Infant, Toddler, Caregiver Friendly Mobility for Indian Cities

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In brief

Urban mobility services that are inclusive of infants, toddlers and their caregivers' mobility needs can foster healthy interactions between them and the cities they live in. They need to feel comfortable and safe and should be able to enjoy the urban environment when they walk outside, take public transport, or access social and health services. It is then critical that infants, toddlers and their caregivers' trips are considered in urban mobility planning instead of focusing only on work-related male-centric mobility patterns[1].

Travel related to caregiving responsibilities can comprise upto 18% of the total trips made by women in some Indian cities[1]. Such mobility of care forms a significant part of urban mobility and thus, needs specific focus to make it safe and inclusive. Improved mobility of care would also mean better access to employment opportunities for caregivers, and ability to travel comfortably with infants and toddlers to access public services across the city. While there are some policies[2,3] that make an effort to address this issue, a bolder approach is required that focuses on retrofitting infants, toddlers and their caregivers' lens across Indian cities' planning guidelines and policy frameworks.

3-THINGS TO REMEMBER

► Infant, toddlers (young children), and their caregivers are usually neglected vulnerable group in urban mobility. Understanding their mobility needs and retrofitting it in mobility plans will allow them to move anywhere and everywhere in the city and can also support the mobility needs of all.

► Cities need to provide safe, inclusive, accessible, convenient and resilient urban mobility and encourage people to shift to active and public transport through focused policy interventions.

► Policy makers, government officials and service providers need to use behaviour change science towards infants, toddlers and caregivers to ensure enhanced physical and social access to mobility and utilization of infrastructure by users.

Contents

Abbreviations

AVL	Automatic Vehicle Location
BRTS	Bus Rapid Transit Systems
CBD	Central Business District
ECD	Early Childhood Development
FoB	Foot over Bridge
GDCI	Global Designing Cities Initiative
GoM	Government of Maharashtra
IPT	Intermediate Public Transport
IRC	Indian Road Congress
ITCs	Infant, Toddlers, and their Caregivers
ITS	Intelligent Transport System
MoHUA	Ministry of Housing and Urban Affairs
MoRTH	Ministry of Road Transport & Highways
NACTO	National Association of City Transportation Officials
NGOs	Non-government Organisations
PMC	Pune Municipal Corporation
PT	Public Transport

Definitions

ITC	ITC is an abbreviation of Infant, Toddler, and Caregiver. 'ITCs' come in all kinds of combinations of ages and genders. 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, older sibling, grandparents, aunt or uncle, either alone, or accompanying the mother.
Urban Mobility	Infrastructure and services, provided for moving people from one location to another location within or between urban areas.
ITC-friendly Urban Mobility	Urban mobility that is convenient, resilient, and leading to positive behaviour change towards ITC while catering to the needs and is safe, accessible, inclusive, green, and playful.
ITC-destinations	Land uses, destinations and services in the city that are often visited by infants, toddlers, and caregivers.
ITC priority zone	Mobility infrastructure and services that are frequently used by ITCs to access ITC destinations in the city. These zones are a combination of publicly operated and privately operated mobility services, mobility infrastructure such as streets, public transport stations, bus stops as well as IPT stops including shared auto rickshaw or taxis.
Convenient	With respect to ITC- friendly mobility, the term convenient refers to mobility that is catering to the care-giving needs such as amenities for care-giving, comfortable movement in the city and pleasant spaces during pauses while moving in the city.
Resilient	With respect to ITC-friendly mobility, the term resilience is defined as the ability of a mobility system to move people around in the face of one or more major obstacles to normal function. These obstacles can include extreme events: human-made or natural, and equipment or infrastructure failures.
Behaviour change	A behavioural change can be a temporary or permanent effect that is considered a change in an individual's behaviour when compared to previous behaviour. With respect to ITC- friendly mobility, behaviour change towards ITCs, for enhancing their experience as they commute anywhere and everywhere in the city is considered.

Definitions

ECD	An integrated concept that cuts across multiple sectors - including health and nutrition, education, and social protection - and refers to the physical, cognitive, linguistic, and socio - emotional development of infants and toddlers from conception up to age 8 (as per "United Nations")
Anganwadi	The word Anganwadi means "courtyard shelter". They were started by the Indian government in 1975 as part of the Integrated Child Development Services program to combat child hunger and malnutrition.
Mobility of Care	It includes all travel resulting from home and caring responsibilities: escorting others-especially children- to school, day-care, activities, etc.; shopping for daily necessities and household maintenance; managing organisational and administrative errands; trips for maintaining social and familial relationship; and visits to take care of sick or older relatives (distinct from personal recreation or leisure visits) (source: Sanchezde Madariaga, "Mobility of Care.")
Micromobility	Any small, low-speed, human-or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles, electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.

Executive Summary

In Maharashtra, 16.8 million children i.e. 11% of the population, are between 0 to 6 years age. It is home to 3rd highest children population in India[4]. This population is usually accompanied by their caregivers while moving around in the city for accessing their services, daily destinations. Their challenges and needs in mobility are quite different than average adult and therefore require specific considerations while planning any mobility infrastructure or service. Women, who tend to carry out most caregiving tasks in India, need to feel safe in travel and have convenient access options.

This Policy brief is prepared by WRI India and Parisar under 'Infant. toddler and caregiver-friendly mobility' program supported by Bernard van Leer Foundation. Policy brief aims to incorporate infants, toddlers and their caregivers' (ITC) needs in design and planning of urban mobility to enable them to travel anywhere and everywhere in the city with safety and comfort. It can help to promote positive behaviour changes in policymakers, government officials and frontline staff to mainstream this approach into typical planning and systemic processes. It also encourages them to use behaviour change science to implement long-term plans and policies benefitting vulnerable users. It has been formed based on the assessment of various existing policies and plans at International, National and Maharashtra State level as well as Pune city's policies which focus on walkability and transport planning.

The policy provides a set of objectives that are essential to make mobility inclusive for infants, toddlers and caregivers. It lays out 7 key principles that form a framework for ITC-friendly mobility. This policy covers mobility at different scales; from neighbourhood level streets to intermediate shared transit network to city-wide public transport services. This policy is intended to help cities to adopt various measures of safety, accessibility, and inclusivity in street design, promote active transport modes (walking, cycling) and public transport modes (buses, metro, local trains) from the lens of children and families.

Trip chaining

Slower walking speed

Shorter trips

Frequent stopping

Dependent mobility

Off peak travel

₹ Affordability

1. Introduction

For a city to thrive, infants, toddlers and their families in cities must thrive! The visible presence of young children of different age groups and backgrounds, with and without their caregivers, is a sign of healthy, flourishing and thriving urban settings. Hence, for cities to flourish, it is infants and toddlers of the city that should first flourish. Young children, between the age 0 to 5 years, and their caregivers experience the city in unique ways. Typically, their mobility needs and ways of exploring the surroundings while in transit is completely different than average adult. It is essential that these environments and services enable, warm interactions with loving adults and offer a stimulating environment to encourage infants and toddlers to explore and engage in safe proximity of their caregivers. ITC need safe and easy access to their essential and social services and while accessing them, they need engaging and comfortable experience with caregivers.

1.1 Why Focus on Infants, Toddlers and their Caregivers (ITC)

India is one of the youngest countries in the world. Official data reports state that nearly 138 million children in India are in the age group of 0 to 5, of which 36.6 million children live in urban areas, i.e., the cities.[5] Further, every eighth urban child lives in slums, the hardest hit living condition, characterized by lack of open spaces for play, unsafe housing, pollution, and poor sanitation. Therefore, there is a need to provide a safe, inclusive, green, accessible, stimulating environment and seamless connectivity for infants, toddlers and their caregivers.

They are mostly accompanied by caregivers, often mother, father, elder brother/sister, grandparents, relatives, and/or nanny. Typically, their trips involve visits with caregivers to destinations such as vegetable markets, grocery centers, recreational areas, workplaces, also early childhood services such as primary health centres, anganwadis, playgrounds, day-care centres, kindergartens and primary schools. Their travel characteristics include shorter trips, trip chaining, lower walking speed, frequent pauses, and off-peak travel to non-commercial destinations. Due to these travel characteristics, infants, toddlers and caregivers need comfortable, safe, reliable, flexible, affordable mobility services and infrastructure supporting their travel needs. Also, access to social services and associated settings must enable warm interactions with infants, toddlers and their caregivers and offer a stimulating environment to encourage them to explore and engage in the safe proximity of their caregivers.

However, caregivers often do not find mobility options that meet their unique needs, forcing them to depend on private vehicles, taxis. These modes are environmentally and even economically unsustainable for caregivers for their daily trips. Also, a lack of consideration in mobility planning may restrict caregivers' access to employment and education opportunities, which affects the city's economic growth in the long term.
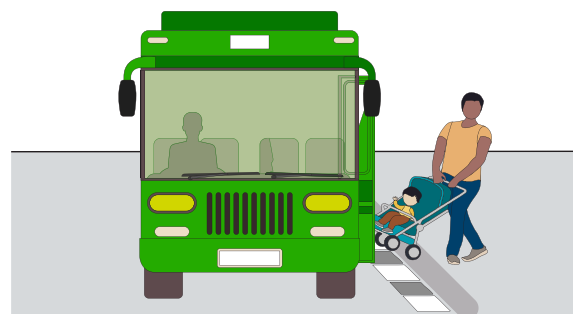
Access to public transport

Traditional city mobility plans are developed to ease up the congestion from motor vehicles and only consider the needs of working adult population. Cities that are car-dependent or have high vehicle ownership are less likely to be child-friendly. Directly or indirectly, they create negative impacts such as mental stress due to traffic congestion, air and noise pollution resulting in poor environment.

