

TOOLKIT PARKING AREA MANAGEMENT PLAN BHUBANESWAR

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Integrated Sustainable Urban Transport Systems
(SMART-SUT)
B-5/2, Safdarjung Enclave
New Delhi-110029
India

T 011 -4949 5353
F 011 -4949 5391
E giz-indien@giz.de

As at December 2021, New Delhi

Registered offices
Bonn and Eschborn, Germany

Friedrich-Ebert-Allee 32 + 36
53113 Bonn, Germany
T +49 228 44 60-0
F +49 228 44 60-17 66

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn, Germany
T +49 61 96 79-0
F +49 61 96 79-11 15

PREPARED BY

SMART-SUT (GIZ) and CoE-UT, CEPT Research and
Development Foundation (CRDF)

RESPONSIBLE

Juergen Baumann
Officer responsible for the commission,
SMART-SUT (GIZ)

PROJECT ADVISOR

Andrea Bluemel (GIZ)
Laghu Parashar (GIZ)
Madhu Singh (GFA)

PROJECT TEAM

CoE-UT, CEPT Research and Development
Foundation (CRDF) :
Team Leader : Prof. H.M. Shivanand Swamy
Senior Advisor : Dr. Nitika Bhakuni and
Dr. Shalini Sinha
Technical Expert : Dr. Abhijit Lokre
Planning Team : Ms. Maitry Shah and
Mr. Jignesh Panchal
GIS & Designing : Ms. Diti Upadhyay and
Ms. Akanksha Balpande
Liaison: Mr. Ramchandran
Project Administration : Mr. Jaydeep Karia

PHOTO CREDITS

Respective sources



CONTACT

GIZ is responsible for the content of this publication.
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New Delhi, India
December 2021

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The team would also like to thank all Parking Project Steering Committee (PPSC) members present throughout the course of this study for providing all necessary information and valuable feedback. We are also grateful to all the stakeholder participants present during the PAMP meetings.

PPSC MEMBERS LIST

Additional Commissioner, BMC
DCP (Traffic), BBSR
Deputy Commissioner, BMC
GM (Tech), BSCL
Planning Member, BDA
CE and EM, BDA
GM (P&A), CRUT
SE (R&B) Central Circle
RTO II
RTO officer, RTO I
Xavier University
GM, OSRTC
GM, CII, BBSR
President, Union of OLA/Uber/private autos
President, Private Bus Operator Association
BBSR Goods Association

PPSC MEMBERS PRESENT DURING PAMP MEETINGS

Former Commissioner, BMC
Commissioner, BMC
Deputy Commissioner (BMC)
GM, Tech (BSCL)
GM (P&A), CRUT
Planning Member, BDA
RTO II
Xavier University

PMC/PSU MEMBERS

Mr. Vishal Jain (BUKC)
Mr. Sujit Gaurav (BSCL)
Mr. Adil Zeya (BSCL)

FOREWORD



Sanjay Kumar Singh, IAS
Commissioner
Bhubaneswar Municipal Corporation (BMC)
Bhubaneswar

Bhubaneswar, the capital city of Odisha state and winner of the National Smart Cities Competition, India is experiencing high annual vehicle growth rates (12%) and heavy demand for parking in the city. On-street parking consists of nearly 85-90% of the total parking demand. Furthermore, it is seen that in the last five years the average speed of private and public transport modes has decreased. The vision for Bhubaneswar is to develop the city as a transit-oriented city, a liveable city, a child-friendly city, and an eco-city. The Low Carbon Development Plan (LCMP) defines strategies and measures to achieve these goals. The city has recently invested in a public transport system by increasing the fleet size of buses and providing route modifications with improved service coverage and reduced average waiting time. The roads in Bhubaneswar will be designed to be more pedestrian and cyclist-friendly based on the Street Design Guidelines developed by the local development authority, to promote non-motorised transport and to improve road safety for all road users as well. These attempts now need to be supported by measures to reduce demand for parking/reliance on private vehicles in terms of parking demand management in the city. Considering this the Bhubaneswar Development Authority (BDA), Bhubaneswar Smart City Limited (BSCL) and the Bhubaneswar Municipal Corporation (BMC) have realised the need for a Parking Management system in the city. A systematic plan of action must manage the growing parking demand and upgrading the existing infrastructure.

To manage the increasing parking demand a Parking Policy has been developed which outlines a broad guideline for parking management in the city. The localized impacts of parking in certain areas result in the trickle-down impact on the overall performance of the network. Hence, the city authorities have realised the need for developing a toolkit for the management of parking in smaller areas (2 – 3 sq km) in the city in form of Parking Area Management Plans. This toolkit would supply guidance to city officials and consultants involved in the preparation of Parking Area Management Plans, these local area plans will be prepared to manage parking demand in the area and promote the shift towards sustainable modes. In addition, the toolkit will be applied to demonstrate the planning for PAMP for Master Canteen and KIIT University area.

This study is commissioned by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) to the Centre of Excellence in Urban Transport (CRDF), CEPT University. The project is supported under the umbrella of the Indo-German Green Urban Mobility Partnership jointly implemented by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Ministry of Housing and Urban Affairs, Government of India.

The plan reinforces the need for effective monitoring and planning of parking infrastructure within the city and makes sure that Bhubaneswar is adding another cornerstone to achieve the Sustainable Development Goals in the city.


(Sanjay Kumar Singh)

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Source : CoE-UT, 2021

ABOUT THIS REPORT

This toolkit has been prepared to support the implementation of the "Parking Policy for Bhubaneswar" in cooperation with the responsible agencies. The objective of the study is to prepare a guiding document for understanding the existing parking situation and defining a mechanism to monitor, implement and enforce the strategies proposed for parking management plan. The project has been supported as part of the bilateral technical cooperation project "Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT)" commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and jointly implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Ministry of Housing and Urban Affairs (MoHUA), Government of India.

Volume 1 : The toolkit focuses on the process of demarcating the Parking Area Management Plan (PAMP) area, analysing the existing situation by conducting various primary and secondary surveys, strategies to be used based on parking issues and area characteristics and, evolving guidelines for implementation of prepared PAMP to improve the parking situation in the area. Survey format and stakeholder consultation questionnaire has been included in the Annexure.

Volume 2 : Step by step details for preparing PAMP for Master Canteen Area is provided in this report.

Volume 3 : Step by step details for preparing PAMP for KIIT University Area is provided in this report.

The toolkit would provide guidance to city officials and consultants involved in the preparation of Parking Area Management Plans.

CONTENTS

ABBREVIATIONS	09
01 INTRODUCTION	10
1.1 BACKGROUND	
1.2 BHUBANESWAR'S PARKING POLICY	
1.3 WHAT IS A PAMP?	
1.4 WHERE DOES THE PAMP TOOLKIT FIT IN THE OVERALL PROCESS?	
1.5 NEED FOR THE PAMP	
1.6 OBJECTIVES OF THE TOOLKIT	
1.7 STRUCTURE OF THE TOOLKIT	
1.8 USERS OF THE TOOLKIT	
02 CASE STUDIES	16
2.1 CASE STUDY	
2.2 KEY LEARNINGS	
03 TOOLKIT PREPARATION	20
3.1 SETTING PRIORITIES	
3.2 BASE WORK & STUDY AREA DELINEATION	
3.3 DATA ANALYSIS AND ISSUE IDENTIFICATION	
3.4 FINALIZING STRATEGY MIX AND ENGAGING WITH STAKEHOLDERS	
3.5 PREPARING PAMP	
3.6 PAMP IMPLEMENTATION	
04 SUMMARY	54
ANNEXURE	56



Source : CoE-UT, 2021

ABBREVIATIONS

BDA	Bhubaneswar Development Authority
BMC	Bhubaneswar Municipal Corporation
BSCL	Bhubaneswar Smart City Limited
BU	Built-use
CAGR	Compound Annual Growth Rate
CCTV	Closed Circuit Television
CPMC	City Parking Management Committee
CoE-UT	Center of Excellence in Urban Transport
CRDF	Cept Research and Development Foundation
CRUT	Capital Region Urban Transport
FGD	Focus Group Discussion
GDCR	General Development Control Regulations
GPS	Global Positioning System
IPT	Intermediate Public Transport
ITS	Information Technology Services
KPI	Key Performance Index
LCMP	Low Carbon Mobility Plan
LCV	Light Commercial Vehicle
LRT	Light Rail Transport
MAV	Multi-Axel Vehicle
NMT	Non-Motorised Transport
PAMP	Parking Area Management Plan
PBS	Public Bicycle Share
PPP	Public Private Partnership
PPSC	Parking Project Steering Committee
PT	Public Transport
PWD	Public Works Department
ROW	Right of Way
RTO	Regional Transport Office
UMTA	Unified Metropolitan Transport Authority
UTF	Urban Transport Fund



01
INTRODUCTION

Source : CoE-UT, 2021

1.1
BACKGROUND

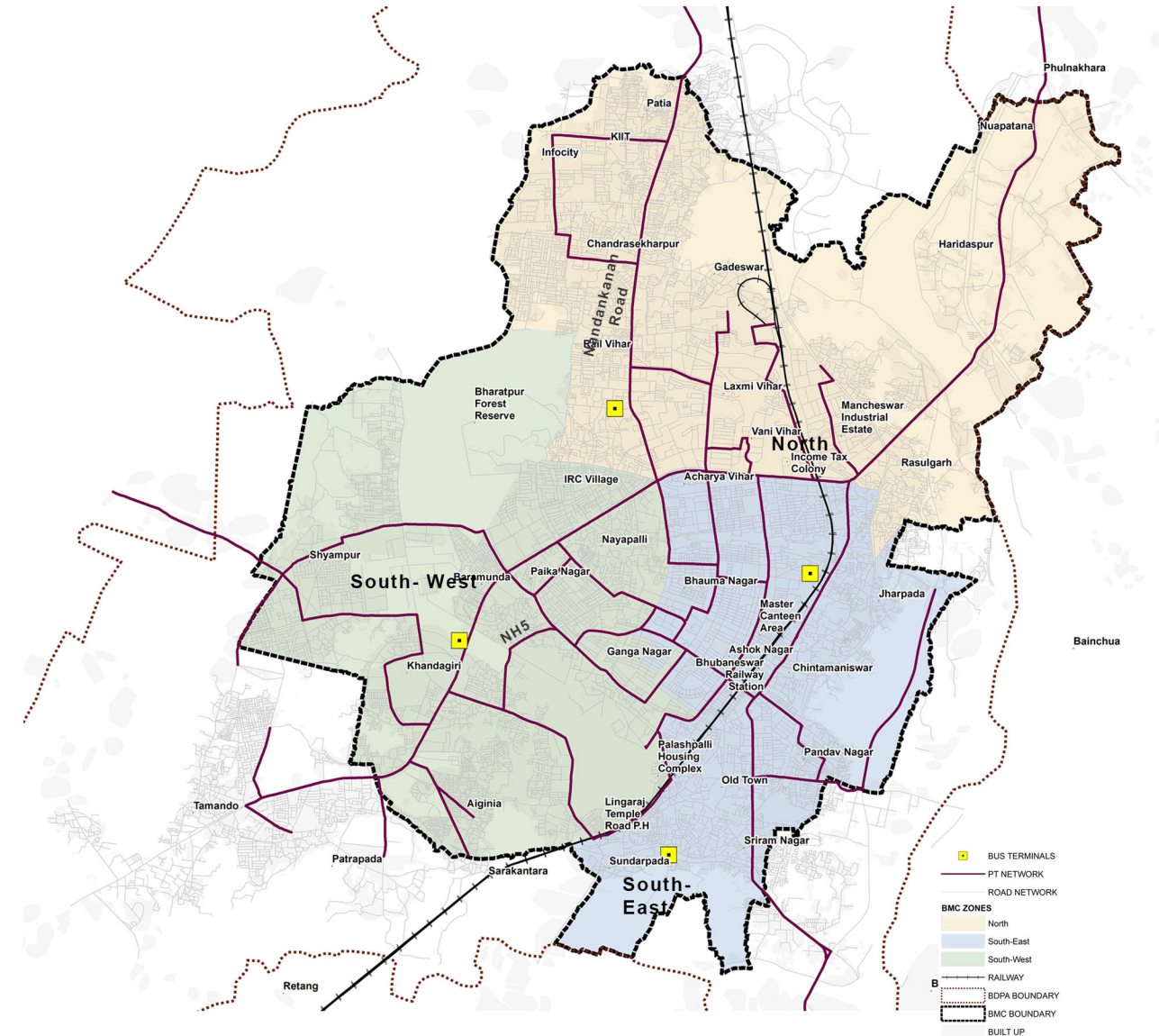


Figure 1: Bhubaneswar Municipal Corporation zones
Source : CRUT, Bhubaneswar

Bhubaneswar, the capital city of the Odisha, is situated in Khordha district. It is one of the few cities in the country which were planned post-independence. The city is the administrative capital of Odisha and has seen a substantial growth in tertiary economic activities. It is administered by the Bhubaneswar Municipal Corporation (BMC) and has a population of 1 million (year 2011) residing in an area of 186 sq.km. The city has a well-developed road network with around 21% of its area under roads. The average speed on the network is 26 kmph for private vehicles and 22 kmph for public transport vehicles (1).

The BMC consists of three zones:

- **North Zone:** Consists of 21 wards with major institutes like KIIT University, Info-city IT park, CIPET college, etc.
- **South-East Zone:** Divided into 25 wards and includes CBD of Bhubaneswar along the railway station near Master Canteen area.
- **South-West Zone:** Consists of 21 wards including IRC village and RBI colony.

Bhubaneswar witnessed a 17% annual growth in registration of cars and 15% in two-wheelers from 2012 to 2019 which translates to about 100,000 vehicles getting added on road each year. The mode share of private vehicles is high at more than 80% indicating high demand of parking spaces. Around 85-90% of the parking spaces in Bhubaneswar are on street, out of which only 7% are paid spaces. The city has 32 on-street, and 28 off-street designated parking provided by BMC. Taking into consideration the high vehicle growth rates and the growing demand for parking in the city, parking management becomes imperative.

