming elements around schools. Apart from street design, it also recommends low-floor public buses for providing easy access to children. The document advocates for bringing awareness among children on the environment through planting and caring for saplings on streets, and informative panels on urban landscapes. The guide book also contains provisions for creating public toilets.

While the document addresses a large number of elements to promote ITC-friendly city design, it missed out on several elements to ensure inclusivity and playfulness. Even the street furniture provided is not ITC- friendly since it is not specifically designed for them.

The document brings in children to participate in the planting of saplings, ensuring that they are closer to nature. This can create a culture of staying close to nature in families with young children. It also encourages street art which can be very stimulating to the minds of young children. The provision of intersection redesign calls for stakeholder participation, ensuring that the needs of ITCs can be heard in the process.

The document scores well on the *Green* indicator because it directly involves children in planting saplings, bringing them closer to nature. It scores well on the *Safe* and *Accessible* indicators because of the inherent provisions but falls short in the *Playful* and *Inclusive* indicators.

Indicators	Inclusive	Playful	Accessible	Green	Safe	Cumulative
Scoring	30%	67%	75%	100%	82%	71%
Rating	No alignment	Weak alignment	Average alignment	Strong alignment	Average alignment	Weak alignment

Strengths

Weaknesses & Threats

Opportunities

Inferences

Guideline rating against gap assessment indicators



Photo:
Pedestrian Plaza,
T.Nagar, Chennai

06 Conclusion & way forward

This study has shown us that there are several policies, plans, and design guidelines that impact the mobility of young children and their caregivers in Indian cities. However, most of these documents do not focus comprehensively on the specific mobility needs of Infant, Toddler, and Caregiver (ITC). The current state of development of Indian cities clearly shows that urban life can be harsh towards one of the most sensitive and vulnerable inhabitants in the city. However, this can be changed. This gap assessment study is a step towards transforming mobility in Indian cities to nurture healthy early childhood development.

The documents assessed in this report include national, state, and city-level policies, plans, and guidelines. They cover all forms of mobility such as walking, cycling, public transport, and personal motor vehicles. All the documents analysed and their comprehensive scores and ratings are provided below:

Document	Comprehensive rating of the document	Comprehensive scoring of the document
Policies		
National Transit-Oriented Development (TOD) Policy (2017)	Weak alignment	43
National Urban Transport Policy (April 2006)	No alignment	22
Maharashtra State Urban Transport Policy (upcoming)	No alignment	31
Transit-Oriented Development Regulations, Pune (2019)	Weak alignment	45
Parking Policy for Pune city (2018)	No alignment	22
Walk Smart (2016)	No alignment	35
Pune Smart City Proposal (2015)	No alignment	34
Coimbatore Street Design & Management Policy (2017)	Weak alignment	47
Chennai Non-Motorised Transport Policy (2014)	Weak alignment	51
Development Plans		
Comprehensive Bicycle Master Plan, Pune (2017)	Weak alignment	39
Revised City Development Plan for Pune (2012)	No alignment	15
Comprehensive Mobility Plan for Pune City (2008)	No alignment	24

Document	Comprehensive rating of the document	Comprehensive scoring of the document
Guidelines		
Urban Street Design Guide, NACTO (2013)	Average alignment	87%
Indian Road Congress Guidelines on urban streets	Weak alignment	43%
Complete Street Design Workbook, ITDP (2019)	Weak alignment	55%
Urban Street Design Guidelines, Pune (2016)	Weak alignment	43%
Better Streets, Better Cities, ITDP (2011)	Weak alignment	43%
UTTIPPEC Guidelines for Street Design, Delhi (2010)	Weak alignment	71%

While many of these documents are path-breaking in their own right, they can be more sensitive and comprehensive to ensure that young children and their caregivers can access the city with comfort, convenience, safety, security, and affordability. The key findings from the gap assessment focus on three areas:

- **Data on infants, toddlers, and caregivers:** The majority of the documents do not mention or mandate collection and management of ITC-specific data including but not limited to disaggregated demographic information, trip characteristics (origin, destination, trip length, etc.), and mode share.
- **Infant, toddler, and caregiver-friendly planning, design, and implementation:** The lack of disaggregated data hinders evidence-based/data-driven planning and design in Indian cities. The majority of the documents do not mandate or detail out the need to include infant, toddler, and caregiver-specific interventions. The majority of the planning tools and design guidelines do not include recommendations across all levels of urban planning—street, block, neighbourhood, ward, zone, city, and metropolitan area.
- **Comprehensive integration of infant, toddler, and caregiver-friendly recommendations:** The majority of the documents fail to recognize infant, toddler, and caregiver-friendly recommendations as an integral layer of any and all initiatives, projects, and interventions within the realms of urban development and mobility planning. Existing policies, plans, and guidelines overlook the needs of young children and caregivers in an urban environment as an isolated problem and do not commonly address them. Hence, they do not include appropriate budget allocation or funding mechanisms for the implementation of infant, toddler, and caregiver-specific interventions.