An enriching experience while accessing ECD services, public spaces can boost better development by creating positive interactions with public realm. Research shows that as many as one million new neural connections per second are developed in babies in their initial years.[6] These connections between nerve cells are formed each time a child communicates / interacts with people, including caregivers and the surrounding environment. Therefore, early childhood development needs warm, frequent, responsive interactions with loving caregivers, access to pleasant social places, open spaces.
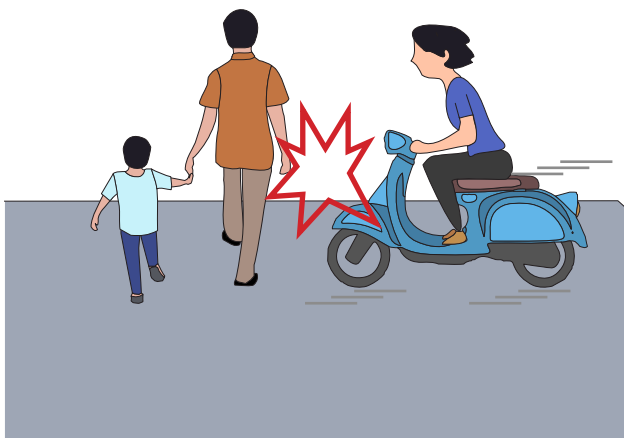
Speeding of personal vehicles

Air and noise pollution

1.2 ITC lens in existing policies and plans

Currently, at the National level, only IRC-103: 2022 Guidelines for Pedestrian facilities has incorporated the needs of young children and caregivers. There is an urgent need to retrofit ITC-lens in all mobility related policies, plans, and guidelines to ensure inclusive urban mobility and provide long-term benefits for city's economic growth. Improving mobility for younger generations ultimately minimizes loss of young population of country who contribute to future economy.

At state level, State Urban Transport policy is currently in the draft stage and hence, in short term, can be retrofitted with recommendation that positively impact ITC in the long term - such as women and children's safety in transit, caregiving services during transit, noise pollution mitigation and low-emission zones in the city. City specific policies such as Pune's Pedestrian Policy, Urban Street Design Guidelines, can be retrofitted with ITC-lens in the short term. This will directly translate into on-ground change such as Children-specific safety in street design, priority zones, NMT infrastructure around their destinations and supportive incentives.

1.3 Why mobility matters?

Global data suggests that road traffic accidents are the leading cause of fatality among children, where low- to middle-income countries account for more than 93% of child road fatalities.[7] Environmental stressors like air and noise pollution, speeding vehicles, lack of pedestrian facilities, low operationality of city-wide public transport, and inadequate facilities at public transport stops add to caregivers' anxiety about accessing urban transport with their infants and/or toddlers. Research suggests that poor air quality affects infants and toddler's health and well-being.[8] Typically, respiratory rate of new-born is between 30-60 breaths per minute[9], while normal respiratory rate of healthy adult at rest is between 12 to 20 breaths per minute.[10] Thus, a toddler breathes faster than an adult, making them more vulnerable to adverse effects of the pollution and this negative impact of air pollution starts as early as in the womb. Further, recent evidence states that more than one in four deaths of children under age five are directly or indirectly associated with environmental risk, including ambient air pollution.[11]

The absence of safe, accessible, and comfortable mobility options deprives them of many growth opportunities by limiting their movement. Regularly, caregivers travel with their babies and toddlers to nearby Early Childhood Development (ECD) services such as anganwadis, creches, clinics and parks. Their caregivers are mostly parents, elderly people, siblings or pregnant women. Therefore, based on their unique travel characteristics, ITC-friendly mobility requires (i) improving access through mobility options and (ii) integrating land use with mobility, which is essential for the growth of babies and toddlers.[1] Mobility options shall include the needs of caregivers as the infants and toddlers never travel alone and because of their unique travel characteristics, which include[1]
• Dependent mobility (moving with caregivers)
• Shorter trips
• Slower walking speed
• Trip chaining
• Off-peak travel
• Affordability
• Frequent stopping
Further, improving access through land use integration covers access to services like:
• Water, Sanitation and Hygiene (WASH),
• Open spaces, (Park, green spaces, playgrounds, parklets with diaper changing facilities
• Health services (Primary health centres, vaccination centres)
• Education (Anganwadis, balwadis, daycare, kindergarten)
• Employment options for caregivers
• Grocery stores, shops, vegetable market
• Religious places (temples, church, mosques, etc.)

Streets that are safe for children to walk, play and socially interact are considered safe for all. Unsafe pedestrian infrastructure, high vehicular speeds, inadequate public transport services, no caregiving amenities, poor last mile connectivity challenges their ability to negotiate the streets and transit spaces. In India, city buses offer very limited children friendly features such as level boarding, restraint systems. Therefore, public transport accessibility is a major challenge for ITC. There is a need to strengthen their mobility through walkable neighbourhoods, provide reliable public transport along their routes, provide opportunities to explore and play in their surroundings and allow responsive caregiving. Considering their travel patterns in mobility planning is crucial to ensure flexible and convenient options that boost their confidence. ITC-friendly mobility planning approach could be a unifying lens for sustainable, healthy, safe, inclusive, and equitable cities.

► In numbers

Every 12th
child in the India
lives in Maharastra[4,12]

1.4 million
children of 0–6-year-old
live in the informal settlements
in Maharashtra[16]

21 children
of 0-18 years age daily lose
their lives on Indian roads[17]

1.4 State of young children in Maharashtra

With population of 112.4 million, Maharashtra is second most populous state after Uttar Pradesh and third most urbanised in the country (Census,2011)[12]. The state has major six urban agglomeration with population more than one million: Greater Mumbai, Pune, Nagpur, Nashik, Vasai Virar city and Aurangabad[13]. A total of 13.32 million children between the age of 0 to 6 years lives in the state of Maharashtra, India[12], which constitute of 11.86% of Maharashtra population. As per various reports and historical population data, Maharashtra's population is expected to increase. Increasing population is directly linked to the increased mobility demands, which can be correlated with increased personal vehicle ownership and Maharashtra is leading state in personal vehicle ownership with more than 35.39 million vehicles[14]. Therefore, many of the Indian cities have been facing the negative impacts such as recurrent congestions, parking problems, increased air and noise pollution and its associated health problems. One of the solutions for any state / cities could be to develop and promote public transportation along with non-motorised transport through young children lens.

To address this, Air Quality Status of Maharashtra 2019-20 Report[15] has encouraged people to use public transport along with carpooling as one of solution to curtail the emission contribution from transport sector. Further, Government of Maharashtra's (GOM's) draft State Urban Transport Policy (SUTP), 2017 is another example, which promotes sustainable mode of transport, walking, cycling and public transport in line with ITC-friendly urban mobility. However, the draft SUTP, 2017 policy can be retrofitted with ITC lens by

- Highlighting specific needs of young children and caregivers
- Gender based safety, natural surveillance, and incident management
- Promoting health environment by introducing noise mitigation measures through noise barriers, green buffers,
- Incorporating guidelines to develop interactive spaces, pause points on streets, bus stops, metro stations, and IPT stations which stimulates infants and toddler's mind through play and learn elements.
- Investment in building safe infrastructure for walking and biking that meets the needs of infant, toddler and caregivers.
- Social and behaviour programs that encourages use of NMTs by families and children.
- Introducing recommendations for the provision of amenities like as drinking water fountains, lactation rooms, restrooms, benches, trees, and street lighting for ITCs on urban streets.

Overall, the cities should consider infants, toddlers and their caregivers as one of the important stakeholders for developing the urban mobility infrastructure and services.

Review of existing plans, policies and guidelines

At four level of governance
- **International**
- **National**
- **Maharashtra state**
- **Pune city level**

Provide ITC specific recommendations in each policy

ITC oriented vision

Draft policy brief for MH

5 ITC Objectives
Safe, Accessible, Green, Inclusive and Playful

3 overarching themes
Convenience, Resilience and Behaviourchange

3 Key policy areas
Short, Medium and Long term recommendations
Agency-wise scope

Adopted process for Policy brief

2. About this Policy Brief

The section discusses the adopted process along with scope and applicability of developed policy brief.

2.1 Adopted Process

Step-by-step process is followed to develop this ITC-friendly mobility policy. Initially, mobility related policies, plans and guidelines are identified and reviewed at four level of governance: international, national, state and city level. From the literature review, three key policy areas related to urban mobility are identified along with the possible policies which can be retrofitted with ITC-lens at Maharashtra state level. For example, Draft State Urban Transport Planning, 2017. Likewise, vision for the ITC-friendly cities in Maharashtra was developed that would help to create goal-setting activities. To achieve the vision, three overarching themes pertaining to ITC mobility namely, Convenient, Resilient and Behaviour change and five objectives of ITCN framework for assessment of policies namely, Inclusive, Safe, Accessible, Green, Playful are put forth.

2.2 Scope and Applicability

This policy focuses on ITC-friendly mobility in terms of their access to services, streets and public spaces. It highlights their specific needs while moving around in the city and proposes recommendations that state and city authorities can adopt to ensure inclusive mobility planning. It is aligned towards non-motorised transport such as walking and cycling, public transport and similar sustainable modes.

This policy is applicable to all departments, agencies and corporations of the Government of Maharashtra (GoM) and its cities. Hereafter, the term 'GoM' and 'Cities' includes not just one specific administrative body but all state, metropolitan, and city departments, agencies, authorities, corporations, companies, and parastatals that play a role in the planning, design, implementation, management, monitoring, and enforcement of urban transport, development and land use systems.

This policy is to be notified by the Government of Maharashtra to all its departments and partner agencies who are involved in any development, operations and maintenance of streets, public transit, intermediate public transit or any upcoming mass transit systems. It shall also be followed by other agencies (central, state or city level) who may be involved in relevant works facilitating ITC mobility such as disaster management cell, environmental cell, airport authorities, private contractors involved in O&M and so on.

3. ITC-friendly Mobility

3.1 Vision

Cities of Maharashtra enable infants, toddlers and their caregivers' to access their services through safe, convenient and affordable mobility and explore clean, healthy and playful environment while moving around the city.