Bhubaneswar has been proactively focusing on improving mobility through implementation of sustainable urban transport strategies. In line with this, the city has prepared the following guiding documents.

- Comprehensive Development Plan (DP) for Bhubaneswar, 2010
- Low Carbon Mobility Plan (LCMP) for Bhubaneswar City, 2021
- Draft Street Design Guidelines, 2017
- Draft Parking Policy for Bhubaneswar city, 2021

Bhubaneswar has also invested in improving PT and NMT infrastructure by purchasing new bus fleet, developing bus stops with PBS stands, proposing MRTS and designing streets with footpaths and cycle tracks. Hence, parking demand management is required as a push factor to facilitate shift towards sustainable modes of travel.

1.2 BHUBANESWAR'S PARKING POLICY

Bhubaneswar prepared a draft parking policy in Oct 2021. The policy included several policy directives. These include:

- All parking (except cycle parking, IPT and Taxi at designated parking bays) would be chargeable. The charge would be based on demand and land value.
- Parking revenue shall be used for developing sustainable mobility in the immediate surrounding neighbourhood.
- Parking permits shall be issued to authorize vehicle owners to park in designated on and off-street parking spaces near residences or for business related activities.
- Proof of parking shall be required before purchasing an old or new car.
- Public and semi-public institutions in Bhubaneswar shall be encouraged to adopt workplace mobility plans to persuade employees to adopt public and/ or non-motorized transport modes.
- Parking minimums shall be replaced with parking maximums so that developers are not allowed to provide parking more than the specified limit.
- Properties would be encouraged to share parking provided peak demand occurred at different times.
- A Parking Area Management Plan (PAMP) shall be prepared for each zone in consultation with the local stakeholder committee.

1.3 WHAT IS A PAMP?

PAMP is a local level plan adopting a range of strategies to efficiently manage parking in a given area. It follows the broad vision and objectives of the Development Plan and LCMP along with the directives of the parking policy. The strategies include infrastructure improvements, pricing measures, time restrictions and technological applications for better parking management.

The overall objective of a PAMP is better management of parking infrastructure for the benefit of the residents and visitors – without compromising on sustainable transport strategies.

1.4 WHERE DOES THE PAMP TOOLKIT FIT IN THE OVERALL PROCESS?

The PAMP is a culmination of the long-term policy and planning for Bhubaneswar as explained in the figure below. Beginning from the Comprehensive Development Plan, the Low Carbon Mobility Plan (LCMP) and its vision, the PAMP toolkit syncs with the parking policy and strategy. It follows the directives of the policy, which themselves are a product of the vision, policies and projects identified in the Development Plan and LCMP.

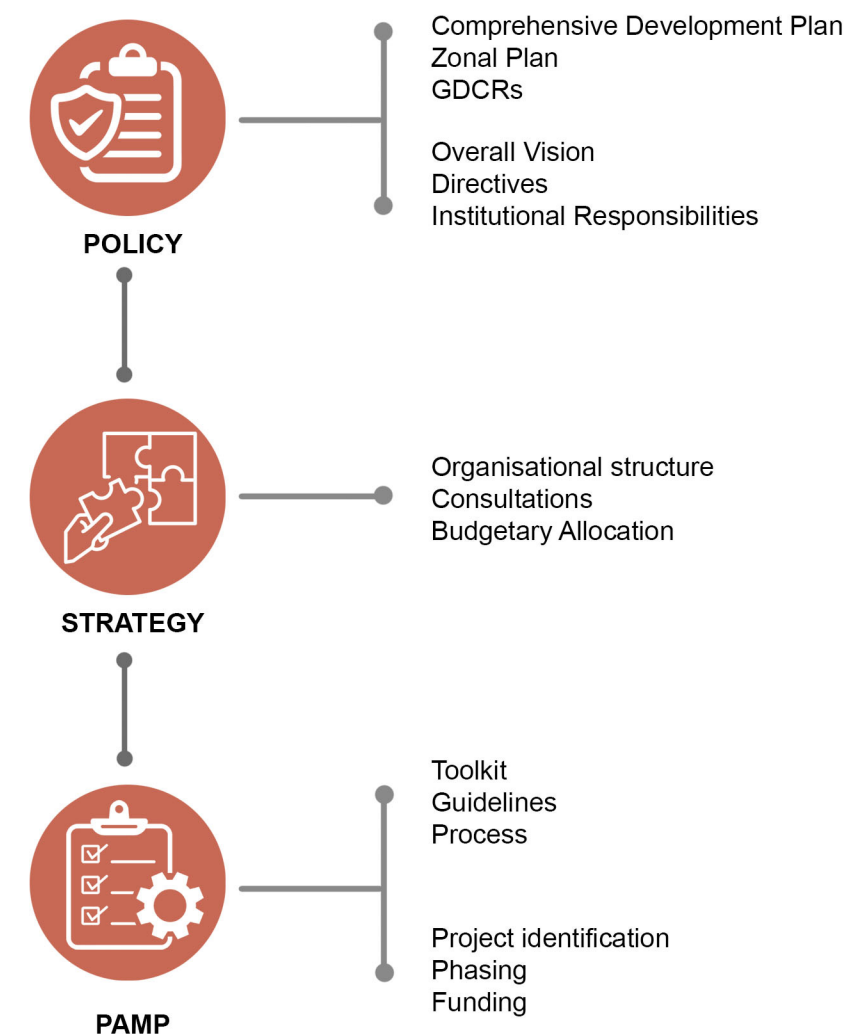


Figure 2: PAMP in the overall planning process

1.5 NEED FOR THE PAMP

Many cities have formulated parking policies. However, policies are broad in their scope and state the overall vision and strategy. They do not get into the details of implementing the policy. This leads to a situation where a well-written and intentioned parking policy does not become 'real' on the ground. As owners of the policy, urban local bodies are not sure of 'how to' implement the policy.

This is where a PAMP comes in. It lays down a step-by-step process of implementing the policy. In this case, the PAMP will source vision and strategies from the DP, LCMP, parking policy and design from the street design guidelines for Bhubaneswar.

1.6 OBJECTIVES OF THE TOOLKIT

The objectives of this toolkit are:



To develop a methodology for preparing PAMP



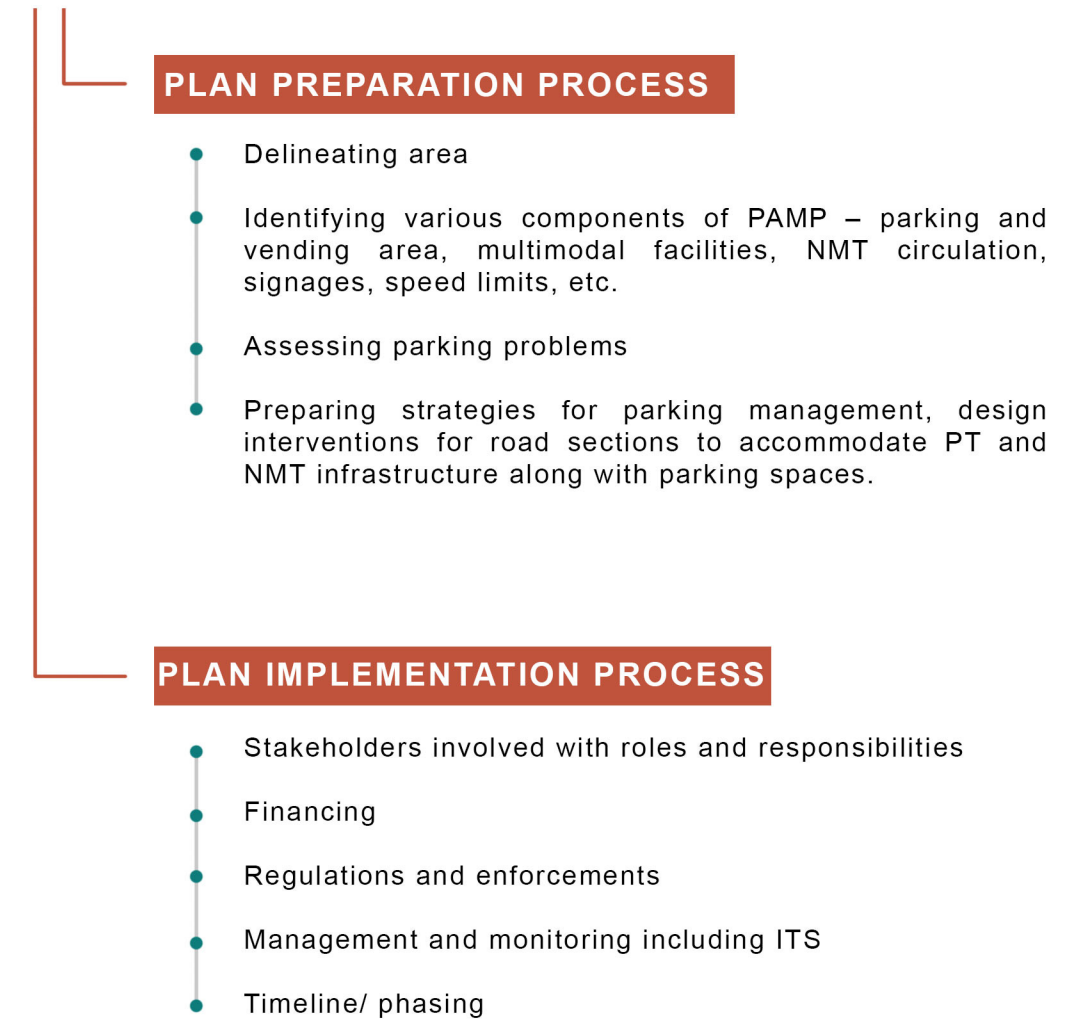
To provide guidelines in implementing the prepared PAMP



Source : CoE-UT, 2021

1.7 STRUCTURE OF THE TOOLKIT

The structure of the toolkit is presented below:



1.8 USERS OF THE TOOLKIT

This toolkit is prepared for urban local body officials involved in street management, planning and development. The main users of this toolkit will be

- Bhubaneswar Municipal Corporation (BMC),
- Bhubaneswar Smart City Limited (BSCL) and Public Works Department (PWD)
- Bhubaneswar Development Authority (BDA)

It shall also be useful for the proposed Unified Metropolitan Transport Authority (UMTA) and regulation and enforcement agency - Traffic Police.



02
PARKING MANAGEMENT
CASE STUDIES

Source : CoE-UT, 2021

2.1 CASE STUDY

Case studies are important to learn from best practices and failures. This section looks at international and national examples to understand their approach and methodology to manage parking.

2.1.1 INTERNATIONAL CASE STUDIES

Cities with the best parking management practices such as Whanganui in New Zealand, Berlin in Germany, Melville in Australia, and San Antonio, Livermore, Malden Center, Montclair, Redwood City, Portland and San Diego in USA are referred to understand parking management plans.

The main components of PAMP in these cities are area delineation, evaluation of the ground situation, tools and strategies selection, demand management, monitoring, enforcement and funding strategies. The parking management area is delineated based on permit boundaries or primary land-use and the area boundaries are often decided through stakeholder consultations. However, for convenience, surrounding roads are considered for defining the area and some of the provisions for parking on land use are based on proximity to public transit, the density of the area, promotion of on and off-street parking and shared facilities. Parking demand management provisions are developed by incorporating on-street parking management, technology and pricing strategies.

On-street parking management deals with the optimal use of available parking spaces which are managed with a time restriction, reserved permit spaces, congestion pricing, wayfinding signage and signage enhancement. Connectivity using technological options such as pay-by-space meters, ITS system and shared mobility services influence the travel behavior to adopt public transport and integration of system manages the pricing instantly. Parking pricing can redistribute parking demand by charging prices based on location, turnover, the duration for progressive pricing, proximity to transit and type of parking.

All the case study cities have defined infrastructure for parking management and enforcement of parking laws. In some cities, the parking department is responsible for the management as well as enforcement through parking officers, whereas, in other cities, the police department is responsible for enforcement. The performance of parking management is monitored and evaluated regularly in pre-defined duration and measures are updated accordingly.



Source : <https://www.trafficinfotech.com/parking-policy-u-turn-in-europe-effective-management-strategies/>

2.1.2 NATIONAL CASE STUDIES

Parking management plans for cities like Delhi, Bengaluru, Surat and Udaipur have been studied to understand various aspects of parking problems and how the plan helps to tackle them. Indian practices for preparing parking area management plans involve guidelines to delineate parking management areas, the procedure for evaluation of the ground situation, provisions for demand management, and provisions for monitoring, management, and enforcement of the proposed parking management plan.

The delineation of parking management area is based on major roads encompassing an area and natural features and based on stakeholder consultation. The tools and strategies often used for on-street parking management are street design guidelines which have more focus and better utilization of available space, congestion pricing, wayfinding programs based on circulation plan and signage enhancement to indicate allowed and forbidden parking areas.

Across cities, the involvement of technology includes the use of parking meters, parking guidance and information system, and cashless payment methods. However, technological aspects are limited, and the absence of an integration system is a constraint on parking management. Like international cities, the parking prices are estimated based on the parking location, turnover, duration for progressive pricing, proximity to the transit system and type of parking. In addition, Delhi and Bangalore policies emphasize prices that can result in an 85% occupancy rate.

Parking policies suggests the formation of special cell within urban local bodies to manage the implementation of parking. Bengaluru, in addition to special cells, recommends an Apex Committee to monitor these cells. All the cities, except Delhi, suggest transferring the parking enforcement rights from traffic police to these special cells for better implementation and management of parking within the city.



