COMPLETE STREETS
POLICY WORKBOOK

Smart City
MISSION TRANSFORM-NATION

Ministry of Housing and Urban Affairs
Government of India

ITDP

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Ministry of Housing and Urban Affairs
Government of India

The Ministry of Housing and Urban Affairs is the apex authority of Government of India to formulate policies, coordinate the activities of various Central Ministries, State Governments and other nodal authorities and monitor programmes related to issues of housing and urban affairs in the country. The Smart Cities Mission was launched by the Ministry in 2015 to promote sustainable and inclusive cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment, and application of 'Smart' Solutions.

ITDP

The Institute for 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 livable, equitable, and sustainable.

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introduction

Promoting walking and cycling through the creation of pedestrian-friendly infrastructure is an integral part of urban renewal under the Smart Cities Mission. Several Indian cities have initiated pilots to create better streets for all. Transforming successful pilots into larger city-wide networks of complete streets require cities to embrace a progressive long-term vision, mandate funding to create walking and cycling infrastructure as well as set up institutional framework that supports project implementation — adopt a Complete Streets Policy.

Smart Cities Mission - Ministry of Housing and Urban Affairs presents Volume 2 of the Complete Streets Toolkit, 'the Complete Streets Policy Workbook', for Smart Cities across India. This document provides a step-by-step approach for decision makers, city officials, engineers, planners, and consultants to develop and adopt a Complete Street Policy, supported by a strong institutional set-up.

The document is divided into three sections:
•Complete Streets Policy
•Creation of Complete Streets Policy
•Institutional Framework

Stressing on the need for a Complete Streets Policy, the users are taken through the various stages of policy framing, from goal setting and stakeholder engagement, to policy drafting, and adoption. The document also provides the needs and ways for creating the institutional framework for effective planning and implementation.

This toolkit contains

i. Complete Streets Policy Framework
ii. Complete Streets Policy Workbook
iii. Complete Streets Planning Workbook
iv. Complete Streets Design Workbook
v. Complete Streets Implementation Workbook
vi. Complete Streets Evaluation Metrics and
vii. Complete Streets Best Practices

creating complete streets

Complete Street A street designed to cater to the needs of all users and activities, through equitable allocation of road space is referred to as a complete street.

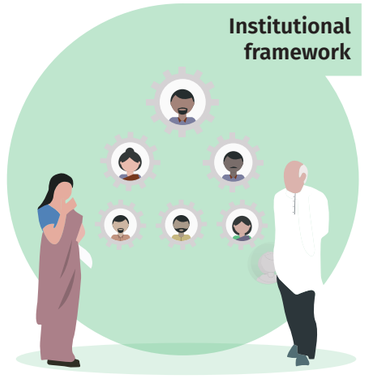
Volume 01 of the Complete Streets Toolkit - Complete Streets Policy Framework - adresses the rationale for making improvements to streets.

Transforming successful pilots into larger city-wide networks of complete streets requires cities to embrace a progressive long-term vision. This can be achieved by adopting a Complete Streets Policy.

Volume 02 of the Complete Streets Toolkit - the Complete Streets Policy Workbook - for Smart Cities across India, provides a step-by-step approach for developing and adopting a Complete Streets Policy that is supported by a strong institutional set-up.

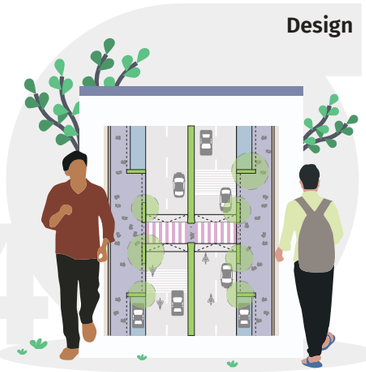
Volume 03 of the Complete Streets Toolkit - Complete Streets Planning Workbook - provides a step-by step guidance to city officials, engineers, planners, and consultants on creating a city-wide walking and cycling networks.

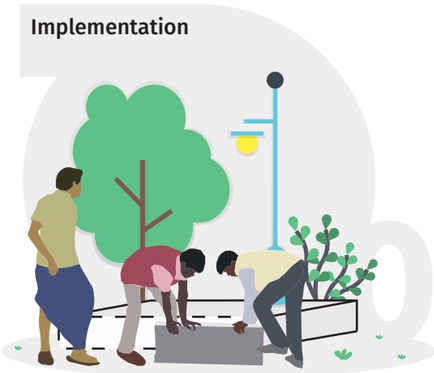
The output created through this process includes a long-term master plan for a Complete Streets network with proposed phasing and estimated investment. This includes streets with continuous footpaths, segregated cycle tracks (where possible), safe intersections, uniform carriageways, and organised parking. It also includes greenways, pedestrian-only streets, non-motorised vehicle and public transport priority streets, shared-streets, and junction redesign projects.



Creation of complete streets involves cooperation and collaboration between multiple stakeholders (such as ULBs, traffic police, planning agencies, consultants, experts, community groups, and others) at different stages, at both the city and the zonal level. Setting-up a dedicated committee and cell, as elaborated in volume 02, is an essential step to ensure the successful implementation of the Complete Streets projects.

It is important to obtain the reviews and approval from various stakeholders at each stage of the process of creation of complete streets to ensure that the end product caters to the expectations and needs of all.





More often than not, the process of creating complete streets happens in isolation without involving the end users or the other agencies pivotal to the operation of the street. This leads to a disconnect between the local context and the design, which eventually renders the redesigned street unusable.

A participatory approach to street design involves the stakeholders - government representatives, public, NGOs, etc - in the design process to ensure that the final design caters to the needs of the intended users. The result of such a process is invariably more feasible and also innovative.

Many cities have initiated work on redesigning their streets. However, they are currently following different methods and standards due to the lack of a single guiding document for street design. There is, thus, an urgent need for a national-level document that serves as a guideline for the design of complete streets.

Volume 04 of the Complete Streets Toolkit - the Complete Streets Design Workbook - for Smart Cities across India, elaborates on the best practice standards and guidelines, as well as the process designing complete streets to city officials, engineers, urban designers, and consultants.

Apart from design execution, the mismanagement of the entire construction process can cause delays and inconvenience to residents. The diversion of traffic, dug-up roads with poor attention to on-site safety, obstruction at property entrances, and water logging add to the problems of residents.

Volume 05 of the Complete Streets Toolkit - the Complete Streets Implementation Workbook - for Smart Cities across India, aims to highlight the typical steps of project implementation that can ensure a good final product - a truly Complete Street.

contents

List of acronyms

BoQ	Bill of quantities
BRR	Bus Route Roads
BRT	Bus Rapid Transit
CS	Complete Streets
CSMP	Complete Streets Master Plan
DBM	Dense Bitumen Macadam
DIP	Ductile Iron Pipes
DLC	Dry Lean Concrete
DWC	Double Wall Corrugated
FFL	Finished Floor Level
FRP	Fibre Reinforced Plastic
GIS	Geographic Information System
HDPE	High Density Polyethylene
HRIDAY	Heritage City Development and Augmentation Yojana
IRC	The Indian Road Congress
IPT	Informal Public Transport
MEP	Mechanical, Electrical and Plumbing
MLCP	Multi-Level Car Parking
MRT	Mass Rapid Transit
MS	Mild Steel
MUZ	Multi-Utility Zone
MoRTH	The Ministry of Road Transport and Highways
NMT	Non-Motorised Transport
PCC	Plain Cement Concrete
PCU	Passenger Car Unit
PMV	Personal Motor Vehicle
PQC	Pavement Quality Concrete
PVC	Polyvinyl Chloride
RCC	Reinforced Cement Concrete
RCC NP3	Reinforced Cement Concrete - Non-Pressurised class 3
RfP	Request for Proposal
RoW	Right-of-Way
ToR	Terms of Reference
ULB	Urban Local Body
WBM	Water Based Macadam
WMM	Wet Mix Macadam

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.

Average trip length The average distance covered by a transport mode for a trip. This is commonly measured in kilometres.

Bus Rapid Transit (BRT) High quality bus-based mass transit system that delivers fast, comfortable, reliable, and cost-effective urban mobility through the provision of segregated right-of-way infrastructure, rapid and frequent operations, and excellence in marketing and customer service.

Bulb-out Lateral extensions of the footpath into the carriageway to reduce the crossing distance for pedestrians. They reduce vehicle speeds, provide enhanced protection and visibility for pedestrians, and lower the time taken to cross the street.

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, genders, and physical dispositions. They also guarantee efficient mobility by focusing on moving people, user safety, universal accessibility, vitality and liveability, sensitivity to local context, and environmental sustainability.

Eyes on the street Informal surveillance of any street by the residents, shopkeepers, and other users of the street.

Greenway A linear, landscaped pedestrian or bicycle route based on natural passages such as canals, rivers, or other scenic courses. It is typically for recreational use, with an emphasis on conserving and preserving vegetation.

Informal Public Transport (IPT) This includes vehicles like share autos, vans, minibuses that operate on a shared or per seat basis on specific routes, in an unregulated or semi-regulated environment, and with no government support. The service may or may not have a predefined “fare structure”.

Mass Rapid Transit (MRT) A high quality public transport system characterised by high capacity, comfort, overall attractiveness, use of technology in passenger information system, and ensuring reliability using dedicated right of way for transit vehicles (i.e. rail tracks or bus lanes).

Mobility Conditions under which an individual is capable of traveling in the urban environment.

Mode share The share of total trips carried out by different modes of urban transport including, but not limited to walking, cycling, bus, rail, share auto-rickshaws, private auto, two wheelers, and cars.

Non-Motorised Transport (NMT) All forms of human powered transportation including, but not limited to, walking and cycling.

On-street parking The space occupied by parked vehicles along the edge of the street or carriageway which otherwise could have been used by motorised or non-motorised traffic.

Off–street parking The term refers to the dedicated spaces provided for parked vehicles outside the right-of-way. It includes parking lots, multi-level car parking, and other off-street facilities.

Public Transport (PT) Shared passenger vehicle which is publicly available for multiple users.

Parking management A mechanism to facilitate efficient use of street space to ensure additional space dedicated for pedestrians, cyclists, public transport, and motorists. In addition, over time, collecting a fee for parking can manage its demand and ensure that personal motor vehicle users compensate the city for the use of valuable land on which they park their vehicles.

Right of Way (RoW) Measure of the width of the road taken from compound wall/edge on one side of the street to that on the other side.

Scarification This refers to the process of removing a pavement surface (asphalt, PCC, etc.) to improve the cross section and the surface profile, thereby preparing it for resurfacing.

Shared street 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 be made to force the vehicles to slow down and match the pace of those on foot.