3.2 Objectives

Inclusive
Gender
Age
Disability
Social
background
Affordable
" Just" for all

Safe
Road safety
Gender lens
Vigilance and
Surveillance
Security
First
Response

Accessible
Connectivity
Access to NMT & PT
Obstructions free
Reliable multiple
options
Priority access
Legible

Green
Emission free
Noise free
Maintained street
greens
Renewable energy

Playful
Enjoyable
Active
Stimulating
Stress free
Anchored in local
culture

Objectives of ITC-friendly Mobility

Convenient

Resilient

Behaviour change

**Overarching
themes for
ITC-friendly
mobility:
Non-negotiable**

- **Amenities for
  care-giving**
- **Pleasant
  mobility
  spaces**

- **Functioning
  during extreme
  events**
- **Recovering
  quickly**
- **Adaptability**

- **Behaviours
  of decision
  makers,middle
  management and
  front-line staff**

Overarching themes for ITC-friendly mobility

ⓡ Inclusive:

- The caregivers should be able to walk with the infants and toddlers with ease and comfort. Especially the pregnant women and elderly who find it difficult to walk due lack of quality infrastructure, insensitive design, and inefficient transit services.

- Infants, toddlers and caregivers of any age group and ability should be able to commute comfortably. 0-3 years old children and 3-5 years old children have their own specific needs when it comes to mobility and these needs should be reflected in the mobility policies and services.

- A child with 95 cm height, strollers, an elderly person, wheelchair user should be able to use streets and conveniently reach transit services. Provide wide sidewalks, cycle tracks, benches for occasional rest and pedestrian lights to be inclusive for different users, those on foot, taking public transit or cyclists.
- The focus should not only be on physical infrastructure but also social inclusion of ITC from various social backgrounds to make mobility "just" for all users. Affordability can enhance the access, usability and reach of the transport systems and help the economically weaker populations to access various opportunities.

ⓢ Safe:

- Infants and toddlers require specific safety measures such as green buffers, safe crossings, lighting and visibility. Providing dedicated NMT infrastructure, traffic calming measures for slowing traffic in ITC dominated areas, car free streets help to minimize conflicts between pedestrians, cyclists and motorized vehicles.

Photo credits : WRI India

Toddlers with their caregiver during regular commute.

- Female caregivers are prone to harassment on roads and in transit services, which hampers their confidence to travel. They can be supported by including behaviour change campaigns for frontline staff focusing on gender sensitization and bystander interventions. Well-lit and active streets, public vending zones add eyes on the street, improve vigilance in public areas and help in first response in case of emergency.

Accessible

- Lack of access to nearby transit, options of travel modes, unsuitable infrastructure for the ITC restricts their movement around the city. Therefore, providing accessible, reliable travel mode options and improving first and last mile connectivity to transit services, obstacle free and legible NMT infrastructure according to the specific needs of the ITC is crucial.
- Co-locating mobility services in proximity of ITC destinations such as hospitals and clinics, anganwadis, markets, parks would make them accessible to ITCs. Incorporating these principles in landuse/zoning, mobility plans, mass transit systems is crucial.

Green

- Access to green spaces has proven to be beneficial for a child's healthy growth. Green cover, exposure to plants and flowers creates stimulating experience while moving around the city.
- A toddler breathes 40-50 times/minute compared to 20 times/minute for an adult. This makes them more vulnerable to adverse effects of the pollution. Therefore, the focus on non-motorized transport, clean public transport and low emissions will allow healthy environment for early childhood development.
- Green landscaped streets with trees that mitigate pollution are preferable to concrete/paved landscapes. Shaded seatings for caregivers to pause and rest are required given the warm climate of Maharashtra.

Photo credits : WRI India

Learning and playing elements on active street edges.

🔵 Playful

- Infants and toddlers are always learning from their surroundings. Therefore, design of streets and transit spaces should enable the toddlers to play and explore surrounding environment safely while caregivers supervise. Shaded play areas adjacent to comfortable resting spaces can create meaningful interactions during travel.

- Interactive elements such as public art, cultural, historical elements can stimulate learning for toddlers while they travel. Children's participation in making such art brings a feeling of belongingness.

- It is crucial to provide a stress-free environment for caregivers as they commute with their infants and toddlers. The extra effort to walk or to board, travel or alight the transit systems can hamper their experience and adversely affect their mental health.

Overarching themes

Beyond 5 objectives mentioned above, 3 overarching themes shall be considered for this Policy which are specific to Mobility domain : Convenient, Resilient and Behaviour change.

Convenient

- Many cities in India either lack basic transit services or have inadequate provision. Meeting minimum standards is a must but frequent, reliable transit options shall be offered to caregivers to allow them to get a bus on time or find a seat with their child.
- Caregivers often choose their travel modes based on convenience while carrying their child. Basic caregiving amenities such as feeding booths, toilets are essential for comfort and convenience of ITC, especially in long distance trips.
- Street furniture elements, seating, height and width of the footpath should be conveniently usable for this group.
- Ambiance of streets, transit stops should make their commute pleasant and convenient which would encourage them to adopt NMT or public transit modes.

Resilient

- Major health or environmental disasters such as COVID can restrict ITC movement. In such cases, having resilient and adaptive mobility options is important, for example, social distancing measures at bus stops.
- During extreme events- natural or human- made, access to last mile is crucial for ITC to reach essential services, ECD facilities. Cycling infrastructure could play a pivotal role in their safe movement to destinations.
- Having mobility mode alternatives can allow them to phase-wise stop functioning during extreme events and also allow them to bounce back to normalcy as quickly as possible. It is key to allow ITC to access mobility services under any circumstances.

Behaviour Change

- Government authorities and decision-makers need to be sensitized about the importance of

ITCs and the steps that can be taken to improve their mobility so that when any Government policy, plan, project or scheme is envisaged, they include the ITC lens.

- Service providers and frontline staff should prioritize needs of infants, toddlers and caregivers while planning infrastructure, routes, fare systems and frequencies.
- Service providers' behaviours should be improved to help ITC in need of assistance, for example, traffic police behaviour towards ITC crossing the street.
- Community groups spreading awareness towards safety of ITC in public transit and offering support on ground.
- Educational institutions such as anganwadis, playschools can influence positive behaviours in caregivers.
- With behaviour change campaigns and incentives, caregivers can be encouraged to take active transport modes such as walking, cycling or use public transit to travel with children.

4. ITC-Friendly Mobility Policy Framework

This section discusses key policy areas that covers micro and macro-level components of city transport. It also proposes principles of policy framework that would help to achieve objectives and vision of ITC-friendly mobility.

4.1 Principles

To achieve the objectives and vision of ITC-friendly mobility in Maharashtra, policy makers can adopt the following seven principles into their existing and upcoming policies and planning projects at the state and city levels.

1. Safe and comfortable streets
2. Accessibility to early childhood services
3. Accessible and affordable public transport
4. Reliable first and last mile connectivity
5. Convenient wayfinding
6. Opportunities to rest and play
7. Healthy street environment

The scope of each of the seven principles is described below.
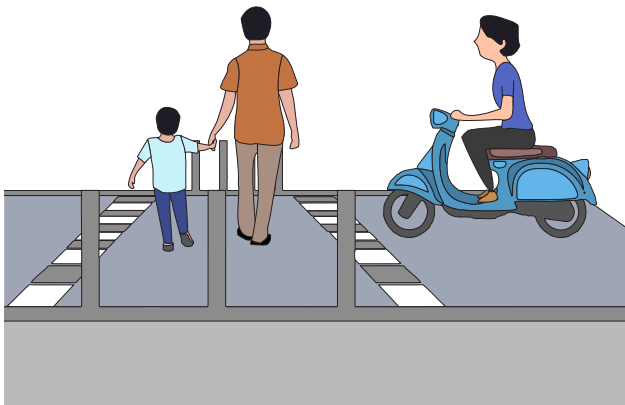
1. Safe and comfortable streets

• A network of protected or raised continuous, wide and obstruction free footpaths and cycle tracks to accommodate caregivers to move with their children while accessing their daily destinations. It offers an opportunity for physical activity, liberates the space for playful and interactive activities. Cycling can help cover longer distances in a shorter timespan compared to walking. Mixed landuse can bring people closer to services and amenities and enliven public realm with more eyes on street.

• Streets adjoining ECD services and residential areas shall be improved first as they are more likely to be used by ITC to walk or cycle. Safe design speeds of 30km/hr or lower shall be enforced within neighbourhoods. Also, high-traffic arterial streets will require traffic calming interventions along with protected walking and cycling infrastructure.

• Pedestrian spaces shall be clear of any parking, vending or utilities encroachments. Motor vehicles should not be allowed to encroach through measures such as bollards, and barricades. Also, curb extensions after parking lane can improve visibility. On-street parking should not hinder ITC movement and curb extensions at the corners can improve visibility. Demand-based parking management shall be encouraged compared to fixed time-based parking prices as time is one of the factors governing parking pricing.

• Walking and cycling are clean transportation modes that contribute to a noise-free, cleaner environment. Shelters shall be provided at strategic locations to make streets resilient in extreme events as part of Disaster Management Plan. Bio-swales and rain gardens along the streets can also improve resiliency in the long term.
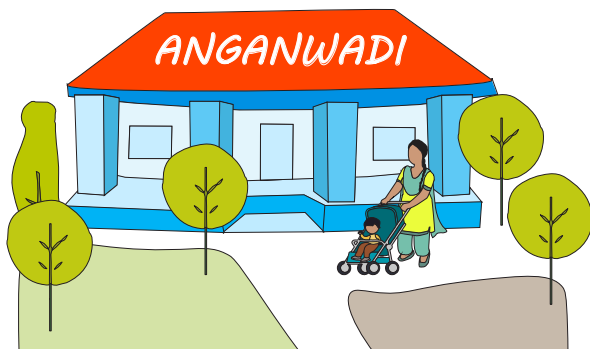
2. Accessibility to early childhood services

- Connecting streets to early childhood services shall be focused for improvements, especially interface where ITC cross junctions or hop onto other transit mode. There should be safe, comfortable waiting spaces outside ECD services.

