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Coimbatore City Municipal Corporation

Green Urban Mobility Partnership

CURRICULUM AND TRAINING MODULE FOR CAPACITY ENHANCEMENT FOR SAFE STREET DESIGN AND ENABLING NMT INFRASTRUCTURE

VOLUME 2: CURRICULUM AND MODULES

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EXIT
TEAM-3
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1. Introduction

Project context

In the bilateral Government to Government Negotiations 2015, the Government of India and Germany had agreed to jointly launch a technical cooperation fostering sustainable urban transport system. Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) GmbH implements this project with Ministry of Housing and Urban Affairs as its political partner. The objective of the "Integrated Sustainable Urban Transport Systems for Smart Cities (SMART-SUT)" project is to improve the planning and implementation of sustainable urban transport in selected Indian cities. The implementation focuses on the pilot cities of Bhubaneswar, Coimbatore, and Kochi, which were selected by the German Government for special support on their way to becoming a Smart City.

Against this background, a Capacity Development Strategy (CDS) framework was developed by the SMART-SUT project to support relevant state and city institutions to improve planning and implementation of sustainable urban transport in Coimbatore, by developing common understanding of the activities involved and promoting coordinated action. The CDS sought to answer the following questions-

1. **What capacities are present within the existing system for developing strategies, making cooperation sustainable, taking decisions and managing processes? What action is needed as a result?**

2. **What needs to change and who needs to change what, so that the desired objectives and results will be achieved? How can that take place? Who needs to learn what on which level, so that the changes can be sustainable and mainstreamed?**

3. **How can the SMART-SUT project bring about a change in co-operation systems and enabling frameworks, keeping in mind the current socio-political contexts?**

Framework for this assessment

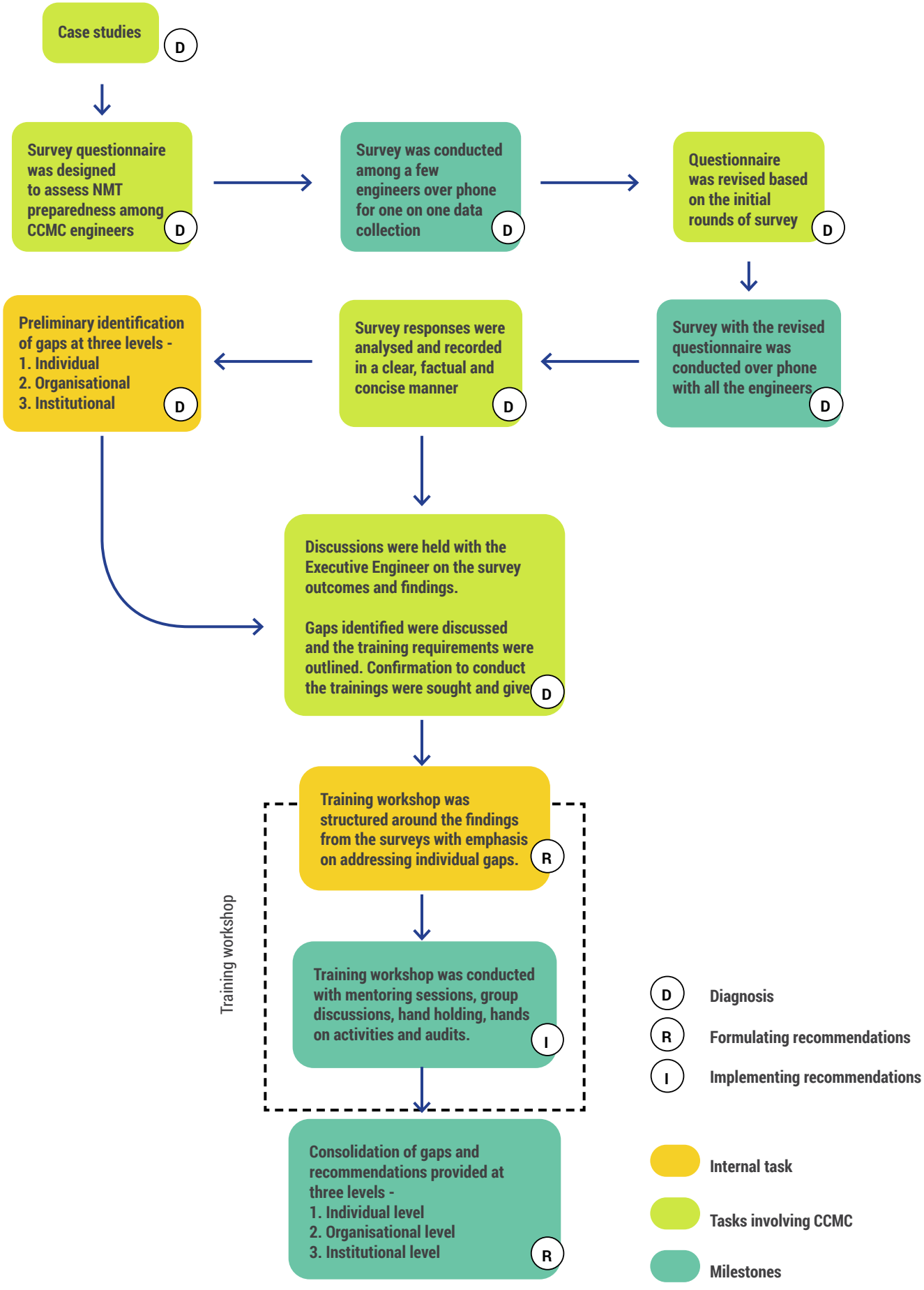
In Coimbatore, the CDS framework is centred around the Coimbatore City Municipal Corporation. The methodology adopted for this assignment is outlined in the work flow diagram as shown in the following page. The methodology is embedded with three broad objectives -

1. Diagnosis
2. Formulating recommendations
3. Implementing recommendations

For the purpose of this capacity assessment and enhancement plan, the entire research and analysis is consistently carried out and presented under 5 main components of realizing NMT infrastructure-

Standards & Guidelines	This sections covers the questions regarding road standards, transportation policies, and important concepts in NMT projects.
Design, Planning, Materials & Specifications	This section covers questions regarding street design process, level of knowledge on various material specifications and components of NMT projects such as - street hierarchies, walking & cycling facilities, barrier free environment etc.
Tendering process and Budgeting	This section is directed towards level of knowledge regarding the tendering and funding procedures for different projects as well as maintenance.
Implementation and Operations & Maintenance	This section of the survey covers the implementation aspect of NMT projects, with focus on inter agency coordination during implementation and other processes involved in this phase.
Enabling Frameworks	This section is directed towards finding the required amount of training and the kind of gaps the engineers experience frequently.

Work flow of the project



Participants of the training program conducted for CCMC engineers playing the NMT game

2. Purpose of this document

This document is intended to offer comprehensive guidance for staff of urban local bodies to build capacity to take up projects with an emphasis on non-motorized transport and their implementation across Indian cities. This document has been prepared in partnership with the municipal corporation of Coimbatore as an aid to creating long term measures regarding NMT knowledge and processes. By using this toolkit provided in this document, Measures to improve NMT readiness within municipal bodies in Tamil Nadu can be institutionalised. This toolkit is organised in two parts -

Part A - Capacity Enhancement Program for creating Safe Streets and enabling NMT infrastructure

which outlines the following:

- Objectives of the training program
- General prerequisites for conducting the training program
- Structure of the training program
- Prerequisites for each day of the training program
- Activities involved
- Objectives and learning outcomes of each activity
- Material and logistics requirements for each activity

Part B - Instructor Manual

comprised of:

- Instructions for training instructors to conduct the activities outlined in the training program
- Links to training materials (presentations and print material)

3. *Part A – Capacity Enhancement Program for creating Safe Streets and enabling NMT infrastructure*

- Objectives of the training program
- Recommended structure of the training program
- General prerequisites for organising and conducting the training program on NMT readiness
- Prerequisites for each day of the training program
- Activity wise description

1/ Objectives of the training program

1. To impart a basic understanding of the processes involved in the conceptualization and implementation of NMT projects.
2. To help the participants gain a practical sense of challenges faced by pedestrians while using streets.
3. To create awareness about the needs and issues from the perspective of different user groups that inhabit a street.
4. To give a hands-on experience to the participants on street documentation and analysis as the basic requirement for taking up NMT projects in future.
5. To help participants understand the value of non-motorised transport modes over other modes of transportation.
6. To help learn about designing street sections and intersection design by strategically placing the street elements to solve the challenges of the site.
7. To give the participants a hands-on experience with designing streets with an emphasis on non-motorised transport as as way to achieve safe streets for all.
8. To help them understand how to deal with above ground utility design in the context of walkability.
9. To impart understanding on tactical urbanism as a way to test their designs on the ground.
10. To introduce the participants to the basics of network planning for non-motorised transport.

2/ Recommended structure of the training program

The workshop should be conducted for the span of 6 days, This is required to ensure that all the activities are conducted and sufficient discussions and reviews are conducted on the activities undertaken. The training should ideally be conducted continuously for the span of 6 days, but the availability of the engineers should also be taken into consideration.

It is essential to undertake all the activities mentioned in the schedule below to give the engineers a holistic understanding of designing and executing NMT priority projects.

Day	*Start*	*End*	*Activity*	*Duration*	*Location*	*Training Personnel required*
Day 1: General Sensitization workshop	10 00	10 20	Introductory presentation Overview of the workshop - Objectives and activities	20 minutes	Indoor	Instructor: 1
	10 20	10 35	Tea break	15 minutes	Indoor	
	10 35	11 30	Tutorial on conducting Pedestrian Environment Audit - Part 1	55 minutes	Indoor	Instructor: 1
	11 30	**13 30**	**Pedestrian Environment Audit - Part 1**	2 hours	Outdoor	*Facilitators: 1 for two teams*
	13 30	14 30	Lunch break	1 hour	Indoor	
	14 15	15 45	Creating awareness to prioritise NMT on our streets - NMT Gaming session	1 hour 30 minutes	Indoor	Facilitators: 1 per table/ game board
	15 45	16 00	Tea break	15 minutes	Indoor	
	16 00	16 30	Introduction to network planning for NMT	30 minutes	Indoor	Instructor: 1
	16 30	17 00	Mapping user groups based on observations from Pedestrian Environment Audit - Part 1	30 minutes	Indoor	Instructor: 1
Day 2: Understanding the site and its users	10 00	10 15	Introduction to Day 2 activities	15 minutes	Indoor	Instructor: 1
	10 15	10 45	Presentation of outcomes of Pedestrian environment audit - Part 1	30 minutes	Indoor	Instructor: 1
	10 45	11 00	Tea break	15 minutes	Indoor	
	11 00	12 00	Role play exercise	1 hour	Indoor	Facilitators: 2
	12 00	13 00	Mapping user groups and their needs	1 hour	Indoor	Facilitators: 1 per team
	13 00	14 00	Lunch break	1 hour	Indoor	
	14 00	14 45	Tutorial on conducting Pedestrian Environment Audit - Part 2	45 minutes	Indoor	Instructor: 1
	14 45	18 00	**Pedestrian Environment Audit - Part 2**	3 hours and 15 minutes	Outdoor	*Facilitators: 1 per team*

Day	Start	End	Activity	Duration	Location	Training Personnel required
Day 3: Designing an NMT corridor-1	10 00	10 15	Introduction to Day 3 activities	30 minutes	Indoor	*Instructor: 1*
	10 15	10 30	Tutorial on Designing the street section	15 minutes		*Instructor: 1*
	10 30	10 45	Tea break	15 minutes	Indoor	
	10 45	13 30	**Designing the street section**	2 hours 45 minutes	Indoor	*Facilitators: 1 per team*
	13 30	14 30	Lunch break	1 hour	Indoor	
	14 30	16 30	**Translating the street section into a plan**	2 hours	Indoor	*Facilitators: 1 per team*
	16 30	16 45	Tea break	15 minutes	Indoor	
	16 45	17 00	**Working with above grade utilities**	15 minutes	Indoor	*Instructor: 1*
Day 4: Designing an NMT corridor-2	10 00	10 45	Tutorial on Intersection design	45 minutes	Indoor	Instructor: 1
	10 45	11 00	Tea break	15 minutes	Indoor	
	11 00	12 30	Designing the Intersection fix	1 hour 30 minutes	Indoor	Facilitators: 1 per team
	12 30	13 30	Preparation for first jury/ review session	1 hour		Facilitators: 1 per team
	13 30	14 30	Lunch break	1 hour	Indoor	
	14 30	16 30	**Review session**	2 hours	Indoor	
	16 30	17 00	Tea break and Closing Comments	30 minutes	Indoor	
Day 5: Testing the design	10 00	11 30	Continuation of street design working session	1 hour 30 minutes	Indoor	Facilitators: 1 per team
	11 30	11 45	Tea break	15 minutes	Indoor	
	11 45	12 30	Introduction to tactical urbanism	45 minutes	Indoor	Instructor: 1
	12 30	13 30	Lunch break	1 hour	Indoor	
	13 30	17 00	**Testing of design on ground - tactical urbanism**	3 hours 30 minutes	Outdoor	Facilitators: 1 per team
Day 5: Exhibiting ideas and designs	10 00	11 15	Preparation for final review	1 hour 15 minutes	Indoor	Facilitators: 1 per team
	11 15	11 30	Tea break	15 minutes	Indoor	
	11 30	13 00	Preparation for final review	1 hour 30 minutes	Indoor	Facilitators: 1 per team
	13 00	14 00	Lunch break	1 hour	Indoor	
	14 00	16 30	**Final review session**	2 hours 30 minutes	Indoor	
	16 30	16 45	Tea break	15 min	Indoor	
	16 45	17 00	Closing comments & feedback session	15 minutes	Indoor	Instructor: 1

Note: The timings on the above structure have been provided as an example. It is recommended to not change the sequence of the activities throughout the workshop as the flow follows the general process involved while working on NMT projects. For example, the workshop begins with auditing a street and progresses to making design proposals for that street and concludes with testing the design on ground through a tactical urbanism project.

3/ General prerequisites for organising and conducting the training program on NMT readiness

It is recommended that this training program on NMT readiness should be conducted for city engineers at all levels especially those working on projects involving streets.

Pre-training prerequisites:

1. A set number of streets/ street stretches need to be identified for the participants to work with during the course of the workshop.
2. Based on a calculation of allocating a 0.5 kilometre street segment for a team of two participants, the total length of all the streets should be a minimum of 3.5 kilometres and a maximum of 7.5 kilometres. 0.5 kilometre is selected as the segment length as it is the maximum distance that can be walked without fatigue in one go.
3. With regard to street stretch selection-
    - It is Ideal to choose commercial streets with mixed landuse and dense population, so that there is complexity in issues to be understood and resolved.
    - Each street stretch must have at least one major intersection.
    - It is recommended to consider streets are due for upgrading under any project schemes or the regular maintenance schedule
    - The selected streets should be accessible for documentation and testing of design on ground. For example, streets which have construction or maintenance activities must be avoided. Likewise, streets on which there is spillover of cultural/ festival related activities at the time of the workshop should be avoided.
4. Instructors must familiarise themselves with the entire structure of the workshop as well as the objectives and outcomes for each activity prior to conducting the workshop.
5. All logistical arrangements must be adhered to as mentioned for each day/ activity of the workshop.
6. Invitations to other stakeholders such as the Commissioner, Traffic police, other city officials, subject matter experts, citizen group representatives for the design review sessions must be given and confirmations procured well in advance of the start of the workshop.
7. Other recommendations:
    - Instructors can study NMT projects in other Indian cities to use as references while making presentations.
    - A survey to understand the NMT knowledge of the participants can be conducted prior to conducting the workshop.

Post-training prerequisites:

1. An exhibition of the outcomes of the workshop can be organised to invite public inputs on the designs.

4/ Prerequisites for each day of the training program

Day 1 - General Sensitization workshop

- Ensure that there are adequate number of facilitators based on the number of participants in a 1:4 ratio.
- Ensure that there is a 400-500 metre street segment with one or two intersections identified for a team of two participants to document and work with.
- Ensure the following are printed
  - Pedestrian Environment Audit - Part 1 - One form per participant (Find this form here)
  - Satellite map of the entire city with the set of streets identified by the instructor marked on it - One copy of this map must be printed in large format size.
  - All contents of the board game - One set for every six participants
- It is recommended that the facilitators are familiar with their roles and responsibilities for each activity for the day. It is recommended that they visit the street stretches and play the NMT game prior to the workshop.
- The instructor is required to compile a set of reference images which are preferably from the local context to support the orientation session for conducting the Pedestrian Environment Audit - Part 1.
- Ensure that the digital version of the Pedestrian Environment Audit - Part 1 is ready for facilitators to enter the data immediately after returning from the site visit.

Day 2 - Understanding the site and its users

- Ensure that there are adequate number of facilitators based on the number of participants in a 1:5 ratio.
- Ensure that the data entry of the audit responses is complete and a quick compilation of the outcomes emphasizing the gaps/issues identified are in presentation format.
- Divide the participant pool into groups of 5 members each and assign one of the identified street segments measuring 400-500m and including 1 or 2 major intersections in each segment
- Ensure the following are printed:
  - Role play cards (Find these cards here)
  - Survey drawings of all the selected streets in 1:500 scale across multiple A3 size sheets with clear overlaps for easy identification - One set for each participant and one set for the facilitator. Use Open Street Map or Google Map Terrain View if survey drawings are not available.
  - Open Street Map or Google Terrain View map of 1 kilometre radius around each segment in 1:1000 or appropriate scale (1 copy per group)
  - Pedestrian environment audit - Part 2 - One form per participant
- The instructor is required to prepare a presentation on how to conduct the Pedestrian Environment Audit - Part 2 on site using the reference slide deck provided in the instructor guidance section of this document.

Day 3 - Designing a NMT corridor - 1

- Ensure these items are printed for the session
  - Street section elements and dimension chart - One set for each group
- All the elements for the street design exercise to be arranged at the table for each group prior to the start of the exercise.

Day 4 - Designing a NMT corridor - 2

- Instructor is expected to gather case examples and references of street design drawings showing detailing of the street right-of-way and intersection designs for participants to observe and absorb into their own designs.
- Ensure that invitees for the design review session will be there and are aware that they are expected to provide inputs on the design for improvement

Day 5 - Testing the design

- Ensure the availability of all the requirements for the on ground testing such as cones, ropes, chalk, tape.
- Ensure that all necessary permissions are procured from the traffic police and other relevant agencies..

Day 6 - Exhibiting ideas and designs

- Ensure that invitees for the design review session will be there and are aware that they are expected to provide inputs on the design for improvement
- Ensure all arrangements are done for the public exhibition (if required)

5/ Activity wise description

Activity 1 – Introductory presentation on Safe Streets for All

Day on which this activity needs to be conducted: Day 01

Location: Indoor

Number of facilitators: 1

Duration of the activity: 20 minutes

This activity sets the tone of the workshop by introducing the participants to the concept of safe streets for all. The participants are also apprised of the objectives of the workshop to set the context for all the activities.

Objectives

- To introduce concepts of safe streets for all
- To bring about a basic understanding of NMT projects and its implementation in the Indian context.
- To outline the basic objectives and time table of the training workshop

Outcomes

- Participants develop an understanding of the need for NMT components while designing streets.

Logistical requirement

- Projector and laptop

To know further details about materials and instructions for conducting this activity - **click here**

*Activity 2 – **Tutorial and Pedestrian environment audit – Part 1***

Day on which this activity needs to be conducted: Day 01

Location: Indoor & Outdoor

Number of facilitators: 1 per group.

Duration of the activity: 55 minute indoor tutorial and 2 hours on-site activity

This activity is a hands on exercise for participants to observe and understand the various factors that discourage walkability at different times of the day. The audit measures the usability of the streets across eight aspects - Footpath, Crossing/ Intersection/ Signage, Personal safety, Adjacent traffic, Aesthetics and Amenities, and, Public transport/ Para transit.

Presentation on audit form and clarification of doubts → *On ground survey of the selected stretch* → *Presentation / Discussions on learnings from pedestrian audit*

Objectives

- To gain a practical sense of the challenges faced by pedestrians while walking.
- To understand the existing condition of the street under the lens of safety, comfort and convenience for the pedestrians.
- To identify different user groups associated with the activities and usability of the street

Outcomes

- Participants understand how to visually audit a street to understand the issues faced by various users of the streets with respect to safety and comfort

Materials required

- Pens / markers
- Writing pad
- Prints of audit forms (one for each participants)

Logistical requirement

- Transport to drop people at site and pick them up
- Mobile / cameras
- Projector & laptop

To know further details about materials and instructions for conducting this activity - **click here**

Activity 3 – Creating awareness to prioritise NMT on our streets – Gaming session

Day on which this activity needs to be conducted: Day 01

Location: Indoor

Number of facilitators: 1 per group - 6 participants per group

Duration of the activity: 1 hour 30 minutes

The activity is designed to develop understanding about the different modes of transportation and the pros and cons associated with each mode; eventually highlighting the significance of NMT through a creative board game format. The game format engages the interest of the participants and turns into an effective learning activity.

Objectives

- To help the participants understand the significance and benefits of NMT over other modes of transportation
- To make the participants aware of integration of different transport modes in a city.

Outcomes

- Participants learn about the the importance of mobility options in a city as well as how to make informed choices about which mode to use.
- Participants also learn about the consequences of their choice of transportation mode from a time and cost benefit perspective.

Materials required

- Pencil
- Game board & other contents
- Dice

To know further details about materials and instructions for conducting this activity - **click here**

Activity 4 – Introduction to network planning for NMT

Day on which this activity needs to be conducted: Day 01

Location: Indoor

Number of facilitators: 1 person

Duration of the activity: 30 minutes

The activity orients the participants to a larger city level context and understand NMT projects through the lens of city wide networks as opposed to standalone pieces of infrastructure.

Identification of key destinations in the city

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Creating an NMT network connecting these destinations

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Discussion on various options of NMT network that could be created

Objectives

- To help the participants understand NMT projects as a city level network connecting key destinations in a city.
- To create an NMT network connecting various identified destinations.

Outcomes

- Participants learn to see NMT projects as a network instead of disconnected pieces of infrastructure.

Materials required

- Pen / Marker
- Sticky notes
- Printout of the city's satellite map with the identified set of streets marked.

Logistical requirement

- Pin up arrangements - (Easels, board, tape / ropes/ etc.)

To know further details about materials and instructions for conducting this activity - **click here**

*Activity 5 – **Role play exercise***

Day on which this activity needs to be conducted: Day 01

Location: Indoor

Number of facilitators: 2 - 3 people

Duration of the activity: 1 hour

Cards with roles are handed out to teams of participants. Participants need to reflect on the walkability levels of the street where they conducted the pedestrian environment audit from the perspective of the user assigned to them through the role play cards.