Sustainable transport modes The following modes are categorised as “sustainable modes” of urban transport because when compared with personal motor vehicles, they consume the least amount of road space and fuel per person-km and also cost much less to build the infrastructure: walking, cycling, and public transport (including a regular bus service as well as MRT systems).

Traffic calming 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.

policy process

01
Complete Streets Policy

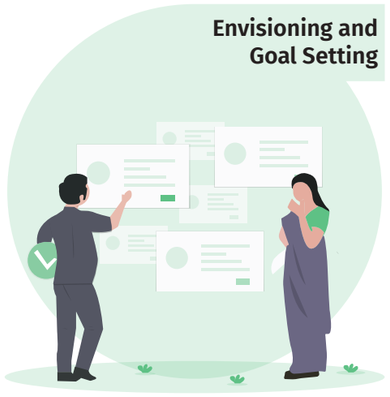
A Complete Streets Policy is essential to guide the creation of better streets for walking and cycling.

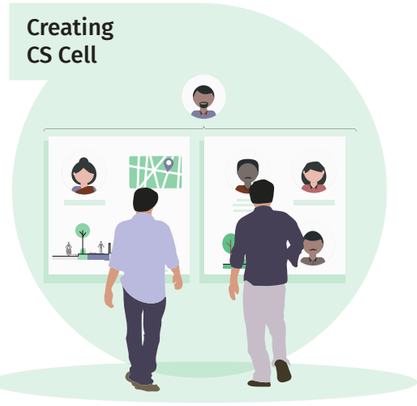
Envisioning and goal setting:
This section will guide in the setting up of long term transport goals, to achieve the city's vision.

Stakeholder engagement:
To ensure long term success of the project, all the stakeholders should be involved in the discussions for policy development from the beginning.

Drafting the policy:
This section focuses on the key questions that the city should address and how the ULB can create the policy within the specified timeline using the 'Policy Template'.

Adopting the policy:
This chapter gives details on the reviews and revisions required for a policy to be adopted, along with estimated timelines involved for each process.





02
Institutional framework

Establishing the Apex Committee:
Stressing on the need for collaboration, the need for an apex committee is highlighted. The apex committee consists of representative(s) from different stakeholder groups - both governmental and non-governmental, for the successful implementation of projects.

Creating Complete Streets cell:
To guide the city in the design and implementation of complete streets, setting up a Complete Streets Cell is essential. The team comprising of qualified personnel, oversees the work done by design consultants and contractors and aids in the planning, design, and monitoring of the work.

1

COMPLETE STREETS POLICY

need for complete streets policy | timeline

1.1 need for complete streets policy

introduction

Transforming successful pilots into larger city-wide networks of complete streets require cities to embrace a progressive long-term vision, set ambitious goals, mandate funding to design, implement and maintain walking and cycling infrastructure, as well as set up institutional framework that supports project implementation — adoption of a Complete Streets Policy.

complete streets

A complete street is one that is designed to cater to the needs of all users and activities equitably. Complete Streets include various elements such as safe, shaded, and continuous footpaths, segregated cycle tracks as well as bus lanes where required, safe pedestrian crossings with refuges, uniform carriageway, and organised on-street parking. The designs integrate bus stops, street vending, trees, seating, children's play zones, and all other street furniture as well as service utilities as appropriate to the street typology. Each element is located carefully such that they do not hinder the experience of any user group while still adding life to the street.

A network of complete streets carefully balances the needs of mobility and liveability without compromising one another.

why do cities need to adopt a complete streets policy?

Walking and cycling account for over a third of urban trips in India - even as high as half of the trips in smaller cities. However, the streets in urban India do not cater to this vast majority of the population. This is evident in the increasing number of fatalities of pedestrians and cyclists. Between 2014 and 2017, an average of 66 pedestrians and cyclists died on the road every day. Lack of infrastructure pushes these mode users to shift to private motor vehicles, which increases pollution and congestion. Keeping this situation in check, and further improving conditions, requires progressive programmes and infrastructure designed to support and encourage sustainable modes like walking and cycling. A Complete Streets Policy ensures that this creation of complete streets is sustained and long-term, by setting the necessary targets for the city to achieve.

A Complete Streets Policy prioritises the creation of walking and cycling infrastructure in the city while simultaneously redressing the focus from private motor vehicle infrastructure by:

- Setting out a vision for the city, prioritising and encouraging walking and cycling.
- Acting as a catalyst for the provision of safe infrastructure for pedestrians and cyclists.
- Institutionalising a forum for all stakeholders, to discuss how to provide for all users of the street.
- Prioritising investment for walking and cycling infrastructure in the government's financial planning.
- Ensuring accountability and creating an institutional framework for implementation.

A tale of two streets | YouTube
https://www.youtube.com/watch?v=fTv5063oqcc

timeline 1.2

Process	Components	Duration (in months)							
		1	2	3	4	5	6	7	8
Complete Streets Policy	Envisioning and goal setting	■	■						
	Bringing stakeholders together towards a shared vision	■	■	■					
	Draft the policy		■	■	■				
	Adopt the policy					■	■	■	■
Institutional Framework	Setting-up Apex Committee	■	■						
	Create a Complete Streets Cell	■	■						

2

CREATION OF COMPLETE STREETS POLICY

envisoning and goal setting | stakeholder engagement | drafting the policy | adoption process

2.1 envisioning and goal setting

The first step in creating a Complete Streets Policy is to set a vision for the city's streets and transportation and chart out a long-term plan with progressive goals. This is to be done through an inclusive and participatory process involving all stakeholders. The vision is developed, based on some basic principles of complete streets.

The ULB or the Complete Streets Cell should define the vision for the coming years. This vision along with its corresponding goals should drive urban transportation planning and the decision-making process in the city.

establishing complete streets principles

In order to guide the process of creating complete streets - from policy through planning up to implementation - cities must adopt certain key principles. These principles form the foundation for all subsequent steps.

effcient mobility

A complete street ensures efficient mobility by offering multiple modes of travel, especially high-quality facilities for public and non-motorised transport. With greater capacity, a complete street moves more people by allocating space equitably for all users and not prioritising only the private motor vehicles.

safety

A complete street is safe for all user groups by providing segregated spaces for each and incorporating traffic calming measures. A complete street ensures personal safety as well, with good lighting and 'eyes on the street' through active edges and vending.

universal accessibility

A complete street should be accessible by all, including the differently-abled. Continuous and even-surfaced footpaths, table-top crossings and ramps, and tactile pavers wherever level differences occur are some measures to ensure universal accessibility.

livability

A complete street is full of life, with elements that improve activity. Improved livability improves conditions for existing users, attracts more users, increases retail activity, and transforms the street into a vital public space.

sensitivity to local context

A complete street is designed to suit the local context, factoring in local street activities, patterns of pedestrian movement, nearby land uses, and the needs of the people. Design interventions can range from elements added to the street to street-level interventions like shared or pedestrianised streets.

environmental sustainability

A complete street promotes sustainable modes of transport and has the scope to improve local climatic conditions. Trees and plants on streets help absorb pollutants and reducing heat. Well-designed complete streets also help properly capture and channelise rainwater.

Chennai's Journey to Reclaim City Streets for its People | YouTube
https://www.youtube.com/watch?v=aET9mHkxk3U

Maharashtra Urban Mobility Policy | YouTube
https://www.youtube.com/watch?v=Zlj1OBhzr48

developing a draft vision

A vision is a guide for charting plans, goals and objectives, making decisions, and evaluating the work, on a long-term basis. A powerful vision inspires action.

In order to transform a few well-designed pilots into a city-wide network of complete streets, the city should set a vision. The Complete Streets Vision will form the basis for defining specific goals to meet the city's desired future.

To develop a vision, the ULB or the street design cell should answer some key questions that would help capture the city's aspirations for the future of its urban realm with emphasis on streets and mobility.

key questions

What kind of a city do we want to live in?

How do we achieve an environmentally and economically sustainable city, especially with respect to mobility?

How will mobility - in particular, walking and cycling - in the city differ in the future from what it is today?

How do we ensure equitable mobility?

How safe do we want our streets to be, especially for the vulnerable user groups, such as women, children, elderly, etc.?

The Complete Streets Vision should reflect the aspirations of citizens from all walks of life, and build upon it. It should provide a qualitative description of the desired future. It should place the complete streets principles at the core of the wider urban development. The vision should be prepared by taking into consideration economic and environmental sustainability, natural and built heritage, social inclusion, gender equity, health, and safety. The vision should not allude to specific projects like skywalks or cycle tracks. The focus should be on "what" the city should achieve, and not `how'.

examples

Vision for Pune

"Moving people safely and economically by emphasising public transport and non- motorised transport" — Pune Comprehensive Mobility Plan, 2008

Vision for Chennai

Chennai will be a city with a general sense of well-being through the development of quality and dignified environment where people are encouraged to walk and cycle; equitable allocation of public space and infrastructure; and access to opportunities and mobility for all residents. — Chennai NMT Policy, 2014

setting progressive goals

In order to achieve its Complete Streets Vision, the city should set progressive and time-bound goals, typically in 5-year intervals. The overall 15-year planning horizon is long enough to ensure that all these goals are attainable. However, cities should aim to implement projects within the 10-year planning horizon and focus the last five years on maintaining projects, and upgrading as required.

Goal setting involves two kinds of targets - outcomes and outputs.

Outcome goals are broader objectives guiding the city's action plan to achieve its Complete Streets Vision. Output goals are specific measurable targets for street infrastructure and services, to help achieve the outcome goals.

It is important to note that the outcome goals cannot be achieved unless a package of policies and programmes such as Parking Management Plan, Vending Management, Public Bicycle Sharing etc are also implemented by the city. The ULB or the Complete Streets Cell should urge other concerned agencies to take complementary actions to realise these goals.

outcome goals

Some outcome goals that the city should aim for are as follows:

The city will increase the mode share of walking and cycling by providing equitable distribution of street space.

The city will aspire to create safe, comfortable, convenient, and accessible street network for all road users irrespective of gender, age, ability, etc.

The city will ensure that all streets are more vibrant, attractive, and inclusive.

The city will aim to improve road safety and reduce injuries and fatalities.

The city will also improve liveability by improving ambient air quality.

output goals

Some output goals that the city should set in order to achieve the above-mentioned outcomes are as follows:

infrastructural outputs

All streets have continuous, safe, accessible, secure, and comfortable walking environment.

The entire city is accessible through a continuous, safe, secure, and comfortable cycle network with minimum detour.

All streets that have a parking occupancy of more than 60% during peak hours shall be brought under an IT-enabled parking management system.

All streets have improved access to public transport (including mass transit and IPT).

All streets are more vibrant and attractive through an increase in non-transport activities.

management and monitoring outputs

The city will ensure that there is coordination among the different street-related stakeholders/ departments.