2.2 KEY LEARNINGS

The major inferences from case studies are as follows:

- **Delineation of the study area** is generally, 1 to 2.5 sq. km. across cities bounded by major roads, have mixed-use character and delineated in consultation with the stakeholders.
- **Reforms in regulations and enforcement mechanisms adopted** in most of the cities are under the same legislative framework. In some cities, the parking department is responsible for the management as well as enforcement via parking officers, whereas, in other cities, the traffic police is responsible for the enforcement of parking laws.
- **On-street parking management** controls the availability of on-street parking seen across the cities with priorities for differently-abled.
- **Application of technology** involves different generations of parking meters and the availability of multiple payment options to improve the efficiency of the system. Use mobility cards and MaaS systems are also being prevalent in some cities. ITS system can regulate the pricing of the parking instantly.
- **Pricing strategies adopted** are based on market-based pricing, differential pricing structures, pricing linked to the availability of transit, premium on-street parking.
- **Institutional framework** involves local authorities in planning and implementing the systems. In most cases, local authorities have also taken up the charge of enforcing the same.
- **Monitoring of management** is an integral part to understand the system performance, regular monitoring to maintain the system and regulate pricing.





03
TOOLKIT PREPARATION

Source : CoE-UT, 2021

3.1 SETTING PRIORITIES

The PAMP toolkit preparation shall guide the user through a step-by-step process for implementation. However, before beginning the process, the user should prepare a matrix for road space priority. This would act as a guide during the various contestations that would occur during space allocation. As mentioned in chapter 1, the matrix should be consistent with the overall vision for the city and in line with the parking policy vision and directives.

In the case of Bhubaneswar, the overall vision is about providing sustainable transport – both in the City Development Plan (CDP) and the parking policy. Hence, facilities for public transport, for pedestrians and cyclist and IPT shall be given priority before providing a parking space on road. The on-street parking shall include dedicated parking spaces for emergency vehicles, women, differently/specially abled people, and freight vehicles wherever required along different activity zones.



Figure 3: Road space (RoW) usage priority

The next section shall guide the user in the process of preparing a PAMP. The process has been divided into five sections – study area delineation, data analysis and issue identification, setting objectives, preparing and implementation of PAMP.

3.2 BASE WORK & STUDY AREA DELINEATION

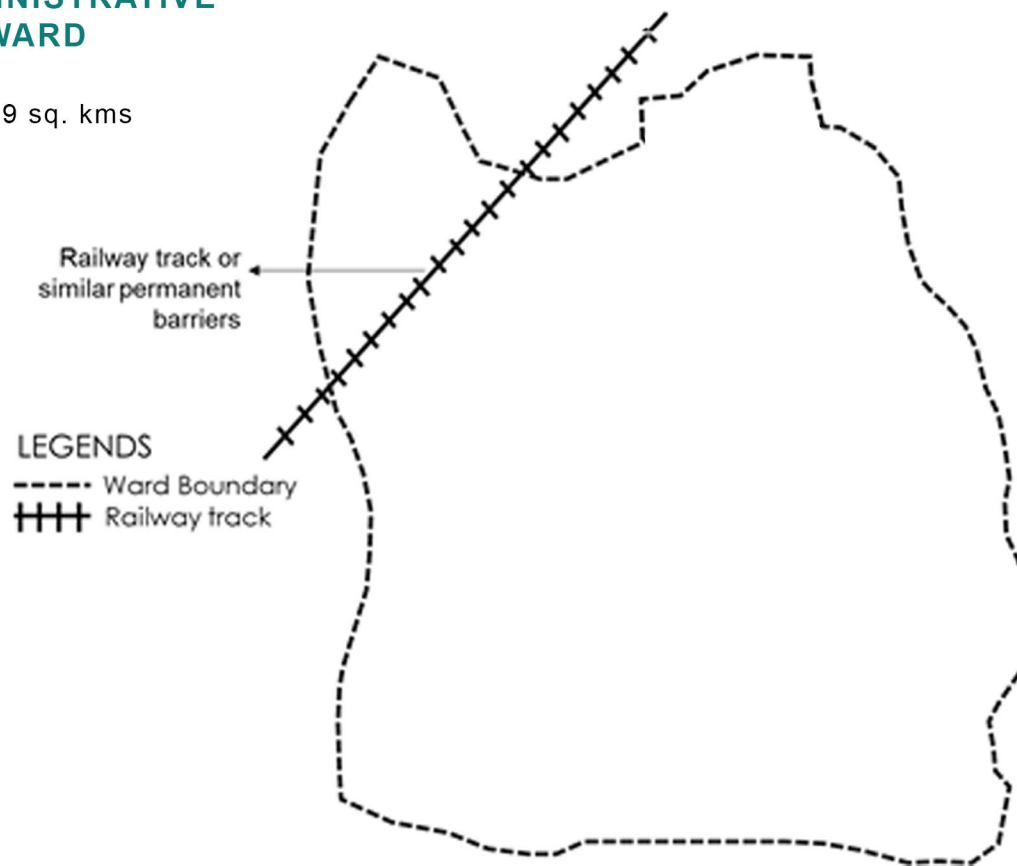
This section of the report will guide the toolkit users in finalizing the area by studying the existing administrative boundaries, land use, road network, transit network. The list of primary and secondary data required is detailed in this section.

3.2.1 AREA DELINEATION

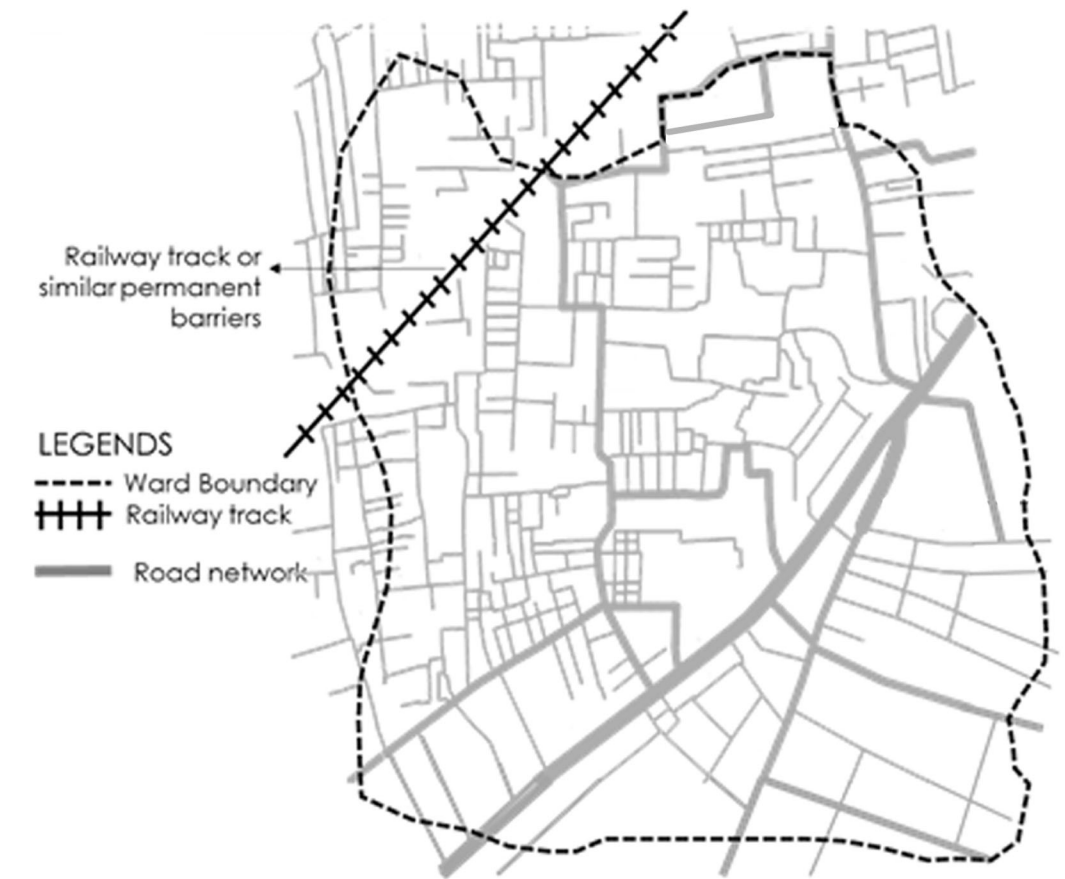
Based on best practices, the area for the PAMP should be between 1-3 sq. km. This is an optimum range as it gives flexibility to include areas that have similar or complementary land use, built form and land prices. This is important as it helps in setting parking charges. At the same time, the area should not be so large that it has too many stakeholders and the potential to increase conflict during plan preparation and implementation. The set of maps below depict the process of delineating the area.