Objectives

- To make the participants aware of the various user groups on a street.
- To understand needs and issues faced by different user groups (pedestrians, cyclists, women, children, vendors, business owners etc.)

Outcomes

- Participants learn to be aware of the needs and issues of various user groups on a street and that an efficient street design should keep all the users as priority.

Materials required

- Role play cards
- Notepad
- Pen / Marker

To know further details about materials and instructions for conducting this activity - **click here**

Activity 6 – Mapping user groups and their needs

Day on which this activity needs to be conducted: Day 02/ 03

Location: Indoor

Number of facilitators: 1 person

Duration of the activity: 1 hour

In continuation of the role play exercise, this activity encourages participants to map the different user groups as identified during the pedestrian environment audit and understand their needs and issues.

Identifying key user groups in pedestrian audit –1

↓

Framing questions and design of questionnaire

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Mapping user groups and their activities

↓

Analysing on needs and issues of each user group.

↓

Presentation on user analysis and discussion

Objectives

- To map various user groups and activities documented during technical audit.
- To help participants understand the role of various stakeholders in streets and analyse needs and issues of the each stakeholder/ user group.

Outcomes

- Participants learn about the role of various users/ stakeholders in a street including their needs and requirements.

Materials required

- Pen / Marker
- Chart paper
- Sticky notes

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board

To know further details about materials and instructions for conducting this activity - **click here**

*Activity 7 – **Pedestrian environment audit – Part 2***

Day on which this activity needs to be conducted: Day 02

Location: Indoor & Outdoor

Number of facilitators: 1 per group

Duration of the activity: 45 minutes indoor tutorial session and 3 hours 15 minutes on-site activity

The activity aims to develop an in depth understanding of the street by dealing with systematic data collection including detailed on site measurements of the street.

Presentation on how to conduct techincal audit and doubt clarificaiton → *On ground technical survey of the stretch* → *Presentation / Discussions on learnings from the audit*

Objectives

- To give a hands on experience on how to document streets.
- To gather data in a manner that it helps take design related decisions for the street.

Outcomes

- Participants learn how to document a street and collect data pertaining to traffic flows, counts, age and gender mix, vendor mapping and activity mapping.
- They also learn how to record this data in a manner that facilitates decision making while designing.

Materials required

- Counters
- Pens / markers
- Writing pad
- Prints of audit forms (one for each participants)
- Prints of base maps
- Measuring tape

Logistical requirement

- Transport required to drop people at site and pick them up
- Mobile / cameras
- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board

To know further details about materials and instructions for conducting this activity - **click here**

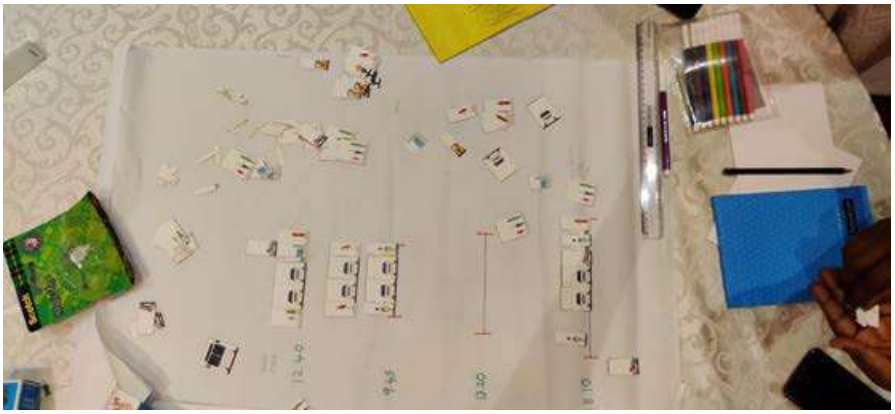
Activity 8 – Designing Safe streets for all

Day on which this activity needs to be conducted: Day 03

Location: Indoor

Number of facilitators: 1 per group

Duration of the activity: 3 hours



a. Designing the street section

The activity uses all the data collected from the on-site audits and verifications to design a reconfigured street section. Various street elements are provided in the form of cut outs which participants use to design a street section.

Tutorial on how to proceed with the activity → *Preparing 2–4 street section options with different combinations of elements* → *Discussion on the options to finalise one option to be translated to a plan*

Objectives

- To understand what a street right-of-way is and how various street elements are configured with the right-of-way.
- To be able to reconfigure an existing street right-of-way based on data collected from the pedestrian environment audits.

Outcomes

- Participants learn to arrive at options for reconfiguring a given street right-of-way.
- They also learn to integrate various user activities and elements based on data collected from the site.
- They also learn that there are many different possibilities for a street section and that they must chose the one that is equitable to most user groups.

Materials required

- Butter sheets / Chart papers
- Print out of street section elements
- Pen / Marker / sketch pens / Colour pencils
- Triangular Scale
- Scale

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board
- Drafting table / table

To know further details about materials and instructions for conducting this activity - **click here**

Day on which this activity needs to be conducted: Day 03

Location: Indoor

Number of facilitators: 1 per group

Duration of the activity: 2 hours

b. Translating the street section into a plan

The activity has participants translating their chosen street section into plan drawings.

Converting sections into plans

↓

Discussion on the options

↓

Resolving issues in design

Objectives

- To be able to translate a street section into a plan drawing and resolve any issues that may arise while doing so.

Outcomes

- Participants understand the feasibility of their proposed street sections as they see its applicability onto the street base map.
- Participants learn how to work with different scales.
- They also learn how to resolve issues while transferring a street section onto the street base map.

Materials required

- Butter sheets / Chart papers
- Print out of the segment map in 1:500 scale
- Pen / Marker / sketch pens / Colour pencils
- Triangular Scale
- Scale

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board
- One working table for each group

Day on which this activity needs to be conducted: Day 04

Location: Indoor

Number of facilitators: 2 -3 people

Duration of the activity: 2 hours 15 minutes

Objectives

- To give the participants an understanding of the principles of intersection design.
- To help the participants work on redesigning intersections on their street stretches.

Outcomes

- Participants get a hands on experience of working with intersection design based on collected data.
- Participants get a basic understanding of various conflicts / issues that arise from poor intersection design.

c. Intersection fix

In continuation of the previous activity, this activity introduces the principles of intersection design and apply these to their designs.

Tutorial on intersection design

↓

Discussion on the intersection design

↓

Resolving issues in design

Materials required

- Butter sheets / Chart papers
- Print out of the segment map in 1:500 scale
- Pen / Marker / sketch pens / Colour pencils
- Triangular Scale
- Scale

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board
- One working table for each group

Day on which this activity needs to be conducted: Day 04

Location: Indoor

Number of facilitators: 2 - 3 people

Duration of the activity: 15 minutes

d. Working with above grade utilities

The activity introduces the basics of utility design and their placement on street section. This activity is discussion based and participants share their knowledge on utility design as they encounter it in their daily line of work.

Presentation on learnings from Utility design practises

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Discussion on standards and codes of utility design

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Discussion on effective integration of utilities in street design

Objectives

- To introduce the concept of zoning utilities on the street and demonstrate how to place them on streets with least obstruction to other users.

Outcomes

- Participants learn the do's and dont's related to working with above-grade utilities.

Logistical requirement

- Projector
- Bulletin board

Activity 9 – Introduction to tactical urbanism

Day on which this activity needs to be conducted: Day 05

Location: Indoor and Outdoor

Number of facilitators: 2 - 3 people

Duration of the activity: 45 minute tutorial followed by 3 hours and 30 minutes on on-site activity

This activity introduces tactical urbanism* as a quick and effective approach to test designs before actually finalising them for construction.

*Tactical urbanism is a temporary arrangement of the proposed street design on the street using cones and rope to test the viability of the proposal

Presentation on tactical urbanism

↓

Testing of revised design on site

↓

Observing / recording the response of the users to the design

↓

Discussion on learnings from the activity

Objective

- To introduce the concept of tactical urbanism including its applications and benefits.
- To get participants to test their designs through a tactical urbanism approach and evaluate the designs based on how users respond to the temporary arrangements on the street.

Outcomes

- Participants learn about the significance and benefits of tactical urbanism towards successful implementation of NMT projects
- Participants get a hands on experience of implementing their design on site and are able to observe and evaluate what works and what doesn't.

Materials required

- Rope / Yarn
- Chalk powder
- Measuring Tape
- Cones
- Chalk

Logistical requirement

- Projector (for orientation & briefing)
- Transport required to drop off people at site and pick them up
- Mobile / cameras

To know further details about materials and instructions for conducting this activity - **click here**

*Activity 10 - **Design review and feedback***

Day on which this activity needs to be conducted: Day 06

Location: Indoor

Number of facilitators: 1-2 people

Duration of the activity: 2 hours

Design reviews are included as key milestones within the training program schedule for participants to take stock and present their designs to an audience in a way that aids the improvement of the proposed designs.

Objectives

- To give an opportunity for participants to take stock, clarify technical doubts and check adherence to standards and codes.
- To allow participants to hear from subject matter experts / associated department experts/ any other stakeholders and evaluate/ refine their designs.

Outcomes

- Participants learn the importance of a review process at various stages of the design process before finalising a design to take forward to construction.
- They also learn the need to consult with various stakeholders to finalise the design as opposed to working in silos.

Who to call for the review ?

- Other department officials e.g. traffic police
- Subject matter experts
- City officials
- Local resident group representatives
- Citizen group representatives
- NGOs working in the sector

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/ etc/ board pins.)
- Bulletin board
- One working table for each group

To know further details about materials and instructions for conducting this activity - **click here**


EXIT

4. *Part B – Instructor Manual*

This section contains specifics for instructors to successfully conduct workshops including guidance notes for conducting each activity along with material and printing requirements. This section is an add on to Part A - where each activity was elaborated on with objectives and outcomes. Each activity in this sections can be cross-referred with the corresponding activity from Part A to gain a holistic understanding. The activities covered in this section is as follows:

Activity 1 - **Introductory presentation on Safe Streets for All**

Activity 2 - **Pedestrian Environment Audit - Part 1**

Activity 3 - **Creating awareness to prioritise NMT on our streets - Gaming session**

Activity 4 - **Introduction to network planning for NMT**

Activity 5 - **Role play exercise**

Activity 6 - **Mapping user groups and their needs**

Activity 7 - **Pedestrian Environment Audit - Part 2**

Activity 8 - **Designing Safe streets for all**

Activity 9 - **Introduction to tactical urbanism**

Activity 10 - **Design review and feedback**

*Activity 1 – **Introductory presentation on Safe Streets for All***

Location
Indoor

Duration
20 minutes

General Instructions:

- Get to know the participant pool - their background, line of work, years of experience etc.
- Make the introductory presentation to the training program.
- Engage in an ice breaker discussion covering participants' expectations from the program as a way to make yourself comfortable with the group as well as to customise any of the activities based on this discussion.

Logistical requirement

- Projector & laptop

*Activity 2 – **Pedestrian environment audit – Part 1***

Location
Indoor

Duration
55 minutes

Preparing and orienting participants to the audit:

- Divide the participants in groups of two and one street segment needs to be alloted to each group.
- Ensure each question in the audit form is explained with references to the local context as a part of the orientation.
- Clarify where and how to record the data. For example:
  - Street: To be observed & recorded along the entire Right of Way (RoW) from property edge to property edge after walking along the property edge on both sides of the street
  - Intersection: All arms of the intersection to be recorded.
- Convey that the data is to be recorded both from the auditor's experience of the street and also based on observations during the audit as to how other users are experiencing the street.
- The participants need to be instructed to identify various user groups on site.

Location
Outdoor

Duration
2 hours

While at site:

- Ensure that participants walk along the entire stretch, on both sides of the street and then fill up all the questions in the audit form based on the observations made.
- Auditing on site can also be done digitally through an online form provided there is adequate access to technology.

Location
Indoor

Duration
30 minutes

Presenting the inferences:

- Create a presentation summarising all the key findings from audit.
- Initiate discussion to address findings and common gaps identified from the audit

Materials required

- Pens / markers
- Writing pad
- Prints of audit forms (one for each participants)

Logistical requirement

- Transport to drop people at site and pick them up
- Mobile / cameras
- Projector & laptop

Printing instructions:

S. No.	File to be printed	No. of pages	Size	Mode	Medium	Copies
1.	Pedestrian Environment Audit - Part 1	8	A4	Cover page - Colour; others - B & W	Paper	One for each participant

*Activity 3 – **Creating awareness to prioritise NMT on our streets – Gaming session***

Location
Indoor

Duration
1.5 hour

Setting up & facilitating the game:

- Finalise the number of boards as per the number of participants (maximum of 6 per board) and assign one facilitator per board to facilitate the game.
- Refer to the game rules for complete instructions on how to play the game.
- The contents of the board game must be sorted and arranged board wise prior to commencement of the game and not during the orientation of the game.
- It is recommended to have the game briefing done individually on the board rather than a single general orientation.
- The player with the maximum destinations reached and the highest amount of money at the end of the game wins. In case of a tie on the number of destinations - the person with the higher amount of money wins.
- Declare the winner for every board and also across all boards.

Materials required

- Pencil
- Game board & other contents
- Dice

Printing instructions:

S. No.	File to be printed	No. of pages	Size	Mode	Medium	Copies
1.	Game board rules	2	A4	B & W	Paper	1 copy/ per board
2.	Chance cards + Parking cards	7	A4	B & W	180 gsm board	1 copy/ per board
3.	Destination chits and player coins	1	A3	Colour	180 gsm board	1 copy/ per board
4.	Currency printing - Re 1	1	A4	Colour	Paper	7 copies/ per board
5.	Currency printing - Rs 5	1	A4	Colour	Paper	7 copies/ per board
6.	Currency printing - Rs 10	1	A4	Colour	Paper	6 copies/ per board
7.	Currency printing - Rs 50	1	A4	Colour	Paper	6 copies/ per board
8.	Currency printing - Rs 100	1	A4	Colour	Paper	3 copies/ per board
9.	Currency printing - Rs 200	1	A4	Colour	Paper	2 copies/ per board
10.	Green signal card	1	A3	Colour	180 gsm board	1 copy/ board
11.	Game board	1	A1	Colour	Foam board	1 copy/ board

Note: The contents shall be multiplied based on the number of boards needed according to the number of participants

*Activity 4 – **Introduction to network planning for NMT***

Location
Indoor

Duration
30 minutes

General Instructions:

- Ensure the city's satellite map is printed in an appropriate scale & size in large format with the identified set of streets marked on it.
- On the printed map of the city, ask the participants to identify and drop sticky notes on prominent landmarks, key destinations and transit nodes across the city.
- Once these have been marked, ask the participants to connect these markers via major/ minor roads to create a network.
- Discuss the opportunities and feasibility of converting these roads to NMT corridors.

Materials required

- Pen / Marker
- Sticky notes
- Printout of the city's satellite map with the identified set of streets marked.

Logistical requirement

- Pin up arrangements - (Essels, board, tape / ropes/etc.)

Printing instructions:

S. No.	To be printed	Size	Mode	Medium	Copies
1.	City Satellite map	As appropriate	Colour	As appropriate	1 copy

*Activity 5 – **Role play exercise***

Location
Indoor

Duration
1 hour

General Instructions:

- Distribute role play cards among the groups of participants; 1 card per group.
- Instruct the participants to come up with at least 3 challenges they would face on the street where they conducted the pedestrian environment audit on from the point of view of the role they have been assigned to in the card.
- Give the participants 10 minutes to discuss and write down the challenges they have identified.
- Instruct each group to individually speak on the role they have been assigned and the challenges they have identified.
- Encourage other participants to ask questions and discuss how these challenges can be resolved.

Materials required

- Role play cards
- Notepad
- Pen / Marker

Printing instructions:

S. No.	File to be printed	No. of pages	Size	Mode	Medium	Copies
1.	Role play cards	23	A5	Colour	Paper	2 sets

*Activity 6 – **Mapping user groups and their needs***

Location
Indoor

Duration
1 hour

General Instructions:

- Make a presentation on the wide range of user group categories related to street design.
- Instruct the participants to make a list of all the different users they identified during the pedestrian environment audit along with a set of questions to ask each user group with regard to walkability on the street.
- Discuss and review all the identified stakeholders and the questions.
- Instruct the participants on how to conduct interviews/ surveys with the user groups during part 2 of the Pedestrian environment audit.
- On conducting interviews, participants should be able arrive at a list of needs and challenges for each individual user group

Materials required

- Pen / Marker
- Chart paper
- Sticky notes

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board

*Activity 7 – **Pedestrian environment audit – Part 2***

Location
Indoor

Duration
45 minutes

Preparing and orienting participants to the audit:

- Divide the participant pool into groups of 5 members each and assign one of the identified street segments measuring 400-500m and including 1 or 2 major intersections in each segment and allot 1 segment to a group of 5.
- Ensure to give a detailed presentation on how and what data to record for each and every mapping and count in the Pedestrian environment audit - Part 2.

Location
Outdoor

Duration
3.5 hours

Conducting the audit:

- Instruct the participants on where exactly they need to be positioned to take the various counts and clarify their doubts on the site.

Materials required

- Counters
- Pens / markers
- Writing pad
- Prints of audit forms (one for each participants)
- Prints of base maps as mentioned below
- Measuring tape

Logistical requirement

- Transport required to drop off people at site and pick them up
- Mobile / cameras
- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board

Printing instructions:

S. No.	File to be printed	No. of pages	Size	Mode	Medium	Copies
1	Pedestrian environment audit	14	A4	B & W	Paper	One for each participant
2	Open Street Map or Google Terrain View map of one kilometre radius	1	as appropriate	Colour	Paper	2 copies per segment
3	Segmented plans for each stretch in 1:500	as per the no. of parts	A3	B & W	Paper	6 copies / segment
4	Base map of entire network containing all stretches	1	A1/ A0	Colour	Paper	1 copy

*Activity 8 - **Designing Safe streets for all***

Location
Indoor

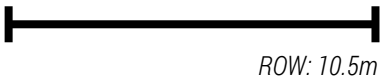
Duration
3 hours

a. Designing the street section

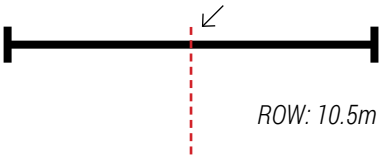
General Instructions:

- Make a brief introduction to the activity with the presentation.
- Ensure there is 1 facilitator for every group to guide the participants through the process.
- The steps listed below have to be explained to all the participants by the instructor:

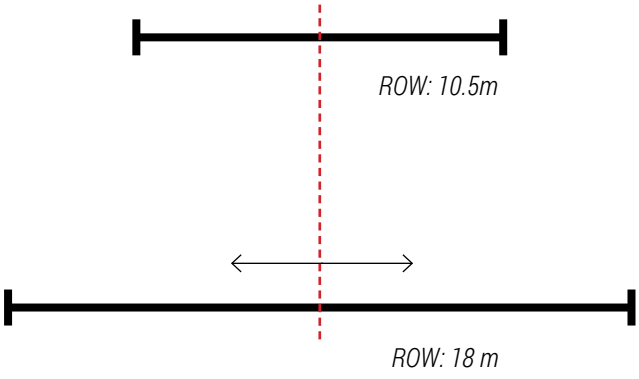
1. Instruct the participants to draw the minimum right-of-way which they measured in 1:100 scale.



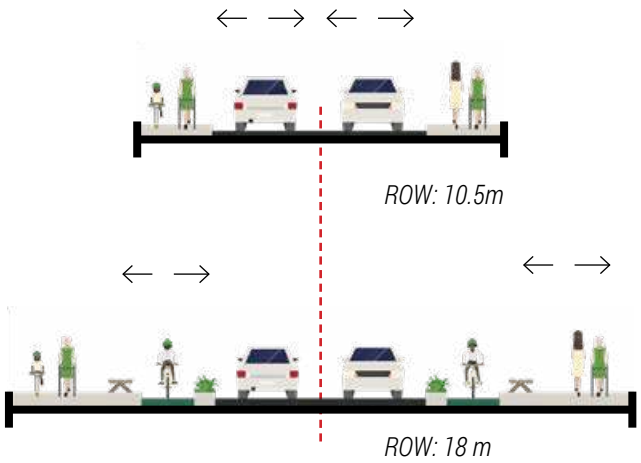
2. Next, instruct the participants to mark the mid point of the ROW and draw the centre line perpendicular to the ROW.



3. Keeping this centre line as a reference, instruct the participants to draw the ROW with the maximum width as shown below.



4 Instruct the participants to arrive at 4-5 street section options for the street ensuring continuity between the minimum and maximum right-of-ways .



- Encourage the participants to try out options that prioritise NMT and also accomodating all the user groups requirements.
- Discuss and review the sections' appropriateness to the site and all user group requirements as reflected from the Pedestrian environment audits.
- At the end of the discussion, ensure that participants finalize one option to be translated into a plan drawing.

Materials required

- Butter sheets / Chart papers
- Print out of street section elements
- Pen / Marker / sketch pens / Colour pencils
- Triangular Scale
- Scale

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board
- Drafting table / table

Printing instructions:

S. No.	File to be printed	No. of pages	Size	Mode	Medium	Copies
1	Street section elements	1	A3	Colour	180 GSM board	1 copy / group

Location
Indoor

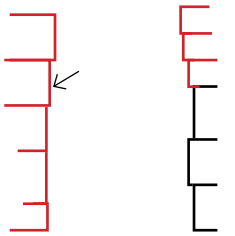
Duration
2 hours

b. Translating the street section into a plan

General Instructions:

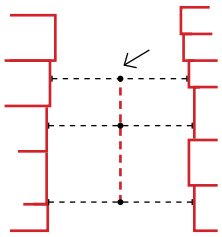
- The steps shown in the diagrams below have to be explained to all the participants by the instructor.

1



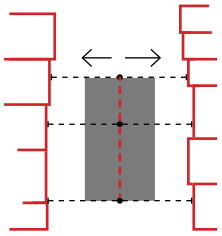
Instruct the participants to trace the property edge from the base maps and verify the right of way measurement across the stretch.

2



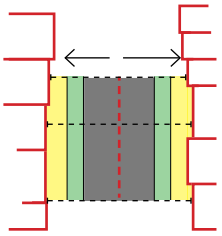
Mark the centre line on the plan of the street. In order to mark the centre line, the property edges need to be connected and the mid point needs to be marked at several locations on the plan. These midpoints have to be connected to form the centre line. The centre line will need to be smoothened to avoid any kinks.

3



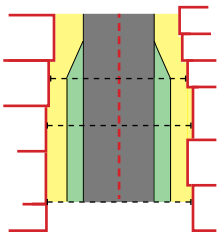
Based on the finalised street section, offset the widths of the carriageway lanes from the centre line.