The city will ensure that the ULB has the capacity to implement and monitor the projects.

The city will ensure that adequate financial capital is allocated for implementation and monitoring of the projects.

The city will ensure inclusivity of street vendors to provide livelihood and 'eyes on the street' and ensure the absence of encroachment by the vendors to provide unhindered space for other road users.

communication and outreach outputs

The city will take initiative to communicate the benefits of complete streets, increase awareness about the projects, and garner public support.

Fig.
Footpath on
St. Mark's Road, Bangalore

2.2 stakeholder engagement

towards a shared vision

The creation of a policy for complete streets should be an inclusive process. The city should involve all stakeholders in the discussion for policy development, so that their views are heard and considered while setting the goals and vision. This helps garner their support, and ensures long-term success of the policy and frictionless project implementation.

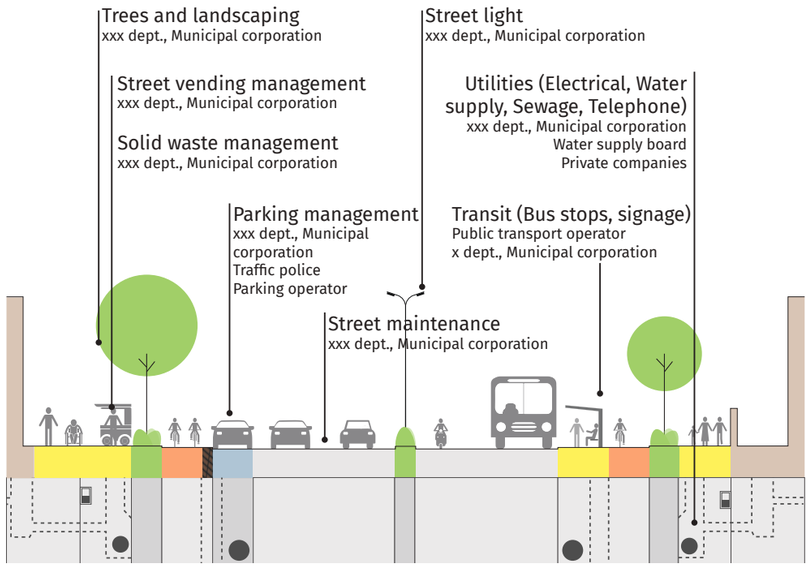
identifying all street owning (and using) agencies

Streets in a city host a wide array of uses and users and hence involve various stakeholders. Streets serve as the primary conduit for movement, be it by private motor vehicles, non-motorised or public transport. The planning of different transport modes has an impact on street design. Many of these modes such as metro rail, suburban rail, bus rapid transit system, city buses, and autorickshaws are under the jurisdiction of different departments of the national, state, and city governments.

In addition to transportation, streets play a vital role in the delivery of various public services such as electricity, water supply, telecommunications, solid waste management, etc. These utilities are under the purview of their respective government departments.

Beyond that, streets are also important public spaces that facilitate socio-economic activities through vending and gathering.

While different streets are owned by different government agencies, different parts within a street are themselves operated by various parties. A comprehensive Complete Streets Vision and its meaningful implementation requires coordination among these agencies. Cities must thus map all agencies with street-related roles and bring them together to discuss the draft vision and transform the same into a shared vision.



Mapping various agencies that own and use parts of the street

envisioning workshop

The urban local body or the complete streets cell should host a visioning and goal setting workshop involving all the stakeholders mapped in the previous step. The aim of the workshop is to build consensus for the draft vision and goals, and make the necessary changes in order to create a shared Complete Streets Vision and set the final required goals for the city. These goals and vision will be included in the policy.

who will conduct the workshop?

The ULB or the Complete Streets Cell shall facilitate the workshop. The workshop can be conducted by the municipal corporation or experts in the field of sustainable transport, depending on the capacity of the municipal corporation.

participants

The participants should include all stakeholders mapped in the previous step, some of whom are:

Decision makers and senior officials from the ULB

Members of the Apex Committee	Find the full list of members of the Apex Committee in Chapter 3.1
Public transport agencies	Representative(s) from the concerned transport agencies.
Traffic police	Key officials from the city's traffic police
Local development authority	Representative(s) from the concerned city development authority.
Highways department	Representative(s) from the national and state highways departments.
All utilities agencies	Representative(s) from the concerned utility agencies; including but not limited to water supply, electricity, telecommunications, solid waste, and storm water.
Representatives from academia	Experts from relevant departments in institutions in and around the city.
Other civil bodies	Representatives from non-governmental or community organisations

External urban transport experts

Cities may also choose to invite political leaders or organise a separate discussion with them.

agenda of the workshop

The ULB or the Complete Streets Cell shall present the draft vision and goals to the participants of the workshop, and initiate discussion on the same. The team should attempt to articulate how this vision ties to the larger vision of the city or other departments. The participants by the end of the workshop should arrive at a consensus on what vision the city aspires to achieve for its streets through its goals within the stipulated timeline.

The deliberations of the workshop shall be publicised along with a graphic representation of the Complete Streets Vision so that the public is simultaneously kept informed.

2.3 drafting the policy

Following the envisioning and goal-setting workshop, the team should draft the Complete Streets Policy which will include the final vision and goals decided at the workshop. The policy template in the annexure of this workbook can be modified and used by the city.

salient features of the policy

The Complete Streets Policy guides long-term action for the creation of complete streets and establishes the steps required. This entails both the physical infrastructure as well as the services and mechanisms needed to make walking and cycling safe, convenient, and comfortable. For instance, while the policy addresses guidelines for street design, it also includes the steps required for vending management. It thus lays the path to a sustainable future for the city based on walk, cycle, and public transport. To achieve this, the policy:

- Explains the city's overall and transportation background with details of demography, administrative setup, and existing transport network;
- Establishes a progressive vision for complete streets with clear goals.
- Sets the requisites necessary for successful implementation of the policy such as developing a Complete Streets Master Plan, adopting Complete Streets Design Guidelines along with Complete Streets Implementation Guidelines for creation of city-wide complete streets.
- Sets regulations for parking management as well as the built environment.
- Provides leadership incentives for cities to focus on NMT and public transport.
- Provides performance measures to determine the effectiveness of the policy.
- Establishes priority for funding for NMT improvements and infrastructure.
- Provides a detailed institutional framework for project implementation.

using the template

The Complete Streets Policy template attached in the annexure of this workbook, includes preset vision and goals which are comprehensive and thorough. The template also has corresponding steps required to achieve these objectives. The city can thus use the template directly or modify the goals and vision based on the final outputs and outcomes decided at the goal-setting workshop.
The template begins with an overview of the city and its existing transportation system, which requires contextualisation. For this purpose, the city has to collect data as instructed in the template, which includes but is not limited to:

- Demographic information
[Population, rate of population growth, M/F ratio, population projection for 2031, prominent sources of employment, etc.]
- Transportation network
[Some skeletal information, eg. if there is a railway station, port, airport, etc.]
- Transport mode shares

timeline

The ULB or the Complete Streets Cell shall collect the required data and write the policy within a stipulated period of 75 days.

adoption process 2.4

Once the policy has been prepared, the process for adoption of the policy by the city shall be initiated.

- The policy draft is first submitted for a final review to the Apex Committee. The Apex Committee should send its comments to the ULB/Complete Streets Cell within 30 days from the date of submission of the policy draft.

- Simultaneously, the draft is also notified online for comments from public domain, for a duration of 30 days. Based on the capacity of the ULB, the policy can be presented to the specific groups of the public such as residential welfare association leaders, civil society organisations, elective representatives etc. through a public meeting/ open exhibition or any other medium as chosen by the urban local body.

- The Complete Streets Cell shall then revise the policy draft based on the comments received before sending it to the standing committee.

- The standing committee will review the policy. Once approved, the policy will be shared with the General Body council. General body and standing committee comprises of elected representatives from the city. In case of absence of such committee/council, the ULB should get the policy approved by the concerned authority in the city.

- After getting the approval and comments from the standing committee and the general body, the Complete Streets Cell shall then revise the policy and prepare a final policy draft for adoption.

The final step is the adoption of the policy by the ULB.

periodic review

Encouraging a shift to walking and cycling as well as changing the tide of rapid motorisation requires many small steps. The successful implementation of this policy will assist the city in making walking, cycling, and public transportation safe and enjoyable for all it's residents. The policy should be monitored and evaluated periodically, with the outcomes being evaluated every one to five years and the outputs being evaluated every year based on the evaluation frequency given in Volume 6: Complete Streets Evaluation Metrics. The outcomes of this process should be used to update this policy and all other documents related to complete streets.

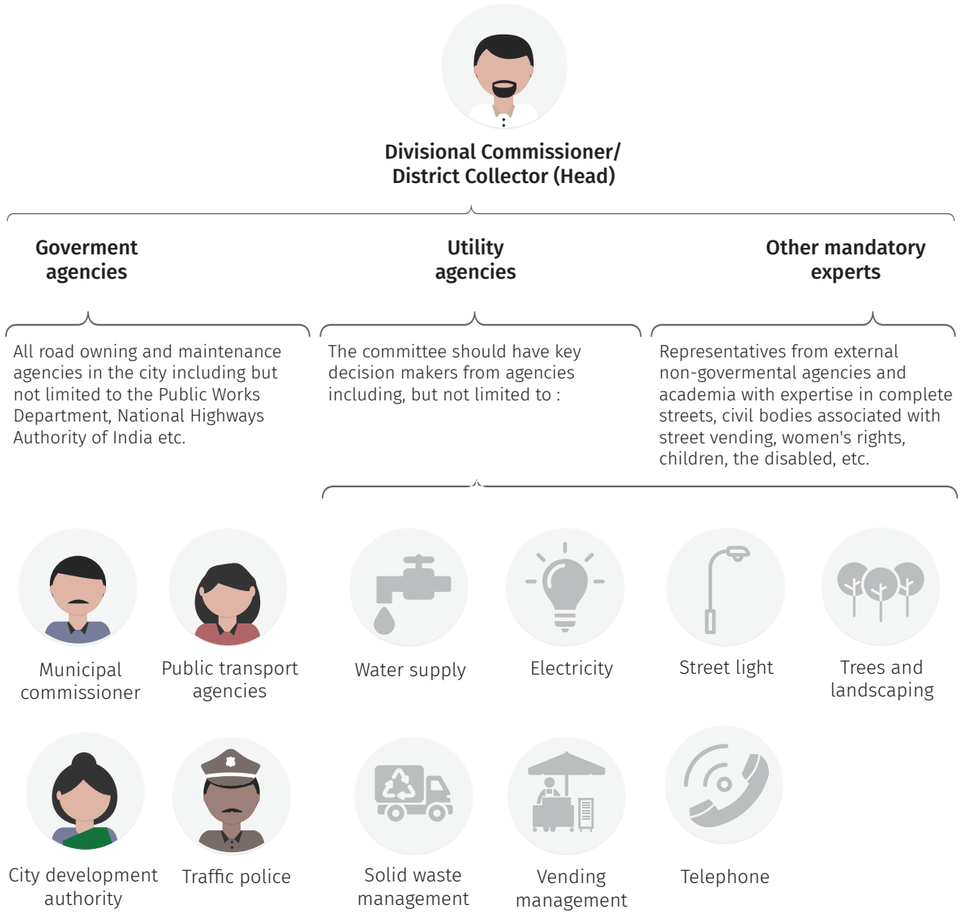
3

INSTITUTIONAL CAPACITY AND FRAMEWORK

establishing apex committee | creation of complete streets cell

3.1 establishing an apex committee

Creation of city-wide complete streets network requires the cooperation and collaboration of multiple stakeholders at both the city and the zonal level.
To improve coordination between various agencies at the city level and to ensure consistent engagement with all stakeholders, the city should set up an Apex Committee with representatives from all stakeholder groups, and convene regular meetings. Such a committee will largely contribute to the successful implementation of complete streets by ensuring smooth progress of work.



timeline

The formation of the committee including the identification of stakeholders, sending and receiving letters of invitation and acceptance/rejection should be completed within a period of 30 days.

roles and responsibilities

The Deputy Commissioner (for cities with population above 50 lakhs) or the Commissioner (for smaller cities), under the guidance of the Apex Committee head, is responsible for ensuring the timely implementation of all Complete Streets projects and towards achieving the Complete Streets Vision.