In addition to the above-listed findings, the majority of the existing policies, plans, and guidelines also do not prioritize all ITC-friendly mobility indicators—inclusive, playful, accessible, green, and safe—equally.

Key highlights from the reviewed policies, plans, and guidelines that align with the indicators for infant, toddler, and caregiver-friendly mobility:

National Transit-Oriented Development Policy focuses on the development of neighborhoods within a 500 - 800m walking distance and increasing the accessibility of the transit stations by creating pedestrian and Non-Motorised Transport (NMT) friendly infrastructure. It also highlights the importance of creating a dense street network with special attention to the safety of women, children, senior citizens, and differently-abled.

Parking policy for Pune city (2018) along with focusing on on-street and off-street parking management, the policy also identifies street design as a key component in parking management. The policy quotes, "While designing streets, priority shall be given to the movement of pedestrians, cyclists, public transport, public spaces, and then motor vehicles. Parking can be accommodated in the remaining street space."

Pune smart city proposal specifically talks about the safety of children, women, and the elderly. This is addressed through CCTV surveillance, remote monitoring Technology, citizen participation, and dedicated children safety zones with wireless infrastructure.

Indian Road Congress Guidelines - IRC:103-2012 - Guidelines on Pedestrian facilities provide technical details on the pedestrian level of service, design standards, and warrants for different street elements on when they should be provided. It has an extensive section on school improvement zones. It also provides guidelines specific to the safety of children such as 'Safe routes to school', school drop-off zones, school zone signages, guardrails, and wide pedestrian crossings.

Complete Street Design Toolkit is contextual to Indian cities and addresses the distinct character of Indian streets. The guidelines ensure inclusivity of gender, age groups, various disabilities, and economic background. The document also acknowledges children as a user group in the guidelines. Specific guidelines on children's play area on the street, children-friendly materials, and street design around school entry and exit have been included and well-illustrated.

UTTIPEC Guidelines for Street Design do express the need to design streets for strollers under universal accessibility. It stresses the need for safe pedestrian crossings and traffic calming elements around schools. Apart from street design, it also recommends low-floor public buses for easy access to children. It considers children as an important stakeholder in urban landscape awareness programs.

Comprehensive Bicycle Master Plan, 2017, Pune acknowledges cycling as a key mode of school transport. It highlights school-related surveys and school-based learning for cycling.

While cities like Pune have taken significant steps towards becoming responsive to the needs of ITCs, a policy framework—within which the cities can converge their existing policies and make development plans and guidelines—is lacking. This means that existing policies only partly address the needs of ITCs. While some policies inherently include a few aspects of accessibility and safety within their framework, aspects of inclusivity and greenery are mostly covered under specific sections. All existing policy frameworks exclude the aspects of playfulness that are important for the emotional, physical, and mental development of young children.

It is also to be noted that most of the policies and plans rate low in terms of ITC mobility primarily because they were created for a different objective. Within the guidelines documents, the Urban Street Design Guidelines (USDG) by NACTO rates the best because it directly or indirectly covers most ITC-friendly design elements. While few documents such as the Maharashtra State Urban Transport Policy (upcoming) and the IRC guidelines present a strong opportunity to include infant, toddler, and caregiver-friendly recommendations because of the scope for revision and its wide reach among city officials, certain other documents do not have an immediate scope for the same.

The different levels of governments in India consider a myriad set of policies before making decisions that have long-term impacts on the residents of this country. The need of the hour is to formulate a policy that focuses specifically on the needs of young children and their caregivers. It is important to use the current development agenda to create better cities for our young children.