4



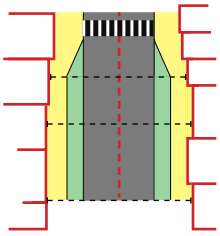
Once the carriageway has been delineated add the other elements from the street section with their corresponding widths such as cycle tracks, parking zones, pedestrian walkways etc.

5



In case of varying righ-of-ways in the same street, carefully delineate the right of way configurations from maximum right of way to minimum right of way keeping the centre line intact.

6



Add pedestrian crossings at logical locations i.e. intersections and mid blocks crossing points.

- The streets can have trees, designated vending areas, parking and other street elements based on space availability.
- Refer the ready reckoner for all standards and guidelines with respect to NMT elements.
- Hold discussions regularly during the working session with each group to check the progress and help them resolve issues.
- Show references of good drawings to help participants detail out their plans.

Materials required

- Butter sheets / Chart papers
- Print out of the segment map in 1:500 scale
- Pen / Marker / sketch pens / Colour pencils
- Triangular Scale
- Scale

Logistical requirement

- Projector
- Pin up arrangements - (Easels, board, tape / ropes/etc/ board pins.)
- Bulletin board
- One working table for each group

*Activity 9 – **Introduction to tactical urbanism***

Location
Indoor

Duration
45 minutes

General Instructions:

- Introduce the activity with the presentation so that participants are prepared for the task at site.
- Ensure that all the permissions are sought and material is ready to execute the exercise on site.

Location
Outdoor

Duration
3.5 hours

General Instructions:

- Select a stretch with one major intersection for the tactical urbanism exercise.
- Measure the right-of-way for different segments of the road and mark the midpoints of these segments.
- Join these points to identify the centreline for the street.
- Offset the centreline with the width of the carriageway lanes based on the proposed design.
- Delineate the sidewalk, cycle tracks and parking zones with traffic cones and/ or ropes.
- The above steps are to be repeated along different segments of the same streets.
- Once the markings have been made, they should be connected.
- The intersections need to be as per the required turning radius fixed in a similar manner.
- Ensure adequate documentation of the before and after conditions of the vehicular and pedestrian movement through videos and photographs.
- Discuss the observations and their inferences.

Materials required

- Rope / Yarn
- Chalk powder
- Measuring Tape
- Cones
- Chalk

Logistical requirement

- Projector (for orientation & briefing)
- Transport required to drop off people at site and pick them up
- Mobile / cameras

Checklist for design review

The instructor can ensure that all participant groups are structuring their presentation to include the following:

1. **Name of the street:**
2. **Starting point & ending point :**
3. **RoW measurements:**
4. **Mapping:**

- Building use
- Important landmarks & building names
- Vehicular access to properties
- Pedestrian access to properties
- Activity mapping
- Vendor mapping
- Parking
- Intersection flows

5. **Counts:**

- Pedestrian counts
- Age & Gender
- Vehicular counts
- Parking counts

6. **List of stakeholders mapped**
7. **Design options for street section configurations**
8. **Finalized street section**
9. **Plan with resolved intersections**
10. **Inferences from the on-ground testing**

It is recommended for the participants to explain their designs with the support of documentation and emphasis on how they have resolved the challenges.

Sample – Post-training Feedback form for participants

Name:

Date:

Q.1 What did you like the most in the overall workshop ?

- ☐ Design and flow of the training
- ☐ Teaching methods and techniques used
- ☐ Usefulness of the discussions and interactions
- ☐ Usefulness of the field/outdoor exercises
- ☐ Time management and schedule of the workshop
- ☐ Overall arrangements and event organization

Q.2 How did you find tutorials used in the training ?

- ☐ Easy to understand tutorials & presentations (language, conveying speed, clarity)
- ☐ Ease of implementing classroom concepts during on-site activities
- ☐ Organization and flow of tutorials/presentations well organized
- ☐ Good balance of theory and outdoor activities
- ☐ Ability of trainers to respond to participants' questions/doubts

Q.3 Learning outcomes and application

- ☐ Usefulness and applicability of the topics taught in your work
- ☐ All the information I was looking to learn about NMT was covered
- ☐ Rate your level of confidence to now work on NMT and related topics is now much improved
- ☐ My understanding and clarity on NMT and related topics is now much improved
- ☐ My understanding and clarity on NMT and related topics is now much improved

Q.4 What is your favorite segment of the workshop ?

Q.5 Key learnings from the on-site survey activities and pedestrian audit

Q.6 Has your outlook/working style towards NMT changed after attending this workshop? Please elaborate how.

Q.7 Key learnings from the street design activity

Q.8 How will you use what you had learnt from this workshop in your work environment? Are there any challenges you foresee?

Q.9 Please provide your rating on various aspects of the workshop, on a scale of 1 to 5: (1 being "very low or poor" and 5 being "very high or excellent")

	1	2	3	4	5
• Relevance of the topics covered in workshop	○	○	○	○	○
• Teaching methods and techniques used	○	○	○	○	○
• Usefulness of the discussions and interactions	○	○	○	○	○
• Usefulness of the field/outdoor exercises	○	○	○	○	○
• Overall arrangements and event organization	○	○	○	○	○
• Usefulness and applicability of the topics	○	○	○	○	○
• Rate your level of confidence to now work on NMT projects after today's training	○	○	○	○	○
• Rate your satisfaction with the range and depth of topics covered today	○	○	○	○	○
• Understanding and clarity on NMT and related topics	○	○	○	○	○
• Ease of implementing classroom concepts during on-site activities?	○	○	○	○	○
• There is a good scope for implementing what I learnt today in CCMC's future projects	○	○	○	○	○
• Good balance of theory and outdoor activities	○	○	○	○	○
• Ability of trainers to respond to participants' doubts	○	○	○	○	○

Q.10 Any other feedback

Note: This form can be used as a sample to structure a feedback form for the instructor to evaluate the efficacy of the training modules as well as its execution.

STREETS FOR ALL

Introduction

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz

When we talk about mobility,
what does everyone want?

போக்குவரத்து பற்றி நாம்
பேசும்போது, **அனைவருக்கும்**
என்ன வேண்டும்?

Who are the
most vulnerable
users of a street?

தெருவில் **மிகவும்**
பாதிக்கப்படக்கூடிய
பயனர்கள் யார்?

giz

Safe streets for all.

பாதுகாப்பான சாலைகள்.
அனைவருக்கும்.

giz

How do we get this?

இதை நாம் எவ்வாறு பெறுவது?

1 Creating a safe space for everyone.

அனைவருக்கும் பாதுகாப்பான இடத்தை உருவாக்குதல்.

giz

1 Creating a safe space for everyone.

அனைவருக்கும் பாதுகாப்பான இடத்தை உருவாக்குதல்.

2 Reducing traffic speeds.

போக்குவரத்து வேகத்தை குறைத்தல்.

giz

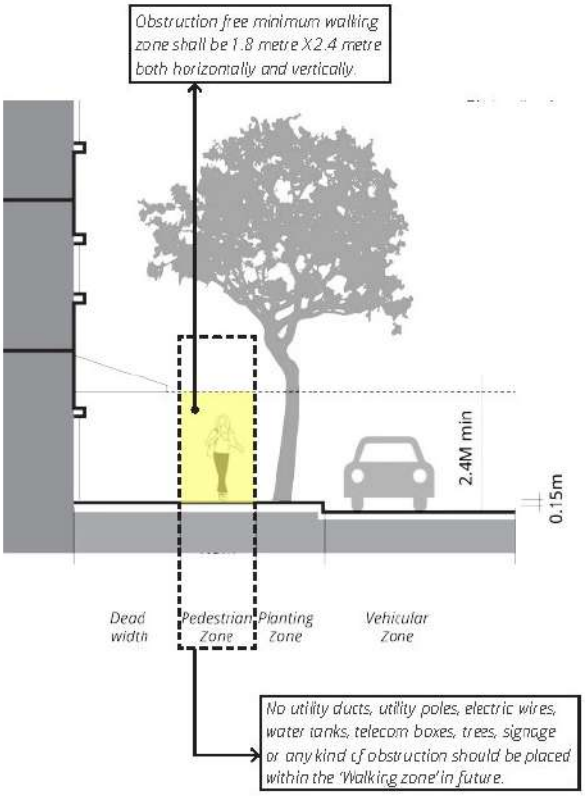
1 Creating a safe space for everyone.

அனைவருக்கும் பாதுகாப்பான இடத்தை உருவாக்குதல்.

1 Creating a safe space for everyone.

அனைவருக்கும் பாதுகாப்பான இடத்தை உருவாக்குதல்.

Minimum 1.8 metres unobstructed and continuous footpath on both sides of the street.
வீதியின் இருபுறமும் குறைந்தபட்சம் 1.8 மீட்டர் தடையற்ற மற்றும் தொடர்ச்சியான நடைபாதை வழங்கவும்.

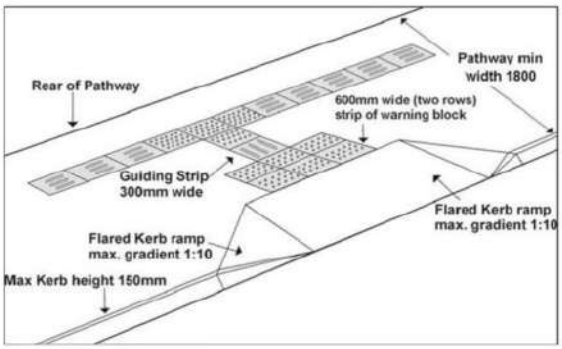


1 Creating a safe space for everyone.

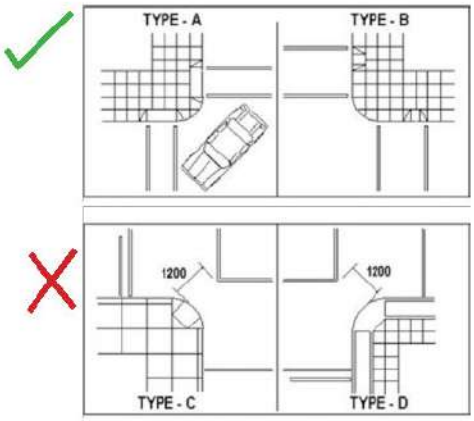
அனைவருக்கும் பாதுகாப்பான இடத்தை உருவாக்குதல்.

Minimum 1.8 metres unobstructed and continuous footpath on both sides of the street.
வீதியின் இருபுறமும் குறைந்தபட்சம் 1.8 மீட்டர் தடையற்ற மற்றும் தொடர்ச்சியான நடைபாதை வழங்கவும்.

Ensure a 1:10 minimum slope for kerbs to help wheelchair users to access footpath.
மாற்று திறனாளிகள் நடைபாதையை அடைய குறைந்தபட்ச 1:10 சரிவு வழங்கப்பட வேண்டும்.



Kerb ramp placement



Source: Harmonised Guidelines

1 Creating a safe space for everyone.

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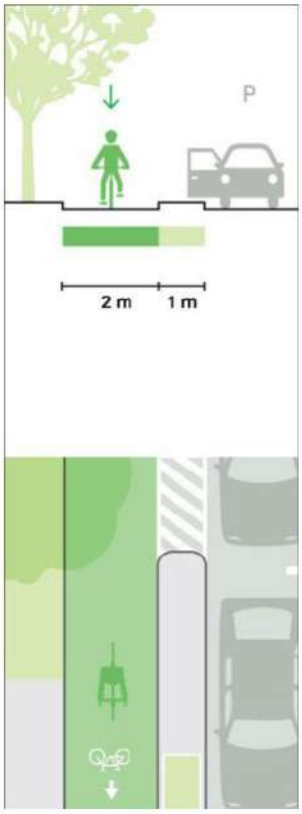
Minimum 2m for cycle path on both sides of the street.
வீதியின் இருபுறமும் சைக்கிள் ஓட்டுபவர்களுக்கு குறைந்தபட்சம் 2 மீட்டர் வழங்கப்பட வேண்டும்.



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2 Reducing traffic speeds.

போக்குவரத்து
வேகத்தை
குறைத்தல்.

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2 Reducing traffic speeds.

Keep the number of vehicular lanes uniform between intersections.
சந்திப்புகளுக்கு இடையில் வாகன பாதைகளின் எண்ணிக்கையை ஒரே மாதிரியாக வைத்திருங்கள்.

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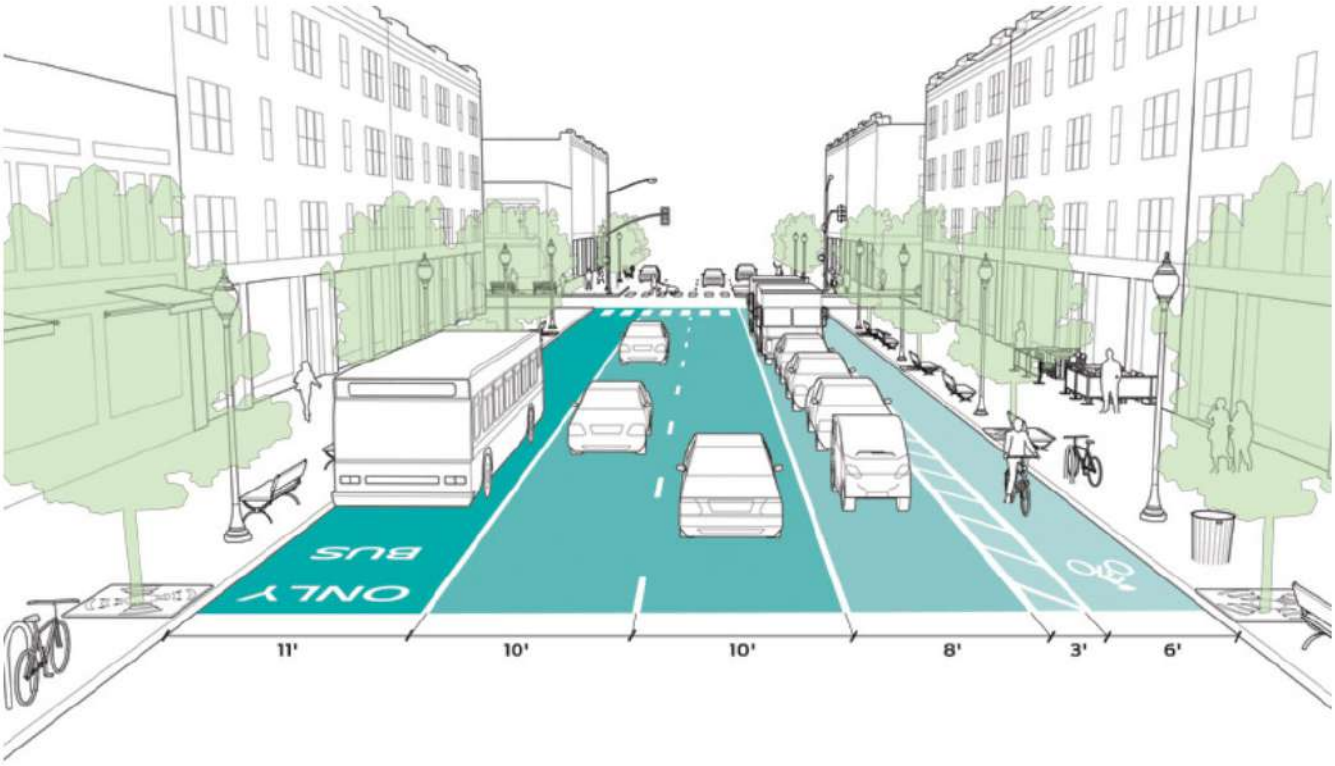

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Reduce the turning radius at intersections.
சந்திப்புகளில் திருப்பு வளைவைக் குறைக்கவும்.

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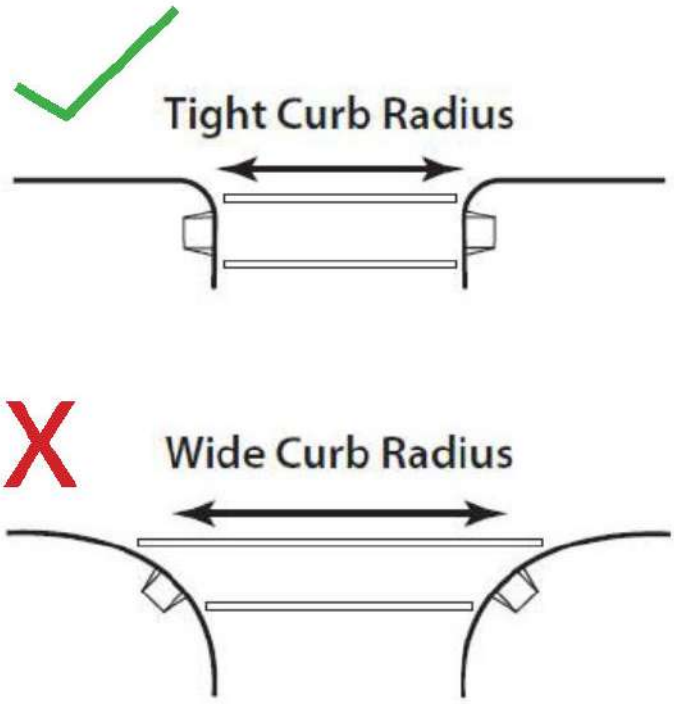

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Provide pedestrian crossings at intersections and also in between intersections wherever there is a need.
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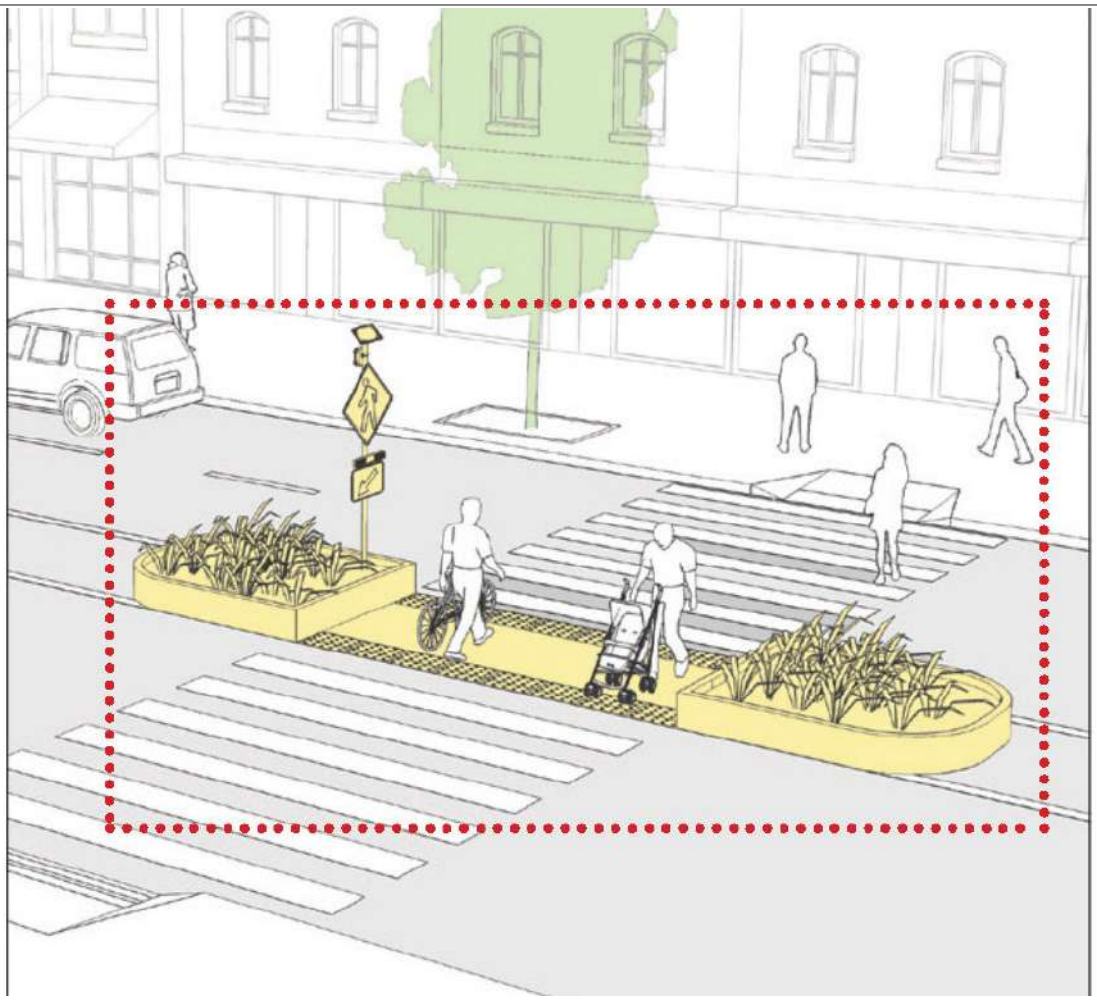
Provide refuge islands where the total length of the road crossing is more than 11 metres.
சாலை கடக்கும் மொத்த நீளம் 11 மீட்டருக்கு மேல் இருந்தால் அடைக்கலம் தீவுகளை வழங்கவும்.



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Provide traffic calming elements like speed humps and table top crossings.
ஸ்பீட் பிரேக்கர்கள் மற்றும் டேபிள் டாப் கிராசிங் போன்ற அம்சங்களை போக்குவரத்து வேகத்தை குறைக்க வழங்கவும்.

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OBJECTIVES OF THE TRAINING WORKSHOP

01

To impart a basic understanding of the process and implementation of NMT projects

02

To gain a practical sense of challenges faced by pedestrians while using streets

03

To create awareness about the needs and issues of different user groups

04

To give a hands on experience to the participants on street documentation and analysis as a preparation to take up NMT projects in future

05

To create awareness about the significance of NMT over other modes of transportation

06

To familiarise the participants with orientation to different scales of spaces in a city (from street scale to larger city level context)

07

To help the participants learn about solving the challenges of streets by strategical placement of street elements designing street sections and intersection design

08

To give them hands on experience of translating streets sections into plans

09

To impart knowledge on above ground Utility design and the standards for placement on streets to create least obstructions.