While the Divisional Commissioner/District Collector and Municipal Commissioner may be present only for important meetings and to sanction the policy, budgets, etc., the other members shall be present for the tasks mentioned below:

- Monitor the creation and adoption of city-specific transport policies including the Complete Streets Policy by the ULB and/or the Complete Streets Cell.
- Review, approve, and monitor the planning, design, and implementation of urban transport and services as well as the projects including work implemented by the Complete Streets Cell.
- Organise review meetings once in every month or as required, based on the project stages.

Specific tasks may include:

- Review various ToRs for empanelment, contractors etc. for design, construction, and implementation of Complete Street work.
- Technical review of bids especially for empanelment of consultants and contractors.
- Review and approval of budgets prepared by the Complete Street Cell.
- Review of designs prepared by Complete Streets Cell/consultants, at the stages of assessment, conceptualization, draft plans, and final designs
- Participate in public meetings where at least 50% of the members should be present.
- Develop, adopt, and monitor metrics to oversee performance of various urban transport and services including Complete Streets Policy and master plan.

3.2 creating a Complete Streets Cell

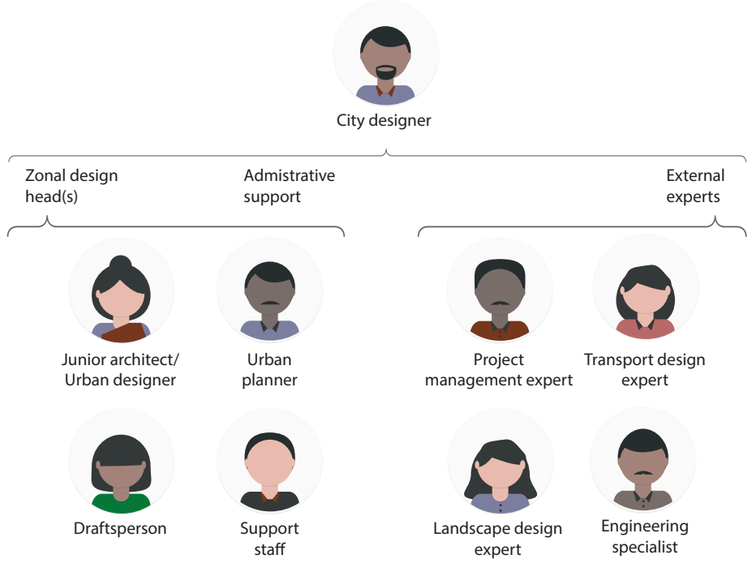
Ensuring high quality of Complete Streets policy, masterplan, as well as design and implementation of specific projects, is often affected by the limited capacity of engineers within the ULB. In most cities, the same team of engineers is responsible for various functions including street design, solid waste management, water supply, to name a few. There is no dedicated team for the creation of complete streets and hence projects do not progress as intended.

For instance, insufficient internal capacity leads to poor monitoring and management of the procured work. Further, due to lack of awareness, cities often hire consultants who may not be equipped to produce quality work and thus do not improve the existing capacity. This shortage of personnel and expertise leads to poor quality of streets.

Successful implementation of complete streets requires qualified staff trained in basic transport planning and urban design principles. The Urban Local Body in the city should set up a dedicated Complete Streets Cell under the existing Road Department for planning and designing of streets, to oversee and monitor the work produced by design consultants, contractors as well as general maintenance of streets. The Complete Streets Cell should have sufficient statutory backing such that the decisions taken by the Cell are binding on the Road Department or ULB.

proposed organisation structure

The Complete Streets Cell should include dedicated internal staff as well as external specialised consultants to guide the city on specific aspects of street design such as project management, landscaping, engineering works, and signages.
The following staff members are required:



The city should have one Design Head per administrative zone. Each Zone Design Head must be supported by a trained design team consisting of 1-2 junior architect(s)/urban designer, planner, draftsperson, GIS-operator, and other technical support staff. In case the city has more than 5-6 zones, the responsibility of 2-3 zones can be shared by one zonal team such that all the zones are covered by not more than 5-6 zonal heads.

roles and responsibilities

Roles	Responsibilities
Planning and monitoring	Develop and update Complete Streets Master Plan and parking management plan for the city. Adopt street design standards and update them when needed. Procure field data/drawings from other departments. Define roll-out plan including financing sources and timelines for Complete Streets projects. Maintain a database of required consultants for detailed design and implementation. Identify projects for detailed design and execution. Monitor project implementation and maintain a database of as-built drawings.
Project designing and implementing	Engage consultants to develop detailed street design plans and coordinate with them at various stages of street design development. Assist in convening regular meetings with the Apex Committee to review and oversee designs developed by consultants. Identify contractors for implementation and oversee implementation works at various stages. Coordinate between contractors and consultants to address onsite issues during construction. Monitor physical infrastructure, to ensure that it is maintained over time and meet appropriate maintenance standards developed by the cell or as specified in these guidelines.
Capacity building	Convene conferences, workshops, and seminars to understand and disseminate best practices in street design and implementation among city officials, consultants, and others. Develop a training program to train city officials, engineers, and traffic police in the basics of street design. This can be done in partnership with academic institutions and technical organisations.
Advocacy	Mediate any conflict between stakeholders (both public and governmental) during construction. Communicate benefits of complete streets to the public through advocacy campaigns, workshops, media articles, etc.

Based on the needs of the Complete Streets Cell, a project management consultant can be hired either at the beginning of the project to help in coordinating the work between the zonal designers and other consultants or at the detailed design stage to help with the final design and execution. The project management consultant will also be responsible to identify contractors for implementation and oversee implementation works at various stages.

While the task of designing major streets in the city may be taken up by a design consultant and/or project management consultant, the Complete Streets Cell may design the local streets depending on its bandwidth.

timeline

The formation of the Complete Streets Cell should happen along with the formation of the Apex Committee within a period of 45 days. The city being unable to form the cell within the stipulated timeframe should not lead to further delays in the creation of the policy. In such a situation, the ULB should take up the process of envisioning, goal setting, organising the workshops, etc. to ensure the successful creation of the Complete Streets Policy.

ANNEXURES

complete streets policy template | list of references

complete streets policy template

1 what is complete street?

A complete street is one that is designed to cater to the needs of all users and ctivities equitably. Complete Streets include various elements such as safe, shaded, and continuous footpaths, segregated cycle tracks as well as bus lanes where required, safe pedestrian crossings with refuges, uniform carriageway, and organised on-street parking. The designs integrate bus stops, street vending, trees, seating, children's play zones, and all other street furniture as well as service utilities as appropriate to the street typology. Each element is located carefully such that they do not hinder the experience of any user group while still adding life to the street.

A network of complete streets carefully balances the needs of mobility and liveability without compromising one another

principles of complete street

In order to guide the process of creating complete streets - from policy through planning up to implementation - cities must adopt certain key principles. These principles lay the foundation for all subsequent steps.

effcient mobility

A complete street ensures efficient mobility by offering multiple modes of travel, especially high-quality facilities for public and non-motorised transport. With greater capacity, a complete street moves more people by allocating space equitably for all users, and not prioritising only the private motor vehicles.

safety

A complete street is safe for all user groups by providing segregated spaces for each and incorporating traffic calming measures. A complete street ensures personal safety as well, with good lighting and 'eyes on the street' through active edges and vending.

universal accessibility

A complete street should be accessible by all, including the differently-abled. Continuous and even-surfaced footpaths, table-top crossings and ramps, and tactile pavers wherever level differences occur are some measures to ensure universal accessibility.

livability

A complete street is full of life, with elements that improve activity. Improved livability improves conditions for existing users, attracts more users, increases retail activity, and transforms the street into a vital public space.

sensitivity to local context

A complete street is designed to suit the local context, factoring in local street activities, patterns of pedestrian movement, nearby land uses, and the needs of the people. Design interventions can range from elements added to the street to street-level interventions like shared or pedestrianised streets.

environmental sustainability

A complete street promotes sustainable modes of transport and has the scope to improve local climatic conditions. Trees and plants on streets help absorb pollutants and reducing heat. Well-designed complete streets also help properly capture and channelise rainwater.

introduction 2

Background

[XYZ] Municipal Corporation (hereafter referred to as MC) through this policy on 'Complete Streets' aims to ensure that people of all age groups, gender, and socio-economic and cultural backgrounds have access to good walking and cycling infrastructure. MC will aim to create a policy environment that supports increased accessibility by prioritising the use of walking, cycling, and public transport. Too often, transport planning has concentrated on infrastructure, traffic, costs, and benefits, with environmental factors limited to engineering consideration. However, mobility planning now focuses on the movement of "people, not vehicles', a goal clearly expressed in the 2006 National Urban Transport Policy (NUTP)*.

In harmony with the focus on moving people, the MC will develop a network of safe, convenient and accessible footpaths and cycle tracks, improve intersections and pedestrian crossings, and integrate intermodal facilities to meet the NMT needs of the city.

city overview

The following subsections may be used to talk about the city. For example, is it known as an educational/industry hub? Add a map to show the city's location w.r.t. the state. Describe any peculiarities of the city. Did the city see development of a particular industry in the last 10 years? Describe its strategic location with respect to other surrounding cities. What about airport, sea port?