STEP 1 - ADMINISTRATIVE BOUNDARY WARD

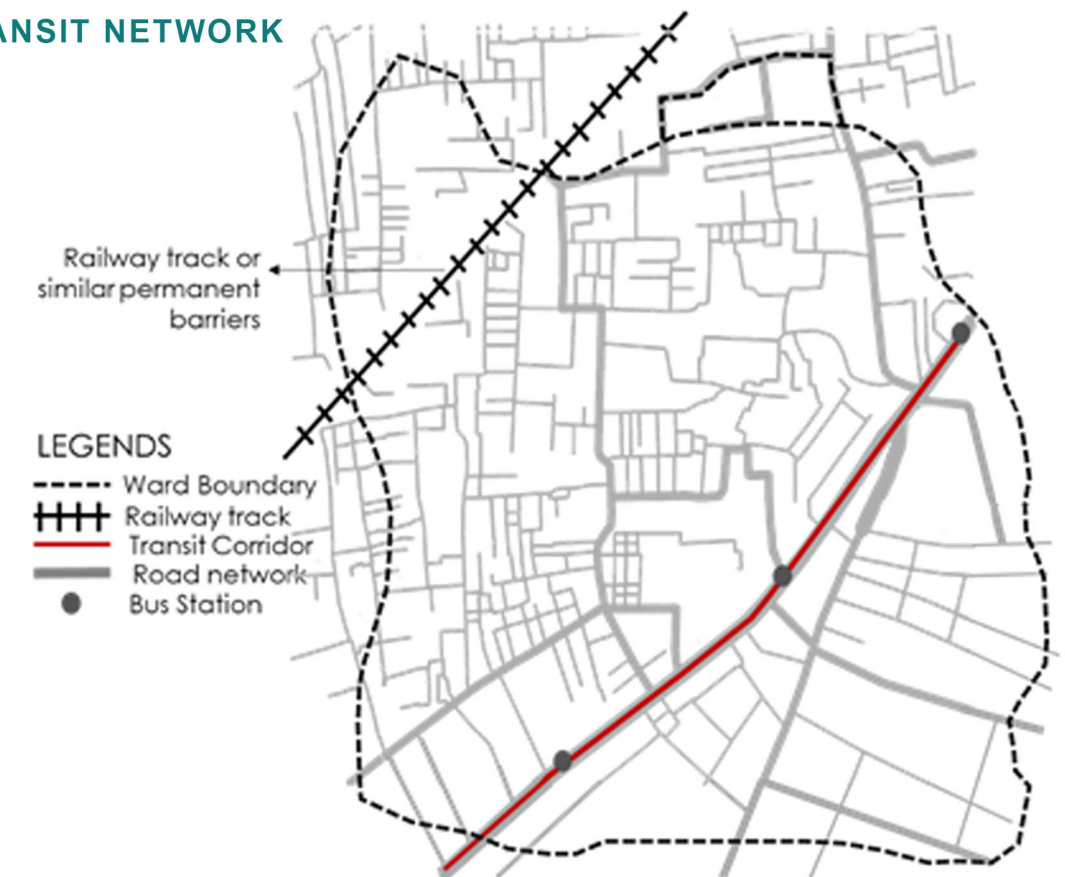
Ward Boundary 3.9 sq. kms



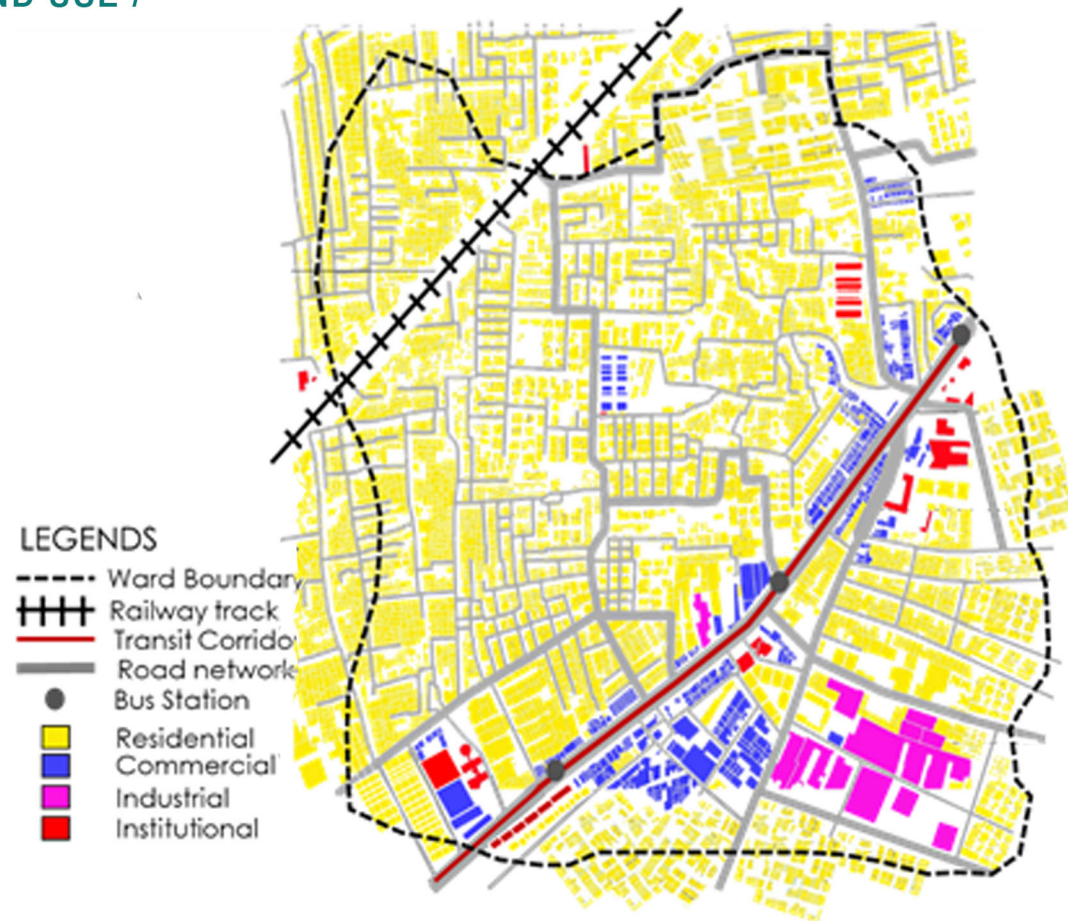
STEP 2 - ROAD NETWORK



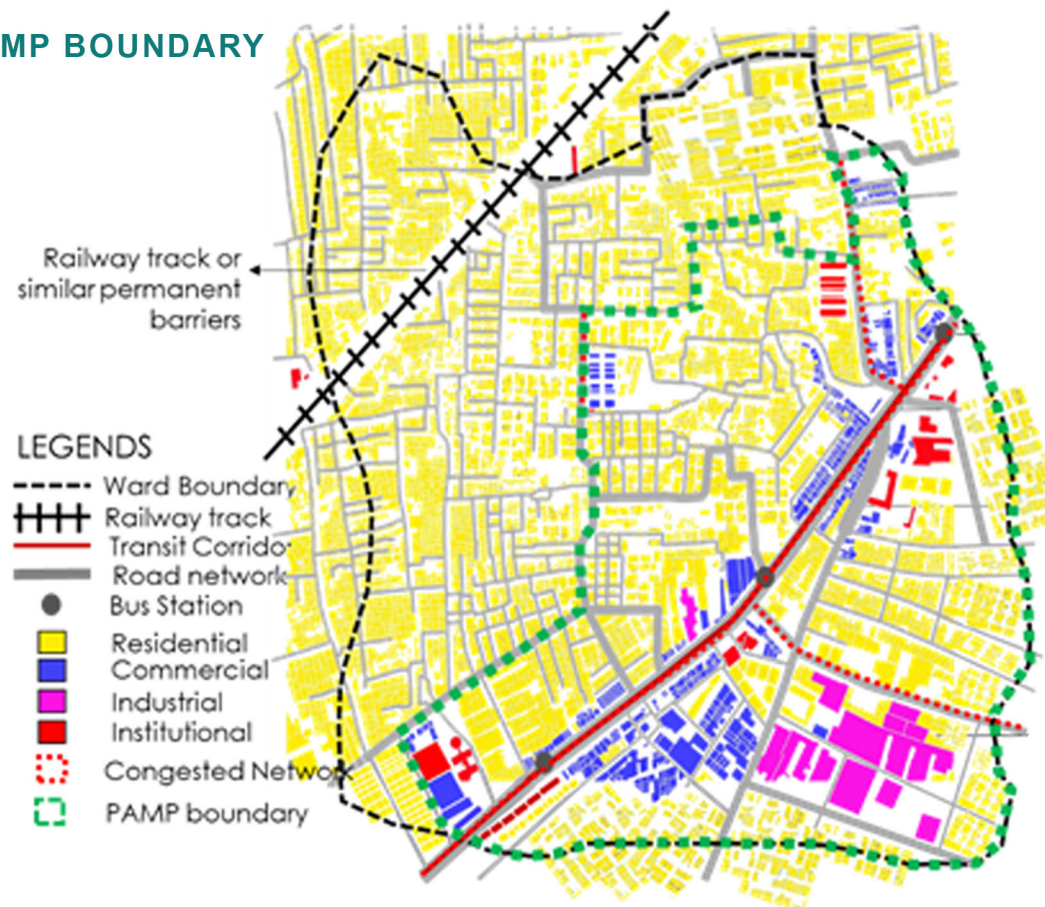
STEP 3 - TRANSIT NETWORK



STEP 4 - LAND USE / DENSITY



STEP 5 - PAMP BOUNDARY



3.2.2 INFORMATION REQUIRED FOR PREPARING BASE MAP

The next step in preparing a PAMP is to generate a high-quality base map. A base map would have basic information about the study area in a spatial format. This information would be available through various primary and secondary sources. The table below identifies the information and probable sources for the same.

Table 1: Information for preparing base map

Information Required for the Base Map	Source
1 Road network (broad classification of road hierarchy)	BDA, BMC, PWD, alternatively, satellite imagery can be used for creating the base network layer
2 Administrative Boundaries - Wards	BMC
3 Existing land use (plot-wise predominant land use in the area)	BDA /Primary survey
4 Building footprint with built use, building height, ground floor use (Commercial /parking)	BDA /Primary survey (need most recent data)
5 Public transport routes passing through the area (with headways) and bus stop location. Information on other PT modes- Metro, LRT, Rail etc. IPT routes that may be passing through the area along with stop locations	CRUT/ Smart city / Relevant Transit Authority Primary Survey
6 Information on development or redevelopment potential of the area (e.g., vacant properties, underdeveloped properties, market trends).	BDA/ Secondary sources/ Real estates
7 Location and type of existing parking facilities (e.g., on-street, off-street, public, private, residential, retail/commercial, IPT, freight- loading unloading etc.).	BDA/ BMC/ Traffic police/ primary survey

3.2.3 DATA COLLECTION

After the area delineation is complete and base map is prepared, following sets of data are required for further analysis:

PRIMARY DATA

Details regarding road network inventory, parking locations, land use, built use and activity performed shall be collected by conducting surveys in the area. Details of the surveys to be conducted and their purpose are enlisted in the table below.

Table 2: Primary data

Purpose	Details to be collected	List of Surveys
1 To assess infrastructure in the area	RoW details to be collected for all arterial, sub arterial and major collector roads along with information related to parking, PT, lux level, NMT infrastructure and land use	Road Inventory (The survey format is presented in Annexure A-1)
2 To assess the demand based on land use	Information on abutting land use and built use, including building height, ground floor use and parking details	Land use and built use survey. (The survey format is presented in Annexure A-2)
3 To assess trips attracted to the area	Parking availability and requirement details from major activity centers (commercial, institutional, recreational etc.)	Activity survey (The survey format is presented in Annexure A-3)
4 To assess the parking supply and demand in terms of occupancy, turnover, and parking duration	On street parking: Representative sample surveys on major roads in the area with non-residential abutting land use. Survey to be conducted in 15 min duration for both up and down direction for 12 hours in a day including morning and evening peak hours.	On street parking registration plate survey (The survey format is presented in Annexure A-4)
5 This information is also required as a baseline for monitoring and evaluation	Off street parking: Representative sample surveys entry or exit. Survey to be conducted in 15 min duration to be captured to be captured for 12 hours in a day including morning and evening peak hours	Off street parking registration plate survey format

SECONDARY DATA

Data regarding parking infrastructure, parking management (tenders, contracts, rules, and regulations etc.), roles and responsibilities of various agencies involved in parking management shall be collected from corresponding authorities. The list of details required with possible sources is mentioned in the table below.

Table 3: Secondary data

Purpose	List of information	Possible Sources
1 To assess parking infrastructure supply. Specific needs and parking issues (short -term parking for customers and their own vehicles) etc.	<ul style="list-style-type: none"> • Designated parking area details for on-street and off street- Location, no of bays available. • Restrictions if any on parking – time, location, pricing etc. • Tenders, contract, business model, charges, management, issues, and challenges etc. • Delivery/ freight loading procedures in the area if any. • Land value or circle rates • Non-Residential Property types 	Smart City Bhubaneswar, BMC, BSCL, BDA, Traffic police and CRUT
2 Assess encroachment on footpaths and carriageways that can have implications on NMT use - location and structure of vending area, delivery and loading times, parked vehicles	Details on designated vending zones – Location, number of vendors allowed, etc.	BMC
3 Understand enforcement aspects	Traffic Police-role of the organization, enforcement details, penalties, resources available for enforcement- manpower and financial resources.	Traffic police

3.3 DATA ANALYSIS AND ISSUE IDENTIFICATION

This section will guide users in analyzing the collected data in terms of existing road infrastructure, parking supply and demand, parking management practices and enforcement in the area. This will further help in identification of issues and gaps in the existing system.

3.3.1 DATA ANALYSIS

Once the data collection is complete, it is important to know what information is required to proceed further with parking management plan. The data collected should be analyzed for:

1. PARKING SUPPLY

The parking supply data shall be collected through parking inventory survey. The data collected shall provide information on type of parking, exact location, total area, and capacity of parking, marked or painted bays, universally accessible bays, fee collection system, availability of user information boards, etc.

2. PARKING DEMAND

The data collected shall be analyzed to understand the parking demand in the area for long term and short term based on various users and land use patterns. The demand can be analyzed by calculating the following:

Parking Occupancy

Vehicles parked during a given time divided by the total number of spaces. Parking occupancy of 85-90% over the day is considered to be an optimum target since some parking will be available, but not so much as to create over supply.

Parking Duration

The length of time a vehicle remains in a parking space is its duration and can be estimated from the registration plate survey. Duration data can be used to understand parking behavior to redefine time restrictions and parking fees and use existing spaces more efficiently. This analysis should reveal if there is different parking behavior in different areas and time periods.

Parking turnover

It is the inverse of parking duration and describes the number of vehicles that can use a space in each period.

Parking conflict analysis

Parking in 2-3 row causes congestions, encroachment of NMT and PT infrastructure

3. PARKING MANAGEMENT PRACTICES

The secondary data collected shall be analyzed to understand the existing parking management system. Existing tenders and contracts shall be reviewed in terms of responsibilities of agencies, penalties etc. Gaps shall be identified and provide proposals to strengthen the system with efficient manpower deployment, improving parking infrastructure, interventions related to parking management technologies and funding sources.

4. EXISTING ROAD INFRASTRUCTURE

The existing road network shall be evaluated focusing on NMT and PT infrastructure. Availability of footpaths, segregated and unsegregated cycle tracks, encroachment on road, lux levels, PT stops, etc. shall be analyzed.

Designated on-street and off-street parking, number of bays - cars/2W, marked or painted bays, lighting condition, parking meters and infrastructure, universal accessibility, gender needs.



SUPPLY INFRASTRUCTURE
To understand the supply aspects of available infrastructure and use the information at the detailed planning stage.

DEMAND FOR PARKING
Understand the parking requirements long-term and short-term based on users and land use patterns.



No. of vehicles parked - cars and 2W
Parking turnover - long term/short term
Number of visitors from activity survey
Public transport connectivity - routes and frequency

Review tenders and contracts, charges, the responsibility of contractor and agency, manpower deployed, equipment and ITS facility available and maintenance schedule. Payment terms and monitoring regime.



PARKING MANAGEMENT PRACTICES
Assess the existing parking management practices, loopholes in the current contracts.

ENFORCEMENT ASPECTS
Understand existing situation to identify gaps in the same



Parking restrictions, enforcement practices through discussion and interviews, violation penalties, manpower and financial resource assessment.

Footpath - Availability, location, width, height, condition of cycling tracks, Lux levels, shading, edge condition and encroachment. Public transport stops, schedule, route information, stop condition, lighting and linkages to public hotspots such as schools, hospitals, etc.



FOCUS ON NMT AND PT INFRASTRUCTURE
Assess the existing infrastructure for NMT & use the information when improving or redesigning road section.

INSTITUTIONAL
Understand the roles, responsibilities and jurisdictions of various organisations and coordination mechanism including financing



Roles and responsibilities of organisations
Coordination mechanism

Figure 5: Data analysis

3.3.2 IDENTIFYING ISSUES IN THE AREA

Based on the existing situation analysis, issues related to parking, parking management, NMT infrastructure, enforcement and institutional coordination will be identified. Parking issues can be presented as below.

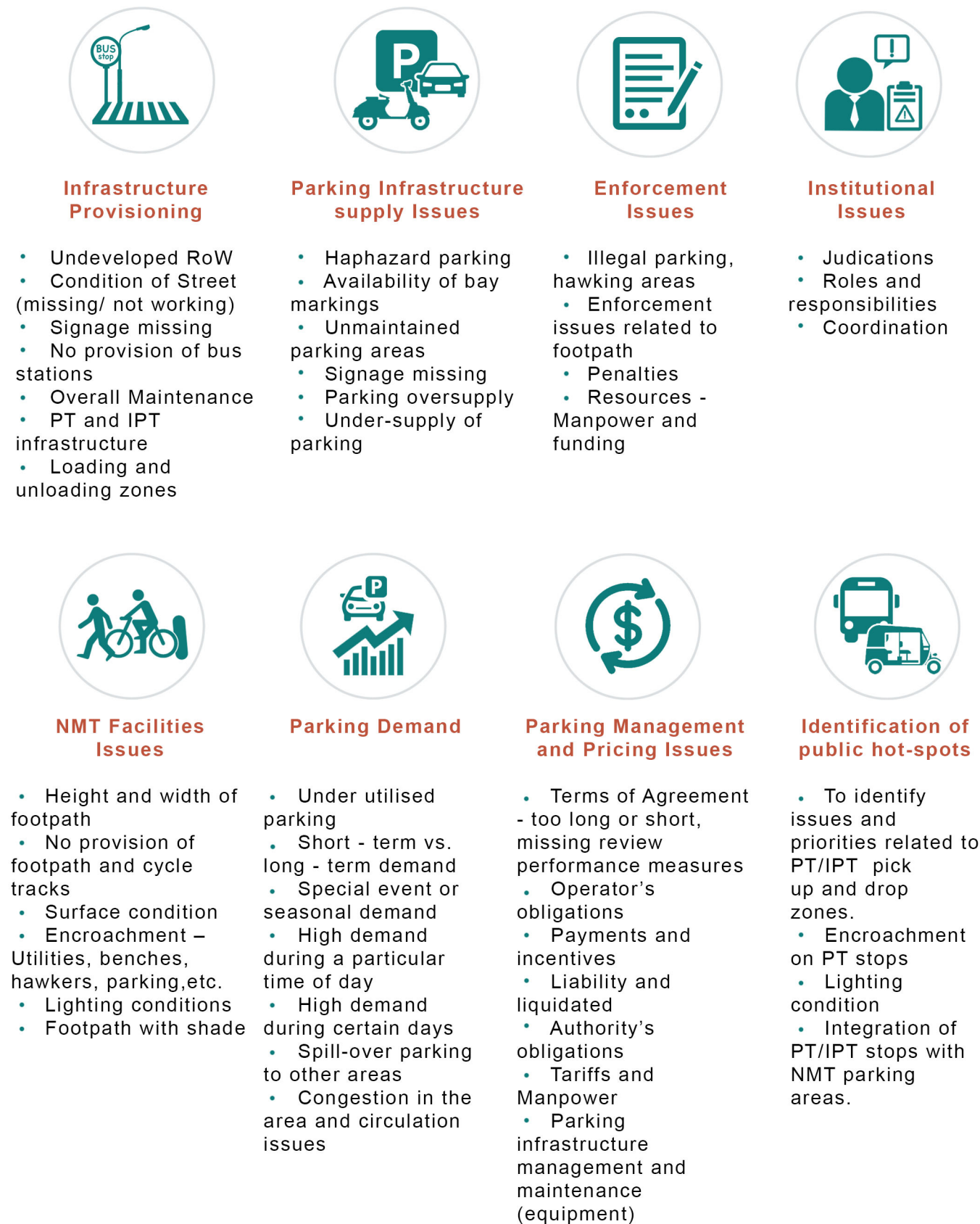


Figure 6: Identifying issues

3.4 FINALISING STRATEGY MIX AND ENGAGING WITH STAKEHOLDERS

This section details out the procedure of setting objectives and finalizing the strategy mix to be adopted based on typology of the area. The detailed objectives should be finalized by conducting stakeholder consultations. The procedure of stakeholder mapping and type of engagement in parking management is detailed in this section.