10

To impart understanding on tools and techniques of tactical urbanism and help them learn the process through on ground testing of their design

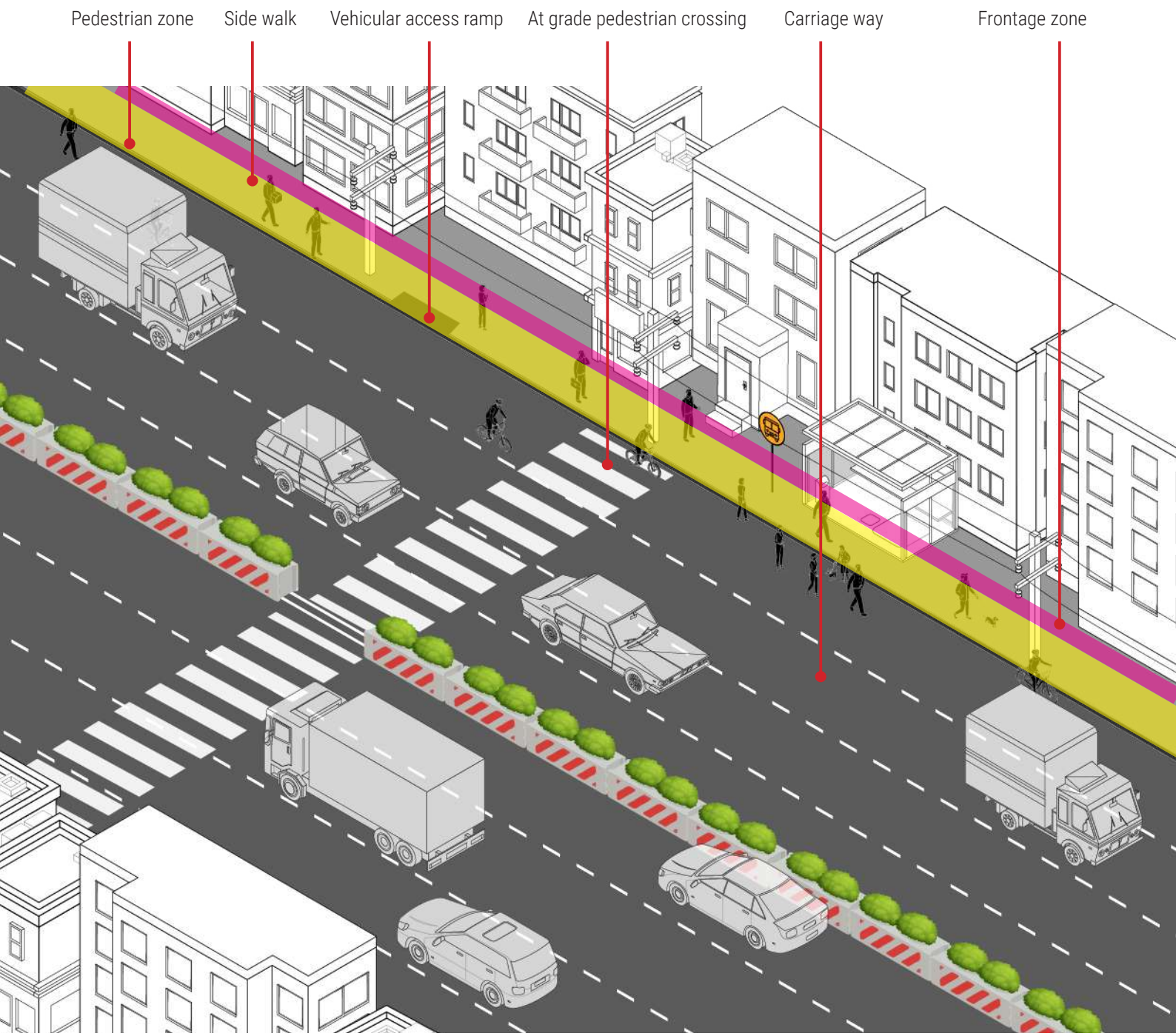
TRAINING WORKSHOP
DAY WISE - SCHEDULE

PEDESTRIAN ENVIRONMENT AUDIT | *Part 1*

Why measure walkability ?

Our streets are increasingly becoming the domain of motorized vehicles, with very little consideration given to the needs of pedestrians. Lack of footpaths, poor construction and lack of maintenance are all factors that discourage people from walking regularly.

The premise of this audit is to understand the existing condition of a street to ensure it is safe, comfortable and convenient for pedestrians.



german cooperation
DEUTSCHE ZUSAMMENARBEIT
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

GLOSSARY

Accessibility:
The ease with which a building, place or facility can be reached by people and/or goods and services. Accessibility can be shown on a plan or described in terms of pedestrian and vehicle movements, walking distance from public transport, travel time or population distribution.

Amenity:
Design, aesthetic or other features of a development (building or public space) that increase its marketability or usability to the public. Examples of amenities include: good architecture, open space, landscaping, street furniture, an outdoor amphitheatre, public art etc.

Barrier-Free Design/ Universal design:
Building and site design which is accessible to all people, regardless of age and abilities.

Building access:
The entry / exit points of a building for pedestrians & vehicles

Footpath:
Is defined by the area between the kerb and the property boundary used to support pedestrian movement along the street. Footpaths in some locations can support activities such as footpath dining. Wider footpaths improve pedestrian amenities, ease of movement and connectivity by allowing the provision of street furniture, shade trees and landscaping. Frontage The width of a single lot, measured parallel to the right-of-way.

Frontage zone:
The area adjacent to the property line where transitions between the public sidewalk and the space within buildings occur. (also dead width)

Para transit:
Forms of transportation services that are more flexible and personalized than conventional fixed-route, fixed-schedule service. The vehicles are usually low- or medium-capacity vehicles, and the service offered is adjustable in various degrees to individual users' desires. Its categories are public, which is available to any user who pays a pre-determined fare (e.g., autos, share autos) and semi-public, which is available only to people of a certain group, such as the elderly, employees of a company, or residents of a neighbourhood (e.g., vanpools, subscription buses). These services are usually informal and oftentimes fill the gaps in the public transport network.

Pedestrian:
All people on foot or moving at walking speed, including those who use mobility aids (wheelchairs, scooters, etc.), persons with strollers and buggies, and frail elderly persons.

Right-of-way (RoW):
That part of the street space including the space above and below the surface that is publicly owned and lies between the property lines. This space is generally established for the use of pedestrians, vehicles, or utilities.

Traffic calming:
Measures to reduce the speed of motor traffic, particularly in residential areas. They include education, enforcement and engineering (the three Es).

Walkability:
A condition of a system of routes which are barrier free, interesting, safe, well-lit, comfortable and inviting to pedestrian travel. Essentially, the ease with which it is possible to walk around an area, from one point to another.

Way finding:
The information which orients users of an area to ensure their ability to navigate through an area. This information includes but is not limited to signs, graphic communications, streetscape elements, building design and the street network.

Auditor's name:

_____

Name of the street:

_____

Name of the locality / Area:

_____

Starting location of the street that is being audited:

_____

Ending location of the street that is being audited:

_____

1 FOOTPATH

1.1 General observations

Is a footpath present ?

☐ Yes ☐ No

Is the path provided on both sides of the road ?

☐ Yes ☐ No

What is the type of footpath ?

☐ Constructed continuous footpath (Wheel chair can go along full length)

☐ Constructed but non continuous footpath (Wheel chair can't go along full length)

☐ At grade foot path demarcated by difference in material

☐ No footpath but there is adequate space between the road and property edge to walk

☐ No footpath and no space for walking

Which direction is most of the pedestrian traffic?

☐ Both directions ☐ One direction

☐ Unclear

Is the width of the path uniform throughout the street ?

☐ Yes, it is uniform

☐ No, it varies along the stretch

☐ Not Applicable

1.2 Path condition & Path obstructions

What is the hazard or maintenance issue ?

☐ Uneven or broken surface

☐ Slippery Surface

☐ Protruding tree roots

☐ Low hanging wires or tree branches

☐ Garbage

☐ Construction material or Debris

☐ Manholes

☐ Low mounted road signs

☐ Things protruding from the ground

☐ Waterlogging

☐ Other _____

What are the permanent obstructions ?

☐ Street Signs

☐ Bus stops / shelters

☐ Street furniture / seats

☐ Trees / bushes

☐ EB boxes

☐ Transformers

☐ Telephone boxes

☐ Access ramps to properties

☐ CCTV poles

☐ Street lights

☐ Built Encroachments

☐ Public toilets

☐ Police booth

☐ Overhead cables

☐ Tree branch

☐ Kiosks/ Petty Shop

☐ Other _____

What are the temporary obstructions?

☐ Parked bicycles

☐ Parked Cars

☐ Parked Two Wheelers

☐ Portable signs

☐ Seats from cafes

☐ Shop Stands / Hoarding / Flex banner

☐ Dumpster/Dust bin

☐ Garbage/Debris

☐ Vendors
☐ Pavement dwellers
☐ Barricades
☐ Other _____

1.3 Path connectivity

Is it continuous (i.e. no missing sections?)

☐ Yes ☐ No

Is the path connected to other paths to form a pedestrian network?

☐ Yes ☐ No ☐ Not Applicable

Is it connected to key destinations along the route?

☐ Train / MRTS / Metro Stations
☐ Bus Stand / Depot
☐ Bus Stop
☐ School
☐ Neighborhood grocery stores / provision / ration shop
☐ Park
☐ Community Centre
☐ Office
☐ Healthcare
☐ Other _____

1.4 Accessibility for persons with disabilities (PwD)

Is the surface of the path suitable for use by prams, wheelchairs and mobility-impaired persons ?

☐ Yes ☐ No ☐ Not Applicable

Are kerb ramps provided at the kerb, median and refuge areas to accommodate wheelchairs and prams?

☐ Yes ☐ No ☐ Not Applicable

Is the slope from the path to the road safe, smooth and comfortable to use?

☐ Yes ☐ No ☐ Not Applicable

Are waiting areas level with sufficient maneuvering space to accommodate wheel chairs and all users?

☐ Yes ☐ No ☐ Not Applicable

Can vision impaired pedestrians identify the crossing via tactile surfaces provided?

☐ Yes ☐ No ☐ Not Applicable

Do pedestrian signals have audio-tactile devices for vision impaired pedestrians?

☐ Yes ☐ No ☐ Not Applicable

2 CROSSING/ INTERSECTION

Location of the intersection / crossing #1

_____

What type of crossing is present?

☐ Median island / refuges
☐ Zebra
☐ Automatic Pedestrian Signals
☐ Traffic lights without pedestrian signals
☐ Foot over Bridge
☐ Subway
☐ School crossing
☐ Traffic cop assisted crossing
☐ No facility

How many traffic lanes do pedestrians have to cross ?

_____

Are median islands provided to allow pedestrians to cross in two stages?

☐ Yes ☐ No ☐ Not Applicable

Are crossings at logical locations e.g. entrances/ exits to key destinations or connections to other paths?

☐ Yes ☐ No ☐ Not Applicable

Do pedestrians use the crossing points provided correctly?

☐ Yes ☐ No ☐ Not Applicable

If crossing is prohibited, are pedestrians directed via physical barriers and signs to another crossing point?

☐ Yes ☐ No ☐ Not Applicable

At the traffic junction is the pedestrian signal duration long enough to cross the road ?

☐ Yes ☐ No ☐ Not Applicable

Is the waiting time for pedestrian signal short enough to encourage people to wait for the correct signal to cross the road ?

☐ Yes ☐ No ☐ Not Applicable

At non-signalised intersection: Do the gaps in the traffic flow allow people to cross the road safely?

☐ Yes ☐ No ☐ Not Applicable

Is the waiting area sufficient to accommodate the expected pedestrian volumes ?

☐ Yes ☐ No ☐ Not Applicable

Is the crossing sufficiently well marked, wide enough, at a logical location and clearly visible ?

☐ Yes ☐ No ☐ Not Applicable

Are the kerb ramps and waiting areas located right next to the pedestrian crossing ?

☐ Yes ☐ No ☐ Not Applicable

Location of the intersection / crossing #2

_____

What type of crossing is present?

☐ Median island / refuges
☐ Zebra
☐ Automatic Pedestrian Signals
☐ Traffic lights without pedestrian signals
☐ Foot over Bridge
☐ Subway
☐ School crossing
☐ Traffic cop assisted crossing
☐ No facility

How many traffic lanes do pedestrians have to cross ?

_____

Are median islands provided to allow pedestrians to cross in two stages?

☐ Yes ☐ No ☐ Not Applicable

Are crossings at logical locations e.g. entrances/ exits to key destinations or connections to other paths?

☐ Yes ☐ No ☐ Not Applicable

Do pedestrians use the crossing points provided correctly?

☐ Yes ☐ No ☐ Not Applicable

If crossing is prohibited, are pedestrians directed via physical barriers and signs to another crossing point?

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☐ Yes ☐ No ☐ Not Applicable

Is the crossing sufficiently well marked, wide enough, at a logical location and clearly visible ?

☐ Yes ☐ No ☐ Not Applicable

Are the kerb ramps and waiting areas located right next to the pedestrian crossing ?

☐ Yes ☐ No ☐ Not Applicable

3 SIGNAGES

Is signage provided to guide and direct pedestrians to the key destinations in the area ?

☐ Yes ☐ No

Are street names clearly visible to pedestrians?

☐ Yes ☐ No

☐ Not Applicable (There are no street name board / marking)

Are pedestrian routes/crossings clearly visible to motorists via warning signs and pavement markings ?

☐ Yes ☐ No

☐ Not Applicable (There are no warning signs)

Are the signage and pavement markings visible during day & night ?

o Yes o No

o Not Applicable (There are no signage)

4 PERSONAL SAFETY

Do you feel safe walking on this route section during the day?

☐ Yes ☐ No

Do you feel safe walking on this route section during the night?

☐ Yes ☐ No ☐ I don't know

Are there enough people around to make you feel safe during the day ?

☐ Yes ☐ No

Are there / would there be enough people around to make you feel safe during the night ?

☐ Yes ☐ No ☐ I don't know

Is there good lighting in the area during the night ?

☐ Yes ☐ No ☐ I don't know

5 ADJACENT TRAFFIC

Is separation provided between motorists and pedestrians?

☐ Level difference

☐ Safety Rail

☐ Bollards

☐ Trees/Vegetation

☐ None

☐ Other _____

Is the path used by other traffic?

☐ Wheelchairs

☐ Prams

☐ Bikes

☐ Scooters

☐ Cycles

☐ Other _____

Is oncoming traffic clearly visible to pedestrians (no obstructions blocking sight lines) at crossings?

☐ Yes ☐ No

Are there any traffic calming devices?

☐ Yes ☐ No

If yes what are the traffic calming devices?

☐ Speed humps

☐ Median Islands

☐ Chicanes

☐ Roundabouts

☐ Projecting kerbs
☐ Material
☐ Barricades
☐ Other _____

6 AESTHETICS AND AMENITIES

Is the street segment attractive and pleasant to walk around?

☐ Yes ☐ No

Is shade provided to the path by trees or other built structures?

☐ Yes ☐ No ☐ Not Applicable

Are there any seating/resting spaces along the street segment ?

☐ Yes ☐ No

If yes, is there shade provided at resting places and areas with street furniture, by trees or structures?

☐ Yes ☐ No ☐ Not Applicable

Are there any toilets?

☐ Yes ☐ No

What is the condition of footpath outside toilets?

☐ Constructed continuous footpath (Wheel chair can go along full length)
☐ Constructed but non continuous footpath (Wheel chair can't go along full length)
☐ At grade foot path demarcated by difference in material
☐ No footpath but there is adequate space between the road and property edge to walk
☐ No footpath and no space for walking

Are there dustbins ?

☐ Yes ☐ No

Are there any vendors in this stretch?

☐ Yes ☐ No

7 PUBLIC TRANSPORT/ PARA TRANSIT

Is the stretch a bus route road ?

☐ Yes ☐ No

Is there a bus stop on this stretch ?

☐ Yes ☐ No

Are there any auto pick up points ?

☐ Yes ☐ No

8 PARKING

Is there parking on this stretch ?

☐ Yes ☐ No

If yes, where is it located ?

☐ Both sides ☐ One side

What vehicle is the parking designated for ?

☐ Two wheeler ☐ Four wheeler
☐ Auto

Is there any loading/ unloading activity on this stretch ?

☐ Yes ☐ No

9 USER GROUP STUDY

Make a list of all the stakeholders / user groups found on the street under study

.....

RACE - NMT AWARENESS GAME

Elements in the game
Game Board
6 pawns / binder clips
1 Dice
Pollution fee (money)
Green signal Cards
Destination list
Destination Cards
Chance Cards
Parking ticket

Number of players: 6

How to win:
The player with all or maximum destinations covered and highest money at end, wins the game.

Setup:
Each player chooses 1 coloured pawn and places it on the matching coloured home base.
Each player is distributed 500 INR and 10 green signal cards
Pollution fee denomination per player
200 X 1 no = 200
100 X 1 no = 100
50 x 3 nos = 150
10 X 3 nos = 30
5 x 3 nos = 15
1 X 5 nos = 5
The destination list is then distributed to all the players. After which, 6 destination cards are drawn by each of the players, one from each coloured stack.
After players have written their destinations on the destination list, the coloured destination cards are shuffled back to their own stack.
To start, each player rolls the dice. The player with the highest number on dice goes first, followed by a clockwise rotation.
The game is now ready to play.

Rules & Regulations

Movement:
A player has to select any one mode of transport in each turn. They can move in continuous steps in any direction.
However, every mode of transport has its own speed and pollution fee.

(X demarcates the number on dice)
The pollution fee has to be given to the bank every time a person chooses to move based on the mentioned pollution fee of the mode of transport.
The player gets another chance to roll the dice each time they roll 6.

4x depicts each block is equal to 4 boxes so that is how you reach the destination

Mode of transport
Walking, cycling (NMT):

For Car and 2 wheeler:
To choose this mode of transport a fee of 10 INR has to be given to the bank
If you want to change from car or bike to some other mode, a parking ticket has to be drawn.

For Bus:
To choose the bus, walk or cycle to the nearest bus stop (marked with bus symbol on the brown tile)

The red tiles are not accessible by bus.
The hatched boxes are the intersections.
A player has 2 choices every time they come across an intersection:
All modes of transport except those walking cross each intersection by giving 1 green signal card to the bank
Choose to wait at the intersection until his/her next turn

The question mark demarcates the chance cards. Everytime you cross a question mark a chance card has to be drawn.

You can only travel by two wheeler for the next 2 rounds.

Chance Card

Your health condition is deteriorating and the doctor has advised you to only walk for the next 2 rounds.

Chance Card

You are late to work and you are required to travel only in car for next 2 rounds.

Chance Card

There is a global fuel crisis and all the players are forced to use only non motorized transport for the next 2 rounds.

Chance Card

Being a responsible citizen you are on a campaign to increase the awareness on the need to use public transport. Teleport to the nearest bus stop in this round. And in the next 2 rounds use bus.

You get a grant of 25 INR for your initiative.

Chance Card

There is a global fuel crisis and all the players are forced to use only non motorized transport for the next 2 rounds.

Chance Card

Bus Break Down!

Uh oh! If you are on a bus, choose an alternate mode of transport and continue.
If not, then keep moving!

Chance Card

Car Break Down!

Uh oh! If you are in a car, choose an alternate mode of transport OR pay 100 INR for calling mechanic on the spot and then continue.
If you are not in a car, then keep moving!

Chance Card

Your family is starving! Add any restaurant to your list of destinations and pick up dinner for your family on the way.

Chance Card

Oh no! A fight has taken place on the street. Go back 2X steps depending on the mode you are in currently.

Chance Card

You're running out of fuel (if you are in a car or a two wheeler) refill immediately to continue your trip. Stop by nearest fuel station before you go to your next destination.

Chance Card

Due to high pollution alerts all players using NMT get 2 chances to roll the dice on their next turn whereas for players in cars and two wheelers have to pay a fine of 100 INR.

Chance Card

Congratulations! Your vehicle is upgraded to an electric vehicle. You can now use your motorised transport without any pollution charges for the next 2 turns.

Chance Card

It is your lucky day. Roll the dice again captain!

Chance Card

The road is blocked as the minister is on the way, take 3 steps towards left or right and find another route.

Chance Card

You are experiencing back pain. Slow down your speed by half in your next turn.

Chance Card

ACCIDENT!

Your bus driver hit a car. He has started fighting. If you are in a bus, continue on an alternate mode of transport.

Chance Card

Two wheeler Break Down!

If you are on a 2 wheeler, go to the nearest repair shop pay 25 INR and then continue to your destination OR pay 100 INR for calling mechanic on the spot.

Chance Card

ACCIDENT!

For 2 wheeler only: You hit a cyclist. Your license is no longer applicable. Pay 200 INR Penalty if you are on a two wheeler. You cannot use 2 wheeler for next 2 rounds.

Chance Card

ACCIDENT!

For car or 2 wheeler only: You ran over a pedestrian. Go to Jail OR Miss your next 2 turns.

Chance Card

IT IS RAINING!

Move at half the speed if you are walking or cycling.

Chance Card

STRIKE!

There is an auto strike which will last for a day. All players are forbidden to use auto for the next round.

Chance Card

HIKE!

Auto rates have been revised. If you are riding an auto, give extra 2x for the ride.

Chance Card

HIKE!

Auto prices have hiked! Who ever uses an auto in the next round has to give 20 INR extra to the bank.

Chance Card

You get a super power!
You are now allowed to make 1 walk trip at 2X speed.

Chance Card

If you are using bus/cycle/walk you are rewarded for being a responsible citizen, you can now go to any one of your destinations directly.

Chance Card

On account of Maha Shivratri, the PM is visiting Isha Foundation due to which the roads have been blocked.

Pedestrians: Get 2 more turns
Cycle: Get 1 more turn
Two wheeler: Reduce speed by half in the next turn.
Car: Back track 2 intersections behind you.
Bus: Back track 1 intersection behind you.

Chance Card

Congratulations on being a responsible citizen, you get 2 turns extra if you are using a NMT.

Chance Card

Collect 3 Green Signal Cards!

Chance Card

Police caught you for road rule violation

Pedestrians/Cyclists/Bus/ Auto: N.A
Two Wheeler: Driving without insurance (Pay 50 INR as penalty & give 2 green signal cards)
Car: Driving without seat belt (Pay 100 INR as penalty & give 2 green signal cards)

Chance Card

Heavy traffic jam due to the World Classical Tamil Conference

Pedestrian: N.A
Cycle: Give 1 green signal card
Bus: Give 3 green signal cards
Two wheeler/ Auto: Give 2 green signal cards
Car: Give 2 green signal cards

Chance Card

Give way for an ambulance if you are in a car or two wheeler. Take the nearest left or right turn.

Chance Card

Parking available only for 2 wheelers. No Parking for 100M (10 squares) in case you are in a car. Continue in car in the next round until you cover 10 squares.

Parking Card

Parking available only for 4 wheelers. No Parking for 50M (5 squares) in case you are on a two wheeler. Continue in car in the next round until you cover 10 squares.

Parking Card

No Parking Zone for 100M (10 squares) around your destination. Continue in car/2 wheeler in the next round until you cover 10 squares.