The next step in the process is to ensure that a state-level young children-friendly mobility policy is created for the state of Maharashtra. The policy will respond to the key findings from this gap assessment study and comprehensively address the inclusive, playful, accessible, green, and safe indicators. For example, the new policy will include aspects of playfulness that have been missing in most policies. It will also cover aspects such as parking because of the impact they have on ITC mobility, although they come under separate policy frameworks. The young children- and caregiver-friendly mobility policy would specifically address the gaps identified in this report. It will ensure that Maharashtra becomes a shining example of a state that puts young children and their caregivers at the heart of the urban and mobility planning process.

Concurrently, the policy and planning toolkit for infant, toddler, and caregiver-friendly mobility in Indian cities will also be developed to inspire a nation-wide transformation.



Photo:
Car-free Sunday,
Elliots Road, Chennai

Policies and Plans assessment table

Indicator	Policies /Development plans	National TOD Policy (2017)	National Urban Transport Policy (April 2006)	Maharashtra State Urban Transport Policy (upcoming)	TOD Regulations, Pune (2019)	Parking Policy for Pune city (2018)	Walk Smart (2016)	Pune Smart City proposal (2015)	Coimbatore Street Design & Management Policy (2017)	Chennai Non-Motorised Transport Policy (2014)	Comprehensive Bicycle Master Plan, Pune (2017)	Revised City Development Plan for Pune (2012)	Comprehensive Mobility Plan for Pune City (2008)
Comprehensive rating of the document		Weak alignment	No alignment	No alignment	Weak alignment	No alignment	No alignment	No alignment	Weak alignment	Weak alignment	Weak alignment	No alignment	No alignment
Comprehensive score of the document		43	22	31	45	22	35	34	47	51	39	15	24
Inclusive	Rating	Average alignment	Weak alignment	Average alignment	Average alignment	Weak alignment	Weak alignment	Weak alignment	Strong alignment	Strong alignment	Average alignment	Average alignment	Strong alignment
	Total score	13	9	13	14	10	9	9	15	15	14	13	15
	Even and thorough implementation of interventions	3	3	3	3	3	3	0	3	3	3	3	3
	Transparent processes	3	1	3	3	0	2	2	3	3	3	1	3
	Listening and responding to needs of residents through engagement	3	1	3	3	1	2	2	3	3	3	3	3
	Objective, informed by data	1	3	3	3	3	0	2	3	3	3	3	3
	Fair to all, not just owners	3	1	1	2	3	2	3	3	3	2	3	3
Playful	Rating	No alignment	No alignment	No alignment	No alignment	No alignment	No alignment	No alignment	No alignment	No alignment	No alignment	No alignment	No alignment
	Total score	0	0	0	0	0	0	0	0	0	0	0	0
	Attention focusing (not grabbing)	0	0	0	0	0	0	0	0	0	0	0	0
	Enveloping and protecting from distraction	0	0	0	0	0	0	0	0	0	0	0	0
	Challenging	0	0	0	0	0	0	0	0	0	0	0	0
	Committed to art/culture	0	0	0	0	0	0	0	0	0	0	0	0
	Authored by and memorializing of the childhoods belonging to it	0	0	0	0	0	0	0	0	0	0	0	0
Accessible	Rating	Weak alignment	No alignment	No alignment	Weak alignment	No alignment	Weak alignment	No alignment	Weak alignment	Average alignment	No alignment	No alignment	No alignment
	Total score	9	2	6	11	6	9	6	11	12	7	0	3
	Clusters of services/convenient	3	0	3	3	0	0	2	3	3	0	0	0
	Legible	0	0	0	0	0	0	0	0	0	0	0	0
	Free of physical and virtual obstacles	3	2	3	3	3	3	2	3	3	3	0	2
	Predictable and dependable, well-communicated services	3	0	0	2	3	3	2	3	3	3	0	1
	Flexible	0	0	0	3	0	3	0	2	3	1	0	0
Green	Rating	Weak alignment	No alignment	No alignment	Weak alignment	No alignment	No alignment	Weak alignment	Weak alignment	Average alignment	No alignment	No alignment	No alignment
	Total score	9	5	0	8	0	3	9	9	12	5	2	0
	Comfortable and protected from the elements	0	1	0	2	0	3	1	3	3	3	0	0
	Quiet	0	0	0	0	0	0	2	0	0	0	0	0
	Wild and bio-diverse	3	0	0	0	0	0	2	2	3	2	0	0
	Renewable and non-carbon energy sources	3	2	0	3	0	0	2	2	3	0	1	0
	Future-oriented, green technologies	3	2	0	3	0	0	2	2	3	0	1	0
Safe	Rating	Average alignment	No alignment	Average alignment	Average alignment	No alignment	Average alignment	Weak alignment	Average alignment	Average alignment	Average alignment	No alignment	No alignment
	Total score	12	6	12	12	6	14	10	12	12	13	0	6
	Safe to walk/ bike while daydreaming/ mentally distracted	3	2	3	3	3	3	2	3	3	3	0	2
	Slow	3	2	3	3	0	3	2	3	3	3	0	2
	Structured, demarcated, space is assigned	3	2	3	3	3	3	2	3	3	3	0	2
	Respectful of privacy	0	0	0	0	0	2	2	0	0	2	0	0
	Eyes on the street, trust of neighbours	3	0	3	3	0	3	2	3	3	2	0	0