- As per IRC103-2012, at-grade universally accessible crossing shall be provided at 80 to 250 m intervals in residential areas. Certain Global guidelines suggest crossings at 80 to 100m intervals in urban areas for at-grade crossings. Width should ideally be 3m wide (minimum 2m as per IRC:103-2012-6.7.2). Raised pedestrian crossing (Tabletop) shall be used where traffic calming is required, especially near entrances of ECD services, with appropriate warning through rumble strips or cobblestone material.

- There shall be adequate waiting space on both ends of the crossing with a minimum width of 1.2m. Refuge median should be minimum 2m wide to accommodate wheelchairs and strollers. These shall be mandatory whenever pedestrians cross 3 lanes or more at once. Pedestrian ramps shall be given to navigate level changes. A minimum of 80 lux lighting at a lower level shall be provided.

- For signalized crossings, pedestrian phase shall be minimum 2 seconds for every metre to be crossed by ITC comfortably. Audible pedestrian signals may be provided at strategic junctions. USDG suggests shorter cycle of 60-90 seconds for urban areas.
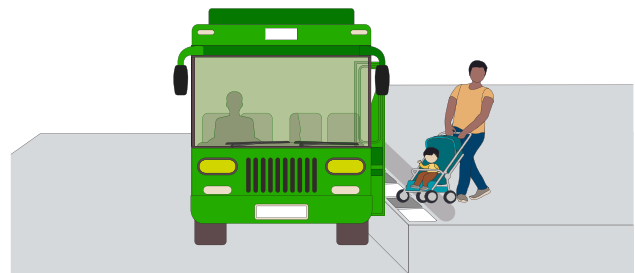
## 3. Accessible and affordable public transport

- Availability of public transport near to the residential areas and around ECD services shall be planned. Transit stop shall be comfortable with all-weather shading, accessible boarding, seating for caregivers, shared transit information and integrated play and learn elements (GDCI: DSfK). Buses shall have level boarding, stroller restraint systems and priority seating for ITC.

- Timing and frequency of public transport shall be matched with ITC peak hours and travel patterns to improve reliability. Wayfinding systems within transit should be legible for ITC and not create confusion. Transfers between different modes of transport shall ensure seamless connectivity through integrated ticketing and universal accessibility within stations.

- Affordable public transport becomes crucial to ensure it is being used by all sections of society and does not become a hurdle for some due to high cost of travel.

4. Reliable first and last mile connectivity

- The connectivity from residential areas and ITC destinations to nearby transit stops shall be enhanced to allow seamless first and last access for caregivers with children.

- This access can be strengthened with continuous footpaths for walking, public bicycle sharing systems, IPT modes such as shared autos that encourage caregivers to adopt public transit.
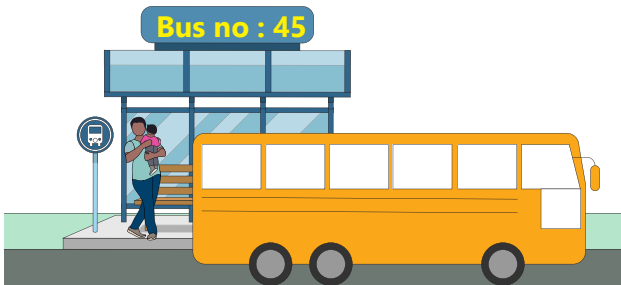
5. Convenient wayfinding

- All streets and intersections around transit stops and destinations frequented by infants, toddlers, and caregivers shall provide legible wayfinding and signages for caregivers to navigate while walking and cycling.

- Wayfinding shall include child-friendly elements such as the use of bright and recognisable symbols and features to train toddlers towards independent mobility.

- In case of emergencies, evacuation and exit guides shall be easy to comprehend for caregivers in public realm.

6. Opportunities to rest and play

- Streets shall provide comfort to ITC in walking and cycling to their destinations by ensuring that they have spaces to pause and rest and even engage in play.

- Such opportunities can be proposed at regular intervals of 300m or strategically placed nearby ITC destinations such as parks, clinics or local markets.

- Streets can be made active throughout the day and night with interactive frontages and activity zones such as vending.

- Parking and high compound walls shall be discouraged in front setback areas.

7. Healthy street environment

- Many peripheral factors can hamper mobility experience of caregivers with infants and toddlers such as loud honking, polluted air, garbage dumps or similar other unhygienic conditions along the streets and transit spaces. It is imperative to provide a cleaner, greener and healthier environment for ITC.

- Green buffer and carbon capture measures to protect from vehicular exhaust, noise barriers, clean, green and shaded footpaths shall be mandated along ECD services and transit spaces. In these areas, vehicular through traffic shall be limited and walking and cycling shall be encouraged. Low emission zones shall be identified and implemented.

- Migration to low-emission vehicles, clean energy-based transportation shall be encouraged through incentives mechanisms to ensure zero-emission transport systems.
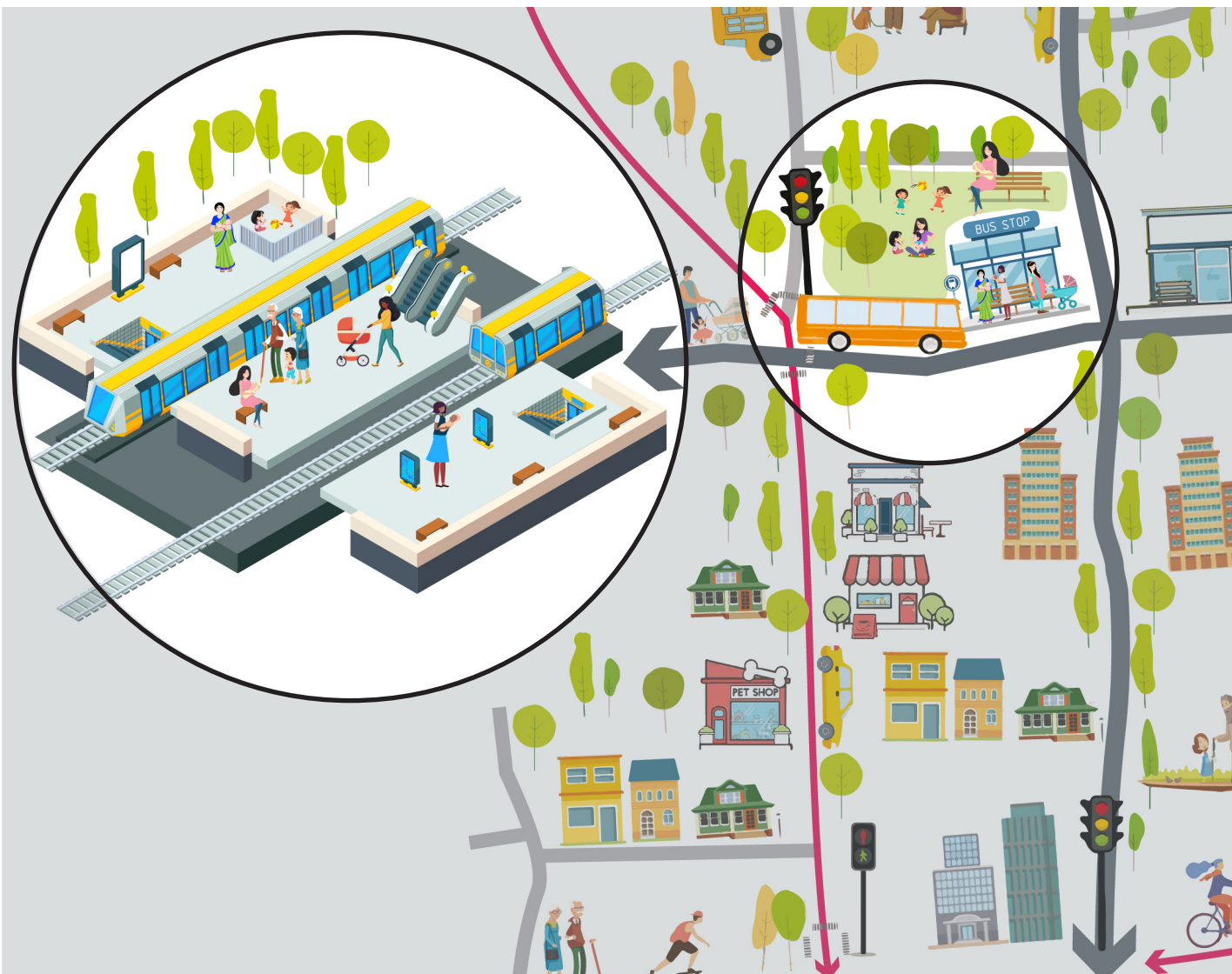
4.2 Key policy areas for ITC-friendly Mobility

City-level Public Transport Network

The city level mass transit systems shall provide connections to all children-oriented destinations to increase its use by caregivers with infants and toddlers to travel anywhere in the city.

Zonal-level Transit Stops

The zonal level mobility needs and toddlers-destinations in in the city through access to are provided with infants and design elements.