What are the city's pain points and main issues with today's transportation? What does the city anticipate, dream of?

Please note that the following sections only provide a suggestion and the city may choose a different structure.

1. **City overview** - Location, largest/nth largest city of your state, what is the city known for, etc.
2. **Demographic information** - Population, rate of population growth, M/F ratio, is it mainly a young population?, population projection for 2031, prominent sources of employment, etc. You may make a comment like "It is necessary to visualise the transportation needs of this population and start planning for it from today."
3. **Administrative setup** - About the ULB, how is transportation planned, etc.
4. **Transportation network** - You may provide some skeletal info here, e.g. whether there is a railway station, port, airport, etc.

the path to NMT-PT-based transportation

A good transport system connects people and boosts a city's economy. It should be sustainable—socially, economically, and environmentally. In [XYZ] city, like all Indian cities, citizens aspire to the convenience, status, and comfort of private motorised travel, which translates into rapid motorisation and significant urban problems. Motorisation fuels spatial decentralisation and sprawl, which decreases general accessibility to economic and social opportunities for those who cannot afford PMVs. This in turn creates demand for more motorisation, which is a fundamental driving force behind increase in air pollution, transport related global greenhouse gas emissions, pressures for conversion of land to urban uses, dependency on petroleum, and demands for expanded infrastructure.

When planning transport infrastructure and services, it is important to differentiate between mobility and accessibility. Mobility, which represents an individual's capability to move, is measured in terms of "how far do we go?" and "how quickly do we get there?" Accessibility describes the ability to reach social and economic opportunities, and is often measured in terms of the time, money, discomfort, and risk that is required to reach such opportunities.

For example, in cities with high levels of congestion, citizens who travel by automobile may experience relatively poor levels of mobility (slow travel speed, low individual travel mileage, etc).

* *Ministry of Urban Development, Government of India (2006). National Urban Transport Policy.*

However, the cities themselves may be economically successful due to their accessibility (cumulative number of opportunities, activities that are clustered together, many travel options, overall low cost of travel). Transport systems exist to provide economic and social connections—travel is rarely an end in itself. Thus, a “good” transport system provides more accessibility per unit of mobility.

Local transport policies play an important role in influencing aspirations for PMVs, and moderating the demand for motorised travel. The [XYZ] MC recognizes walking, cycling, and the use of public transport as important modes to enhance accessibility and improve mobility. Thus, it is necessary to develop programs and infrastructure designed to support and grow these modes - hence this policy. The policy focuses on street design and management, and making optimal use of its resources by:

- **Emphasising on making walking and cycling safe and attractive.** NMT provides basic mobility, affordable transport, access to public transport, as well as health and recreation benefits. Improving conditions for NMT reduces the demand for travel by PMVs. Such improvements increase the convenience, comfort, and safety of walking and cycling and therefore benefit existing users as well as encourage new users.
- **Providing high quality public transport.** High quality buses with ITMS, supported with terminals and depots makes public transport attractive even to personal vehicle users. To support the demand for public transport, cities should also strive to provide MRT.
- **Stabilising and/or reducing the use of PMVs.** Stabilising the use of PMVs at today’s level can be achieved through various mechanisms like reducing parking supply, charging for parking according to demand, and employing several other appropriate measures, including congestion charging. As the city provides attractive alternatives to PMVs, in the form of high quality NMT and PT facilities, people shift to these alternatives.

use of NMT-PT modes in the city

[The city should elaborate on modal share of the city with focus on share of pedestrians and cyclists. Talk about business-as-usual scenario if the current trend is continued vs sustainable transport scenario for the city through bar-graphs/pie charts. The city may comment on the problems which are arising due to the current focus on private motor vehicles and how a shift towards sustainable transport may help solve various problems like congestion, pollution, etc.]

To promote more NMT users and reduce traffic congestion and vehicular pollution, MC proposes to adopt and implement Complete Street Policy that encourages the use of sustainable transportation by providing better and safe NMT facilities. Managing and regulating parking is another aspect of this approach that ensures that available street space is put to effective use for movement and parking of vehicles- motorised as well as non-motorised. Complete Streets helps in better management of road, along with transferring more people in a safe and sustainable manner. High quality streets make a city truly livable and also become places for people to meet, interact, do business, and have fun.

[In order to achieve those goals the city should talk about the projects and programmes already undertaken/proposed by the ULB to support walking and cycling.]

role of complete street policy

Walking and cycling account for X% of urban trips in XY city. However, the streets in city do not cater to this vast majority of the population. This is evident in the increasing number of fatalities of pedestrians and cyclists - X% between 2014 and 2017. Lack of infrastructure pushes these mode users to shift to private motor vehicles, which increases pollution and congestion. Keeping this situation in check, and further improving conditions, requires progressive programmes and infrastructure designed to support and encourage sustainable modes like walking and cycling. A Complete Streets Policy ensures that this creation of complete streets is sustained in the long-term, by setting the necessary targets for the city to achieve.

A Complete Streets Policy (or Non-Motorised Transport Policy) prioritises the creation of walking and cycling infrastructure in the city while simultaneously redressing the focus from private motor vehicle infrastructure by:

- Setting out a vision for the city, prioritising and encouraging walking and cycling.
- Acting as a catalyst for the provision of safe infrastructure for pedestrians and cyclists.
- Institutionalising a forum for all stakeholders to discuss how to provide for all users of the street.
- Prioritising investment for walking and cycling infrastructure in the government’s financial planning.
- Ensuring accountability and creating an institutional framework for implementation.

vision 3

The city will have a general sense of well-being through the development of quality and dignified environment, where people are encouraged to walk, cycle, and use public transport; there is equitable allocation of public space, infrastructure, and funds; and access to opportunities and mobility for all residents.

goals 4

4.1

The ULB aims to increase the use of walking, cycling, and public transport by creating a safe and pleasant network of footpaths, cycle tracks, greenways, and other facilities to serve all citizens in the metropolitan area. It will strive to meet the following desirable outcomes by designing streets consistent with principles of complete streets, and incorporating appropriate environmental planning and water management techniques. The ULB also urges other concerned agencies to take complementary actions to realise these goals.

s.no	Outcome	Indicator
1	The city will enhance its environment-friendliness by increasing the mode share of walking and cycling by providing equitable distribution of street space	Mode share Registered vehicles data
2	The city will increase the mode share of different users like children, women, elderly, disabled etc. by providing accessible, comfortable, and safe streets	Mode share (disaggregated by gender, age, ability, and income)
		Perception surveys (disaggregated by gender, age, ability, and income) on • access, • comfort • safety • satisfaction
3	The city will aim to reduce the deaths and injuries from road traffic accidents by 50%	Road accident fatalities per lakh population (disaggregated by mode of travel and cause)
4	The city will improve the ambient air quality as per Central Pollution Control Board Ambient Air Quality Standards	Annual mean particulate matter concentration • PM10 • PM2.5

Table 1: Outcome

The ULB will invest and manage walking, cycling, public transport infrastructure, and PMV use to meet the following output goals that contribute to achieving the desired outcomes listed above. Output goals are determined for a 15 year planning horizon. The ULB also urges other concerned agencies to take complementary actions to realise these goals.

s.no	Outcome
I	**Infrastructure Outputs**
1	All streets have continuous, safe, accessible, secure, and comfortable walking environment
2	The entire city is accessible through a continuous, safe, secure, and comfortable cycle network with minimum detours
3	All streets that have a parking occupancy of more than 60% during peak hours, shall be brought under an IT-enabled parking management system with demand pegged pricing
4	Improve access to mass transit and Intermediate Public Transit. The city will take initiatives to communicate the benefits of Complete Streets projects, increase awareness, and get support of the public.
5	All streets are more vibrant and attractive through increase in non-transport activities
II	**Management and Monitoring Outputs**
6	The city will ensure coordination among the different street-related stakeholders/ departments.
III	**Financing Outputs**
7	The city will ensure that adequate financial capital is allocated for implementation and monitoring of the projects.
IV	**Capacity Building Outputs**
8	The city will ensure inclusivity of street vendors to provide livelihood and eyes-on-street and ensure absence of encroachment by the vendors to provide unhindered space for other road users.
V	**Communication and Outreach Outputs**
9	The city will take initiatives to communicate the benefits of Complete Streets projects, increase awareness, and get support of the public.

Table 2: Output

The detailed indicators and service level benchmarks for the outputs have been given in 'Volume VI of CS toolkit - Complete Streets Evaluation Metrics'.

The 15-year planning horizon is long enough to ensure that all goals that are set are attainable. However, cities should aim to implement projects within the 10-year planning horizon as it may take a few years for some initiatives to show results. The last five years would focus on maintaining projects and upgrading as needed.

street planning 5

To guide implementation of this Policy, the ULB will develop a 15-year Complete Streets Master Plan and update it. The Complete Streets Master Plan will be adaptable and flexible. It will include reporting on the existing scenario, evaluation of the past and current initiatives, examining available funding resources, and explaining future efforts. **5.1**

In accordance with this Policy, the ULB will create street design guidelines, known as the 'Street Design Manual' (SDM) (refer to CS Toolkit - Volume IV). The SDM will be based on this Policy, as well as the street design standards detailed in the CSMP (refer to CS Toolkit - Volume III: 'Complete Street Planning Workbook.') **5.2**

The SDM will include standards and design guidelines for footpaths, cycle tracks, carriageway, BRT, and other street elements. 5.2.1

The SDM will detail out various street typologies in accordance with CSMP and shall include design templates for various street types based on land use, traffic characteristics, RoW and other criteria. 5.2.2

The SDM will include standards and design guidelines for intersections. 5.2.3

The SDM will include guidelines on materials to be used for various elements. 5.2.4

The SDM will include signage and road marking guidelines so that NMT elements are consistently branded to make the network of NMT facilities legible to all users. 5.2.5

The ULB will also adopt execution guidelines with construction details, along with other details required for successful implementation of the project on ground. (Refer to CS Toolkit Volume V: 'Complete Streets Implementation Workbook') **5.3**

The ULB urges concerned agencies at the city-and state-level, such as Highways Department, Urban Development Authority, transit agencies, and others, to adopt street design standards consistent with the provisions of this policy. **5.4**

The ULB will coordinate various decisions regarding the planning, design, and use of public right-of-ways in accordance with this policy. These actions will be coordinated through an approval or decision concerning any public and private project that impacts, or is adjacent to a publicly accessible right-of-way. **5.5**

All designs shall comply with the street design guidelines as adopted by the ULB. **5.6**

Where there are conflicting standards in guidance provided by agencies such as the Indian Roads Congress*, the ULB will prioritise NMT modes in the allocation of street space, the design of street design elements, and street management. **5.7**

The ULB will urge that all transport-related planning, plans, and studies (including surveys, plans, forecasts, and models, and implementation plans undertaken by professional staff, consultants, and / or international agencies) consider the impact of proposed interventions on NMT users and the ULB's ability to meet the provisions of this policy. **5.8**

The ULB will facilitate annual collection of data related to NMT users and user behaviour including but not limited to: **5.9**

Gender, age, and income profiles of pedestrians and cyclists, 5.9.1

Cordon counts of pedestrian and cycle volumes. 5.9.2

Mapping of crashes involving pedestrians and cyclists to aid in the identification of black spots. 5.9.3

The ULB will assure that the transport mode share data are periodically updated, that all NMT modes are included in all studies of urban transport systems, that all transport investment proposals to **5.10**

**Relevant IRC publications include the Guidelines for Pedestrian Facilities (IRC:103-2012), Geometric Design Standards For Urban Roads And Plains (IRC:86-1983), and Guidelines For Capacity Of Urban Roads In Plain Areas (IRC:106-1990)*

assess the impact on NMT users, and that such studies are freely available for public scrutiny.