Guidelines assessment table

Indicator	Guidelines	Urban Street Design Guide, NACTO (2013)	Indian Road Congress Guidelines on urban streets	Complete Street Design Workbook, ITDP (2019)	Urban Street Design Guidelines, Pune (2016)	Better Streets, Better Cities, ITDP (2011)	UTTIPPEC Guidelines for street design, Delhi (2010)	
	Comprehensive rating of the document	Average alignment	No alignment	Weak alignment	No alignment	No alignment	Weak alignment	
	Comprehensive score of the document	87%	46%	55%	43%	43%	71%	
Inclusive	Rating	Average alignment	No alignment	Weak alignment	Weak alignment	Weak alignment	No alignment	
	Percentage of design elements present	80%	30%	50%	50%	50%	30%	
	Shared-space streets	1	1	1	1	1	1	
	Pop-up playing	1	0	0	0	0	0	
	Benches	1	1	1	1	1	1	
	Use of semi-private spaces	1	0	0	0	0	0	
	Temporary street closure	1	0	0	0	0	0	
	Use of urban leftovers	1	0	1	1	1	0	
	Pocket green	1	0	1	1	1	0	
	Toilets and Drinking Water	0	1	1	1	1	1	
	Community gardens	1	0	0	0	0	0	
	Resting/Nursing Booths	0	0	0	0	0	0	
	Playful	Rating	Strong alignment	No alignment	No alignment	No alignment	No alignment	Weak alignment
		Percentage of design elements present	100%	0%	33%	0%	0%	67%
Ground cover materials and colours		1	0	1	0	0	1	
Provision of adequate parks, tot-lots, playgrounds		1	0	0	0	0	0	
Playful furniture		1	0	0	0	0	1	
Amount and combinations of uses/activities		1	0	0	0	0	1	
Sidewalk games		1	0	1	0	0	0	
Engaging with street art		1	0	0	0	0	1	
Accessible	Rating	Average alignment	Weak alignment	Weak alignment	No alignment	No alignment	Average alignment	
	Percentage of design elements present	75%	63%	63%	38%	38%	75%	
	Density and proximity of community facilities	1	1	0	0	0	1	
	Continuous borders and planters	1	1	1	1	1	1	
	Furniture for ITC	0	0	0	0	0	0	
	Public Building interface	1	1	1	0	0	1	
	Play Equipment	1	0	1	0	0	1	
	Daycare	0	0	0	0	0	0	
	Entrances and Ramps for ITC	1	1	1	1	1	1	
	Benches	1	1	1	1	1	1	