Key policy areas and recommendations

and IPT Stands

to provide connections to infants
the neighboring wards or zones
transit stops and IPT stands that
toddlers-friendly amenities and

Neighbourhood-level Mobility

Continuous and connected urban street corridors
for walking and cycling with amenities to move and
pause, that include shade, lighting, seating, health
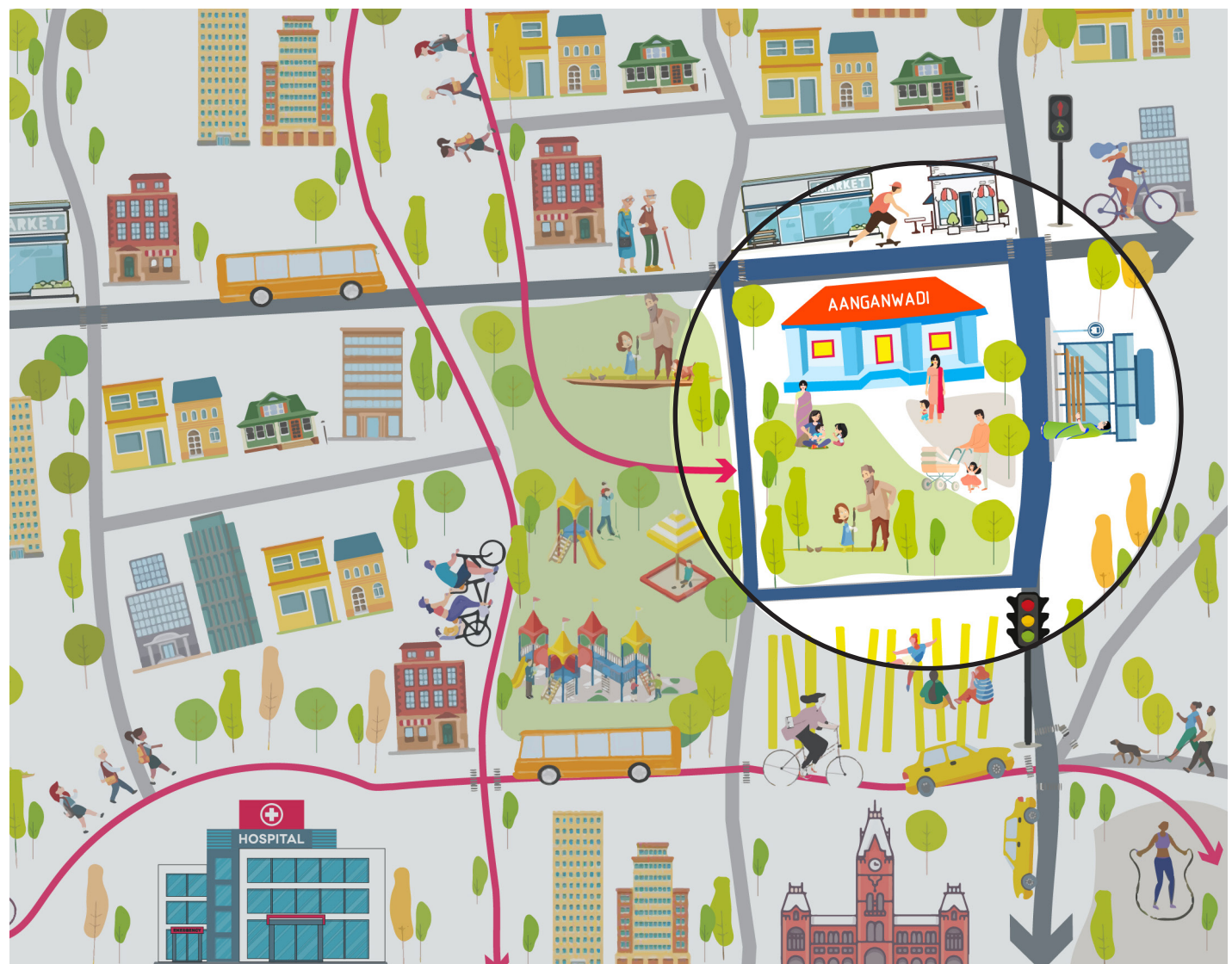kiosks and activity zones for children.

5. Implementation strategies

To implement this policy at the Maharashtra state level, policymakers shall adopt following strategies that accelerates the focus on infants, toddlers and caregivers in mobility and makes it inclusive, safe, and accessible. Cities shall prioritize certain strategies based on local context, needs and current baseline. For ease of implementation, 'Green' highlight strategies are short-term and low-hanging fruits, whereas 'Blue' highlight strategies can be for long-term.

1. Strategic Planning Approaches

- Conduct state level capacity-building workshops for staff working in the field of mobility planning and operations. Make it mandatory under the departments.
- Provide dedicated State budgets to cities for planning projects to improve children and women's mobility in the city.
- State can inform and support cities on how to utilize existing budgets under various schemes and programs related to streets and public transport for implementing children and women-friendly measures.
- State departments shall advise certain ITC-friendly provisions as mandatory for relevant ECD services. For example, Education department mandates provision for safe pick up-drop off zone within school premises, Municipal corporations ban sell of tobacco and liquor around schools, anganwadis, hospitals, parks.
- Bringing gender balance in transport agencies for decision-making and increasing the visibility of women frontline staff at transport stations.
- Subsidized fares for caregivers traveling with infants, toddlers and pregnant women to increase access to opportunities through affordable mobility.
- Adopting low to zero emission bus fleet, designed with dedicated spaces for strollers, reserved seats for caregivers.
- Leverage new entrepreneurships and technologies related to data, finance and new understanding to improve urban mobility
-

2. Data Driven Decision Making

- ITC-related data shall be regularly collected and updated via government surveys, regular audits to collect the data on condition of ITC destinations, mobility infrastructure and services.
- Collected data shall be used to prioritise, design and plan budget for mobility interventions that can benefit infants, toddlers and caregivers. GoM can provide funding support to enhance capacity of cities to do this.
- GoM shall create and maintain ITC-related data repository at city level. For example, no. of services having public transport within 300m, slum children population, no. of children using ECD services.
- GoM shall encourage cities to collect granular age and gender-disaggregated mobility data, analyse the same and use it for planning, budgeting, management, enforcement, and evaluation of all mobility interventions.

■ Short term strategies   ■ Long term strategies

3. Participatory Planning

- GoM shall mandate that all urban mobility interventions and initiatives shall include participatory planning in decision-making and ensure caregivers of infants and toddlers are part of it. Project planning shall identify at which all stages public participation would be most empowering to citizens and most useful for decision makers.
- As per project typologies, various participatory tools can be mandated to understand the needs of infants, toddlers, and caregivers and engage them in developing designs, and in evaluating solutions. Focused Group Discussions, primary surveys, interviews, community workshops are some of the tools.

4. Integrated Mobility Planning Approaches:

- Developing data-informed infants and toddlers specific mobility plans at the city level to identify the infants and toddler's priority, high footfall zones and enhance mobility.
- Introduce Integrated multimodal ticketing for different public transit modes and timed connections between different routes and modes.
- Providing targeted mobility services to infants and toddlers-specific destinations at specific times of the day.
- Operationalizing mobility services with the provision of real-time travel information to make them more reliable.
- Identifying synergies between approaches by different departments such as Urban Development, Women and Child, Health, and Transport. For example, co-ordination between municipal agencies and transit agencies on transit network planning and locations of anganwadis, hospitals.

5. Implementation, Monitoring, and Evaluation:

- Introducing guidelines and checklists advocating good practices to retrofit ITC-centric recommendations. Amending procurement guides, tenders to ensure good practices in execution as well.
- Auditing transit stops and station areas with gender and ITC focus: indicators for auditing, ratings of station areas, amenities, accessibility infrastructure, and first response.
- Monitor and evaluate the use and behaviour around existing vs new infrastructure – behaviour and use by caregivers, children of different age groups, frontline staff.
- Mandate for cities to conduct impact assessment of existing infrastructure on a yearly basis, done by city officials. Data for predetermined indicators shall be collected to quantify visible and evident changes.
- Key performance indicators (KPI) shall be identified for cities to track goals of this policy. GoM shall evaluate the key indicators against the goals of this policy every 5 years and revise the indicators if required.
- Develop ITC-friendly mobility rating mechanism which can be linked to future funding of cities.
- Systematic process shall be established at state level to enable reliable monitoring, reporting, and verification (MRV) in all cities.

6. Institutionalisation at levels of governance:

- Institutionalising young-children-related mobility through capacity-building workshops for middle management and sensitization workshop for frontline staff.
- Creating a high-level committee at the state level responsible for ITC mobility-related works to track progress and propose new directions, including procuring ITC elements in mobility infrastructure and developing tender documents to help implement the mobility plan on ground
- Expert advisors nominated by state for periodic consultations with cities and feedback.

7. Communication and Outreach:

- Communications and campaigns in public domain to build momentum to adopt sustainable transport modes or UDD and transport dept campaigns, central govt programs
- Knowledge dissemination within government bodies at all level- state, city
- Platforms for advocacy and support from NGOs around children-centric mobility (Roundtables, annual summits)
- Dedicated, state level stakeholder outreach programs – FGDs, workshops with users
- Feedback and redressal systems on public platforms – public apps, websites, digital surveys
- Develop participatory tools to engage caregivers in feedback processes such as in-person surveys and interviews, FGDs or even neighbourhood level activity events to capture their responses.

6. Recommendations in Key Policy Areas

The Policy brief suggests a set of recommendations that GoM can adopt and promote to all their cities towards making mobility inclusive. The recommendations do not require cities to allocate large fundings or separate resources. Instead, they can be included in ongoing and proposed projects and programs as per city's current priorities and capacity. This idea of retrofitting ITC lens into existing priorities will be helpful for cities which are still planning basic infrastructure, have minimal resources or lack additional funds to do something new. GoM can support cities to follow certain core recommendations and track progress towards some advanced recommendations that can benefit ITC mobility.

Following core recommendations in 3 key policy areas shall be considered a priority for implementation.

6.1 Key policy areas

At the neighbourhood level, street corridors giving access to infants and toddlers-oriented destinations could be identified to incorporate:
- Complete network of continuous, accessible, well-lit and shaded pedestrian and cycling infrastructure
- Road safety with safe crossings and slower streets with traffic calming measures
- Shared streets within neighbourhoods with pedestrian priority
- Shaded pause and rest spaces with green cover.
- Network of green and blue infrastructure along with pedestrian only streets near ECD facilities.