3.4.1 FINALIZING STRATEGY MIX

Based on the objectives that are set up, the strategy mix for the area shall be decided. The focus shall remain on reduction in travel demand and promotion of PT and NMT modes in the area in line with the overall parking policy, LCMP framework and street design guidelines.

An example of objectives and strategy mix for an area is mentioned below:



Figure 7: Objective and strategies

1. MUST HAVE STRATEGIES

These strategies are must for parking management and focuses on promotion of PT and NMT and improving the existing parking scenarios by using upgraded technology, implementing time restrictions, parking pricing, enforcement and implementation standards based on street design guidelines and managing freight movement & parking.

2. SUPPLEMENTARY STRATEGIES

These strategies supplement the 'must have' strategies. These are mostly related to parking policies for regulation & enforcement and infrastructure improvement. These include proof of parking, parking sharing, unbundling of parking, NMT infrastructure improvement, street design and removal of illegal vending and parking activities by enforcement.

3. PROMOTIONAL STRATEGIES

These strategies are to manage the increasing parking demand due to upcoming developments in the area. These strategies are basically related to promoting legal parking with incentives to users in the form of vouchers/coupons, promoting workplace mobility plans, etc.

Table 4: Strategy mix for Bhubaneswar

Sr. No.	Strategies	Issue Addressed	Must have strategies	Supplementa-ry strategies	Promotional strategies
PARKING SUPPLY MANAGEMENT TOOLS & STRATEGIES					
1	Circulation plan for NMT and freight vehicles	<ul style="list-style-type: none"> Prepare NMT circulation plan for the last mile connectivity Prepare freight circulation plan and time restrictions for major activity centres 	●		
2	Provision of time limit restrictions	<ul style="list-style-type: none"> Allow parking for a limited amount of time or only between certain hours of the day 	●		
3	Introduction/upgradation technology	<ul style="list-style-type: none"> Ease the process of parking management and minimize leakage in fare collection, reduce time, ensure better enforcement, low operating, and transaction costs 	●		
4	Sharing parking	<ul style="list-style-type: none"> Provide opportunity for private parking owners such as hotels, companies, universities, etc. and individuals to rent out their parking space at times they do not use it 		●	
5	Proof of parking	<ul style="list-style-type: none"> Address the issue of residential on road parking, reduce congestion, ensure safety, and better utilization of street space, spill over to neighbourhood areas, unbalanced parking demand, etc. 			●
6	Workplace mobility plan	<ul style="list-style-type: none"> Charge employees for the parking spaces within office buildings and if an employee chooses not to use the parking space, provide a monthly mobility allowance to use public transport 			●

Sr. No.	Strategies	Issue Addressed	Must have strategies	Supplementa-ry strategies	Promotional strategies
PARKING DEMAND MANAGEMENT TOOLS & STRATEGIES					
1	Defining parking zones & no parking zones	<ul style="list-style-type: none"> Ensure (as per street design guidelines), 50 mt buffer near major junctions and 30 mt buffer near minor junctions as no parking Restrict parking near other public hotspots like universities, schools and colleges, major temple etc. 	●		
2	Defining reserved parking bays	<ul style="list-style-type: none"> Provide parking bays for pregnant women, disabled people, and emergency vehicles in the defined parking location 	●		
3	Freight parking	<ul style="list-style-type: none"> Reduce congestion, improve safety, integration of loading zones and operational efficiency, promote commercial activities, spill over in neighbourhood, etc. 	●		
4	Dedicated cycle parking, IPT pick up drop off zones	<ul style="list-style-type: none"> Promote use of public transport and NMT for commute, increase parking space for NMT, cycles and IPT drop off, pick up zones, improve unbalanced parking, ensure safety and reduce spill over in neighbourhood 	●		
5	Parking pricing	<ul style="list-style-type: none"> Introduce parking prices based on base land value and major land use in the area Demand management measures to reduce parking demand 	●		
6	Demand responsive parking pricing	<ul style="list-style-type: none"> Use pricing as a demand responsive measure where prices may vary day by day of the week and time of the day 		●	

Sr. No.	Strategies	Issue Addressed	Must have strategies	Supplementa-ry strategies	Promotional strategies
PARKING DEMAND MANAGEMENT TOOLS & STRATEGIES					
7	Redesigning of streets	<ul style="list-style-type: none"> Facilitate organized parking by addressing inadequate parking facility, high demand, non-compliance of traffic regulations, awareness, ease of use of parking space, safety, special event parking demand etc. 		●	
8	Unbundling parking	<ul style="list-style-type: none"> Unbundle parking units (private parking) from residential units while sale or rent. Payment for parking shall be undertaken separately. Buyers only pay for the number of parking spaces they need Help in addressing the issue of lack of parking facility, unbalanced parking demand, and better enforcement of regulations etc. 		●	
9	Hawking and vending area	<ul style="list-style-type: none"> Reduce conflict and congestion, unbalanced and high parking demand, ensure safety and reduce conflicts, congestion. Increase safety on streets by integrating hawking/ vending zones (eyes on street) 		●	
10	Providing off-street parking	<ul style="list-style-type: none"> Accommodate parking while promoting new development, and special event parking demand, support commercial activities etc. 			●

Sr. No.	Strategies	Issue Addressed	Must have strategies	Supplementa-ry strategies	Promotional strategies
USER INFORMATION TOOLS & STRATEGIES					
1	Wayfinding	<ul style="list-style-type: none"> Facilitate ease of parking by addressing concerns of safety and poor information sharing, underutilization of facilities, high demand, spill over, poor enforcement, noncompliance of regulations, and parking congestion, etc 	●		
2	Public information campaigns	<ul style="list-style-type: none"> Organise campaigns to raise awareness among people about vision and strategies, existing and proposed infrastructure and take their feedback 		●	
3	Use of technology	<ul style="list-style-type: none"> Make technological interventions for ease of usage to consumers and efficient maintenance by a parking management agency Provide real time information of parking availability on mobile apps and automatic fee collection systems, etc. 			●
4	Marketing and branding	<ul style="list-style-type: none"> Create branding by providing coupons to users, partnering with other non-competing businesses, adding signs and banners 			●

3.4.2 AREA TYPOLOGY

Identifying the typology of the area with respect to transit influence and land use is important to set objectives and form strategies since requirements would vary from one area to another. The section details out step by step procedure for preparing PAMP based on the typology of the area. Recommendation for each component of a PAMP i.e., on street/ off street parking, IPT parking, NMT circulation, freight circulation, wayfinding and signage, technology etc. is detailed in the section. The initial typology classification could be 'transit' and 'non-transit' zone, based on availability of transit.

3.4.2.1 FOR TRANSIT ZONE

Transit zone is defined as an area that has an existing or proposed transit network. It is generally well connected with rapid transit systems or has a high frequency of PT services. The strategy mix in the transit zone should focus on promoting NMT and PT modes of travel and reducing parking demand in the area. The supply in the area should be limited by restricting short term parking. Interaction with users should be improved by providing wayfinding and real time information at PT stops. Priority should be given to pedestrians and NMT users. Also, technology should be used for better monitoring of parking locations and efficient parking management.

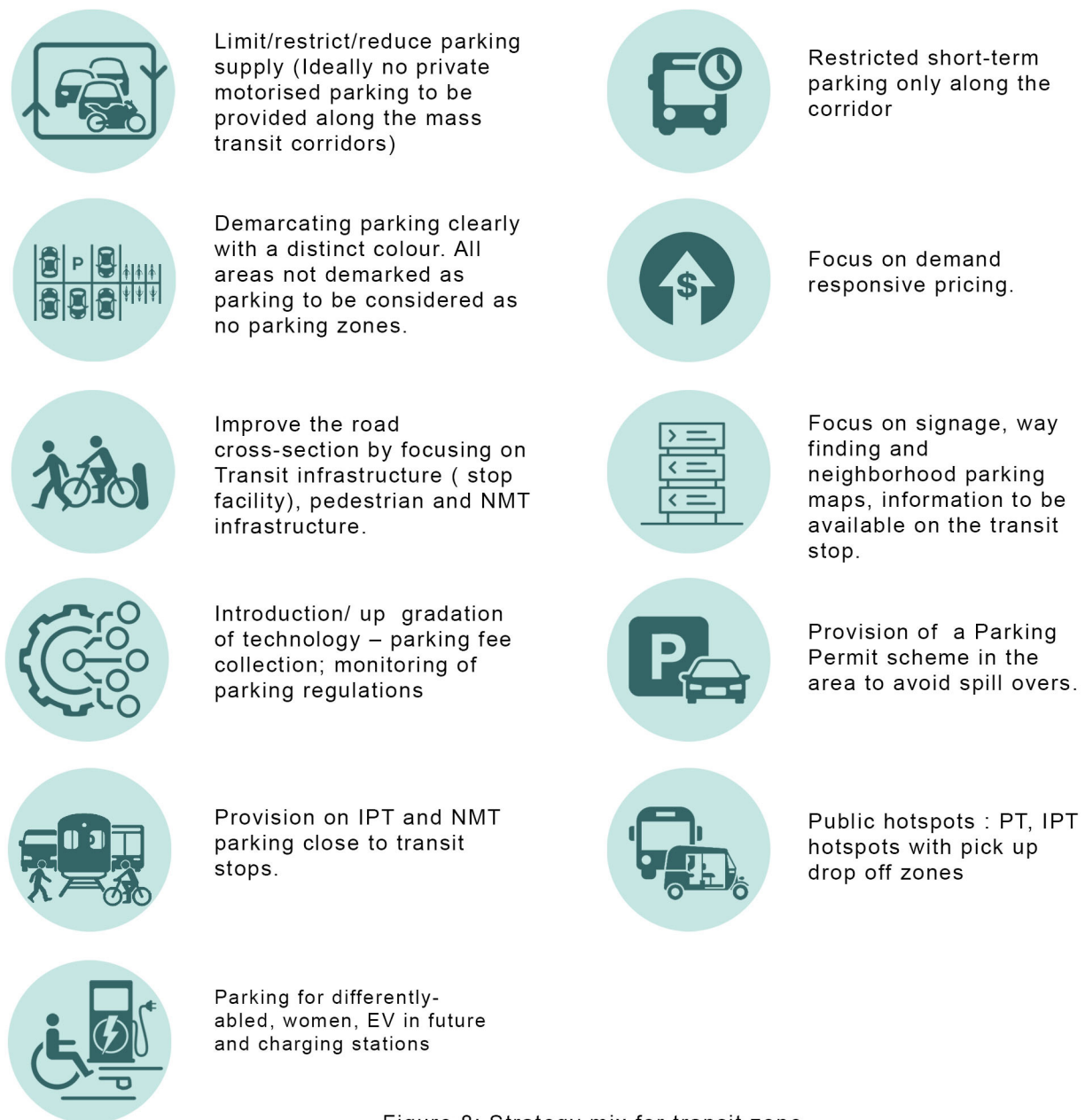


Figure 8: Strategy mix for transit zone

3.4.2.2 FOR NON-TRANSIT ZONE

Non-transit zone does not have a transit system passing through or has a low-frequency PT network. The strategy mix should focus on managing existing parking demand along with promoting other modes. Shared parking options should be explored with parking management technologies. Signages and wayfinding should be provided with improved PT, IPT and NMT infrastructure. The possibility of improving the public transport connectivity and availability should be explored.



Figure 9: Strategy mix for non-transit zone

3.4.3 STAKEHOLDER MAPPING

Mapping all stakeholders and conducting stakeholder interactions is an important step to evaluate their perception and incorporate it in the plan as objectives and proposals. This will also help in the easy implementation of the proposed plan. (The survey format is mentioned in Annexure A-5).