Parking Card

Paid Parking

Pay 10 INR to park your 2 wheeler
Pay 25 INR to park your car.

Parking Card

No Parking Zone for 100M (10 squares) around your destination. Continue in car in the next round until you cover 10 square.

Parking Card

Premium Parking

2 wheeler: Pay 20 INR
Car: Pay 50 INR

Parking Card

Paid Parking

2 wheeler: Pay 10 INR
Car: Pay 25 INR

Parking Card

Being a responsible citizen for choosing NMT, the society has honoured you with cash prize. Collect 50 INR from each of the players, *only if you are using a NMT in this round.*

Parking Card

Colour:

Destinations:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

Pollution Level:

Colour:

Destinations:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

Pollution Level:

Colour:

Destinations:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

Pollution Level:

Colour:

Destinations:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

Pollution Level:

Colour:

Destinations:

1) _____

2) _____

3) _____

4) _____

5) _____

6) _____

Pollution Level:

Chance Card

Oh god! A troublesome citizen like you never chooses NMT. Being an irresponsible citizen pay fine for the pollution. Give 50 INR to each of the players, *only if you are in a car/ 2 wheeler*

Parking Card

Chance Card

BAD LUCK!

You owe bank 50 INR. Give 50 INR to the bank.

Parking Card

Chance Card

Premium parking

2 wheeler: Pay 20 INR
Car: Pay 50 INR

Parking Card

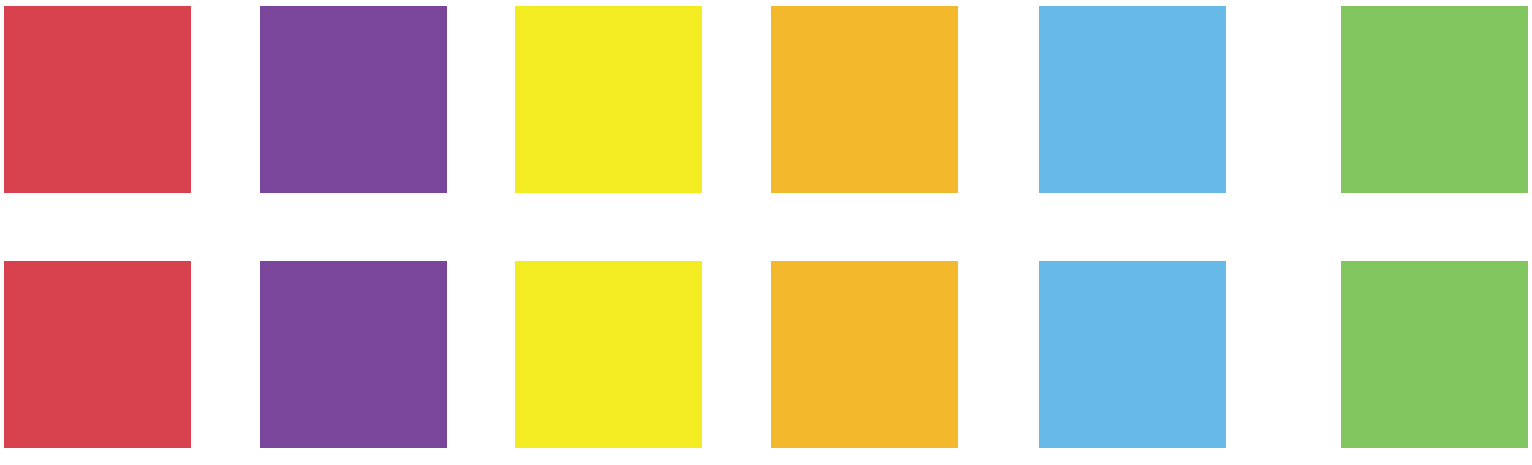
Parking Card

GOOD LUCK!

You just withdrew 25 INR from the bank. Take 25 INR from the bank.

Parking Card

Bharathi Park	Tamil Nadu Agricultural University	Shri Nehru Vidylaya Matric Hr.Sec School	Forest College Campus	Sree Annapoorna Hotel
Central Theatre	Baba Cinemas	The Tamil Nadu Electricity Board & Corporation Office	Brookfield's Mall	Sree Annapoorna Lodging And Restaurant
Sri Masaniamman Temple	SBOA School	Gandhi Park	Corporation School	Town hall
Kumaraswamy Lake	Narsampathy Lake	Ganga Bakery	Kabarsthan Sunnath Jama-ath Masjid	Periya kulam
Selva chinthamani kulam	Post Office	Bank	PSG College of Technology	Kovai Medical centre and hospital
Ramar Kovil	G. Kuppuswamy Naidu Memorial Hospital	Senior citizen and Memorial park	Hotel Junior Kuppanna	Coimbatore Corporation Perarignar Anna Park
Children Traffic Park	Gandhipuram Bus Stand	KG Hospital	Race course Park	CSI Church
Coimbatore girl's school	Police station	Thandu Mariamman temple	Railway station	Café Totaram
Singanallur lake	Children's Park	Valan kulam	Ukkadam new wholesale fish market	Ukkadam post office




₹1
ONE RUPEE
₹1


₹5
FIVE RUPEES
₹5


₹10
TEN RUPEES
₹10

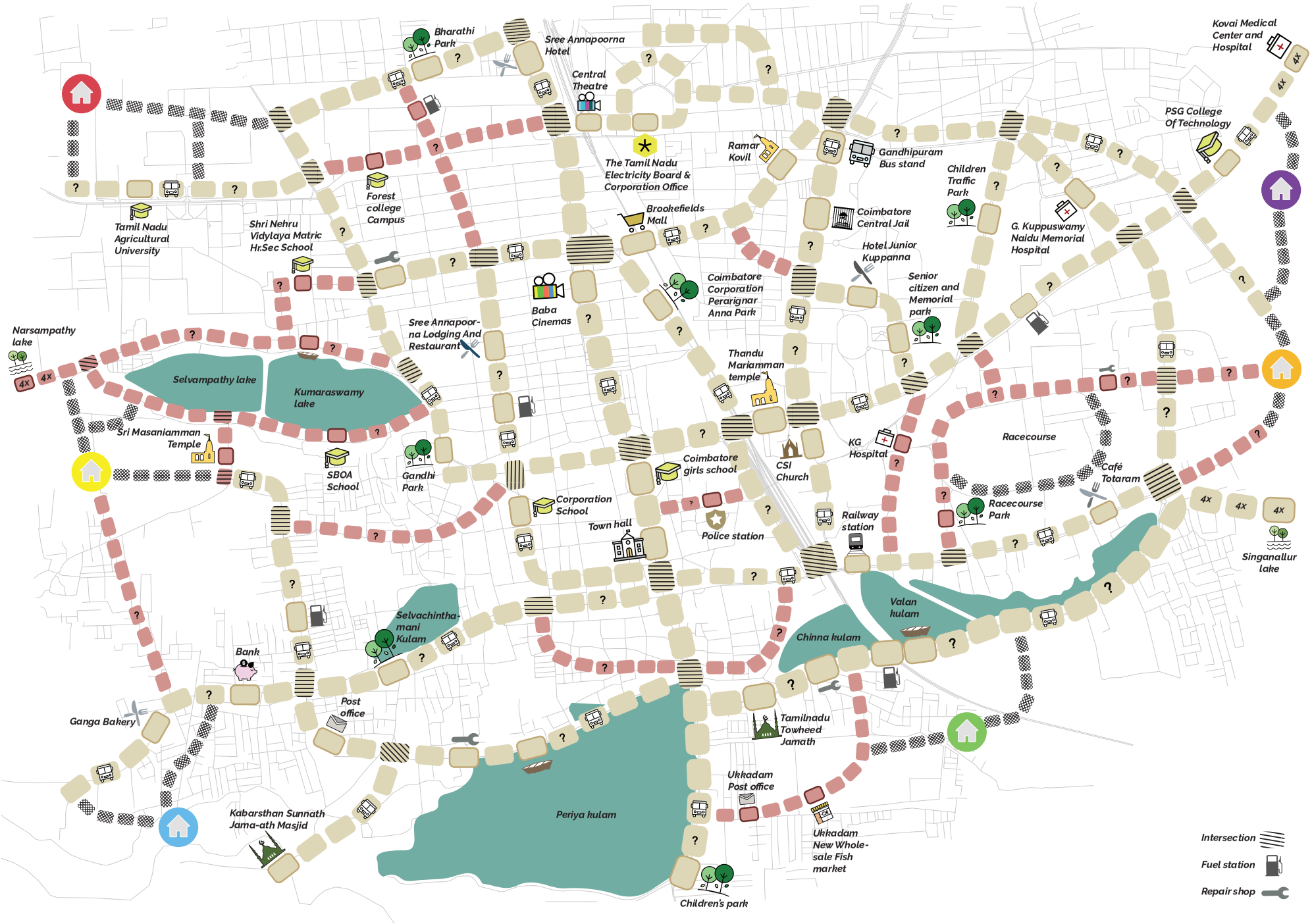

₹50
FIFTY RUPEE
₹50


₹100
ONE HUNDRED RUPEES
₹100


₹200
TWO HUINDRED RUPEES
₹200

GREEN SIGNAL CARD

GREEN SIGNAL CARD


Bharathi Park
Sree Annapoorna Hotel
Central Theatre
Kovai Medical Center and Hospital
PSG College Of Technology
The Tamil Nadu Electricity Board & Corporation Office
Ramar Kovil
Gandhipuram Bus stand
Children Traffic Park
Forest college Campus
Brookefields Mall
Coimbatore Central Jail
G. Kuppuswamy Naidu Memorial Hospital
Tamil Nadu Agricultural University
Shri Nehru Vidylaya Matric Hr.Sec School
Hotel Junior Kuppanna
Baba Cinemas
Coimbatore Corporation Perarignar Anna Park
Senior citizen and Memorial park
Narsampathy lake
Sree Annapoor-na Lodging And Restaurant
Thandu Mariamman temple
Selvampathy lake
Kumaraswamy lake
Racecourse
Sri Masaniamman Temple
KG Hospital
SBOA School
Gandhi Park
Coimbatore girls school
CSI Church
Café Totaram
Racecourse Park
Corporation School
Railway station
Town hall
Police station
Singanallur lake
Valan kulam
Selvachintha-mani Kulam
Chinna kulam
Bank
Post office
Ganga Bakery
Tamilnadu Towheed Jamath
Ukkadam Post office
Kabarsthan Sunnath Jama-ath Masjid
Periya kulam
Ukkadam New Whole-sale Fish market
Children's park
Intersection
Fuel station
Repair shop

Observe
Connect
Take Action

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YOU ARE

A 20 YEAR OLD COLLEGE GIRL

You are an everyday user of this street during peak hours to access your college that is located at the end of this street, by government bus. You also get back late in the night at times due to evening lectures.

YOU ARE

A 30 YEAR OLD WORKING MAN

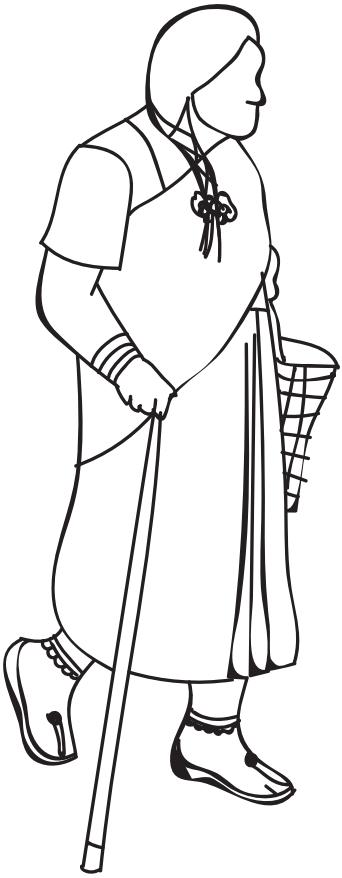
You are working in a software company and use the bus stop located on this street to commute to work every day.

YOU ARE

A 10 YEAR OLD SCHOOL BOY

You stay in a house in this locality and cycle through this street every day to go to your school, tuition and play ground.

YOU ARE



A 80 YEAR OLD SENIOR CITIZEN

You take your grandchildren out every day to the nearby park, go to the medical store, grocery store on this street weekly once and bank at the intersection to collect your pensionm - all by walk.

YOU ARE

AN AUTO RICKSHAW DRIVER

You own an auto rickshaw and are stationed at an auto stand right outside the government office on this street.

YOU ARE

A TRAFFIC POLICE

You stand at the intersection regulating traffic every day from 10 AM to 10 PM, all days of the week. You are responsible for helping pedestrians cross the street - especially school children and the visually challenged.

YOU ARE

A GENERAL STOREKEEPER

All the residents of the locality come to buy supplies from you. Because your shop faces the street, you like to observe the activities on the street from your seat at the cash counter.

YOU ARE

A TEA STALL OWNER

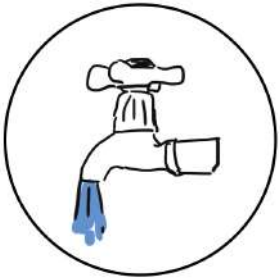
You have a tea stall next to the general stores at the corner of the street. You open the stall at 4 AM for the early morning commuters and cab drivers. At noon, the employees of a nearby office come to drink tea after lunch. You close your stall at midnight after the night patrol officers drink tea at your stall.

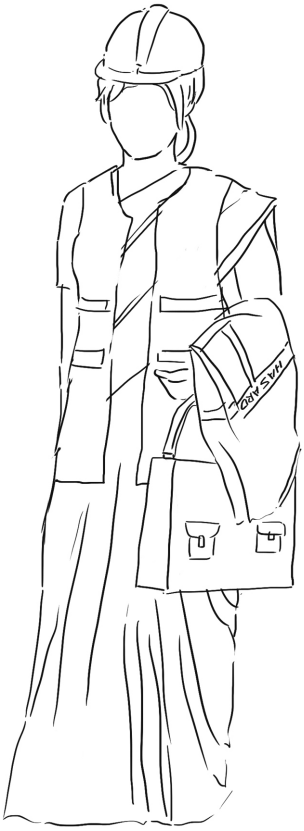
YOU ARE

A TNEB / TANGEDCO AREA ENGINEER

You are responsible for providing uninterrupted power supply to all the properties along this street. You handle all the repair / maintenance works and provide new connections as required.

YOU ARE





A WATER SUPPLY & SEWER AREA ENGINEER

You are responsible for providing uninterrupted water supply to all the properties along this street and also sewer connections from the properties to the nearest pumping station. You handle all the repair / maintenance works and provide new connections as required.

YOU ARE

A STORM WATER AREA ENGINEER

You are responsible for laying and maintaining storm water drains on this street so that there is no waterlogging during the monsoon season.

YOU ARE

A BSNL AREA ENGINEER

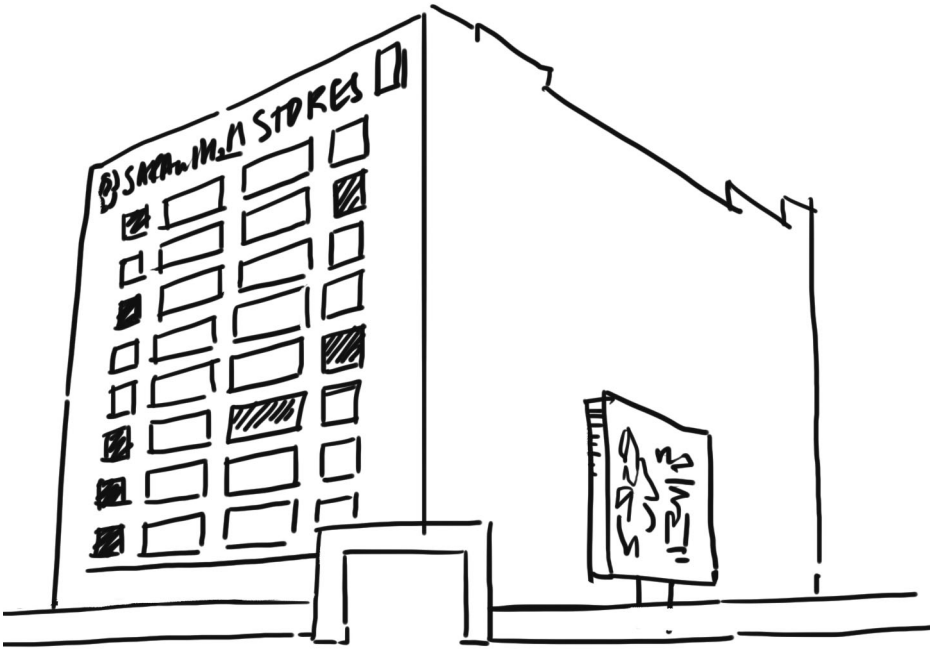
You are responsible for providing uninterrupted data and telephone network connections to all the subscribers in this street. As required, you also provide new connections.

YOU ARE

A LONG-TIME RESIDENT

You are a resident of this street for more than 30 years and own a two wheeler and your son owns a car. You are an active member of the resident welfare association and are very committed to making this locality a better one to live in.

YOU ARE



A LARGE FORMAT RETAIL SHOP OWNER

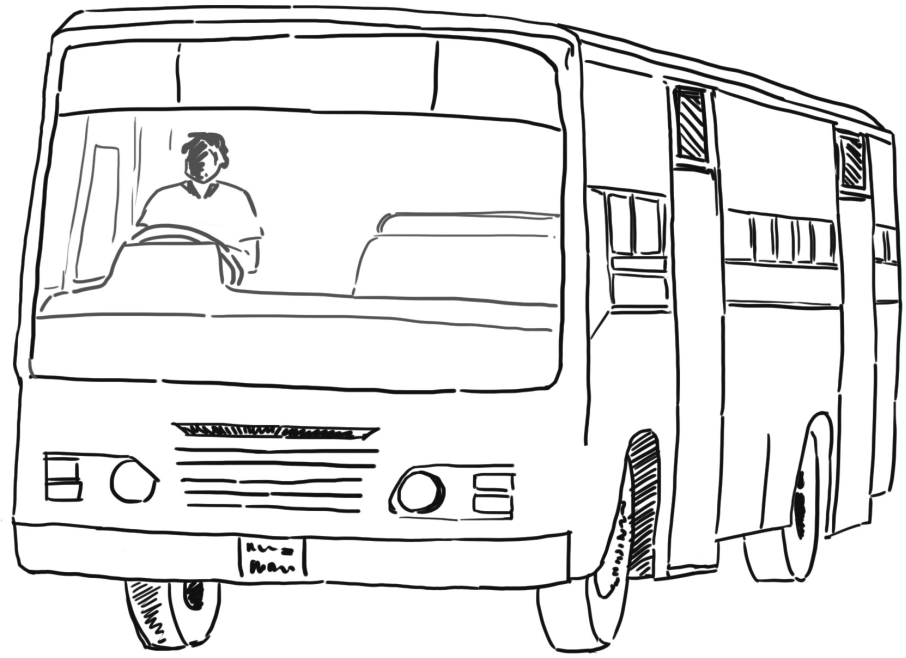
You are the owner of a 4 storey retail shop with more than 200 staff working with you. Most of your customers come to shop by car, two wheeler or walk from the nearest bus stop. You have limited parking within your property. Your shop functions from 10 AM in the morning to 10 PM in the night.

YOU ARE

A SHOPPER

You come here to shop along with your family by car and spend almost an entire day once in two months and definitely during festival season .

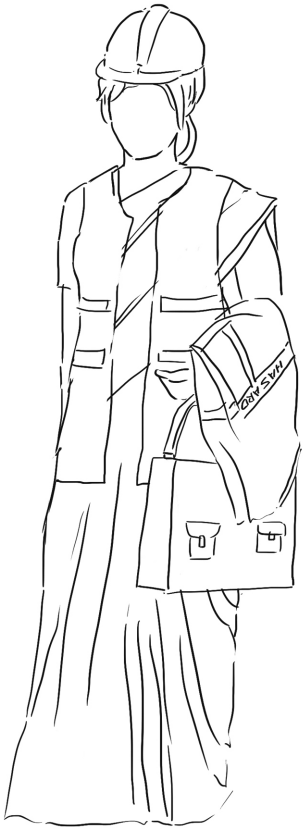
YOU ARE



A BUS DRIVER

You are driving through this street which is highly congested especially during peak hours with the constant pressure to finish your trips on time.

YOU ARE



A MUNICIPAL ENGINEER

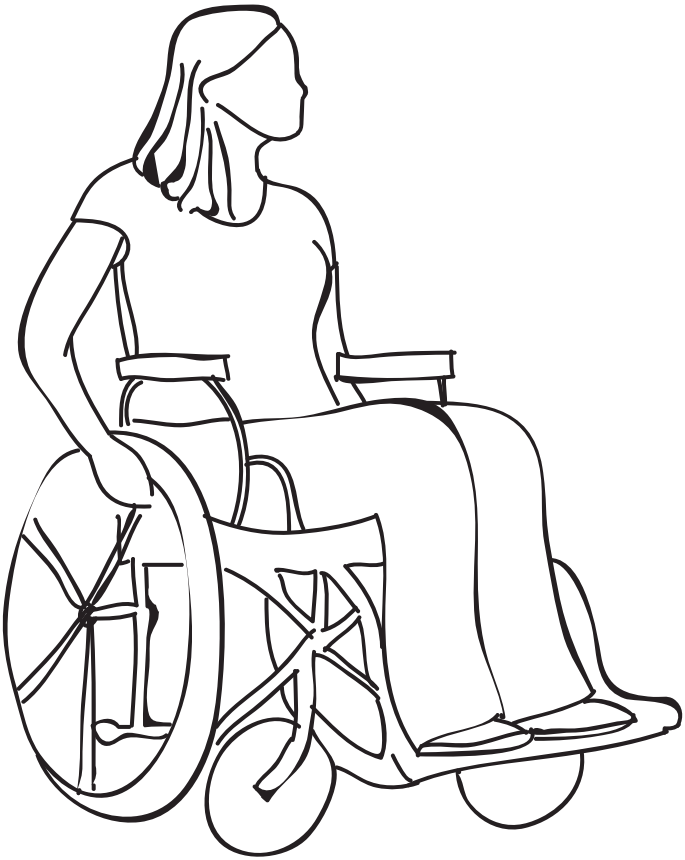
You are responsible for maintaining the street and bus stops. You are also in charge of site supervision, handling consultants, coordinating between different agencies and contractors for any redesign / repair works.

YOU ARE

A CYCLIST

Being a health conscious person, you use your cycle to go to work every day and on the way back home you stop at the lake side to enjoy the view and relax.