At the zonal level, public transport and IPT stops can incorporate:
- Well-lit, shaded and universally accessible stops and terminals
- First and last mile connectivity to ITC destinations
- Priority queuing for caregivers with infants and toddlers
- Priority seating with larger seats for caregivers with infants in arms and toddlers
- Play and learn components and sufficient seating for caregivers

At the city level, public transport network can incorporate:
- Network-level planning considering ITC travel patterns and peak hours
- Increasing fleet and providing stops to be accessible within 300m from ITC destinations
- Multimodal seamless connectivity
- Frequent and reliable public transit services via data-informed dynamic scheduling and real-time information
- Low polluting and well-maintained public transit vehicles
- Safety and security through vigilance and quick response

Annexure 1 provides detailed list of recommendations across 17 solutions in short term, medium term or long term. Recommendations are mapped to 3 major stakeholders - municipal corporations, transit agencies and enforcement agencies. The GoM shall provide necessary guidance for implementing the policy brief recommendations at city level. Regular notifications, directives, and other official communications will be required.

S.no	Solutions	Acti...
		Municipal corporations	
1	Increase presence of women in mobility	1. Provide gender-sensitive infrastructure (clean washrooms near transit stops) to encourage women to use public transit and streets more often 2. Well-lit, safe access streets leading to ITC destinations and transit stops 3. Include female staff as frontline providers to create better perception of safety	1. Increase pre... management,... 2. Provide sub... their caregivi... 3. Priority que... children
2	Ensure all ages and abilities-friendly designs	1. Provide continuous, smooth obstruction free, well lit footpath access 2. Mandate universal accessibility design for streets -curb ramps, tactile, sufficient widths 3. Stroller accessibility around bus stops, at entrances of ITC destinations with gentle ramps	1. Universal ac... stops and stat... 2. Introduce w... caregivers wit... buses
3	Introduce ITC-friendly amenities	1. Ensure family restrooms with diaper changing platforms, feeding booths, shared pram systems, shaded seating are provided in proximity to transit stops	1. Add multi-u... stations with f... small playpen... and food venc... diaper-changi... areas for pare... 2. Introduce le... boards for eas... 3. Include crea... and materials... providing sup... toddlers in ne... 4. Priority seat... children, inclu... vehicles, at tra...
4	Ensure personal safety of infants, toddlers and caregivers	1. Measures to protect from unintended injuries around streets and transit stops e.g. covered drains, no exposed utilities 2. Active frontages along the ITC destinations 3. Well-lit and shaded footpaths 4. No sharp elements or objects along streets	1. Safety elem... boarding, ped... stations 2. Protection f... at bus stop ar... 3. Regular safe... and metro sta... 4. Restraining/... metros for str...

...ion points			
Transit agency	**Enforcement agency (Traffic and RTO)**	Time frame	Objective achieved
...esence of women as frontline, middle ... and technical staff in transit system ...sidies in fares for women to ease ...ng trips ...uing and seating for women with	1. Presence of police officer at strategic locations including transit stops during off-peak and night hours	Medium term	Inclusive Safe Behaviour change
...ccessibility ensured in design of ...tions ...ider seats (min. 800 mm) for ...h babies in hand at metros and all	1. Train staff to understand needs of differently abled users. 2. Audio signals for pedestrian crossings 3. Build capacity of staff to improve behaviour of prioritizing safe movement of wheelchair users	Medium term	Inclusive Accessible
...utility shelter spaces at transit ...family restrooms which includes ...s, library, food warming facility, water ...ding machines, nursing stations, ...ng areas, restrooms, nap or rest ...nts/caregivers, first-aid facility ...egible signages and route info ...sy wayfinding of caregivers ...ative information via digital boards ... to sensitize the public about ...port to caregivers with infants and ...ed ...ting for caregivers with young ...ding pregnant women within transit ...ansit stops and stations.		Short term	Inclusive Convenient
...ents such as handrails, level ...lestrian sensors in bus and metro ...from traffic while boarding/alighting ...ea ...ety audits, perception ratings of bus ...tions by users .../locking features in buses and ...ollers, cycles	1. Support in emergency situations on-ground; e.g. road crashes, vehicle breakdown, harassment, violence 2. Priority to caregivers crossing the streets and junctions 3. Enforcement of helmet and seatbelt regulations 4. Regulating driver license	Short term	Safe Inclusive

| S.no | Solutions | Acti... |
		Municipal corporations	
5	Quick response systems for caregivers in case of emergency	1. Installation of panic buttons at major streets and junctions 2. Emergency helpline or help booths 3. Dedicated quick response team	1. Installation ... stations 2. Emergency ... 3. Dedicated ...
6	Improve road safety for infants, toddlers and caregivers	1. Improve road geometry, visibility with refuge spaces around ITC destinations and transit stops 2. Provide mid-block crossing for continuous infrastructure of safe walking, cycling 3. Specify appropriate speed limits in high footfall areas (upto 30km/hr) 4. Introduce traffic calming measures at critical locations - tabletop near entrances, bulb-out at junctions, kerb extensions warning rumble strips, visual patterns 5. Introduce Pavement Management Systems (PMS) to prioritise maintenance, rehabilitation, and repair	1. Regularise ... driving behavi... 2. Install speed... warning alarm... 3. Improve dri... back mirrors t... 4. Ensure vehi... and tests with... telematic syst...
7	Introduce technology-based system for monitoring traffic / pedestrian / public transport movement	1. Ensure appropriate pedestrian signal timings as per children's walking speed of 20m/min around high children footfall areas 2. Provide all-red signal as clearance time for pedestrian in high footfall zones 3. CCTV surveillance outside transit stations and ITC destination clusters such as schools to monitor any cases of harassment or crashes	1. Install surve... metro 2. Introduce A... (APTS) for bet... vehicle mainte... 3. Regular mo...
8.	Enhance immediate surroundings of ITC destinations	1. Street improvements in 300 metres zone of ITC destinations - wide footpath, cycle tracks, lighting 2. Clear wayfinding and signage on streets leading to ITC destinations 3. Mandate footpaths with unobstructed walking width of minimum 1.8m in residential areas and 2.5m in commercial areas 4. Planning pedestrian corridors across neighbourhoods as shortcuts leading to ITC destinations 5. Creating pause points for caregivers along the access streets of ITC destinations	1. Locate bus ... destinations t... 2. Transit stop... footpaths with... Pedestrians ar... to step into th... should they h... platform. 3. Provide legi... directions to r... 4. Ensure mult... ITC destinatio... 5. Transit subs... adopt public t... 6. Increase fre... ITC peak hour...

ion points				
	Transit agency	**Enforcement agency (Traffic and RTO)**	Time frame	Objective achieved
	of panic buttons at transit stops and STOP button in transit vehicles quick response team	1. On-ground coordination with quick response system	Long term	Safe Resilient
	driver training programs to improve iours and speed control d limit devices in vehicles to give s to drivers in case of high speeds er's visibility with proper side and o avoid road crashes cle safety through regular checks technology based system (e.g. em)	1. Penalising rash drivers and drunk driving 2. Enforcing speed limits around ITC destinations 3. Deploying traffic warden around school zones during pick-up drop-off times to manage traffic movement	Short term	Safe Accessible Inclusive
	eillance systems in transit - buses, dvance Public Transportation System ter communication with users, enance, and driver performance nitoring of timely services, delays	1.Introduce intelligent signal system for efficient and synchronised signal phasing operations 2. Management of traffic based on surveillance data 3. Personnel deployment at critical locations as per surveillance data 4. Early detection surveillance system	Long term	Safe Resilient
	stops within 300m of major ITC o ensure easy access s should be integrated with hout blocking walking area. d wheelchair users should not have e street to board a vehicle, nor ave to use steps to access a raised ible wayfinding at bus stops giving nearby ITC destinations tiple options for Last mile transit to ns sidies for children and caregivers to transport quency and timing of transit during s e.g. school hours		Short term	Accessible Inclusive Convenient

S.no	Solutions	Municipal corporations	Act...
9	Improve first and last mile connectivity	1. Ensure continuous walkways from ITC destinations to and from transit stops 2. Create safe, vibrant, and at-grade crossings at critical intersections and provide them with traffic calming and pelican signals. 3. Provide dedicated drop-off zones for autos, taxis, school vans or mini buses	1. Introduce fe... e-buses withir... station buses ... 2. Provide sha... outside metro... 3. Provide sha... stations
10	Provide supportive infrastructure for health and nutrition	1. Provide health, maternal and nutrition kiosks near certain ITC-destinations such as parks, primary health centers	1. Provide hea... major bus sto... 2. Availability ... extinguisher ir...
11	Improve micro-environment and thermal comfort around ITC destinations and transit	1. Provide plantations, water fountains ran on clean energy, community gardens and green pockets at regular intervals of streets 2. Provide shaded footpath and frequent resting areas for caregivers along streets of ITC destinations 3. Plant local species, increase flora and fauna around streets	1. Microgarde... concentrated ... 2. Shaded bus... 3. Measures to... 4. Eliminate he... add all-weath...
12	Ensure noise-free environment	1. Introduce noise barriers on roads with high traffic volume, construction sites within the vicinity of ITC-destinations, residential areas	1. Regular noi... and noise bar... stations
13	Reduce carbon footprint from mobility	1. Use of locally sourced, sustainable materials for construction of roads and footpaths 2. Use carbon capture materials in design	1. Add vehicle... CNG, Hydroge... 2. Use of susta... transit stops, ...
14	Clean and well-maintained transit infrastructure	1. Maintain cleanliness and hygiene in the premises of transit stops with sufficient cleaning staff 2. Waste management, disposal points, clearing garbage dumps along streets and transit stops 3. Mandate businesses and building owners to install and maintain proper gutters, downpipes, and drainage systems that prevent water from flooding walkways. 4. Quick helpline for residents to flag unhygienic surroundings, especially around children's services	1. Regular clea... and transit sto... 2. Maintain hy... water fountair... maintenance ... 3. Introduce g...
15	Incorporate play and learn opportunities for enjoyable journeys	1. Provide play and learn components such as abacus railings, sidewalk games, slides along footpaths leading to transit stops and ITC destinations 2. Provide play zone adjacent to transit stops to make waiting time engaging 3. Add local arts, culture and history-based elements along streets	1. Introduce ir... station to ena... auditory learn... 2. Include tou... design of bus ... 3. Provide play... wayfinding ar... legible to chil...