Table 5: Stakeholder mapping

Group	Role	Stakeholder
NON-CONSUMERS	Individuals not using the parking. They are either NMT, PT or IPT users requiring integrated infrastructure development in the area (IPT stops, PBS stands near bus stops, good condition footpath, cycle track and vending spaces).	Pedestrians, Cyclists, IPT users, Public transport users
CONSUMERS	Individual users	Residents - Owners/ renters Commuters : Employees/ students/ freight vehicle operators, Travellers
	Local business sector, Institutions, and Industrial sector	Shoppers, visitors, retailers, employers, industry, and warehouse owners, vendors, educational, health, religious, cultural, sport institutions
SUPPLIERS (Agencies that supply parking infrastructure including NMT suppliers)	These agencies are responsible for supplying different types of parking in the area. These could include public and private agencies.	Property developers (looking to invest in the area both residential and commercial), architects (involved in designing the real estate and parking areas) PT providers, IPT providers, PBS providers (providing bicycle infrastructure stand), vendor association, technology providers to parking enforcers and operator.
GOVERNMENT	Local	BDA, BMC and BSCL officers- planners, engineers, managers, CRUT, traffic police, vendors and residential communities, etc.
	Implementing Agencies	Traffic Police

As proposed in Parking Policy, a parking cell shall be formed in BMC which will be responsible for planning and implementing with local stakeholders in each zones while taking up preparation of zonal plans. Other authorities like BDA, traffic police, BSCL shall act as participatory stakeholders. A working Committee, CPMC, as suggested in Parking Policy, shall support implementing agency and provide better coordination with stakeholder. Details regarding type of stakeholders and their involvement is mentioned below.

Table 6: Types of stakeholders

Type of Engagements	Stakeholders	Mode	Reporting/ Monitoring
Partnership: Shared accountability and responsibility. Two-way engagement joint learning, decision making and actions	Parking Cell, BMC and parking contractor	Meetings and performance reporting	Contract management and KPI
Participation: Part of the team, engaged in delivering tasks or with responsibility for a particular area/activity. Two-way engagement within limits of responsibility	BMC, BSCL, BDA, Traffic police, CRUT	Setting up of working committee, CPMC as suggested in parking policy. This committee to coordinate with parking steering committee.	Regular meetings and Interactions, minutes of the meeting & workshop reports.
Consultation: Involved, but not responsible and not necessarily able to influence outside of consultation boundaries. Limited two-way engagement: organization asks questions, stakeholders answer	BMC, BSCL, BDA, Traffic police, CRUT Local trade associations, institutions, industry, financiers, and developers	Consultation Meetings/ FGD At the draft stage of the plan inviting suggestions and concern	Stakeholder consultation report Addressing concerns
Push communication: One-way engagement. Organization may broadcast information to all stakeholders or target stakeholder groups using various channels	Local trade associations, institutions, industry, financiers and developers, commuters, residents, visitors etc.	Email, letter, webcasts, podcasts, videos, leaflets, etc	
Pull communications: One-way engagement. Information is made available, and stakeholders choose whether to engage with it	Local trade associations, institutions, industry, financiers & developers, commuters, residents, visitors, hawkers and vendors	Web site, hoardings, social media	

Once the consultation is done, the objectives and targets for the area should be finalized. The objectives for the area shall be in line with the overall vision of LCMP, parking policy and street design guidelines.



Figure 10: Setting goals and objectives

3.5 PREPARING PAMP

This section shall detail out a step-by-step process to prepare the PAMP after the base map, data collection and analysis and finalizing the strategy mix is complete. The section is depicted as a set of recommendations/ guidelines for specific activities.

3.5.1 HOW TO START?

As with any plan, it is a good idea to understand where and how to start. This section provides step wise guidance to begin the process. The first step deals with identifying public transit infrastructure, moves to redesign of streets and identification of any off-street parking opportunities. Once parking and no parking areas are identified, the next step would be to start discussing with local stakeholders. The figure below depicts the process.



Figure 11: How to start?

3.5.2 GUIDELINES FOR ON STREET PARKING

On street parking shall follow recommendations made in the Bhubaneswar Draft Street Design Guideline, 2017. The overall intention is to ensure that on street parking does not create problems for moving traffic, especially public transit and ensures clear and demarcated parking spaces.

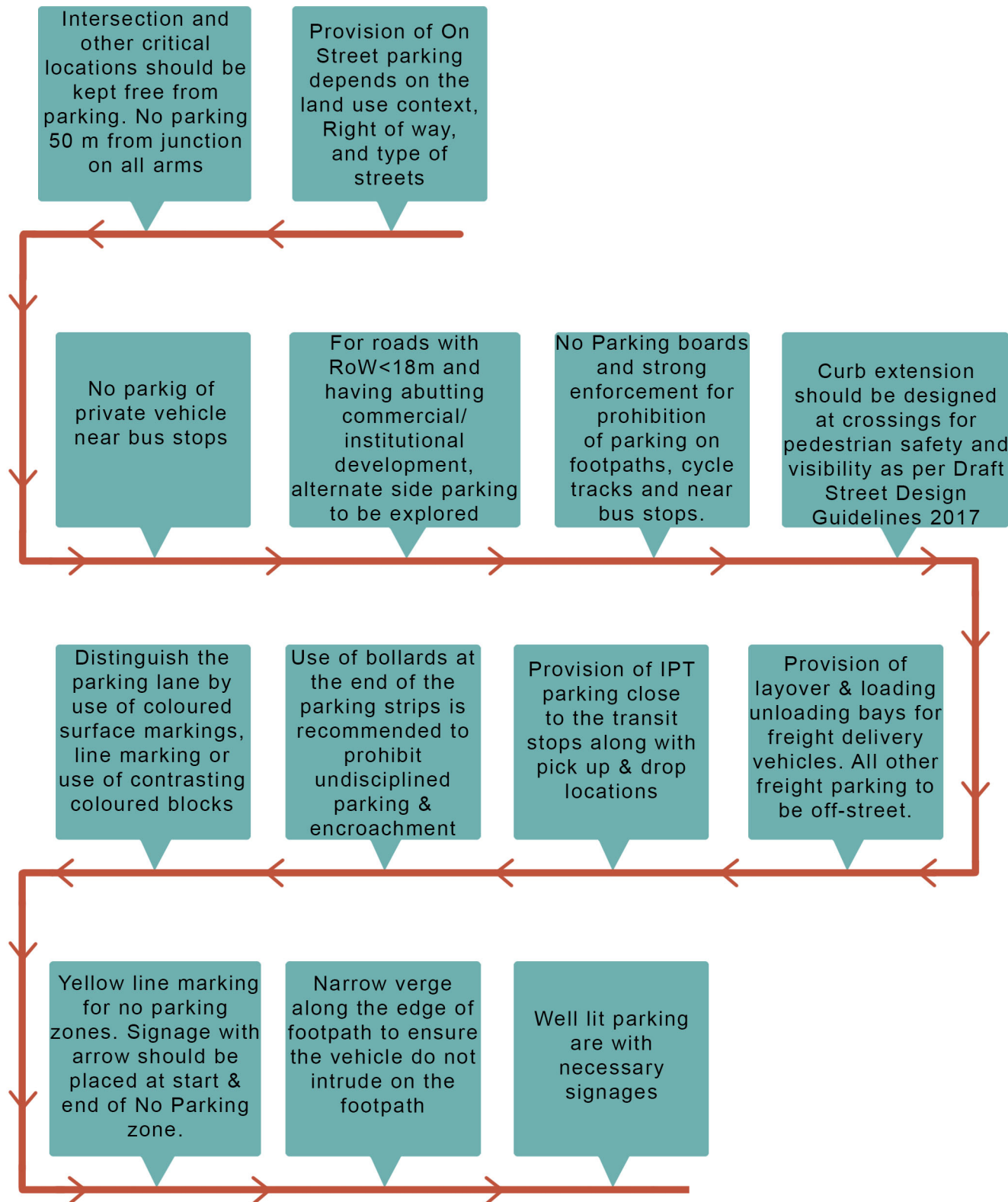


Figure 12: Recommendations for on-street parking

3.5.3 RECOMMENDATION FOR PARKING DIMENSIONS AND LAYOUT

The recommended parking dimensions as per the Draft Street Design Guideline, 2017 are:

- Car Park = 2m X 5m parallel parking
- 2-wheeler Parking = 1m X 2m
- Cycle Parking = 1m X 2m
- Perpendicular 2-wheeler parking on the centre stand is recommended on the streets with provisions for roadside parking.
- Parking on transit corridors during peak hours is restricted.
- Parking bays should not be continuous and should be interrupted at maximum 22 m to provide bulb out space for street furniture, vending, green/ trees and pedestrian crossings.

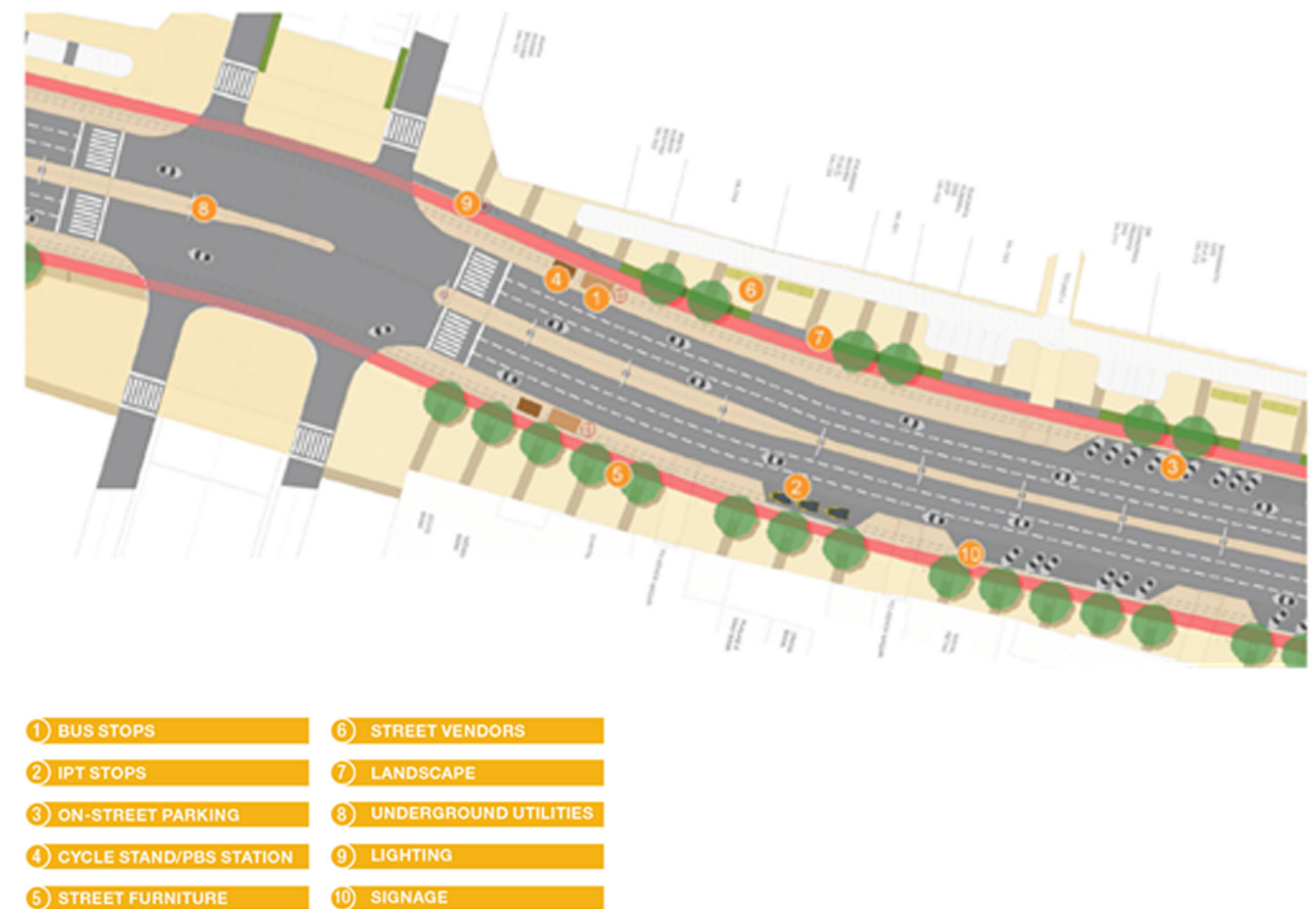


Figure 13: On street parking guidelines

3.5.4 RECOMMENDATIONS FOR IPT PARKING

The IPT parking shall be located around 50m from each transit stop to provide last mile connectivity to PT users. Parking bays shall be available for seven rickshaws at an IPT stop. Enforcement shall be strengthened to restrict waiting of autorickshaws on footpaths, cycles tracks and near junctions.