YOU ARE



A WHEEL CHAIR USER

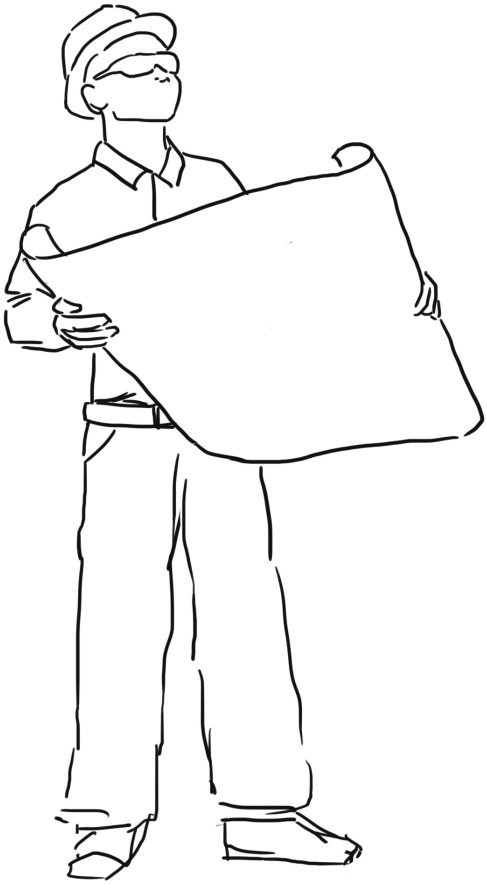
You are a resident of this street and find this street unfriendly for wheelchair users. As a result, you rely on your neighbour to buy your daily food supplies.

YOU ARE

A CONTRACTOR

You have been appointed to procure materials and construct the street as per the design given by the consultant including the temporary connections for shifting of utilities.

YOU ARE



A CONSULTANT

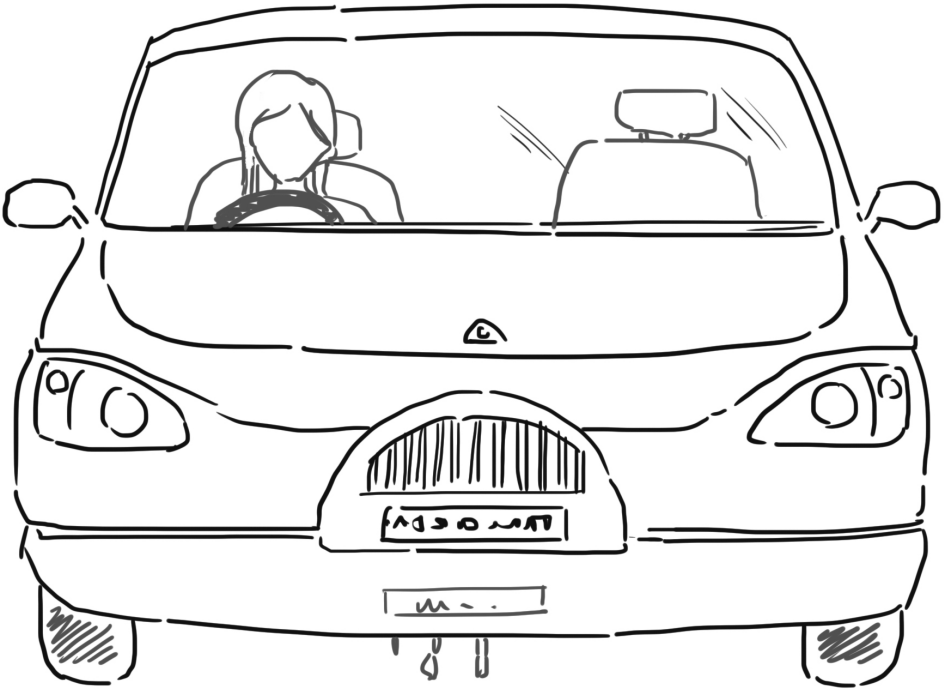
You have been appointed to redesign the entire street. Your scope of work is to understand the existing site condition in depth, conduct stakeholder engagement and redesign the street keeping in mind future demand projections.

YOU ARE

A TWO WHEELER RIDER

You ride through this street every day on the way to work. You visit the gym located on this street either in the morning before work or evening after work.

YOU ARE



A CAR DRIVER

You pass through this street every day and stop to buy some grocery and other daily needs.

USER GROUP ANALYSIS
Introduction

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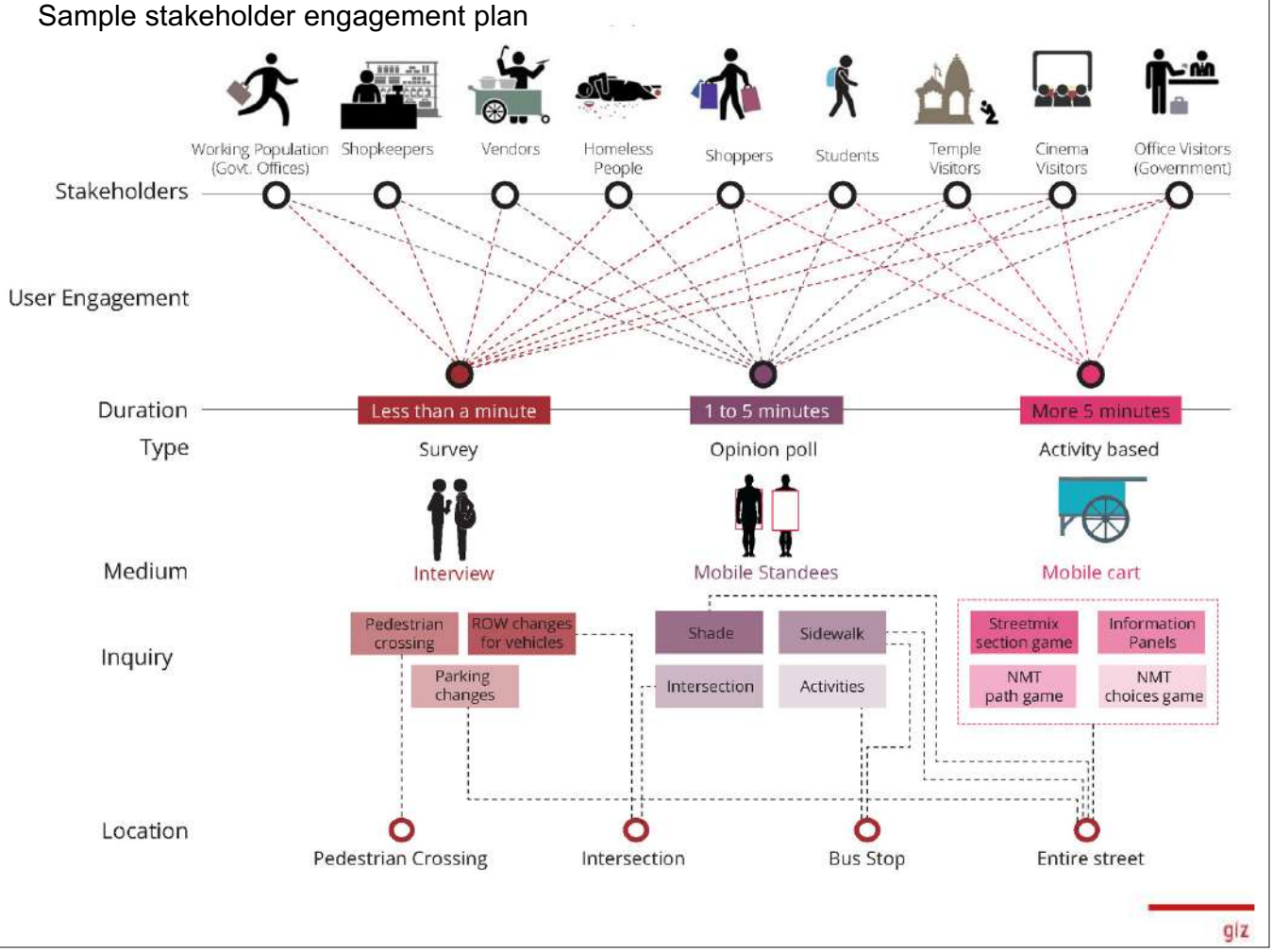
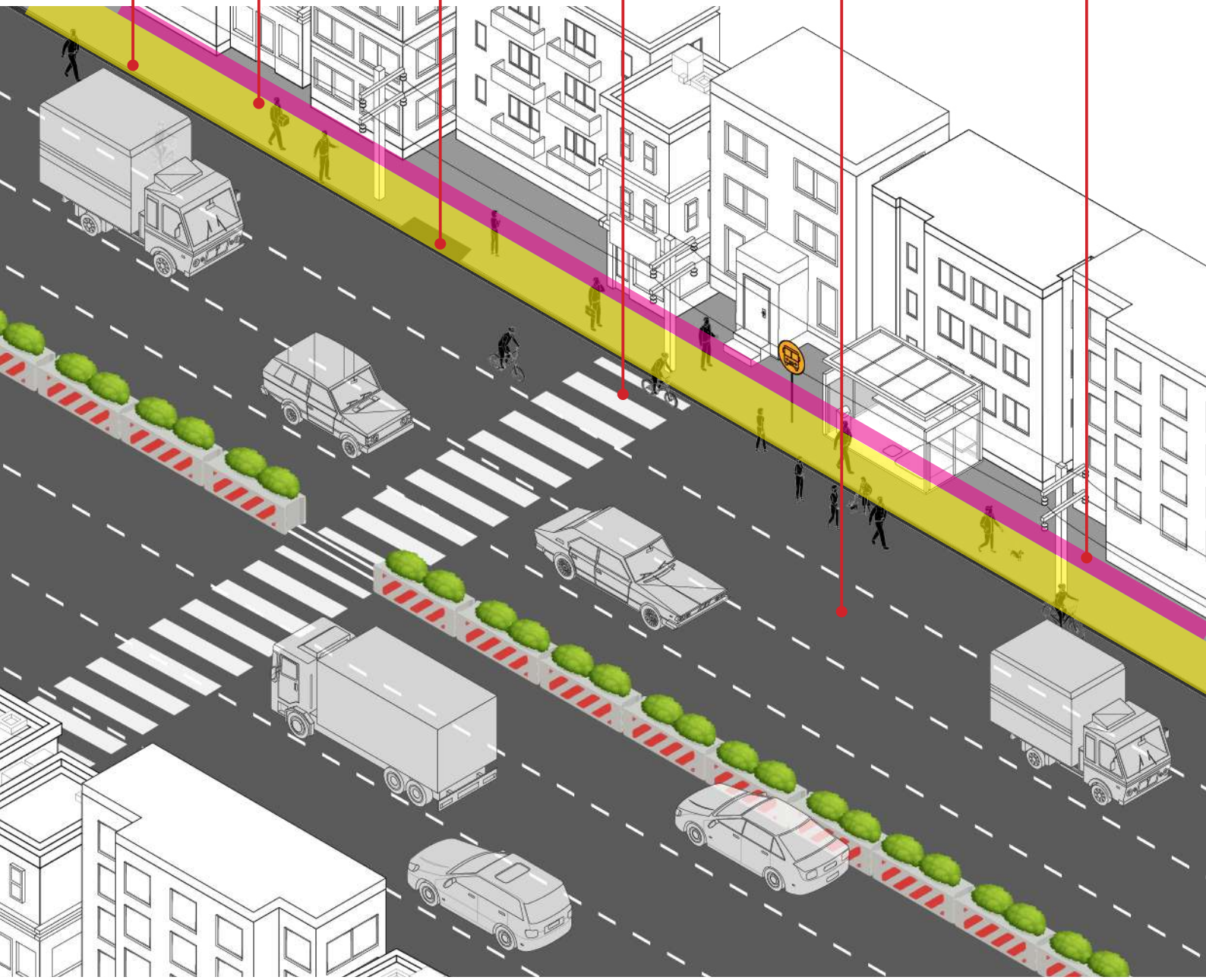
Sample Stakeholder Profiles

- *Government sector*
- *Statutory agencies*
- *Political sector*
- *Commercial sector*
- *Non-governmental sector*
- *Subject-matter experts*
- *Civil society entities/ representatives*
- *Resident population of varying demographic profiles*

Sample stakeholder engagement plan



PEDESTRIAN ENVIRONMENT AUDIT | *Part 2*



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AGE AND GENDER SURVEY

The age and gender survey can form an additional layer of information with the pedestrian counts to understand the social and demographic factors of space usage. It helps to provide a picture of who uses and moves through the city. The balance between different age groups and genders is an indicator of the quality, safety and integration level of public spaces.

WHAT TO SURVEY?

The Age and Gender survey can be conducted by observing passing pedestrians, and for each person, noting down the gender (M/F) and approximate age group:

- Children 0-17
- Adults 18-60
- Seniors above 60

This survey will have to be done for a target number of 100 pedestrians irrespective of the time it takes to reach this count. Pedestrians are recorded in the worksheet using the following abbreviations-

MC - Male child
MA - Male adult
MS - Male senior citizen
FC - Female child
FA - Female adult
FS - Female senior citizen

WHEN TO SURVEY?

This survey can be repeated four times a day, in sync with the morning and evening peak hours and lunchtime.

AGE AND GENDER SURVEY

Location		Surveyor Name	
Date		Note	

This survey was conducted on ☐ a weekday ☐ a weekend

TIME	01	02	03	04	05	06	07	08	09	10
8 AM										
12 noon										
4 PM										
7 PM										

CALCULATIONS

MC	
MA	
MS	
FC	
FA	
FS	
TOTAL	

MC	
MA	
MS	
FC	
FA	
FS	
TOTAL	

MC	
MA	
MS	
FC	
FA	
FS	
TOTAL	

MC	
MA	
MS	
FC	
FA	
FS	
TOTAL	

legend - M - Male, F - Female, C - Child (0-17), A - Adult (18-60), S - Senior (above 60)

PEDESTRIAN COUNT

Pedestrian counts are useful in understanding the volumes and patterns of usage of the public realm across the site area / neighbourhood / city district. When collated, the data on number of people walking in the city can provide valuable insights on what places work well for pedestrian occupation, and factors that contribute to lively use of the public realm despite poor infrastructure or environmental quality.

The pedestrian environment audit again provides the framework for counting pedestrian activity. The following pointers will be useful in executing the pedestrian counting activity.

WHOM TO COUNT?

1. Count all pedestrians walking in each direction.
2. Count children, as well as children carried by their parents
3. Count people in wheelchairs and on rollerskates as pedestrians.
4. Count people riding bicycles separately, as their own category

WHEN TO COUNT?

1. You will need to take a pedestrian count for 10 minutes in every hour at each of the selected locations. This can then be extrapolated to an hourly count by multiplying by 6.
2. Ideally, counts spanning every hour from 7 am to 11 pm would be useful to understand the ebbs and flows in activity. If this is not practical, aim to capture atleast 2 hours of counts each in the morning and evening during rush hours and an additional 2 hours around lunch time (totally 6 hours of counts).

THINGS TO REMEMBER:

1. If you are using a counter/ clicker , reset to zero before each count
2. Count for exactly 10 minutes every hour. Use a stopwatch to monitor if necessary
3. Carry an official letter from the concerned authorities at all times during surveying

PEDESTRIAN COUNT

Location		Surveyor Name	
Date		Note	

This survey was conducted on ☐ a weekday ☐ a weekend

TIME	NO. OF PEDESTRIANS		NOTES
	Direction 1	Direction 2	
07.00 - 07.10			
08.00 - 08.10			
09.00 - 09.10			
10.00 - 10.10			
11.00 - 11.10			
12.00 - 12.10			
13.00 - 13.10			
14.00 - 14.10			
15.00 - 15.10			
16.00 - 16.10			
17.00 - 17.10			
18.00 - 18.10			
19.00 - 19.10			
20.00 - 20.10			
21.00 - 21.10			
22.00 - 22.10			
23.00 - 23.10			

VEHICULAR COUNT

Vehicular counts helps in understanding the nature and volume of the floating population, traffic pattern and density in the stretch / site area. Data obtained from documenting the number of vehicles crossing a particular point at various time intervals can be compared with the standards to determine the width of the carriage way at various sections of the stretch, giving more space for pedestrians.

The following pointers will be useful in executing the vehicular counting activity.

WHAT TO COUNT?

1. Count all vehicles in each direction.
2. Each vehicle category is counted and tabulated separately.

WHEN TO COUNT?

1. You will need to take a vehicular count for 10 minutes in every hour at each of the selected locations. This can then be extrapolated to an hourly count by multiplying by 6
2. Ideally, counts spanning every hour from 7 am to 11 pm would be useful to understand the ebbs and flows in activity. If this is not practical, aim to capture atleast 2 hours of counts each in the morning and evening during rush hours and an additional 2 hours around lunch time (totally 6 hours of counts)

THINGS TO REMEMBER:

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2. Count for exactly 10 minutes every hour. Use a stopwatch to monitor if necessary
3. Carry an official letter from the concerned authorities at all times during surveying

VEHICULAR COUNT

Location		Surveyor Name	
Date		Note	

This survey was conducted on ☐ a weekday ☐ a weekend

TIME	CAR		TWO WHEELER		BUS		AUTO		SHARE AUTO		BICYCLE		LORRY	
	Direction													
	1	2	1	2	1	2	1	2	1	2	1	2	1	2
07.00 - 07.10														
08.00 - 08.10														
09.00 - 09.10														
10.00 - 10.10														
11.00 - 11.10														
12.00 - 12.10														
13.00 - 13.10														
14.00 - 14.10														
15.00 - 15.10														
16.00 - 16.10														
17.00 - 17.10														
18.00 - 18.10														
19.00 - 19.10														
20.00 - 20.10														
21.00 - 21.10														
22.00 - 22.10														
23.00 - 23.10														
TOTAL														

PARKING COUNT

Counting the vehicles parked along the stretch, gives information about the percentage of the road section used for parking. The number of vehicles parked at various instances at the same day helps in deducing the parking demand for the stretch, which can be considered while redisgning the stretch.

The following pointers will be useful in executing the parking counting activity.

WHAT TO COUNT?

1. Count all the vehicles parked in the stretch.
2. Count vehicles parked on either side of the road and tabulate them separately.
3. Count the service vehicles parked during the exercise. Service vehicles include supply vehicles, cleaning trucks etc.

WHEN TO COUNT?

1. You will need to take a parking count for every hour at each of the selected locations. This can then be extrapolated to an hourly count by multiplying by 6.
2. Ideally, counts spanning every hour from 7 am to 11 pm would be useful to understand the ebbs and flows in activity. If this is not practical, aim to capture atleast 2 hours of counts each in the morning and evening during rush hours and an additional 2 hours around lunch time (totally 6 hours of counts)

Additionally, parking patterns can be marked on a map to better understand, where the vehicles are parked with respect to the context. The mapping exercise can be done in a single go if the considered stretch is less than 500m. If more, the stretch can be demargated into different segments and the exercise is carried out for each segment.

MAP OF SITE / STUDY AREA

Use survey drawing. If not available, use google maps.

PARKING COUNT

Location		Surveyor Name	
Date		Note	

This survey was conducted on ☐ a weekday ☐ a weekend

TIME	CAR		TWO WHEELER		AUTO		BICYCLE		SERVICE VEHICLE	
	Side A	Side B	Side A	Side B	Side A	Side B	Side A	Side B	Side A	Side B
07.00 - 07.10										
08.00 - 08.10										
09.00 - 09.10										
10.00 - 10.10										
11.00 - 11.10										
12.00 - 12.10										
13.00 - 13.10										
14.00 - 14.10										
15.00 - 15.10										
16.00 - 16.10										
17.00 - 17.10										
18.00 - 18.10										
19.00 - 19.10										
20.00 - 20.10										
21.00 - 21.10										
22.00 - 22.10										
23.00 - 23.10										

TOTAL										

USER GROUP ANALYSIS

User group analysis is essential to understand the various stakeholders involved in the selected site area. This help in understanding the issues and needs of the various user groups, which can be translated into design considerations.

The following steps are to be followed in the user analysis:

1. List all the user groups involved in the site area based on their usage.
2. Categorize the users into primary, secondary and tertiary stakeholders based on the usage and amount of time they spend on the site.
3. Based on this categorisation, come up with means of engagement to understand the issues faced by each user groups and their needs.

SOME TYPICAL USER GROUP PROFILES

Pedestrians

School and college **students** from nearby institutions, **working population, religious institution visitors** and **shoppers** who use the street as well as transit users.

Motorists

Private vehicle drivers and **public transportation** drivers who frequently use the stretch as well as park the vehicles there.

Police Officers who guide the traffic at intersections and during the Tactical urbanism project.

Residents' Welfare Association (RWA) of nearby neighbourhoods.

Shopkeepers who own or work at shops in the stretch and temporory **street vendors** who keep tempory stalls/kiosks/vehicle stalls.

USER GROUP ANALYSIS

USER GROUP	6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 AM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	7-8 PM	8-9 PM	9-10 PM	10-11 PM	11-12 PM	12-1 AM
01.																			
02.																			
03.																			
04.																			
05.																			
06.																			
07.																			
08.																			
09.																			
10.																			
11.																			
12.																			
13.																			
14.																			
15.																			
16.																			
17.																			
18.																			

ACTIVITY MAPPING

This survey is intended to create a snapshot of the activities in a public space at a given moment. Walk through the space, look ahead of you and map the activities you are passing on your way. Do not turn around or double back. Mark each of the people on the map in the right location, and according to the legend to specify activity type.

WHAT TO MAP?

1. People standing still – looking in at windows, street performers, talking etc.
2. People waiting for transport / traffic
3. People sitting
4. People lying down
5. Children playing
6. People doing physical activities like play, exercise etc.
7. People doing cultural activities – performances etc.
8. People doing commercial activities – hawkers, street vendors etc

Note - During the mapping exercise, only the stationary activities are to be mapped and people walking along the stretch are to be ignored. The above mentioned activities are some of the common activities in a public space and the surveyors need not restrict themselves to these activities.

WHEN TO MAP?

The stationary activities mapping should be done every hour in parallel with the pedestrian counts. Subject to size considerations, mapping stationary activities should take no more than 10 – 15 minutes every hour.

Similar to parking counts, the activity mapping exercise can be done in a single go if the considered stretch is less than 500m. If more, the stretch has to be demarcated into different segments and the exercise is to be carried out separately for each segment.

MAP OF SITE / STUDY AREA

Use survey drawing. If not available, use google maps.