5.11 The ULB will prioritise known black spots for NMT improvements.

5.12 The ULB will ensure (and urge where appropriate) that new developments, both public and private, often include the rebuilding of portions of the public right-of-ways and shall serve as models for implementation of the Complete Streets Policy. Great efforts shall be made that new ULB developments lead by example.

5.13 The ULB will require, wherever possible, that NMT user participation is included in transport-related planning processes.

5.14 The ULB will provide regular updates and seek input on such NMT projects and programmes from stakeholders through appropriate frameworks, as outlined in Section 12- Public Awareness.

6 street management, maintenance and enforcement

6.1 The ULB will ensure that all projects involving construction of new streets or retrofitting of existing streets improve safety and convenience for NMT users as per the Street Design Guidelines.

6.2 The ULB will urge the Traffic Police to manage intersections with a focus on pedestrian and cyclist mobility and safety:

6.2.1 Signal phases shall include adequate time for pedestrians.

6.2.2 Green phases shall be timed to facilitate cycle and public transport movement.

6.2.3 Motor vehicle users will give the right-of-way to pedestrians and cyclists.

6.3 The ULB will manage vending as follows, in accordance with the provisions of the National Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act 2014 and relevant state rules:

6.3.1 The ULB will identify locations where there is existing and potential demand for goods and services of street vendors.

6.3.2 The ULB will enhance and preserve existing culturally significant street vending markets and will accommodate street vendors in on-street locations at MRT stations, railway stations, market areas, commercial centres, and other key destinations.

6.3.3 The ULB will provide supportive infrastructure such as cooperatively managed water taps, electricity points, waste bins, and public toilets.

6.3.4 The ULB will regulate street vending by providing vendor infrastructure in locations that ensure the continuity of footpaths and cycle tracks.

6.4 The ULB will institute a repair and maintenance programme to keep all footpaths and cycle tracks in a good state of repair and cleanliness.

6.5 The ULB will provide designated spaces for trash collection so that trash containers and trash collection activities do not hinder the use of NMT facilities.

6.6 The ULB will adopt a zero-tolerance approach for managing encroachments on footpaths. The ULB will remove all temporary and permanent obstructions that force pedestrians to walk on the carriageway. The ULB will relocate vendors as per the provisions of Section 7.3.

6.7 During construction projects that compromise the use of NMT infrastructure, the ULB will provide alternative means for pedestrians and cyclists to circulate.

6.8 The ULB will implement and maintain street furniture for NMT users as follows:

6.8.1 The ULB will provide street furniture, such as benches, waste bins, tables, public way-finding signage, shelter, water taps, and other amenities to make streets an attractive place to spend time, promote sanitary conditions, and to function as traffic calming elements.

6.8.2 The ULB will locate street furniture in appropriate locations that receive proper shade, and maintain 3m clear width path of travel so that they do not obstruct through movement of pedestrians and cyclists, and avoid unnecessary clutter.

6.8.3 The ULB will coordinate the placement of street furniture with other user amenities (especially advertising panels and utility boxes) to maintain a 2 m clear width path of travel to not obstruct through movement of pedestrians and cyclists.

6.8.4 The ULB will scale the quantity of street furniture to meet demand, adjacent land uses and street activity (e.g. larger quantities will be provided at key destinations, public facilities, commercial hubs, etc.). Refuse collection points/waste bins will be provided at frequent intervals (e.g. every 20 m) on streets with large numbers of pedestrians and commercial activity.

6.8.5 The ULB will conduct maintenance, replacement, and cleaning to ensure that all street furniture elements (especially waste bins) remain in usable and sanitary condition.

6.9 The ULB will manage advertising and hoardings in public ROWs as follows:

6.9.1 The ULB will coordinate the placement of advertising panels with other user amenities (especially utility boxes) to maintain an unobstructed 2 m wide, 2 m high clear path of travel to facilitate movement of pedestrians and cyclists, as well as avoid unnecessary clutter and protruding objects.

6.10 The ULB will manage service utility providers to ensure that access points for stormwater, sewage, electricity, telecommunications, and other services meet the following standards:

6.10.1 Access points for underground and overground utilities will be designed in such a way that they do not conflict with NMT user movements. Manhole covers will be level with footpaths, cycle tracks, and the surfaces of other NMT facilities. Utility access points will be designed to minimise disruption during maintenance.

6.10.2 Storm water systems will be designed in such a way that storm water drains off the NMT infrastructure into appropriate channels and catch pits. At no point will footpaths, cycle tracks, or other NMT facilities lie at the lowest level in the street cross section, except in the case of NMT-only streets. Stormwater facilities will be maintained regularly to prevent flooding of NMT infrastructure.

parking management 7

7.1 The ULB will effectively manage the use of PMVs by implementing a formal parking management program:

7.1.1 The ULB will develop a robust management system that improves the enforcement of no-parking zones and keeps PMVs from obstructing NMT facilities.

7.1.2 The ULB will clearly demarcate parking and no-parking zones. Footpaths, cycle tracks, and other NMT facilities will be designated as no-parking zones.

7.1.3 The ULB will urge Traffic Police to ensure that footpaths, cycle tracks, and other NMT facilities remain free of encroachment by parked vehicles.

7.1.4 The ULB will utilize all revenue collected from the parking management program to fund public transport and NMT improvements that support meeting the goals listed in this policy.

8 built environment regulation

8.1 The ULB will apply the following built environment regulations to ensure that the pedestrian realm is active and vibrant in all of its own buildings and properties. The ULB will also urge concerned agencies, such as the Urban Development Authority and others, to adopt and include these regulations in documents such as the Master Plan, Detailed Development Plans, and Development Control Regulations. The ULB will work with concerned agencies to:

8.1.1 Ensure that at least 90 per cent of buildings have visually active frontages* to create a pedestrian realm that is active, vibrant, and safe. These could be in the form of actual openings and/or transparent frontages (windows/patios) that are visually penetrable and provide a means of passive surveillance.

8.1.2 Prioritise physically permeable frontage* abutting public walkways. This can include entrances to restaurants and cafes, storefronts, and residential housing that contribute to a vibrant public realm. The average number of shops and building entrances per 100m of street frontage shall be at least 5.

8.1.3 Adopt minimum build-to lines to ensure that private buildings are oriented towards the streets rather than towards internal plots and thus provide 'eyes on the street'.

8.1.4 Ensure that front setbacks, where present, are not used for motor vehicular parking, but instead become an extension of the pedestrian environment.

8.1.5 Ensure that for residential buildings, compound walls are transparent above a height of 300mm.

8.1.6 Ensure that for plots with frontage on more than one street, the main vehicle access, i.e. driveways, shall be provided from the secondary street. To reduce pedestrian-vehicular conflicts, average number of driveways intersecting pedestrian walkways will be limited to 2 or less per 100m of block frontage.

8.1.7 Provide a diverse mix of uses, including employment, housing, regional attractions and public spaces to create a high-quality urban environment, especially near MRT stations.

8.1.8 Encourage compact urban development by creating high density developments at, and around MRT stations. Such developments shall be integrated with the surrounding community through walking, cycling, and public transport.

9 multi-modal integration

9.1 The ULB will design streets and public spaces that are integrated with and supportive of public transport services. Where it has the power to do so, it will develop accessible multi-modal interchanges (MMIs) at intercity transit station, public transport stations and bus stops.

9.1.1 The ULB will provide bus shelters and/or rapid transit stations at key destinations**, and at frequent intervals. Bus stops will be located in the furniture zone or on bulb-outs in the parking lane, leaving clear space for pedestrian movement behind and allowing bus passengers to board without waiting and/or stepping into the carriageway.

9.1.2 Bus bays inconveniences and slowdowns the movement of bus services. Therefore, they will not be constructed except in cases where they provide improved intermodal access to intercity railway and bus stations, rapid transit stations, or other key destinations.

9.1.3 The ULB will create clear, direct, and short transfers between rail systems, bus stops, and paratransit stops that minimise horizontal and vertical displacement. These pathways shall comply with disability access guidelines and shall offer consistency and clarity in station entrances and interfaces, spaces, layout, and visual cues. The ULB will prioritise at-grade access to BRT stations.

9.1.4 The ULB will provide paratransit stands at key destinations, and at frequent intervals.

**Visually active frontage measures the opportunities for visual connection between sidewalks and the interior ground floors of adjacent buildings. Not only shops and restaurants, but also workplaces, residences and all types of premises qualify.*
**Physically permeable frontage measures active physical connections through the block frontage via entrances and exits to and from storefronts, building lobbies, courtyard entrances, passageways, and so on.*

9.1.5 The ULB will provide protection from rain and sun inside stations and stops, and along connections between modes.

9.1.6 The ULB will coordinate feeder service schedules and routes with schedules of trunk services to minimise customer wait times.

9.1.7 The ULB will adopt priority measures to ensure the efficient movement of surface public transport modes, such as buses and rickshaws, to and from the station area.

9.1.8 The ULB will provide clear and consistent wayfinding and signage to support efficient navigation to public transport stations in station areas. The ULB will provide static information such as route maps, route destinations, and transfer opportunities.

9.1.9 The ULB will provide for safe and efficient movement of pedestrians and cyclists in the influence areas around public transport stops and stations.

9.1.10 The ULB will provide an attractive pedestrian environment on all approach streets within one km radius of MRT stations, particularly on routes serving major destinations. All pedestrian links will provide a high level of priority and safety and shall be compliant with this policy.

9.1.11 The ULB will provide clearly marked and protected access for pedestrians and cyclists at station areas to minimise conflicts, particularly at passenger pick-up and drop-offs, bus facilities, and parking access points.

9.1.12 The ULB will provide secure and plentiful bicycle parking at station entrances with additional cycling amenities at high volume locations.