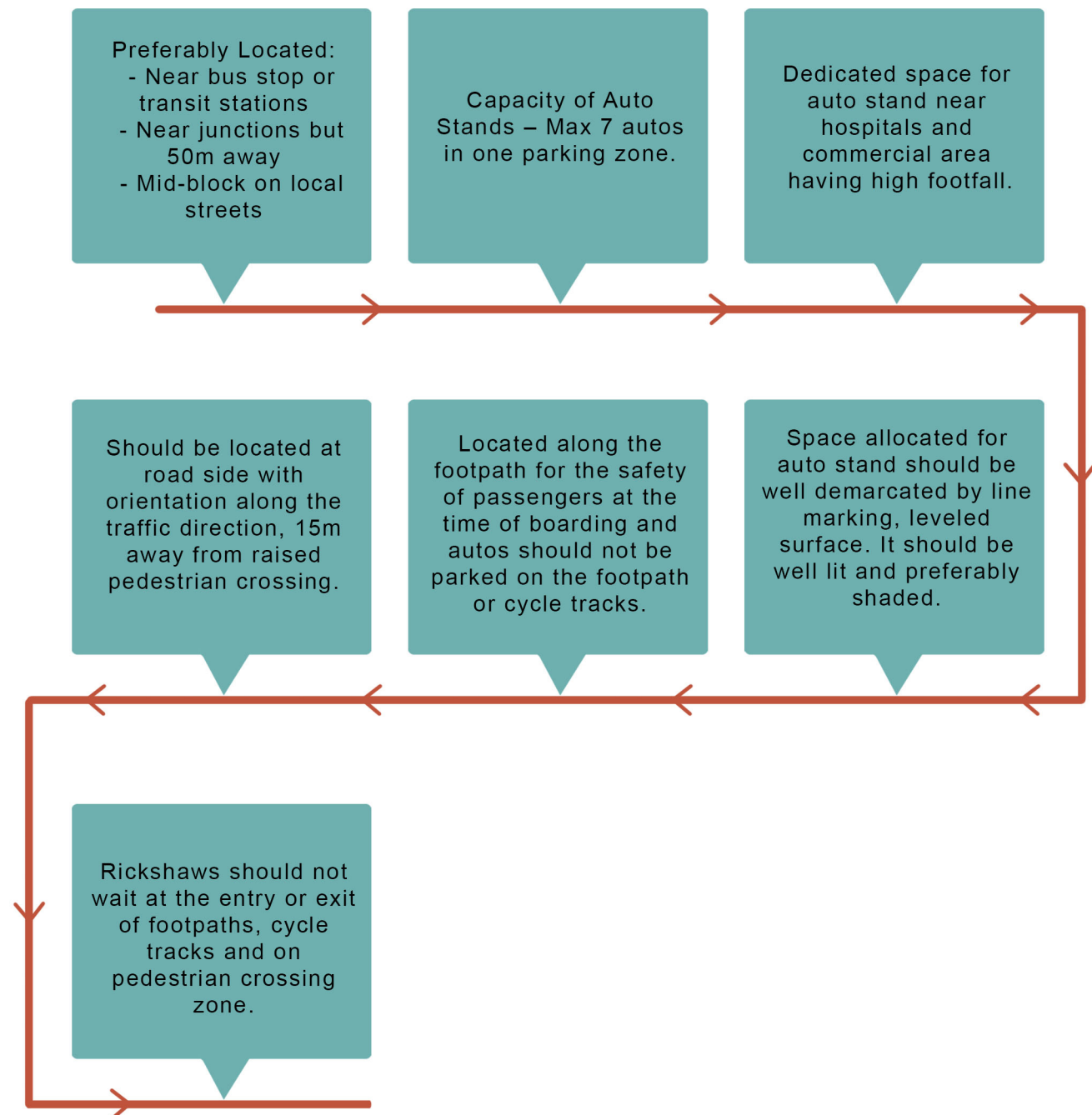


Figure 14: Guidelines for IPT parking

3.5.5 PREPARING NMT CIRCULATION PLAN

An important strategy to reduce demand for parking is to encourage people to use PT and shared mobility modes. Hence, NMT plan becomes integral to any PAMP. The following steps need to be taken to prepare a NMT plan.



STEP 1

Map out the existing NMT network and its condition.

STEP 2

Identify major landmarks and bus stops in the area- schools, colleges, hospitals, commercial areas and overlay the existing network to check connectivity.

STEP 3

Identify missing links and identify network with shortest route that can be upgraded with pedestrian and cycling facilities. Locate open areas/ parks and gardens and explore the feasibility of having the network pass through these areas.

STEP 4

Identify potential location close to the transit station and main activity area which can be designated to cycle parking and PBS.

STEP 5

Provide adequate information on the availability of these NMT facilities at transit stops, near main institutional areas, etc. through wayfinding.

3.5.6 PREPARING WAYFINDING PLAN

Wayfinding plan is an important component of PAMP. It provides orientation to the PT and vehicle users to direct them towards the parking facilities in the areas. Along with this, lighting in the areas also plays an important role from the perspective of people using NMT modes. The following steps need to be taken for preparing a wayfinding plan.



STEP 1

Identify major landmarks, parking location in the area.

STEP 2

Provide clear signage in terms of direction of the facilities and the number of bays available before junctions. Have special signage for NMT facilities close to the bus stations and transit hubs.

STEP 3

Identify street lighting along the NMT networks and lighting facilities at parking areas to encourage people to use these areas safety at night.

3.5.7 PREPARING AREA PERMITS

Introducing parking area permits in the PAMP is important to ensure that there is no spillover of parking in the residential areas. This is an optional strategy that Bhubaneswar can adopt in the future, as and when requirement is felt. The idea is to reduce on-street parking and encourage people to park in their respective properties. This is also an effective tool to reduce need for private vehicles, especially in transit influence areas. The permit will only provide permission to park in the on-street parking areas available but not guarantee a parking space.

PHASE 1

Time-based system to be introduced with a nominal fee for parking. Parking permits issued shall be based on the spaces available. Permits to be valid for 3 months, 6 months and 1-year duration, depending on the fees paid.

PHASE 2

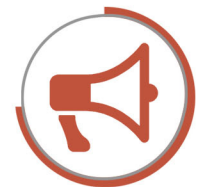
Monitor the parking permit applications and increase the fee depending on the demand of parking in the area. This can be done once in two years.



STEP 1
Identifying the legal parking space



STEP 2
Consult with the local residents



STEP 3
Advertise and provide information

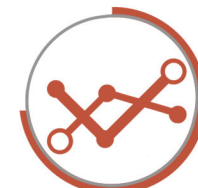


STEP 4
Set up an online system

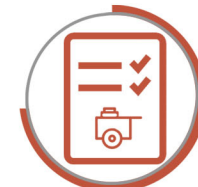
Figure 15: Steps for issuing parking permits

3.5.8 PREPARING VENDING PLAN

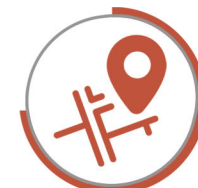
Vending is an integral part of Indian city scape. It provides multiple services and is important for improving safety on streets (eyes on streets). However, haphazard vending and parking areas create conflict and congestion. The following steps need to be taken to prepare a vending plan.



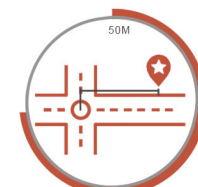
STEP 1
Identify the existing vending areas. Check if they are creating any kind of congestion.



STEP 2
Refer to the standards and recommendation of 'Street Design Guidelines' for vending zones on the major PT network. If not permitted, identify inner streets where these activities can be moved.



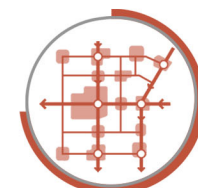
STEP 3
Lay down vending zones in the area and streets redesigned to incorporate the same in the cross section.



STEP 4
Ensure that the zones are not located within 50 m of junctions on all arms and appropriate measures are taken to accommodate them in close vicinity of the existing areas. Ensure they do not obstruct or conflict with the pedestrian movement.

3.5.9 PREPARING TRAFFIC CIRCULATION PLANS

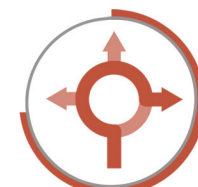
Circulation of traffic in the PAMP area can be impacted by the location of the parking areas/ bays and hence, a clear traffic circulation plan needs to be worked out. The following steps need to be taken to prepare a circulation plan.



STEP 1
Mark out the one-way networks in the area along with the parking locations



STEP 2
Identify roads with heavy traffic movement using Google Maps during different times of the day and identify parking areas along these stretches.



STEP 3
Identify special areas, event venues, institutions, schools with their opening and closing time and local implication that it may have on the roads in and round. Identify alternative route networks through which the demand can be distributed to avoid congestion.

3.5.10 PREPARING PRICING STRATEGY

Pricing strategy for the area needs to be in line with the parking policy. The concept of differential parking along major roads and minor roads needs to be maintained. The formula to determine parking charges at each location is also provided in the parking policy. The charges are linked to base land value provided by BMC.

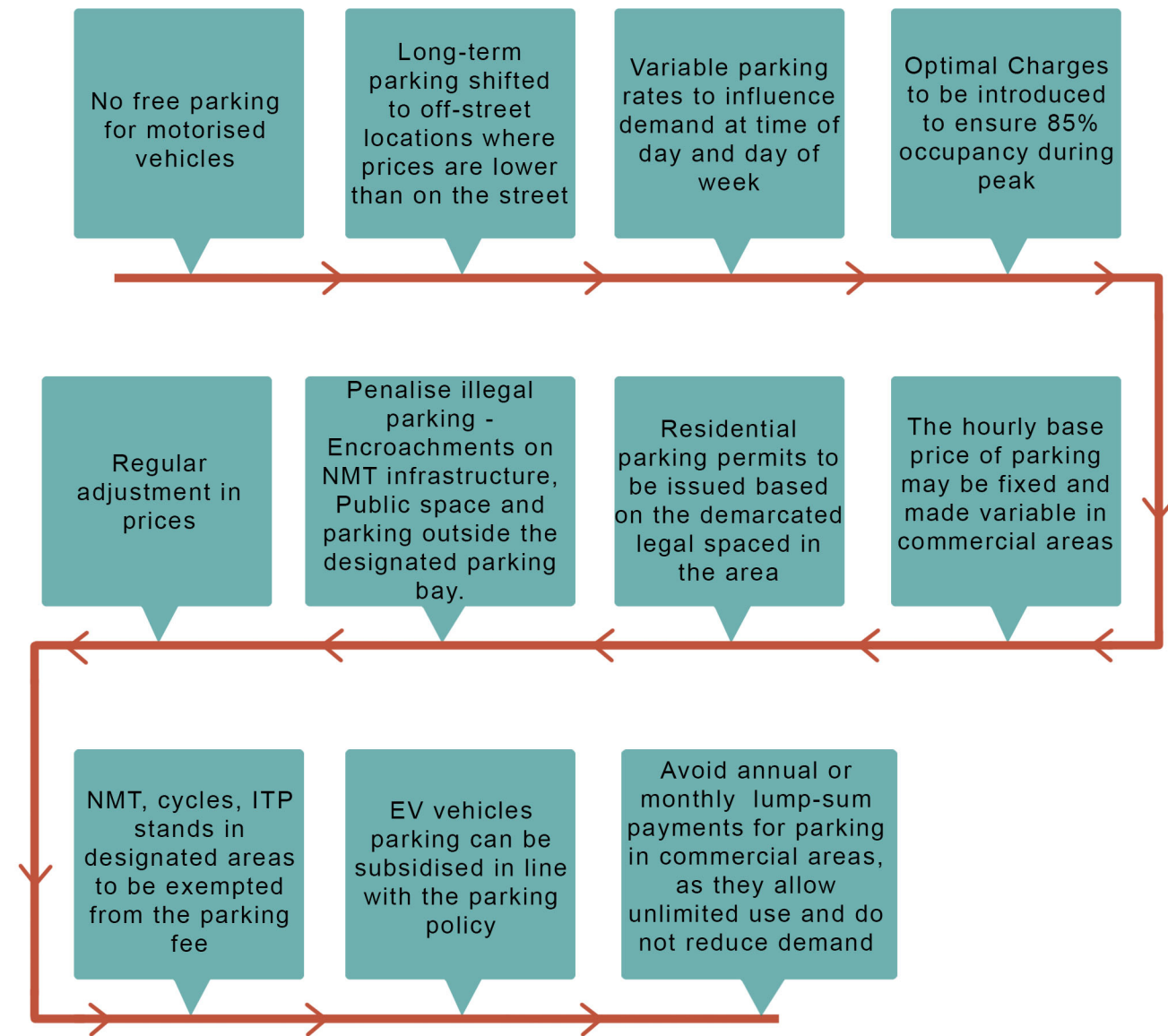


Figure 16: Steps to implement parking pricing

3.6 PAMP IMPLEMENTATION

Once PAMP is prepared, implementing the same on ground is a major task. This section details the recommended institutional setup with the roles and responsibilities of all the stakeholders, financing, enforcement rules and regulations, contractual management, and monitoring of the proposed PAMP.

3.6.1 FINANCING THE PAMP

Parking fees revenue and enforcement-related revenue should cover the costs of the whole on-street parking management effort including planning, implementation and O&M (operations and management) of parking infrastructure in the area.

It is generally observed that on-street charges can provide a revenue surplus for local authorities, which could be put into the Urban Transport Fund (UTF), and used for improving lighting, signage's, cycling and pedestrian infrastructure in the area. Part of the revenue can also be used to cover the cost of enforcement apart from investment in aids that help in enforcement e.g., CCTV cameras etc.

In case of off-street parking multi-level parking, it should be implemented on a PPP basis, with the parking contractor taking additional responsibility of providing infrastructure for managing the area.



Figure 17: Sources of financing PAMP

3.6.2 INSTITUTIONAL SETUP

The BDA Planning cell shall be responsible for the policy and planning decisions of parking management. A parking cell is proposed under BMC which will work under CPMC for implementing parking management plan approved by BDA planning cell. They shall be responsible for tendering and contracting out parking areas and coordination with other bodies for smooth implementation of the plan.

Enforcement shall be done by traffic police and shall report to BMC parking cell. BSCL parking cell shall monitor performance and help in updating the technology for parking management.