ACTIVITY MAPPING

Location				Surveyor Name	
Date		Time		Note	

This survey was conducted on ☐ a weekday ☐ a weekend

ACTIVITY	SYMBOL	NUMBER
Standing	●	
Waiting for transport	○	
Sitting	■	
Lying down	□	
Children playing	×	
Physical Activities	⊠	
Cultural activities	▲	
Commercial activities	△	
Total		

VENDOR MAPPING

Vendors are an important aspect of street activity. Mapping the vendors in a stretch will give a holistic image of the various vendors operating in the zone and include them as part of the new proposal.

WHAT TO MAP?

1. Only the street vendors are to be marked. This does not include the commercial establishments along the stretch.
2. Document the type of shop - Permanent or Temporary, Movable or Immovable, etc.
3. Document the type of goods sold by the vendors.
4. Document the time period for which the vendor is present on the street
5. Also, document the time interval at which a particular vending activity is at its peak.
6. Document the number of vendors present at a particular vending activity.

WHEN TO MAP?

The vending activities mapping should be done every hour in parallel with the pedestrian counts. Subject to size considerations, mapping stationary activities should take no more than 10 – 15 minutes every hour.

The vendors mapping exercise can be done in a single go if the considered stretch is less than 500m. If more, the stretch has to be demarcated into different segments and the exercise is to be carried out separately for each segment.

MAP OF SITE / STUDY AREA

Use survey drawing. If not available, use google maps.

VENDOR MAPPING

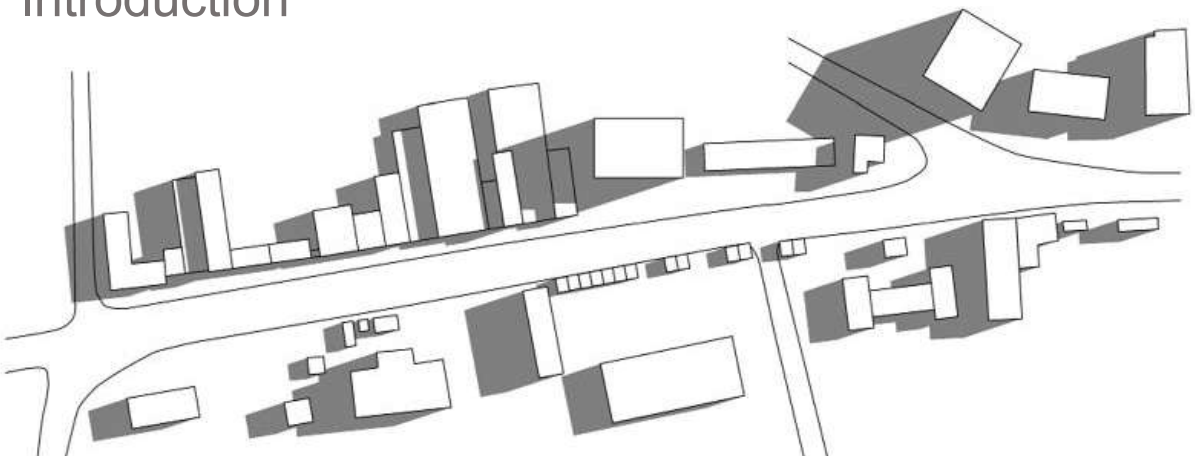
Location				Surveyor Name	
Date		Time		Note	

This survey was conducted on ☐ a weekday ☐ a weekend

ACTIVITY	SYMBOL	TYPE OF SHOP	TYPE OF GOODS	TIME DURATION	PEAK TIME INTERVAL	NUMBER OF PEOPLE
Total						

PEDESTRIAN AUDIT - PART 2

Introduction



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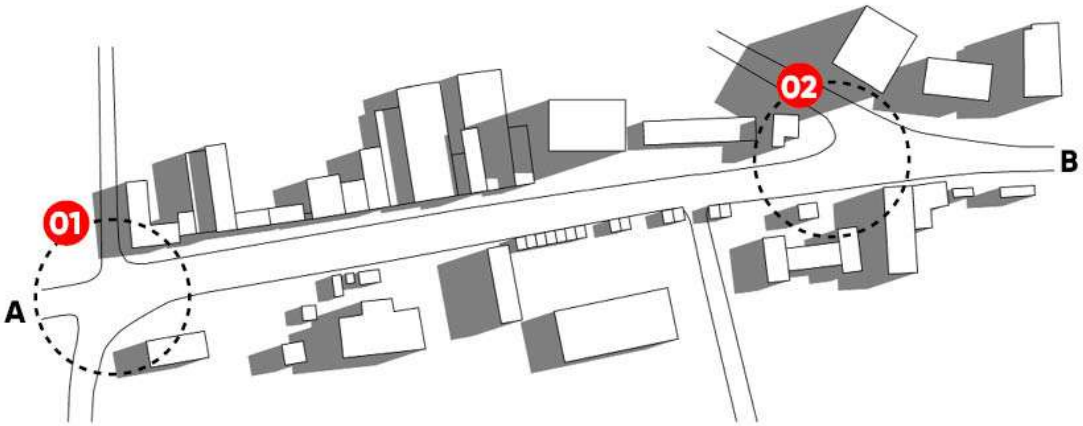
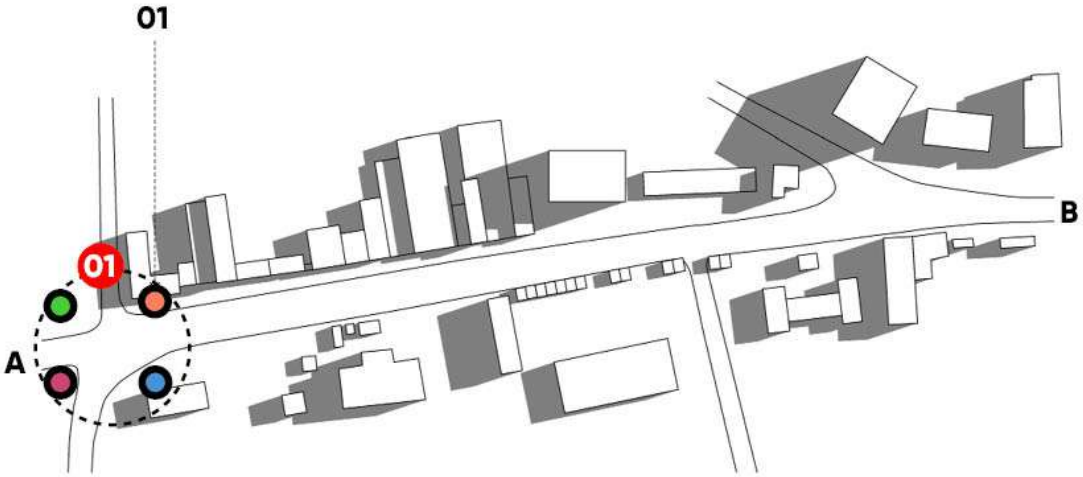
Pedestrian count

Age & Gender count

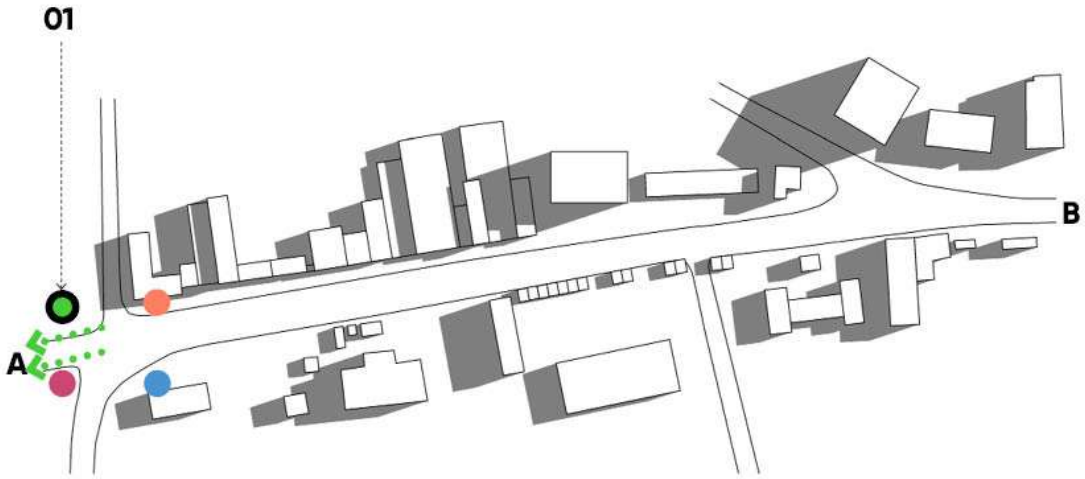
Identifying key intersection



Location to conduct the counts



Intersection 01



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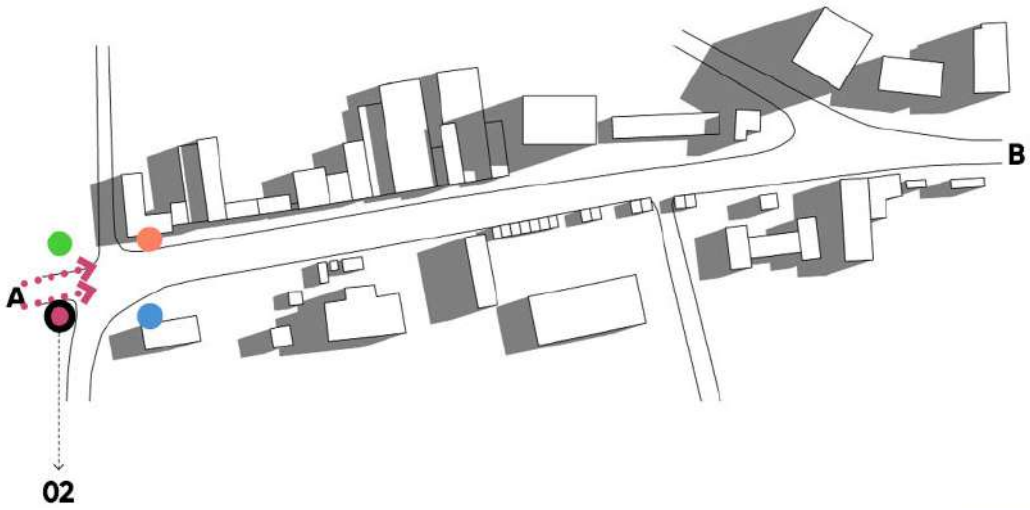
Intersection 01



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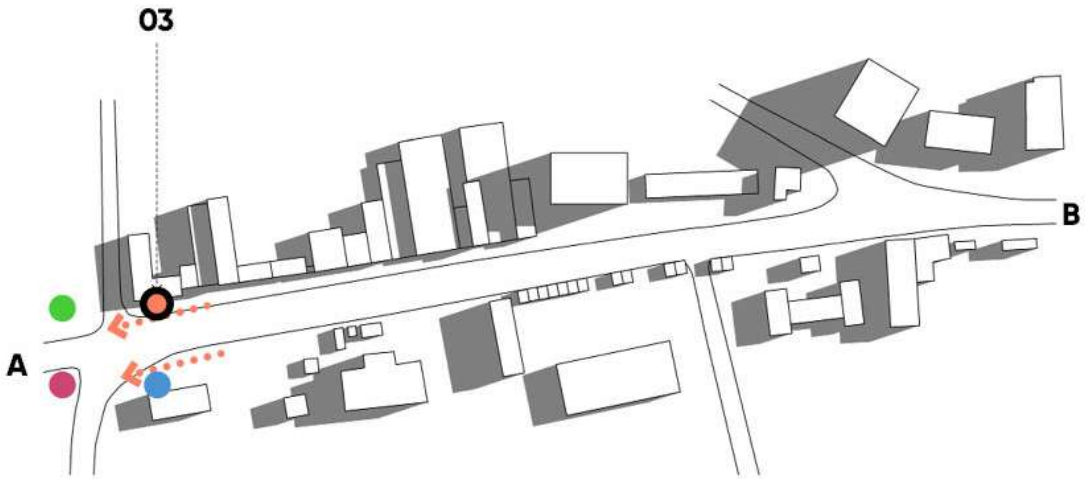
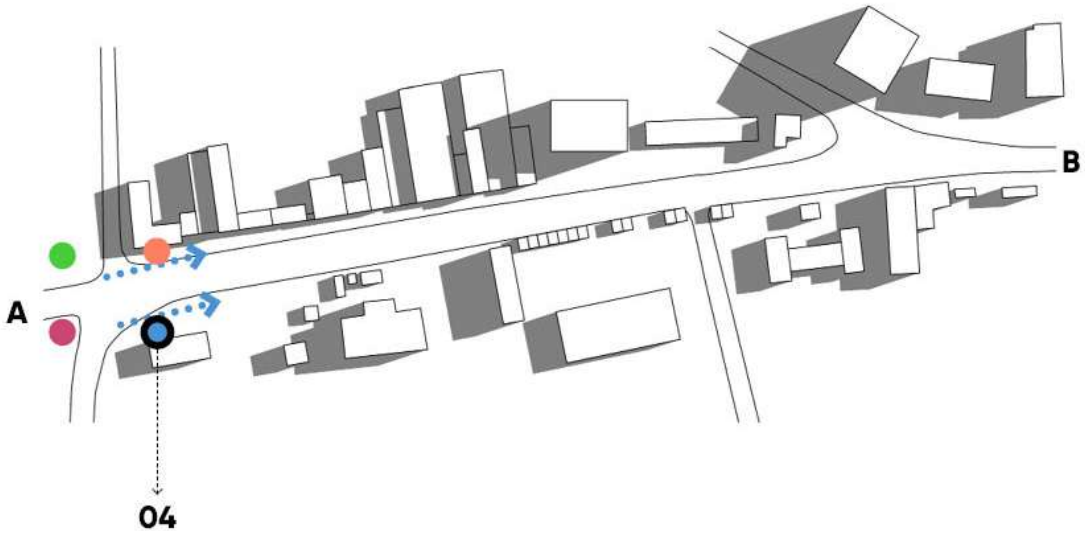
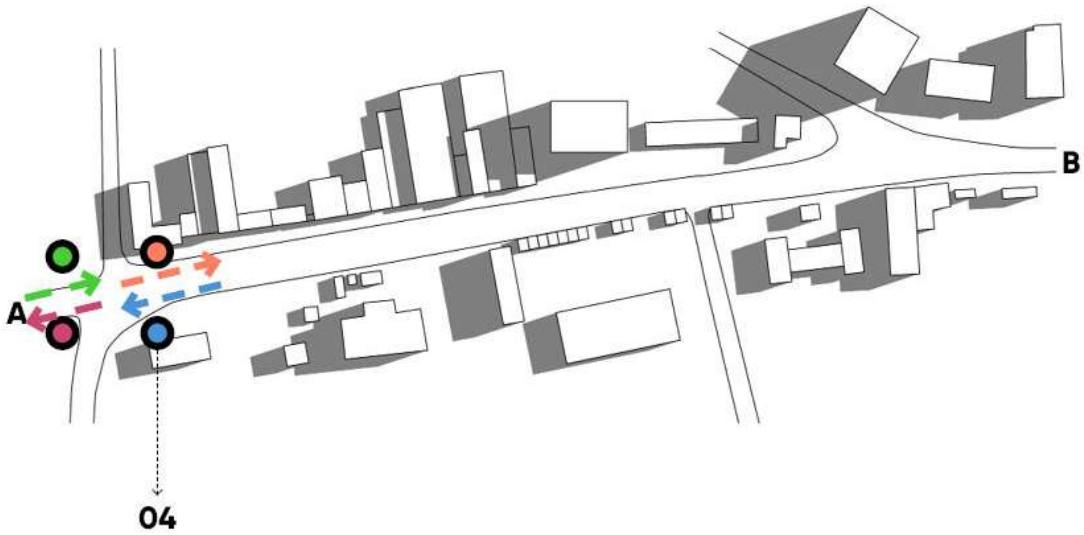
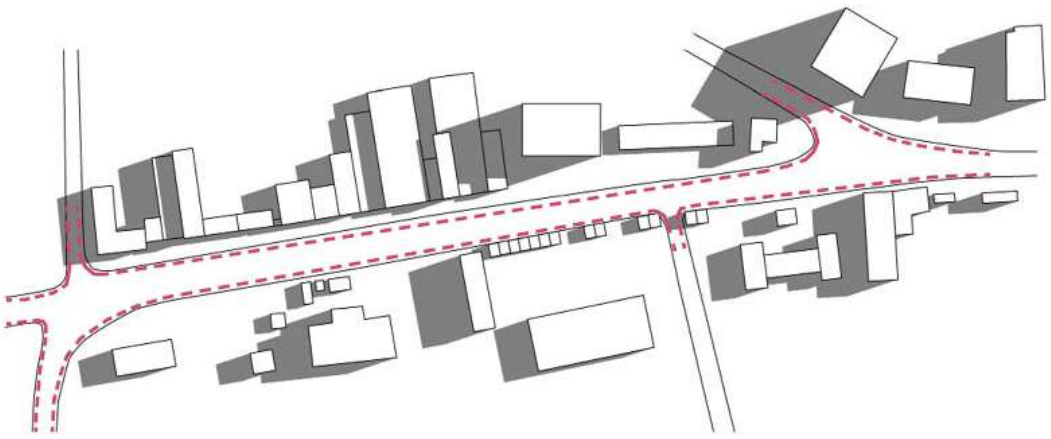

03
A
B


A
B
04

Vehicular count

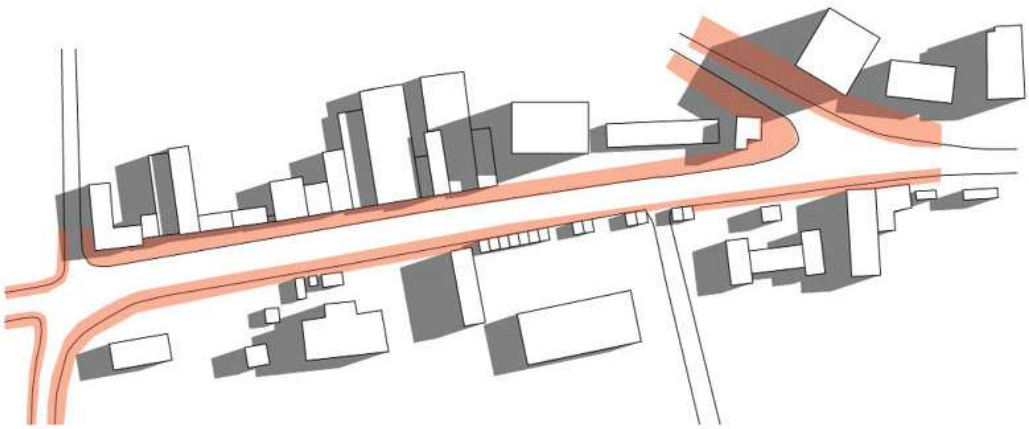


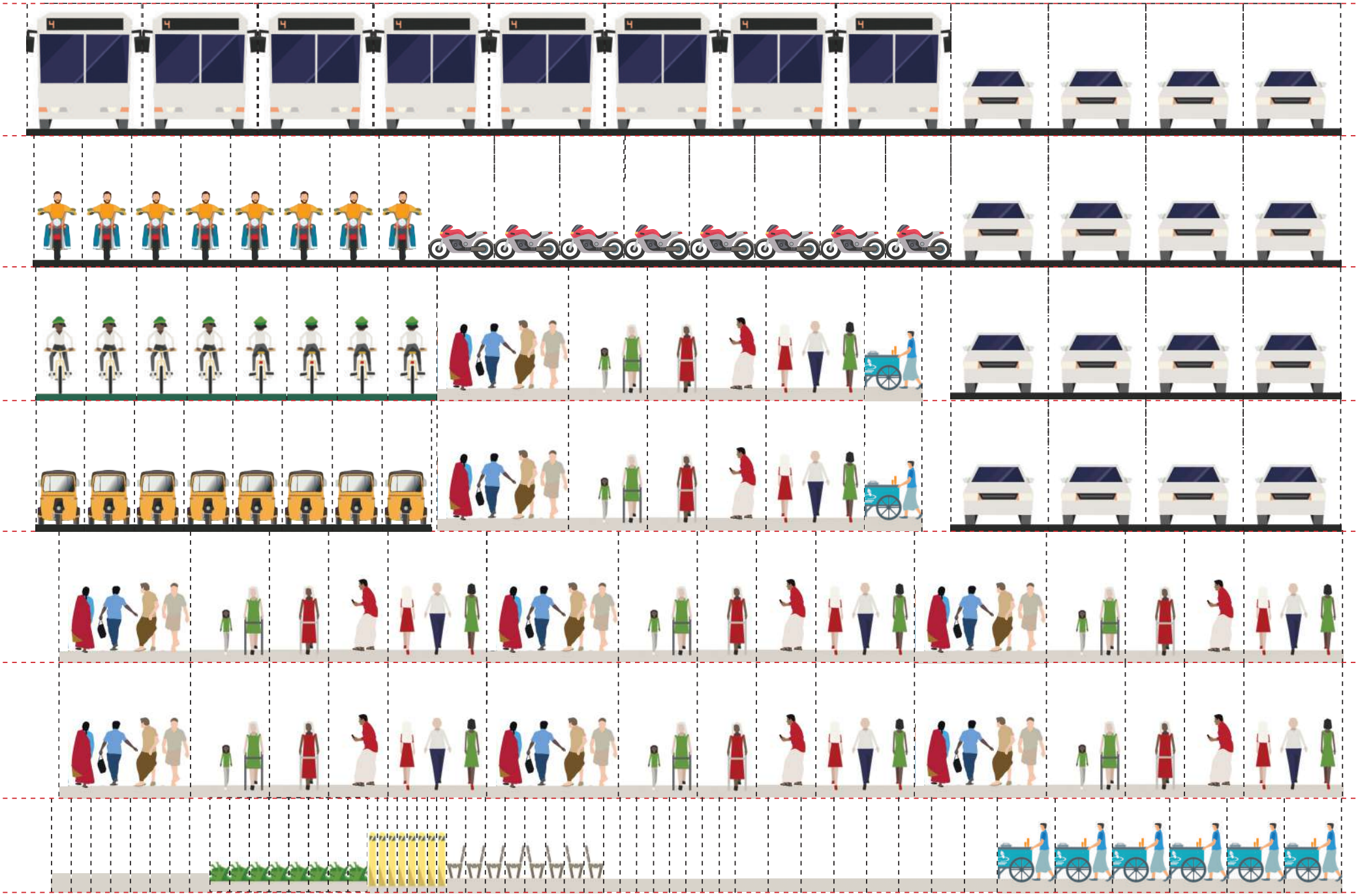
Parking count



User group analysis

Activity mapping
Vendor mapping





Designing street sections - Dimension chart

Street Element	Dimension
Bus lane	3.5m
Car lane	3.0m
Motorbike lane	1.5m
Cycle lane	1.5m
Auto rickshaw	15m
Sidewalk - 1 person	1.8m
Sidewalk - 2 persons	2.4m
Sidewalk - 3 persons	3.0m
Sidewalk - 4 persons	4.0m
Bike parking	2.0m
Median - Small	0.5m
Median - Medium	0.6m
Median - Large	1.0m
Planting strip	0.6m
Bollard/ Delineator	0.3m
Seating	0.6m
Vendor zone	1.8m