Indicator	Guidelines	Urban Street Design Guide, NACTO (2013)	Indian Road Congress Guidelines on urban streets	Complete Street Design Workbook, ITDP (2019)	Urban Street Design Guidelines, Pune (2016)	Better Streets, Better Cities, ITDP (2011)	UTTIPPEC Guidelines for street design, Delhi (2010)	
	Comprehensive rating of the document	Average alignment	No alignment	Weak alignment	No alignment	No alignment	Weak alignment	
	Comprehensive score of the document	87%	46%	55%	43%	43%	71%	
Green	Rating	Average alignment	Weak alignment	Weak alignment	Weak alignment	Weak alignment	Strong alignment	
	Percentage of design elements present	89%	56%	56%	56%	56%	100%	
	Street Planting	1	1	1	1	1	1	
	Air Pollution measures	1	1	1	1	1	1	
	Groundcover in parks, adding green	1	0	1	1	1	1	
	Noise control	0	0	0	0	0	1	
	Shading and cooling elements	1	1	1	1	1	1	
	Use of renewables	1	0	0	0	0	1	
	Natural Play Elements	1	0	0	0	0	1	
	Solid waste management	1	1	0	0	0	1	
	Surface drainage and rainwater harvesting	1	1	1	1	1	1	
	Safe	Rating	Average alignment	Average alignment	Weak alignment	Weak alignment	Weak alignment	Average alignment
		Percentage of design elements present	91%	82%	73%	73%	73%	82%
		Active facade along Routing	1	1	1	1	1	1
Recommended street widths		1	1	1	1	1	1	
Children Wayfinding		1	1	0	0	0	1	
Cycling Lanes		1	1	1	1	1	1	
Fencing/ Permeable Perimeter		1	1	1	1	1	1	
Parking Types		1	1	1	1	1	1	
Lighting		1	1	1	1	1	1	
Protective elements from traffic		1	1	1	1	1	1	
Legibility and sightlines		1	1	1	1	1	1	
Camera monitoring		1	0	0	0	0	0	
Protection from Strays		0	0	0	0	0	0	

Document	Source
Policies / Plans	
National Transit-Oriented Development (TOD) Policy (2017)	http://mohua.gov.in/upload/whatsnew/59a4070e85256Transit-Oriented_Development_Policy.pdf
National Urban Transport Policy (April 2006)	http://www.urbantransport.kar.gov.in/National%20Urban%20TransportPolicy.pdf
Maharashtra State Urban Transport Policy (upcoming)	https://www.maharashtra.gov.in/Site/Upload/Acts%20Rules/Marathi/Notification%20for%20Transport%20Policy.pdf
Transit-Oriented Development Regulations, Pune (2019)	https://pmc.gov.in/sites/default/files/Building_permission/Tod_development_plan/2019.03.08_TOD_37_(1%20AA).pdf
Parking Policy for Pune city (2018)	https://pmc.gov.in/sites/default/files/project-glimpses/PMC-public-parking-policy-English-revised-March2016-Final.pdf
Walk Smart (2016)	http://smartcities.gov.in/upload/development/5a9009c9843cdPolicy%20for%20Pedestrian%20Facilities%20and%20Safety%20in%20Pune%20City.pdf
Pune Smart City proposal (2015)	https://pmc.gov.in/en/smart-city-proposal
Coimbatore Street Design & Management Policy (2017)	https://www.itdp.in/wp-content/uploads/2018/01/CoimbatoreStreetDesignandManagementPolicy_ITDP_170218.pdf
Chennai Non-Motorised Transport Policy (2014)	https://www.itdp.in/wp-content/uploads/2014/10/NMT-Policy.pdf
Comprehensive Bicycle Master Plan, Pune (2017)	https://punecycleplan.files.wordpress.com/2018/09/1-pune-cycle-plan-gb-approved-2017.pdf
Revised City Development plan for Pune (2012)	https://pmc.gov.in/sites/default/files/project-glimpses/Draft_City_Development_Plan_for_Pune_City_2041_Vol-1.pdf
Comprehensive Mobility Plan for Pune City (2008)	https://wricitieshub.org/sites/default/files/Comprehensive%20Mobility%20Plan%20for%20Pune%20City.pdf
Guidelines	
Urban Street Design Guide, NACTO (2013)	https://nacto.org/publication/urban-street-design-guide/
Indian Road Congress Guidelines on urban streets	- not uploaded in one place -
Complete Street Design Workbook, ITDP (2019)	https://www.itdp.in/resource/complete-streets-framework-toolkit/
Urban Street Design Guidelines, Pune (2016)	https://pmc.gov.in/sites/default/files/project-glimpses/USDG_Final_July2016.pdf
Better Streets, Better Cities, ITDP (2011)	https://www.itdp.in/resource/better-streets-better-cities-a-guide-to-street-design-in-urban-india/
UTTIPEC Guidelines for street design, Delhi (2010)	http://www.uttipeccnic.in/upload/uploadfiles/files/7554441800.pdf

List of references

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Prepared by



Aila Bandagi **Team**

A V Venugopal

Parin Visariya

Pranjal Kulkarni

Vaishali Singh

Avishek Jha **Editing**

Keshav Suryanarayanan

Aishwarya Soni **Layout**

Bala Nagendran M

Aswathy Dilip **Manager**

All photographs and graphics by ITDP India Programme, unless otherwise mentioned