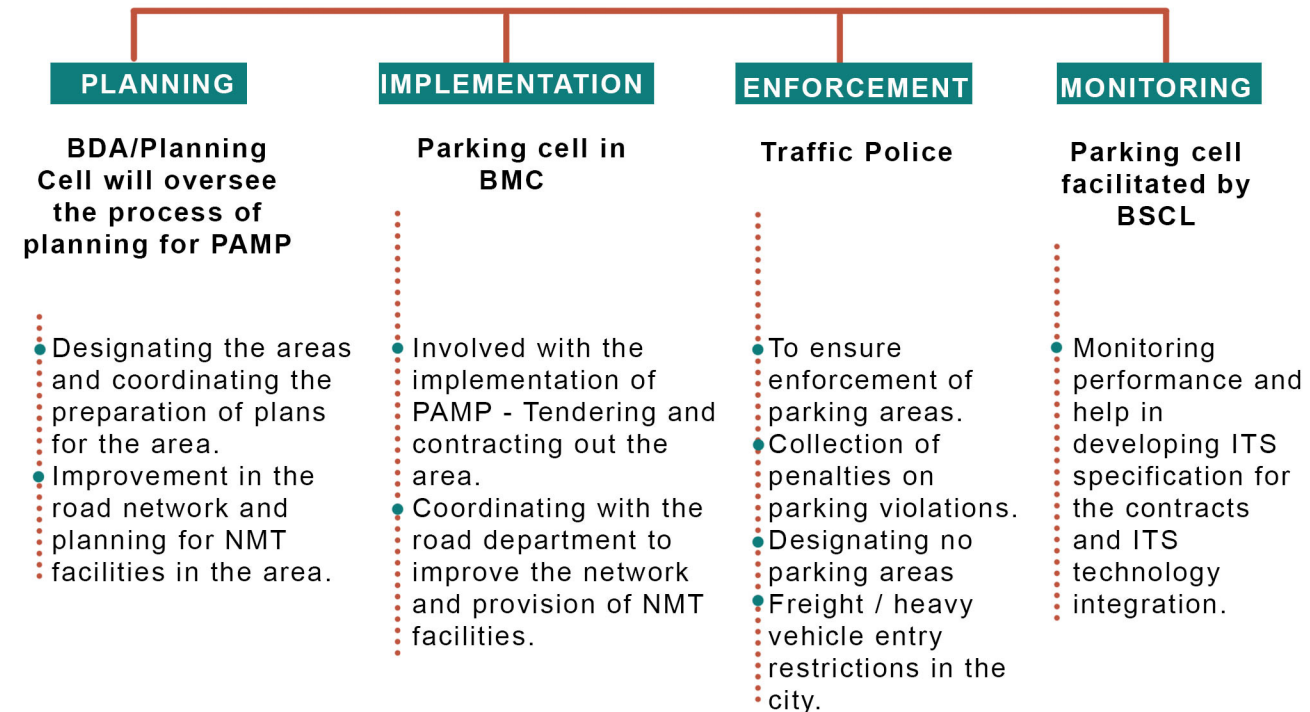


Figure 18: Roles and responsibilities

The success of PAMP will depend on the implementation mechanism. PAMPs should ideally be developed and monitored by a single agency for easier implementation, enforcement, and greater accountability. The first step is to understand the existing stakeholder organizations and their roles and responsibilities in the same with respect to parking.

1 UNIFIED METROPOLITAN TRANSPORT AUTHORITY (UMTA)

(UMTA) is proposed to review the implementation and compliance of the parking policy of Bhubaneswar and shall be approving agency for all parking policy matters.

2 BHUBANESWAR MUNICIPAL CORPORATION (BMC)

Proposed parking cell in BMC shall be responsible for implementation of the parking policy under guidance of CPMC.

3 BHUBANESWAR DEVELOPMENT AUTHORITY (BDA)

BDA shall be responsible for defining parking norms as part of the building regulations, and street design guidelines.

4 BHUBANESWAR SMART CITY LIMITED - BSCL

BSCL shall be responsible for participatory decision-making, responsible governance and open access to information and technology, to be a transit-oriented city (Travel Demand Management (TDM) part of the same strategy.)

5 TRAFFIC POLICE

shall be responsible for enforcement of parking, declaring parking and no parking zones, entry restrictions on freight parking. All enforcement shall be done by traffic police in coordination with parking wardens assigned to each location. The illegal parked vehicles shall be towed or immobilized by clamping. The infrastructure for enforcement shall be improved along with introduction of private partners for enforcement.

3.6.3 PARKING CONTRACT MANAGEMENT

The current parking management system follows the PPP model, parking locations in a zone are tendered out for a period of one or two years and given to a private agency for management. The PPP system shall be continued but the contracts need to be managed to ensure contractor performance and correct implementation of PAMP. This includes complaint resolution, revenue collected, maintenance of infrastructure and patrolling hours. This assessment would ensure that parking is managed at a high standard and users have no cause for complaint.

ASSESSMENT PERFORMANCE OF CONTRACTOR

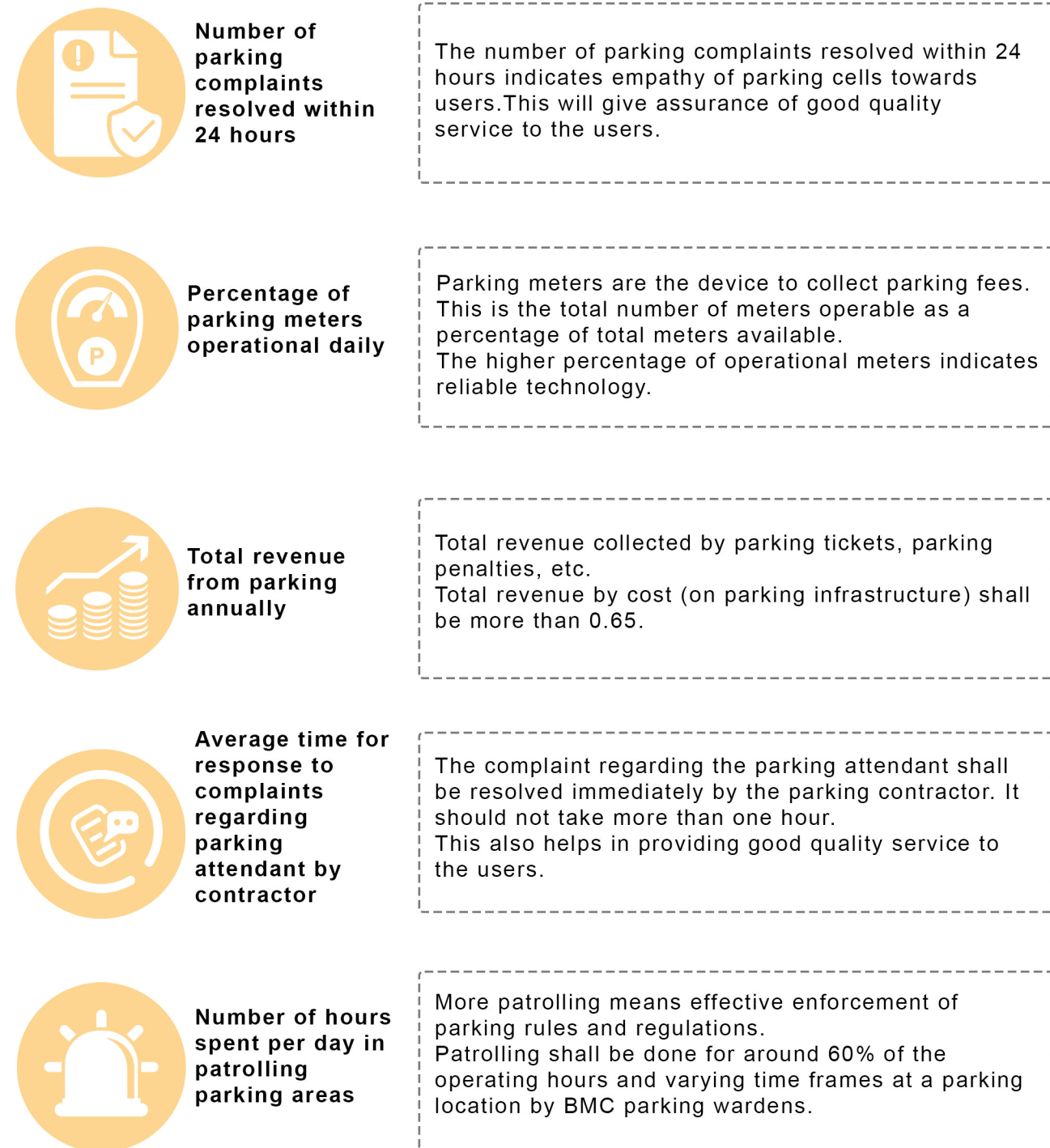


Figure 19: Assessing contractor performance

3.6.4 PAMP ASSESSMENT

The PAMP effectiveness should be checked periodically. This can be done through the following steps:

- Interview business and property owners and get their reactions and feelings – do they still support the original solutions?
- Interview residents get what their experiences in terms of parking and quality of NMT/Public space environment
- Analyze the revenue generated from fees and fines and assess the effectiveness of the adjudication system
- Assess the effectiveness of the marketing and promotional program



Source : CoE-UT, 2021



Bhubaneswar city is experiencing rapid growth in population. The motorisation rates are rapid, leading to increased vehicular traffic, congestion, and increased demand for parking. Without a parking management system in place, people tend to park vehicles on the street haphazardly, vehicles would spill over on to streets resulting in clogging of the network and may at times be the cause of violence. Hence, parking management is an important strategy towards addressing these inefficiencies in the transportation system.

In view of this Bhubaneswar Municipal Corporation has prepared a progressive parking policy. To aid the effective implementation of the policy, parking management plans are to be prepared for specific areas facing problems. The objective of this tool is to provide guidance to prepare Parking Area Management Plans (PAMP).

The PAMP toolkit provides step-by-step guidance to planners, policymakers, and implementing agencies to translate the strategic vision of the city as provided in the LCMP and parking policy to the ground. The PAMP tool has been demonstrated taking Master Canteen and KIIT University areas.



Source : CoE-UT, 2021

ANNEXURE



Source : CoE-UT, 2021

A-3. ACTIVITY SURVEY

Parking Area Management Plan for Bhubaneswar											
Activity survey											
Form No. :		Name of Surveyor:			Day & Date:			Time of survey:			
Type of survey location*:				Survey location coordinates:							
Address of location:											
Name of surveyed person:						Telephone No.					
Employees Details											
Number of Employees:		Office Hours/Operational Hours: 10:00 am - 8:00 pm			Travel mode of employees		Car: 1	2W: 1	Walk: 1	Cycle	
Availability of parking within premises?			Yes	No	If yes:		Area of available parking space: 30 sq mt. (or no. of vehicles parked)				
If no, where are the vehicles parked?				How much vehicles can be parked?			Car	2W	Walk	Cycle	
Visitors Details											
Number of daily visitors		Visitng time (min)		Travel mode of visitors (Avg %)		Car: 25%	2W: 50%	Walk	Cycle	LCV / MA	Others
Availability of parking within the premises?			Yes	No	If yes:		What is the capacity of available marked/official parking space?				
For how much time, are the vehicles parked? (mins)				if no:		Where are the vehicles parked?					
Loading/unloading activity Details											
Is loading/unloading required?		Yes	No	If yes, what vehicle is used?		LCV	MAV	Other (please specify):			
Parking time of vehicles? 8:00 - 8:30 AM (mention frequency of delivery)		Availability of parking within premises?		Yes	No	If yes: What is the capacity of available parking?					
		Availability of parking bays near premises?		Yes	No	If no: Where are the vehicles parked?					
		For how much time vehicles are parked? (mins)									
Codes											
Type of survey location	1. Retail Shops	2. Markets	3. Restaurants/Hotels	4. Offices	5. Malls	6. Warehouses / Godowns					
						7. Others (Please specify)					

A-5. STAKEHOLDER CONSULTATION QUESTIONNAIRE

General Information

Name -
Mobile Number -
Profession -
Email ID -

Is this property your Home Business Both Other
If 'other' please specify

How many vehicles are there in the above property? Car 2W Cycle Others
Number

How many of these are parked on the street? None One Two Three
If more please specify

Do you have access to off street parking facilities? Yes No

Parking issues

Are you happy with the current parking situation in your road? Yes No

Do you regularly find it difficult to find a space to park in your road? Yes No

If yes, at what times do these problems occur? (Please tick all boxes that apply)
Morning Afternoon Evening Night
Mon- Fri Sat - Sun

Do you ever have to park in neighbouring roads because there is no space in your own road? Yes No

Do you find vehicles are parked obstructively, unfairly and/or inconsiderately in your road? Yes No

If yes, please give details (tick all boxes that apply)

Footway parking	Double parking	Vehicles left for long periods of time	Obstructions to access/driveway
Vehicles not parking parallel to the kerb	Taking up more space than necessary	Obstructions to through traffic	Inconsiderate businesses / customers
Inconsiderate residents /visitors	Other (Please specify)		

Do you find it difficult to turn at junctions in your road due to parked vehicles? Yes No
If yes, please specify the road names of the junction

Do parked vehicles in your road cause you problems as a pedestrian or non motorist (i.e. as a cyclist etc)? Yes No

If yes, please give details (tick all boxes that apply)

Obstructed junctions	footpath parking	Inconsiderate parking	Obstructions to bus stops
Obstructed pedestrian crossing	Dangerous for cyclists	Problems for pushchairs/wheelchairs	Heavy parking causing obstructions
Other (Please Specify)			

Do your visitors have problems finding a parking space in your road?

Large vehicles /commercial vehicles parked taking up all the space	Problems only during school drop-off and pick-up times	Heavy parking due to non-residents/business users	No parking available for visitors
Too many parking restrictions in the road or immediate area	Problems due to inconsiderate parking	Other (Please Specify).....	

If yes, at what times do these problems occur? Morning Afternoon Evening Night
Mon- Fri Sat - Sun

When parking, do you experience problems on a regular basis from any outside public or business facility in close proximity to your road? (For example, schools, hospitals/medical centres, parks and recreation centres, public transport services, shops and restaurants, etc) Yes No

Parking charges in your area Affordable/ Too High/ Too Low/ Don't Know

Parking Overall
In your opinion, how would you describe the number of parked vehicles in the section of road around your property? Very-High High Moderate Low Very-Low

Would you like your road to be included as part of a Resident Permit Parking Area? Yes No

Vissioning
What are your expectations from parking managing in your area?

Reduce congestion	provide good walkable spaces	hassle free parking	reduction in accidents
improving commercial attractiveness	Other please specify		



This report was undertaken as a part of the “Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT)”, a project implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and the Ministry of Housing and Urban Affairs (MoHUA), Government of India and commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). Under the aegis of the Green Urban Mobility Partnership between Germany and India, SMART-SUT aims to facilitate and improve the planning and implementation of sustainable urban transport systems in Indian states and cities.