9.2 The ULB will provide last mile connectivity to MRT stations via innovative programmes such as cycle sharing. Cycle sharing systems refer to the shared use of a common cycle fleet. The principle is simple: Individuals use the cycles on need basis and return them to a network of closely spaced cycle stations. With a smart card or other form of identification, a user can check out a cycle from a station and return it to any other station. These systems imply short-term cycle access and provide users with an environment friendly and low-cost form of public transport. The ULB will implement cycle sharing systems that employ the following best practice features:

9.2.1 A dense network of stations across the coverage area, with spacing of approximately 300m between stations.

9.2.2 A fully automated locking system at stations that allows users to check cycles in or out without the need for staffing at the station.

9.2.3 Radio frequency identification devices to track where a cycle is picked up, where it is returned, and the identity of the user.

9.2.4 Real-time monitoring of station occupancy rates through general packet radio service (GPRS), used to guide the redistribution of cycles.

9.2.5 Real-time user information provided through various platforms, including the web, mobile phones, and/or on-site terminals.

9.2.6 Pricing structures that incentivise short trips, helping to maximise the number of trips per cycle per day.

9.2.7 Cycles with specially designed parts and sizes to discourage theft and sale as whole or for parts.

city leadership 10

10.1 The ULB will provide the necessary leadership by emphasising a paradigm shift from current urban transport planning methods to the new focus on NMT and public transport.

***Key destinations are the main places that people need to access including: municipal offices, public transport nodes and stations, common workplaces, schools, markets, shops, sites of worship, and recreation areas.*

10.2 The ULB will proclaim NMT as priority modes and will issue policy guidelines and instructions to professionals regarding priorities in the design of transport facilities.

10.3 The ULB will conduct extensive training and outreach to the ULB engineers, administrators, and elected officials on NMT user needs, design principles, and promotion strategies.

10.4 The ULB will encourage and provide incentives for its own employees to walk, cycle, and use public transport as part of their daily commuting.

10.5 The ULB will urge other institutions to prioritise non-motorised modes in physical designs, regulations, management practices, and investment plans for transport systems.

11 public awareness

11.1 Working with the Traffic Police, the ULB will carry out a diverse public information campaign to generate widespread support and publicise the individual and social benefits of transport by NMT modes. The ULB will also coordinate NMT advocacy and planning through national organisations. While policy impacts are local, interfacing with national bodies can help coordinate local groups with national efforts to fund and promote India-wide NMT initiatives.

11.2 The ULB will explore alternative programs with the local business community to promote and encourage NMT use. For example, the ULB may reduce the business taxes / fees, or waive enforcement of parking requirements, or utilise other financial incentives to reward businesses or organisations that facilitate employees, customers, or the general public traveling by NMT modes. Recognised NMT-supporting amenities include, but are not limited to the following:

- Provide incentives for employees to commute by NMT modes (or public transport).
- Disincentivise use of PMVs by removing subsidies, such as free parking, and levying fees and taxes that reflect the true costs of PMV ownership and use.
- Provide secure bicycle parking.
- Provide fleet of well-maintained cycles for employees to use for short errands or trips from the office.
- Provide on-site employee changing rooms with showers.
- Provide cycle repair station, maintenance supplies such as tools, pumps and tubes, or a dedicated cycle maintenance staff at the company premises.
- Provide employees with cycle-related training, such as finding safe cycle routes to work, safe riding skills, bicycle maintenance, driver training (share the road with bicyclists), or other related topics.
- Utilise local logistics and courier services that are NMT-based.
- Organise cycle rallies or other cycle-related events for employees.
- Sponsor a local riding club or cycle racing team (e.g., employee, local, youth, professional).
- Sponsor individual employees who participate in local charity cycle rides or events.
- Sponsor or directly improve (with ULB review and approval) existing street furniture, municipal footpaths, cycle tracks, or bus shelters.

11.3 The ULB will support efforts to appreciate the city's history and traditions through neighbourhood walking and cycle tours. The ULB will specifically create wayfinding signage and network maps to guide participants.

12 funding development and infrastructure

12.1 The ULB will provide sufficient budgetary support to build and maintain the necessary NMT infrastructure in order to fulfill the policy goals. Specifically, the ULB will ensure that at least 30 percent of its street infrastructure budget is allocated to NMT infrastructure and provide more financial budget whenever required.

Specific allocations and expenditures in the state and city transport budget should be provided for women's safety in urban transport. **12.2**

The ULB will prioritize funding NMT improvements in areas where there is high NMT use. **12.3**

The ULB will channel foreign loans and investment toward projects that improve conditions for NMT users. **12.4**

The ULB will channel appropriate funding for the formation and working of the Complete Streets Cell. **12.5**

The ULB will use all revenue collected from the parking management program to fund public transport and NMT improvements that support meeting the goals listed in section 4. **12.6**

institutional framework 13

Successful implementation of Complete Streets projects will involve cooperation between multiple stakeholders, such as urban local bodies, traffic police, planning agencies, consultants, and others, at different stages. The ULB will develop appropriate frameworks to engage with stakeholders, both at the city and zonal levels. **13.1**

The ULB will help the Apex Committee to monitor the planning, implementation, and monitoring work of complete street plan while overseeing the functioning of the street design cell, zonal committee etc. 13.1.1

The ULB will set up a dedicated Complete Streets Cell to oversee detailed design, construction, and general maintenance of streets. Such a Complete Streets Cell shall include dedicated internal staff as well as external specialised consultants to guide the city on specific aspects of street design such as project management, landscaping, engineering works, signages etc. 13.1.2

The ULB will also set up Zonal Committees under Complete Streets Cell to oversee detailed street design at the zonal level. The ULB will convene regular meetings with the Apex Committee to oversee detailed design produced by consultants, construction implementation and monitoring as well as to address inter-agency issues that may arise during this process. 13.1.3

The ULB will also partner with academic institutions and technical organisations to conduct training programs to train officials, engineers, and staff in the basics of street design. **13.2**

performance measurement 14

The ULB will measure the effectiveness of the Complete Streets Policy based on the outcome and output indicators mentioned in section 4 above, using Monitoring and Evaluation Framework document. **14.1**

The ULB will create an inventory of footpaths and cycle tracks, conduct surveys of transport system users, and compile other records to measure progress as per the indicators listed above. **14.2**

The ULB will commission progress reports that indicate compliance with this policy, performance as per the indicators and progress towards achieving the goals outlined in Section 4. The ULB will make progress reports available for public scrutiny and feedback. **14.3**

The ULB will ensure that NMT infrastructure designs are reviewed and re-evaluated as per their contribution to performance indicators. **14.4**

list of references

Following are some of the acts, laws, and initiatives undertaken until now by the Central and the State Governments, and other organisations in the road and transportation sector prominently related to vehicles, road construction, and road users. The Complete Streets framework toolkit has taken into consideration the information and suggestions as mentioned in these studies.

Indian Road Congress Guidelines

The Indian Roads Congress (IRC) was set up by the Government of India in consultation with the State Governments in December, 1934 and is a registered society under the Registration of Society Act. It is the premier body of Highways Engineers in India. The principal objectives of the India Roads Congress are to provide a national forum for regular pooling of experience and ideas on all matters concerned with the construction and maintenance of highways, to recommend standard specifications, and to provide a platform for the expression of professional opinion on matters relating to roads and road transport, including those of organisations and administration. It also publishes journals, monthly magazines, and research bulletins.

Few of such journals regarding design of urban roads have been considered in the study for the framework documents. The documents recommend to follow the given IRC for the technical specifications and details for construction of street elements:

1. IRC:35-2015 Code of Practice for Road Markings
2. IRC:36-2010 Recommended Practice for Construction of Earth Embankments and Subgrade for Road Works
3. IRC:37-2012 Guidelines for the Design of Flexible pavements
4. IRC:67-2012 Code of practice for Road Signs
5. IRC:70-2017 Guidelines on Regulation and Control of Mixed Traffic in Urban Areas
6. IRC:98-2011 Guidelines on Accommodation of Utility Services on Roads in Urban Areas
7. IRC:99-2018 Guidelines for Traffic Calming Measures in Urban and Rural Areas
8. IRC:103-2012 Guidelines for Pedestrian Facilities
9. IRC:SP:50-2013 Guidelines on Urban Drainage
10. IRC:SP:055 Guidelines on Traffic Management in Work Zones
11. IRC:SP:057 Guidelines for Quality Systems for Road Construction
12. IRC:SP:112-2017 Manual for Quality Control in Road and Bridge Works
13. IRC:SP:117-2018 Manual on Universal Accessibility for Urban Roads and Streets
14. IRC:SP:119-2018 Manual of Planting and Landscaping of Urban Roads

MoRTH Specifications

The Ministry of Road Transport and Highways, is a ministry of the Government of India. It is the apex body for formulation and administration of the rules, regulations, and laws relating to road transport and transport research in India. Some of the MoRTH regulations and specifications referred in the Complete Streets framework documents have been listed below:

1. MoRTH Section 300: Earthwork, Erosion Control and Drainage
2. MoRTH Section 400: Sub-Base, Bases Not-Bituminous and Shoulders
3. MoRTH Section 500: Base and Surface Courses (Bituminous)
4. MoRTH Section 800: Traffic Signs, Markings and Other Road Appurtenances

Design of Urban Roads-Code of Practice, 2012[1]

The code of practice for designing of urban roads has been prepared by the Transportation Research and Injury Prevention Programme (TRIPP) for the Institute of Urban Transport (IUT), Ministry of Urban Development. The primary purpose of this document is to provide a code of practice for various urban road components. It has been developed in five parts:

Part I : Urban road cross section design
Part II : Intersection design
Part III: Road markings
Part IV : Signages
Part V : Traffic Calming methods

Among other recommended codes, the document has two major variations from IRC codes in terms of road design for intended speed limit and linking of lane width with speed limit.

Motor Vehicles Act[2]

The Motor Vehicles Act, 1988 is an Act of the Parliament of India, which regulates all aspects of road transport vehicles. The Act came into force from 1 July 1989. It replaced Motor Vehicles Act, 1939 which earlier replaced the first such enactment Motor Vehicles Act, 1914. The Act provides in detail, the legislative provisions regarding licensing of drivers/ conductors, registration of motor vehicles, control of motor vehicles through permits, special provisions relating to State Transport Undertakings, traffic regulation, insurance, liability, offences, and penalties, etc.

Disabilities Act[3]

The Rights of Persons with Disabilities Act replaces the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995. It fulfills the obligations to the United National Convention on the Rights of Persons with Disabilities (UNCRPD), to which India is a signatory. The Act came into force during December 2016.