...ion points				
Transit agency	**Enforcement agency (Traffic and RTO)**	Time frame	Objective achieved	
eeder systems like e-rickshaw, and n the catchment area e.g. special	1. Monitor instance of vandalism in shared transit systems outside stations, in high footfall areas	Medium term	Accessible Inclusive	
red pram, bicycle and e-bike systems and bus stations red transit information at the		Medium term	Inclusive Convenient	
lth, maternal and nutrition kiosks at ps, metro stations, multi-modal hubs of nutrition kit, first aid and fire n all transit vehicles				
ning, greening solutions around transit stops s shelters lower temperature around stations eat reflective materials and instead er materials		Medium term	Green Resilient	
se level checks of transit vehicles riers or sound absorbing materials at	1. Penalising vehicles, including two-wheelers for noise pollution through horns and tailpipes	Medium term	Green Safe	
e fleet run on clean energy (Electric, en, .) ainable materials for constructing depots - solar rooftops .	1. Regular monitoring of vehicle emissions by RTO 2. Penalty mechanisms for non obedience	Long term	Green Resilient	
ning and maintenance of vehicles ps ygiene in supporting facilities (toilets, , benches) by appointing a transit officer rievance system		Short term	Green Resilient	
nteractive play elements at transit ble visual, linguistic, rhythmic and ings ch-base, sound-based elements in stops and stations yful trails, graphical signage and ound transit stations which are dren		Short term	Playful Behaviour change	

S.no	Solutions	Municipal corporations	Acti
16	Generate social interactions among infants, toddlers and caregivers in transit	1. Create clustered seating spaces that allow group interactions of caregivers, open gym around transit stops, ITC destinations 2. Incorporate interactive installations, playboards for group play of children	1. Include inte vehicles to en more engagin
17	Ensure seamless operations during extreme events	1. Develop an action plan with refuge locations marked and wayfinding for evacuation and gathering 2. Disseminate in public Dos and Don'ts via different communication channels (ITS, radio, social media, and newspapers)	1. Develop an transport duri evacuation or safe locations 2. Showcase e appropriately

ion points		Time frame	Objective achieved
Transit agency	**Enforcement agency (Traffic and RTO)**		
eractive elements within transit able interactions and make journey g - such as playful handrails, posters		Short term	Playful Behaviour change
action plan to operate public g extreme events, either for carrying people (prioritizing ITCs) to vacuation routes marked within the transit vehicles	1. Implement the action plan on-ground for evacuation and gathering at secured locations during extreme events	Long term	Resilient Safe

6.2 How can cities retrofit ITC lens ?

ITC-friendly mobility is a lens for cities and not a separate project or task. This will help cities to develop their mobility to be more inclusive to all its users.

The policy suggests that cities of Maharashtra shall adopt ITC-friendly Mobility framework in their existing systems, processes and plans. Cities can look at achieving primary recommendations stated above within their current planning of core or basic mobility infrastructure. These can be phased out by city level administrations as per short, medium and long term timelines. Short term-high impact recommendations (low hanging fruits) can be implemented first to build consensus. Ideally, cities shall retrofit ITC lens in nay program from the beginning of planning to make it less resource intensive.

For example, while developing connected and well-lit footpaths and ensuring safe crossings, cities can incorporate (i) safe buffers, micro greening along the streets, (ii) wayfinding to ITC destinations, government buildings, transit stops (iii) While introducing street furniture and services such as seating and toilets, interactive learning elements based on visual, music, linguistic, logical, social learning can be embedded.

Secondly, while planning transit stops and infrastructure, cities can introduce (ii) priority seating arrangements, priority queuing for boarding and alighting for pregnant women, and ITCs (iii) Nutrition & Maternal health kiosks (iv) Presence of women police at strategic locations (v) Children learning elements to make waiting spaces engaging.

Lastly, while upgrading the public transport services and procuring fleet, cities can include
(i) level boarding and informative signages to sensitize the public about helping and offering seats to caregivers with infants and toddlers
(ii) wider seats (min 800mm), for caregivers with babies
(iii) panic buttons in case of emergency
(iv) advance public transportation systems to collect passenger counters, collision warning system, and automated voice announcements in different languages for information dissemination.

In addition to retrofitting ITC lens, few advanced systemic changes can be taken up by authorities,

- Develop an action plan to keep public transport functional during emergencies and extreme events to allow movement of people, with women and young children on priority.

- Prepare evacuation plan with routes marked within transit vehicles and in stations with clear wayfinding information to gather at safe locations during extreme events.

- Systematically identify black spots in the city, based on crash data, police FIR data with details of demography, gender and age to understand mobility risks for ITC.

- Adopt best practices that involve unconventional approaches of lowering traffic conflicts and appropriating traffic signals for ITC.

- Conduct gender and ITC-focused audits at stations, and areas around mass transit stations: ratings of station areas.

6.3 How to measure the impact of Policy ?

To evaluate the progress and impact of ITC-friendly Mobility policy, Key performance Indicators (KPI) are formulated which shall be collected from cities of Maharashtra (given below). These indicators shall be tracked every quarter to measure progress on ITC-friendly Mobility Policy. They cover progress of physical changes to user perceptions to long-term legislative actions. Please see below the table of KPIs.

M&E parameters for Policy	Action Points	Key Performance Indicators
ITC Priority Zones	Selection of zones within a city	• Completion and approval of ITC Mobility Plan • No. of ITC priority zones identified in the city • No. of ITC priority zones taken up for improvements • No. of projects planned in ITC priority zones
Street Improvement	Street Improvement	• No. of street projects and junctions implemented in ITC Priority zones • No. of trials, pilots done for road safety of infants and toddlers • Lengths of streets improved for ITC mobility • % length of footpath that are designed as per with universal accessibility
	Upgrade Transit stations and surroundings	• No. of bus stops, metro stations, IPT stands upgraded in ITC priority zones • No. of major transit stations equipped with caregiver amenities • No. of capacity building sessions conducted with staff for sensitising towards needs of the vulnerable group along with ITC
	Technology-based monitoring	• No. of pedestrian traffic signals with signal timings as per children's walking speed • Whether any technology-based advanced public transport system (APTS) is introduced for communication, maintenance of vehicles, and recording driver performance • % of fleet equipped with APTS
	Urban greening solutions	• % of the fleet running on clean energy • Length of streets in which local, sustainable material was used for construction • % or length of streets shaded with tree cover or shading devices • Length of streets equipped with noise barriers • % of footpath shaded by tree cover

Parameters of M&E of ITC-friendly Mobility Plan	Action Points	Key Performance Indicators
Safety and Security	Presence of female frontline staff	• No. of female frontline staff at ECD services or police officers deployed during off-peak and night hours around transit stops
	Traffic enforcement	• % of drivers following various traffic rules- no jumping signal, wrong-side driving, illegal parking (through observation survey)
	Audit mechanisms	• Number of audits of streets, transit stops and vehicles focusing on child safety? • No. of street audits conducted, particularly in ITC priority zone • % of transit stops and vehicles audited during planning, construction, and operation stage
	Operations during emergencies	• Emergency action plan developed and followed • No. of times the action plan is rehearsed – mock drills
Service level Improvements	Increase in bus frequency around ITC destination	• Satisfaction ratings related to ease of use, timeliness, comfort, and cleanliness of transit services
	Convenient scheduling and timing of public transit	
	Well-maintained and clean services	
	Caregiving amenities at transit depot / stops, including health and nutrition, play, learning and social interaction	• No. of transit depot / stops equipped with caregiver amenities (list is provided in action plan step 5)
Policy and guideline changes	Adoption of new ITC-focused policies, programs, handbooks, guidelines	• No. of new policy, documents, knowledge materials around ITC mobility
	Revisions in existing documents to include ITC lens	• No. of documents revised, amended or newly created with ITC lens

Infants and Toddlers Oriented Interventions in Hubballi - Dharwad BRTS

THE PROBLEM:	THE SOLUTION:	THE IMPACT:
• Lack of supportive amenities for safety, comfort and convenience and stimulating environment for infants, toddlers and their caregivers as they connect and wait between twin-cities, in the bus rapid transit systems (BRTS).	• Introduction of priority seating and queuing for infants, toddlers and caregivers and pregnant women in 100 BRTS buses and shared pram system at Hosur interchange premises.[18] • Introduction of playful areas around 300 sq.m at the BRTS interchange, waiting spaces for children are provided with floor-based games, and interactive play installations along the foot-over-bridge.[18]	• While the shared pram system operations need to be made robust, this initiative has enhanced the daily convenience of caregivers traveling with their infants, toddlers and reinforced the inclusive image of public transport. • Around 50 infants, toddlers and 200 school children users use the playful public transport area.[18]

How does it work?

Hubballi-Dharwad was selected as one of the twenty-five cities to promote healthy early childhood development in planning and management under the Nurturing Neighbourhood challenge (NNC).[19] The NNC challenge was hosted by Smart Cities Mission, MoHUA, Government of India in collaboration with the Bernard van Leer Foundation and with the technical support of WRI India.

By introducing infants and toddlers-centric interventions like shared pram system for comfortable interchange at the BRT stops, and the learning and play elements near waiting areas, families with infants and toddlers get enhanced commuter experience while accessing BRTS. Hubballi-Dharwad's focus on people and providing quality bus services helped them attract one in five passengers from other modes of transport, with passenger satisfaction raised

from 56 to 85.5%. These favorable impacts have been achieved through BRTS with less than one-tenth the cost of Metro.[20]

What makes this project supportive of ITCM?