INTERSECTION DESIGN

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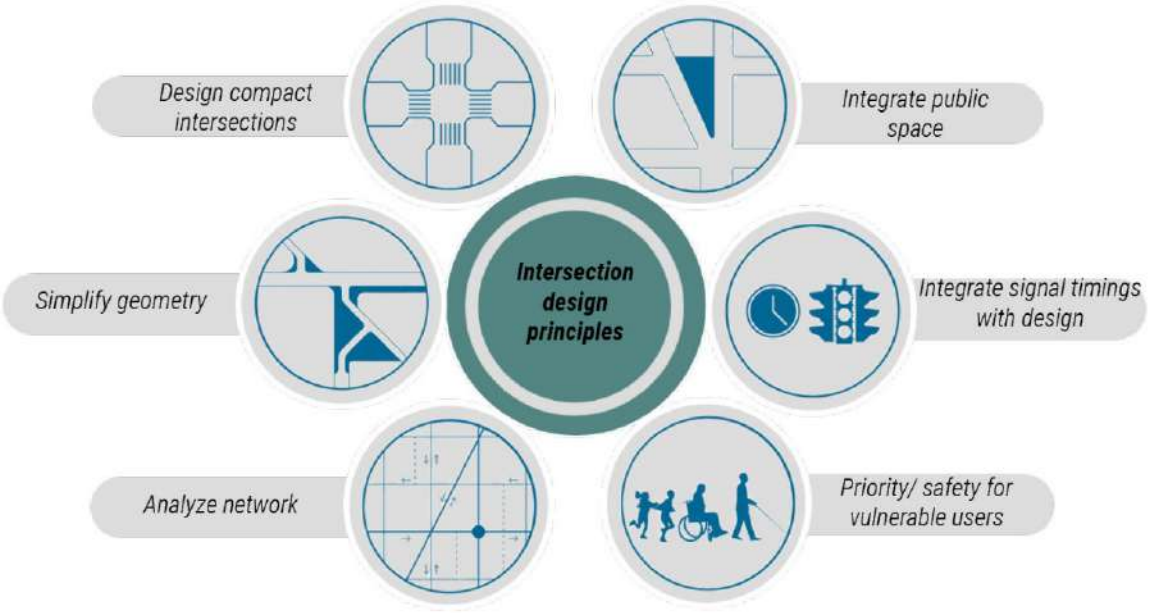
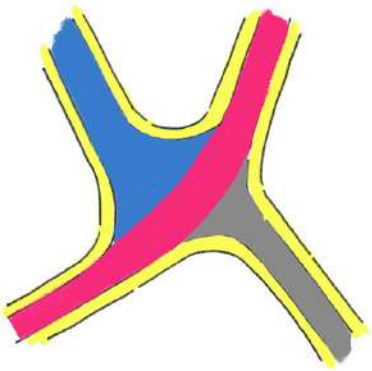


Step 1 - Understanding the street hierarchy

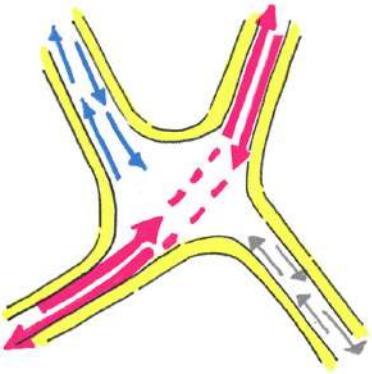
Identify different street hierarchies and which street has priority traffic flow



Arterial road
Sub-arterial road
Inner street

Step 2 - Understanding traffic flows and vehicular counts

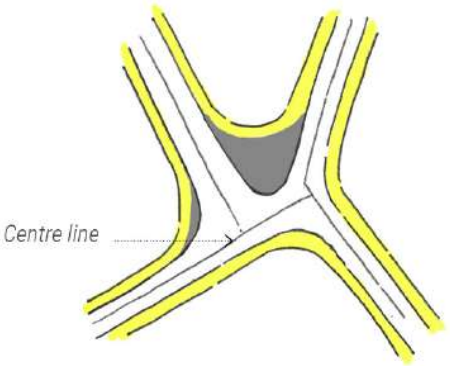
Analyze the different modes of transport and direction of movement of traffic on the streets.



2 way - Bus route road
2 way - only LMV
2 way - only LMV

Step 3 - Simplifying the geometry of intersection

Tracing a centre line for all the streets that meet at an intersection is a precursor to simplifying the geometry. This will give us the required room to tighten the turning radii in step 4.



Step 4 - Tightening the turning radius

Smaller turning radii increases pedestrian safety by

- *shortening crossing distance*
- *increasing pedestrian visibility for drivers*
- *decreasing vehicle turning speed; and*
- *making drivers look out for pedestrians while taking the turn.*

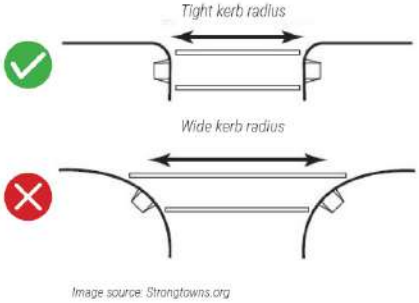
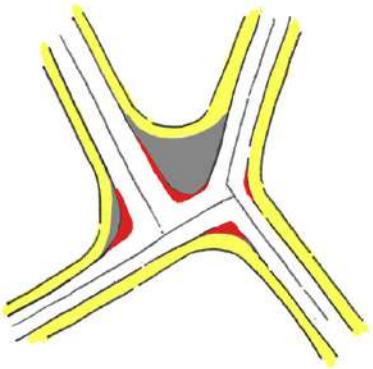
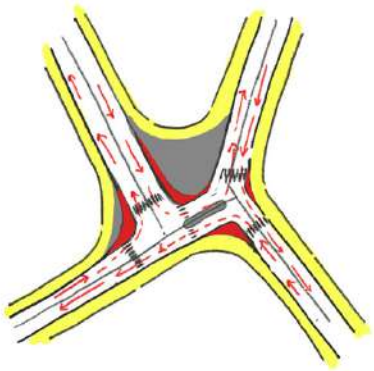


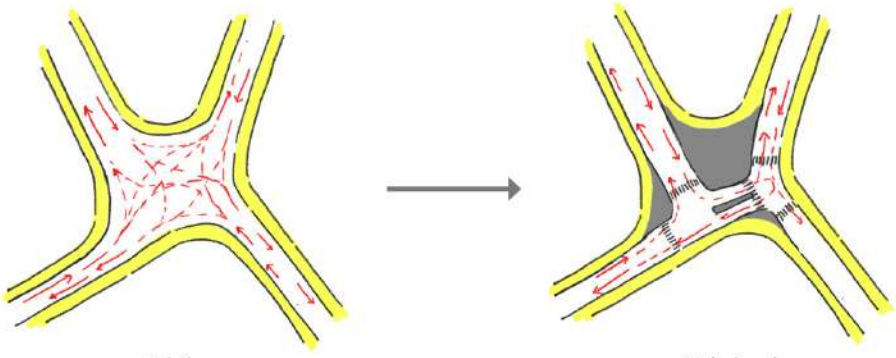
Image source: Strongtowns.org



Step 5 - Addition of pedestrian crossings & refuge islands

The last step is to determine the nature of the pedestrian crossings - kerb drop crossing, table top crossing, crossing with refuge island etc.





Existing ***Redesigned***

The gray patches in the redesigned intersection drawing indicate land parcels within the street right-of-way which can be reclaimed to accommodate the footpath, waiting area or public spaces which are both functional and visually appealing.

ABOVE GRADE UTILITY DESIGN

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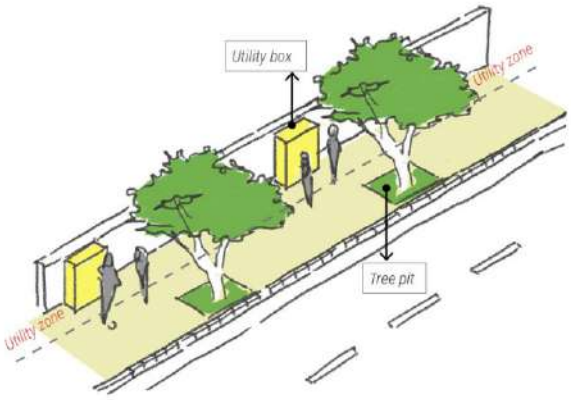
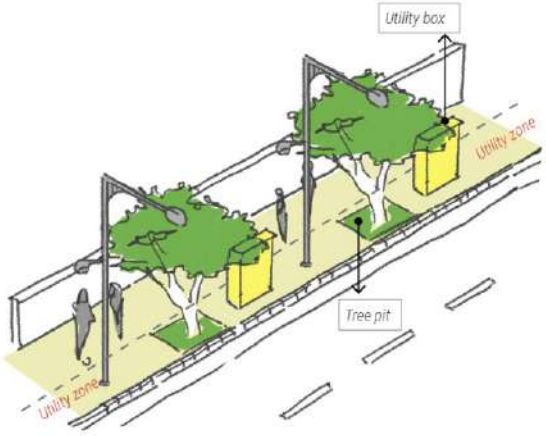
Defining utility zones

All above grade utilities should be streamlined within the street right of way without creating obstructions in pedestrian or cyclist movement

Utility zones should be defined and all above grade utilities such as transformers Electric distribution boxes and section feeders should be placed within this zone



Along property edge

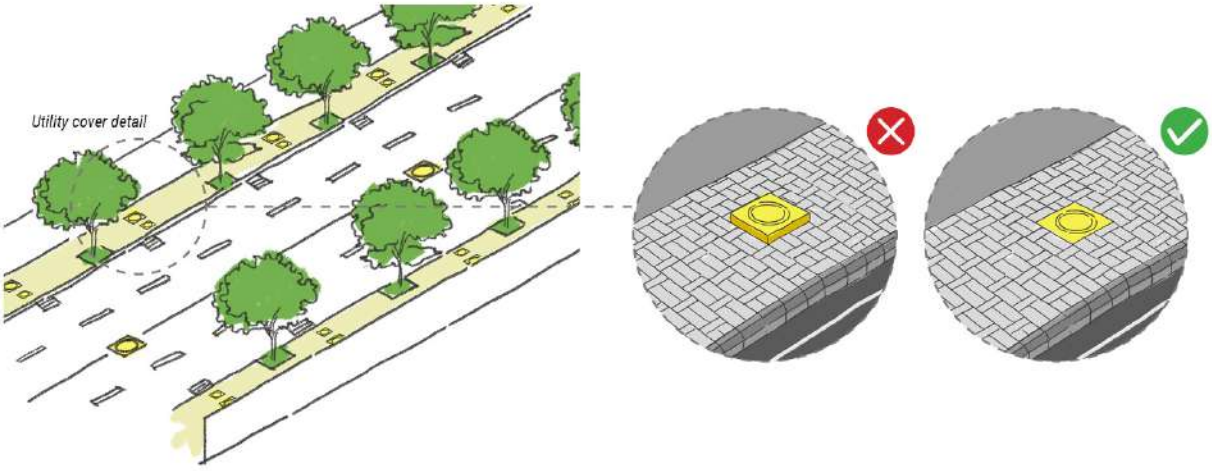


Along kerb edge

These utilities must be placed parallel to ROW and not perpendicularly.

Placement of utility chamer covers

All inspection chamber covers/ manholes must be flushed to the level of sidewalk.



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TACTICAL URBANISM
An introduction

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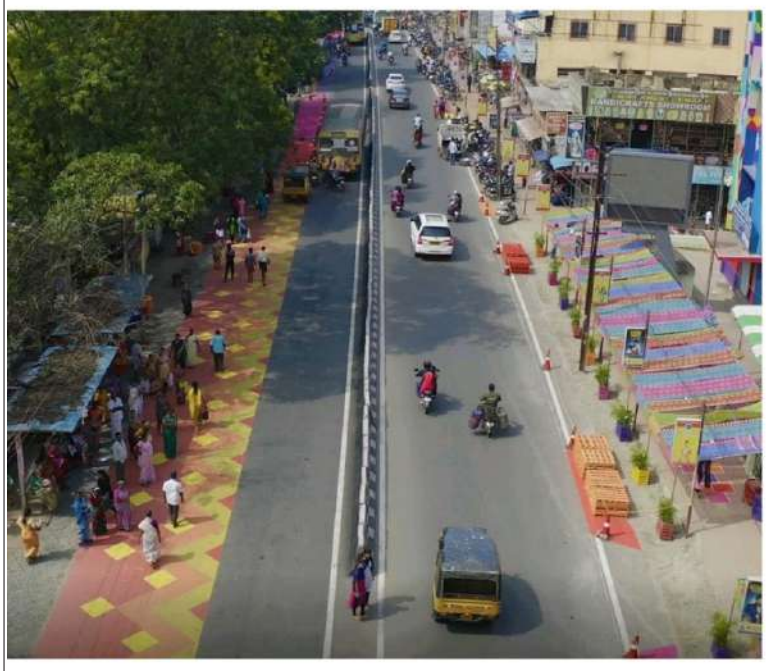
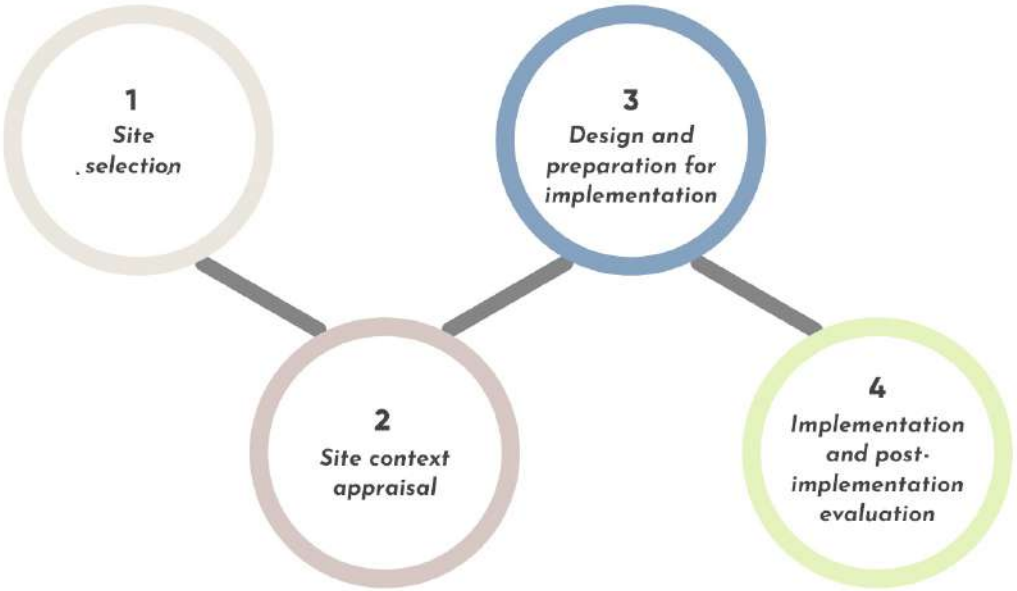


WHAT IS TACTICAL URBANISM?

Tactical urbanism is a city and/or citizen-led, quick and affordable way to test and demonstrate change in our physical environments. It is an approach that is premised on using short-term, low-cost and scalable interventions as a way to catalyse long-term change.

4 KEY STAGES OF A TACTICAL URBANISM PROJECT



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WHAT ARE THE DESIGN POSSIBILITIES IN A TACTICAL URBANISM PROJECT?

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CONNECTING PLACES AND PEOPLE

Extended Sidewalks
Pop-up Bike Lanes

Santiago centro
Image credit: Carlsberg

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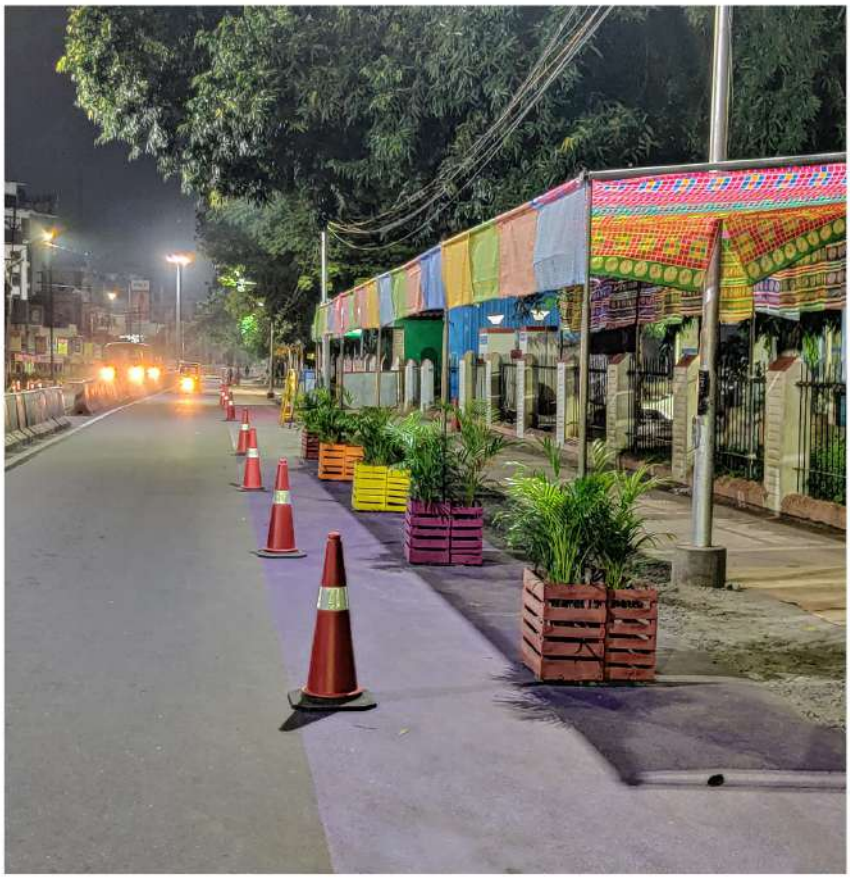

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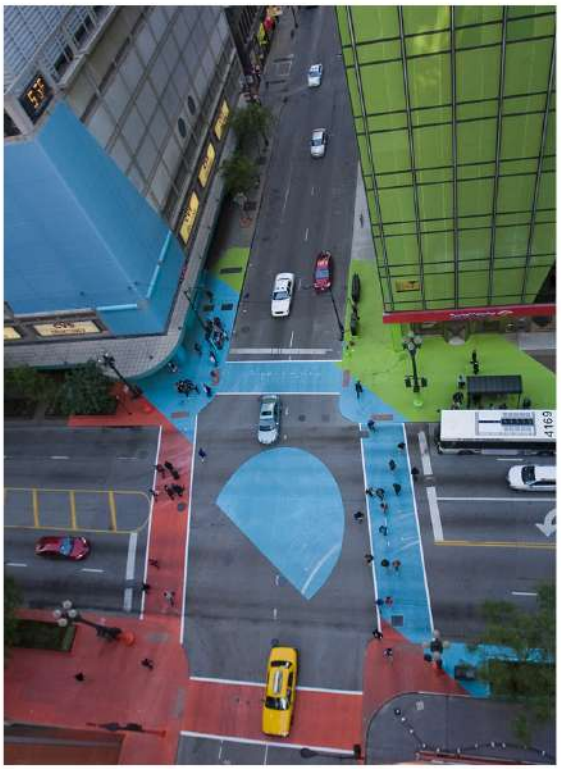
NYC plaza
Credit: NYC DOT

Salou
Credit: Loca studio

REDUCING CONFLICT BETWEEN MOBILITY AND LIVABILITY



Streamlining carriageway
Intersection fix
Pedestrian crossing
Traffic calming
Parking reorganization

Colourjam, Chicago
Image credit: Jessica Stokholder

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Medellin, Colombia

giz

giz

IMPROVING ACCESS TO PUBLIC TRANSPORT

Bus stop improvements
Bus lanes/ Bus bay marking

Big bazaar road, Coimbatore
Image credit: UDC

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Big bazaar road, Coimbatore. Image credit: UDC

PLACEMAKING TO IMPROVE LIVABILITY

Shade structures
Seating
Stationary activity zones
Lighting
Art in the street

Pavement to plaza
Santiago, Chile

Credit: Apicultura studio, Milan

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Stratford city centre. Image credit: Thomas Matthews

WAYFINDING TO IMPROVE LEGIBILITY

Sign boards
Floor signage
Trail markings

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Stratford city centre. Image credit: Thomas Matthews

BENEFITS OF A TACTICAL URBANISM PROJECT

It helps deepen understanding of user's needs at the site for intervention through a rapid assessment of the existing challenges, opportunities and constraints.

Credit: Build a better block

It serves as a proof of concept for a plan before committing large financial investments to a project. Conversely, it also helps expedite project implementation knowing that there is a buy-in from all stakeholders involved if the tactical urbanism project has received positive feedback post-implementation.

It helps to quickly address problems related to user experience in our streets through cost-effective interventions.

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Credit: Streetplans

It encourages residents, non-profits, local businesses, and government agencies to work together while using the system creatively. This helps widen public engagement by providing an opportunity for more effective conversations with citizens.

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Ministry of Housing and Urban Affairs (MoHUA) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH are jointly implementing the 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). The project works with the three Smart Cities of Bhubaneshwar, Coimbatore, and Kochi and respective state governments of Odisha, Tamil Nadu, and Kerala to promote low carbon mobility planning, and to plan and implement sustainable urban transport projects in the fields of public transport, non-motorised transport and modal integration.

As part of the Indo-German bilateral cooperation, both countries have also agreed upon a strategic partnership - Green Urban Mobility Partnership (GUMP) between Ministry of Housing and Urban Affairs (MoHUA) and Federal Ministry for Economic Cooperation and Development (BMZ). Within the framework partnership's technical and financial cooperation, the German government will support improvements in green urban mobility infrastructure and services, strengthen capacities of national, state, and local institutions to design and implement sustainable, inclusive, and smart mobility solutions in Indian cities. As part of the GUMP partnership, Germany will also be supporting expansion of public transport infrastructure, multimodal integration, low-emission or zero-emission technologies, and promotion of non-motorised transport in India. Through this strategic partnership, India and Germany intend to jointly achieve effective international contributions to fight climate change.