Accessibility is one of the rights that is given importance under this Act, which makes it mandatory to provide for disabled friendly design of public places, including roads and streets. The rules under this Act, have specified the standards for accessibility through Harmonised Guidelines and Space Standards for Barrier Free Built Environment for Persons With Disabilities and Elderly Persons[4]. The guidelines, prepared by the Ministry of Urban Development are comprehensive guidelines, inclusive of all provisions updated and harmonised to act as an easy reference to Practitioner's Guide for Barrier Free Designs with universal access, responding to the varying needs of the persons with disabilities.

[1] http://mohua.gov.in/cms/Design-of-Urban.php
[2] http://www.tn.gov.in/sta/Mvact1988.pdf
http://164.100.47.4/BillsTexts/LSBillTexts/PassedLoksabha/214C_2016_LS_Eng.pdf
[3] http://disabilityaffairs.gov.in/upload/uploadfiles/files/RPWD%20ACT%202016.pdf
[4] https://cpwd.gov.in/Publication/Harmonisedguidelinesdreleasedon23rdMarch2016.pdf

The Guidelines and Toolkits for Urban Transport Development

The Guidelines and Toolkits for Urban Transport Development were prepared by a Technical Assistance on Urban Transport Strategy (TA 4836-IND) funded by the Asian Development Bank for the Ministry of Urban Development (MoUD), Government of India. These documents are designed to help decision makers and practitioners in States and Municipal Governments, who are concerned with urban transport development in medium-sized cities in India.

It consists of 5 modules addressing topics like -
- Comprehensive mobility plans[5]
- Bus Rapid Transit Systems (BRTS)
- Guidelines for Bus service improvement
- Guidelines for parking measure
- Guidelines for NMT measures

The National Urban Transport Policy (April 2006)[6]

It was approved by the Government of India to tackle urban mobility issues to ensure a safe and sustainable 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, capital support in the form of equity participation and/or viability gap funding, innovative financing, dedicated urban transport funds, non-motorised transport, car restraint measures, clean fuel and vehicle technology, private sector participation, and pilot projects in cities to establish models of best practices.

Recommendations of Working Group on 12th FYP[7]

The Working Group on Urban Transport for the 12th Five Year Plan has made recommendations on investments and plans on nine broad themes in urban transport which were identified in line with the National Urban Transport Policy (NUTP) developed by the Government of India.

Study on Traffic and Transportation Policies and Strategies in Urban Areas in India, MOUD, 2008[8]

The study aimed at updating the transportation information and projections made from the previous study 'Traffic and Transportation Policies and Strategies in Urban Areas in India 1994', in order to review the National Urban Transport Policy in light of the new and comprehensive data provided within this report.

[5] https://smartnet.niua.org/sites/default/files/resources/file_1016201405372097.pdf
[6] http://www.iutindia.org/downloads/Documents.aspx
[7] http://planningcommission.gov.in/aboutus/committee/wrkgrp12/hud/wg_%20urban%20Transport.pdf
[8] http://mohua.gov.in/upload/uploadfiles/files/final_Report.pdf

Since 2009, the Ministry of Housing and Urban Affairs (then titled Ministry of Urban Development) has adopted the practice of service level benchmarking. Through the Service Level Benchmarking (SLB) initiative, the Ministry hopes to create a robust set of indicators across sectors for which data would be collected at the city levels and collated and published at the National level. This would then help create a ranking for cities, aided by a positive competitive spirit. At the same time, cities were also expected to set targets for themselves and better their performances over time.

Within urban transport, pedestrian and non-motorised transport facilities were assigned indicators - such as the share of city roads with footpaths and the coverage and efficiency of street lighting, etc.

National Mission on Sustainable Habitat: Report of the Sub-Committee on Urban Transport

Under the National Action Plan for Climate Change, the National Mission on Sustainable Habitat has been launched to cover various aspects, which include better urban planning and modal shift to public transport. Regarding urban transport, the objectives of the National Mission on Sustainable Habitat (NMSH) are "To address the issue of mitigating climate change by taking appropriate action with respect to the transport sector such as evolving integrated land use and transportation plans, achieving a modal shift from private to public mode of transportation, encouraging the use of non-motorised transport, improving fuel efficiency, and encouraging use of alternative fuels, etc.

UTTIPEC Guidelines for Street Design[10]

As per the recommendations of National Urban Transport Policy, DDA, Delhi has notified Unified Traffic and Transportation Infrastructure (Plg. & Engg.) Centre (UTTIPEC) to enhance mobility, reduce congestion, and to promote traffic safety by adopting standard transport planning practices.

Recently UTTIPEC has published street design guidelines to promote sustainable transportation system in the city of Delhi.

The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014[11]

Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 is an Act of the Parliament of India. This Act was drafted with the legislative intent of protecting the livelihood rights of street vendors as well as regulating street vending through demarcation of vending zones and laying out conditions/restrictions for street vending. The Act now governs over all matters in regards to the rights and duties of the street vendors in India.

[9] http://mohua.gov.in/upload/uploadfiles/files/Service_level.pdf
[10] http://smartcities.gov.in/upload/uploadfiles/files/StreetGuidelines_DDA.pdf
[11] http://legislative.gov.in/sites/default/files/A2014-7.pdf

Chennai Non-Motorised Transport Policy, 2014[12]

The Chennai Municipal Corporation adopted a progressive non-motorised policy in October, 2014, to make walking and cycling its priority. The policy aims to arrest the current decline in walking and cycling in the city, by creating safe and pleasant network of footpaths, cycle tracks, greenways, and other NMT facilities.

Urban Street Design Guidelines, Pune 2016[13]

In accordance with the key principles of moving people before vehicles in National Urban Transport Policy, the Municipal Corporation of Pune adopted the 'Urban Street Design Guidelines' as a new policy document aimed at 'equitable allocation of street space'. The guidelines give an overview of the various elements that go into designing streets, making them universally accessible and also provide standard templates for different sizes and uses of streets.

Policy for Pedestrian Facilities and Safety, Pune 2016[14]

The Municipal Corporation of Pune, in 2016 adopted a Pedestrian Facilities and Safety Policy, keeping in view the focus set in NUTP and CMP for Pune. The policy establishes good quality public transport system as well as safe, adequate, and usable facilities for pedestrians and cyclists as the solutions to city's traffic problems and aims at providing consistent, high quality pedestrian infrastructure with equitable allocation of road space.

Public Parking Policy, Pune 2016[15]

The policy on Public Parking adopted by Pune Municipal Corporation in 2016, is expected to help the city in becoming more 'people friendly' than 'vehicle friendly'. The policy aspires to discourage usage of private modes, encourages efficient use of available parking spaces, aids in evolving a better transportation system, builds a strategy to reduce congestion, pollution, and also helps the public transport system to grow.

NMT Guidance Document, 2016[16]

The guidance document for preparing Non-Motorised Transport (NMT) plans has been undertaken by the Sustainable Urban Transport Project, Ministry of Urban Development (MoUD), Government of India (GOI) with support from Global Environment Facility (GEF), UNDP, and World Bank. The focus of the Guidance Document is to establish a systematic process for plan preparation, serving more as an implementation manual with checklists of potential alternatives, rather than providing technical standards for development of detailed specifications.

[12] https://www.itdp.in/wp-content/uploads/2014/10/NMT-Policy.pdf
[13] https://pmc.gov.in/sites/default/files/road_img/USDG_Final_July2016.pdf
[14] http://smartcities.gov.in/upload/development/5a9009c9843cdPolicy%20for%20Pedestrian%20Facilities%20and%20Safety%20in%20Pune%20City.pdf
[15] https://pmc.gov.in/sites/default/files/project-glimpses/PMC-public-parking-policy-English-revised-March2016-Final.pdf
[16] https://smartnet.niua.org/sites/default/files/resources/nmtguidancefinal.pdf

Coimbatore Street Design & Management Policy, 2017[17]

Keeping with the approach set-out in NUTP-2006, the Coimbatore City Municipal Corporation (CCMC) adopted a Street Design & Management Policy to ensure the implementation of high-quality transport systems. The policy seeks to achieve an environment that supports more equitable allocation of road space by incorporating a focus on non-motorised transport (NMT) and public transport (PT) in the planning, design, managing, and budgeting stages.

Ease of Living Index, 2018[18]

The SLB initiative has been reimagined and expanded into the Ease of Living Index, covering more sectors and aspects of citizen lives. Within transport however, the larger set of indicators remain largely similar to the earlier SLBs.

Specifications for Urban Road Execution, Tender SURE

Bangalore City Connect Foundation (BCCF) in conjunction with Indian Urban Space Foundation (IUSF) approached the State Government of Karnataka to build an Urban Road and Tender Manual in 2010. The publication contains guidelines on designs, specification, and procurement of contract for urban roads execution, with the priority on the comfort and safety of pedestrians and cyclists, as well as recognising the needs of street vendors and hawkers.

Urban Street Design Guide, NACTO

NACTO's (a non-profit organisation) 'Urban Street Design Guide' gives guidance through toolbox and tactics that cities can use to make streets safer, more livable, and more economically vibrant. The guide outlines both a clear vision for complete streets and a basic road map for how to bring them to fruition.

Better Streets, Better Cities, ITDP[19]

A street design manual for Indian cities prepared by ITDP, (a not for profit organisation) that discusses design details of various street elements and street sections on 'complete streets' principle.

Parking Basics, ITDP[20]

Parking Basics, a guiding document by ITDP, outlines the key principles and steps involved in managing on-street parking and regulating off-street parking.

[17] https://www.itdp.in/wp-content/uploads/2018/01/CoimbatoreStreetDesignandManagementPolicy_ITDP_170218.pdf
[18] https://easeofliving.niua.org/assets/upload/pdfs/ease-of-living-national-report.pdf
[19] https://www.itdp.org/wp-content/uploads/2011/12/Better-Streets-Better-Cities-ITDP-2011.pdf
[20] https://www.itdp.org/wp-content/uploads/2015/10/Parking-Basics.pdf

Footpath Design: A guide to creating footpaths, ITDP[21]

This design guide prepared by ITDP is a quick reference document, which highlights key concepts from the IRC Guidelines, including footpath design standards. The guide also draws from local and international best practices for some themes not covered in the IRC publication.

Footpath Fix, ITDP[22]

Footpath Fix, the second volume after Footpath Design, is a step-by-step guide on footpath construction detailing for urban designers, municipal engineers, and contractors. The guide aims to highlight the steps of footpath construction in chronological order, from pre-excavation to above-ground construction. It also features necessary precautions, drawn from experience on-ground, that must be taken into consideration at each stage of the construction.

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[21] https://www.itdp.in/wp-content/uploads/2014/04/05.-Footpath-Design_Handout.pdf
[22] https://www.itdp.in/wp-content/uploads/2018/07/Footpath-Fix.pdf