Overall, these convenient and playful interventions are a few mobility interventions that can be adopted in zonal or city-wide transport to make the journey of infants, toddlers and their caregivers less stressful. This initiative was implemented at zonal level during June to October 2021.

Shared prams for the daily convenience of infants and toddlers and their care givers at Hubli - Dharwad.

Gender-sensitive reforms in Public transport Case of Kerala

THE PROBLEM:	THE SOLUTION:	THE IMPACT:
• Issues of unsafe transportation, inadequate accessibility and coverage have impacted women's mobility.	• Metropolitan Transport Authorities as nodal agency for gender mainstreaming in transport	• Improved public transport services for women mainly through reservation of seats, deploying of police patrols within the bus and along major routes, employing women as frontline workers.
• Unsafe public transportation systems have often been identified as one of the barriers to women's participation in the labour force, in addition to domestic and childcare responsibilities.[21]	• Gender disaggregated data framework	• Visibility of women staff increases use of public transport.
	• Gender responsive infrastructure	
	• Women inclusion in transport sector	
	• Training and awareness programs	

How does it work?

The Kerala Government has taken up several initiatives to improve the public transport service and to ensure a safer journey for women, be it the first and last mile or travel inside the vehicles.

The State Transport Department is working towards transforming the urban transport systems with the formation of Metropolitan Transport Authorities (MTA), using technology for data collection, analysis and dissemination, and moving towards low carbon transportation systems.

MTA takes up the role of a nodal agency for gender mainstreaming in transport sector. The MTAs formed can take up initiatives such as
1) Coordinate with agencies for collection and analysis of gendered data,
2) Regular monitoring and evaluation of the data collected for strategizing actions,
3) Coordination with agencies for developing women centric plans and infrastructure,
4) Women's participation in transport sector at different levels,
5) Developing conducive environment for women to work in transport sector,
6) Regular trainings and awareness programs towards gender sensitization, and
7) Coordinate with agencies such as Municipal Corporations, Police for preparation of statutory plans and regulations for city development with gender considerations.[22]

Women drivers and conductors in KSRTC: KSRTC has started giving equal opportunities to women and men for the role of conductors and drivers.

She taxi/ She autos/ Nirbhaya autos and taxi: Kerala Police has introduced Nirbhaya auto and taxi, which facilitate travel for women freely at night.

Photo credits : https://www.thehindu.com/news/national/kerala/kerala-police-launch-pink-project-for-women-safety/article35411027.ece

Members of the newly formed Pink Protection Force with their brand new vehicles in Thiruvananthapuram.

Training and awareness campaigns: Kudumbasree, KSJD, Kerala Resource Centre and several NGOs in Kerala are involved in creating awareness about crimes against women and their impact.

Formation of K-SWIFT: K-SWIFT is a transport company. The company envisages the separation of city bus service and long-distance routes, adoption of technology such as GPS-based tracking, new electronic ticketing machines (ETMs) and clean fuel buses as per the Electric Vehicle (EV) Policy 2019. GPS-enabled panic buttons / control centre SURAKSHA-MITR/ real time information.

What makes this project supportive of ITCM?

Within the Indian context, women are the primary caregivers of young children. Collection of gender-disaggregated data, an increase in women's work participation (conductors, drivers), and awareness campaigns towards gender sensitization are some of the institutional-level interventions. These interventions help to improve the caregiver's participation in mobility. Further, training and awareness campaigns would help front-line, middle-management staff. Lastly, dedicated women paratransit services would increase the safety and security of caregivers in mobility. Above mentioned gender-sensitive reforms incorporate the needs of caregivers in the mobility sector from an employability, safety, and inclusivity lens.

School Travel Improvement Plan, Case of Pune

THE PROBLEM:

- Issues of unsafe walking and cycling infrastructure, parking encroachments, lack of traffic enforcement around school zones, anti-social activities in the vicinity.

THE SOLUTION:

- Forming dedicated program as School Travel Improvement Plan which focuses on to improve safety, accessibility, inclusive development and better enforcement within school zones.

THE IMPACT:

- Safety Perception of caregivers accompanying younger children to schools improved.

- Increased use of walking, cycling and public transit to commute to school.

How does it work?

Pune Municipal Corporation initiated a design competition with an objective of ensuring safe access to schools by planning young children-friendly mobility solutions and promoting non-motorised transport modes. The process involved jury selection of proposals for 3 zones, consultations with school authorities, parents and conducting site surveys to plan contextual solutions. All 3 zones – Kharadi, Deccan and Parvati included pre-primary schools or anganwadis which served 3- to 5-year-old children and their caregivers. This was project was initiated from July 2022 and trials were conducted in December 2023.

On-ground trials were conducted in 3 zones on Pune's Pedestrian Day, with design measures to reduce traffic speed, create dedicated walking spaces, cycle tracks, drop off zones for school vans and waiting spaces for caregivers. Each school zone was demarcated as 200-300m zone highlighted with paints and surface signage. Footpaths were delineated with temporary green buffers and bollards, pedestrian crossings were marked, signage for speed limit and crossings were put, and shaded waiting spaces were created.

In Kharadi, junction next to school was redesigned to slow down traffic and ensure safe pedestrian mobility. With geometry correction and relocation of PMPML bus stops away from the junction, more than 6000 sqft of area was reclaimed for pedestrian walkways and plaza at the junction which emphasized on non-motorized mobility. The trial observed 80% increase in ITC who feel safe in accessing the street and 4 times more ITC were seen pausing, resting and engaging in play at junction plaza. In Deccan, an alternate pedestrian lane was created for safe access to school for young children which made both entry and waiting comfortable

Photo credits : Shunya Studio

Aerial view of the trial intervention at the Kharadi Junction, Pune

for children and caregivers outside school. In Parvati, the street space in front of the school was reclaimed for footpaths and shaded waiting area. Crossings with temporary barriers made school access safe for everyone.

Apart from the on-ground trials, various engagement activities were conducted by PMC, WRI India and Parisar, Traffic Police department, PMPML and Safe Kids Foundation. Road safety workshops for school children, sensitization workshops for school bus drivers around children's safety, Cycle rally and Student special bus rides were planned in each zone. Academic institutes and local community groups in the city also participated in implementation and outreach activities to build momentum.

What makes this project supportive of ITCM?

This case study shows how a city can institutionalize the idea of 'priority zones' around ITC destinations via competitions and trials with multi-stakeholder participation.

Micromobility to improve last-mile connectivity, Case of Paris

THE PROBLEM:	THE SOLUTION:	THE IMPACT:
• Vehicular congestion in core city leading to longer waiting time, stress, and increase in air pollution. • Issues with access to public transportation, insufficient last-mile connectivity.	• Launching a publicly financed bike-sharing program • Affordable services	• Decrease in the number of private vehicles on the road • Improved connectivity, services within short distances • Due to less pollution, healthier and happier streets for people • Less cars resulted in low maintenance cost of the streets

How does it work?

Micromobility services plays a huge role in providing last mile connectivity to public transport users, especially caregivers who are often forced to use private vehicles due to lack of access to public transport.

Paris is embracing micromobility to fight vehicular congestion and encourage people to use active mobility and shared services to move around the city. Paris has dense network of public transportation with subways and regional trains, buses and trams. Since past few years, it is building a network of cycle lanes and docking stations for e-scooters and mopeds across the neighbourhoods.

In 2005, Vélo'v, a publicly subsidized bike-sharing service based on a network of stations spread across the city. Two years later, another similar service called Velib was launched and now has a massive success with more than 15,000 bikes

on the service, where each bike is used nearly 14 times per day.[23] Few more private services for electric mopeds are also serving thousands of commuters every day. Permits have been given to operate shared scooter services which regulate its fleet and ensures dedicated parking space for them. They offer subscription model with cheaper rates than any other European cities since it is a subsidized service.

City authorities have noted positive impact as there are less cars on the streets now, which led to lesser maintenance costs of streets. Additionally, due to increased physical activity and less pollution, people tend to be healthier and happier, which reduced pressure on public health systems, in the long term.

In line with these, recent political agendas have accelerated micromobility efforts, for instance, Mayor campaigns advocating 15-minute city

Integrated micro-mobility modes (bikes/cycles)

concept. Access to social services, employment centres and transportation services within 15-minute radius is the key principle of this concept. To achieve this vision, city authorities are pushing micromobility modes and shared transit services. A major corridor called Rue de Rivoli was redesigned to dedicate one-third of the street for buses and two-third reserved for bicycles and e-scooters.

What makes this project supportive of ITCM?

For caregivers of young children, these services are beneficial as they are easily available, cheaper and efficient for short distance travels or as a last mile connect to public transport. Bike-sharing services cannot work without public money as it fosters network density, which boosts usage. Once the network reaches a critical mass, it's a never-ending virtuous circle of network expansion and increased demand.[23]

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BERNARD VAN LEER FOUNDATION (BVLF)

Founded in 1949, the Bernard van Leer Foundation (BvLF) is a private foundation focused on developing and sharing knowledge about what works in early childhood development. It 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 30 million euro initiative to make lasting change in the landscapes and opportunities that shape the crucial first five years of children's lives. BvLF has supported programs in India since 1992.
https://bernardvanleer.org/

Urban95

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?"

WRI INDIA

World Resources Institute (WRI) is a global research organization that spans more than 60 countries, with international offices n Brazil, China, India, Indonesia, Mexico, and the United States, Regional offices in Ethiopia (for Africa) and the Netherlands (for Europe), and program offices in the Democratic Republic of Congo, Turkey, and the United Kingdom. Our more than 1,000 experts and staff turn big ideas into action at the nexus of environment, economic opportunity, and human wellbeing.
https://wri-india.org/

PARISAR

Parisar is a Pune based civil society organisation, working on the broad spectrum of issues under sustainable urban development over the past three decades. The approach for bringing about sustainable, effective changes in these areas is through research, policy advocacy and public engagement. Our focus areas include urban mobility, road safety, air quality, urban planning and natural and built heritage conservation.
https://parisar.org/