

URBAN95

Udaipur – An Urban95 City



Template of Infant, Toddler and
Caregiver (ITC) Integration in Udaipur
Intervention Guidance Report



Supported by



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Technical Partner

**Template of Infant, Toddler and Caregiver (ITC) Integration in Udaipur - Intervention
Guidance Report**

Project – Urban95 Program, Udaipur

City Partner – Udaipur Municipal Corporation (UMC)

Funder cum Supporting Partner – Bernard Van Leer Foundation (BvLF).

Technical Partner – ICLEI - Local Governments for Sustainability, South Asia

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List of Abbreviations

- BvLF - Bernard Van Leer Foundation
- CPZ - Child Priority Zone
- IRC - Indian Roads Congress
- ITC - Infant, Toddler and Caregiver
- ITCN - Infant, Toddler and Caregiver Friendly Neighbourhood
- MUZ - Multi Utility Zone
- UMC - Udaipur Municipal Corporation
- UTTIPEC - Unified Traffic and Transportation Infrastructure (Planning & Engineering) Centre

Preface

Bernard van Leer Foundation (BvLF) believes that giving all young children a good start in life is both the right thing to do and the best way to build healthy, prosperous and creative societies.”

Udaipur Municipal Corporation (UMC) realizing the need to transform city's urban built environment into more child responsive and child friendly, signed a MoU for initiating Urban95 program in Udaipur.

ICLEI - Local Government for Sustainability, South Asia (ICLEI SA) - the technical partner of BvLF for Urban95 project in Udaipur engaged Mr. Adarsha Kapoor (Urban Designer) to provide inputs to design interventions for Infant, Toddler and Caregivers (ITC) in Udaipur city.

This report is in continuation to the works being done and has been prepared through assessment of the site studies, data collected on site, data and publications made available by BvLF and stakeholder consultations conducted in the month of June 2019. The assessments have been carried out as per steps outlined in the Urban95 starter kit. This report is to be read in continuation to the Baseline Assessment Report.

ICLEI SA is thankful to BvLF for supporting this initiative and to UMC, their representatives and the other local city based stakeholders for providing valuable inputs and feedbacks in preparation of this report.

ICLEI SA also acknowledges the contributions made by Mr. Adarsha Kapoor (Urban Designer) and his team including Ms. Somi Chatterjee (Conservation Architect), Ms. Vinshi Raj (Urban Regeneration Specialist), Ms. Sabreena Ashraf (Urban Regeneration Specialist) and Mr. Saad Yazdani (Architect) in preparation and completion of this report.

Executive Summary

This report titled “Template of Infant, Toddler and Caregiver (ITC) Integration in Udaipur - Intervention Guidance Report” has been prepared in consultation with Udaipur Municipal Corporation and Bernard van Leer Foundation. It is an outcome of extensive on-ground studies, stakeholder interactions, expert feedbacks and continuous on-ground testing through implementation of tactical and pilot interventions in the city of Udaipur.

This template has been structured similar to a “Handbook”, while it has been simplified with the intentions of “Simplicity in Comprehension” and “Ease of Application”, as this is intended to be referred and applied by various sector experts, like architects, designers, engineers, policy makers etc. The document draws inspiration from various knowledge resources published by BvLF and tested through on ground implementation of tactical and pilot interventions by Udaipur Municipal Corporation, Udaipur Smart City Limited and other local stakeholders.

This document is structured in the following parts-

- 1. Introduction and Application-** This section lays principles and processes for application of this document in designing of ITC friendly spaces and utilities, specific to Udaipur. The section draws inspirations from BvLF's research, shows application of various surveys and outlines a framework for design of such spaces. It also explains how to read and apply this document.
- 2. Design Pallete-** This section directly refers to the design pallete for ITC friendly spaces and utility, advocated by BvLF through its researched knowledge resources.

- 3. Intervention Guidelines-** The Intervention Guidelines are structured such that each section first describes various types of spaces, lists out typical ITC elements for each type of space and then recommends typical design, specifications, codes and guidelines for application. Each section has a recommended classification of elements into Essential, Supportive and Thriving Components to assist the user of this document to judiciously phase out the implementation of the comprehensive schemes. The guidelines are structured into following three broad category of interventions-
- Streets
 - Parks and Public Spaces
 - Public Utilities
- 4. Possible Transformations-** This section demonstrates how application of this guideline can transform spaces and utilities thereby making them ITC friendly.
- 5. ITC Reference Documents-** This section lists out all other documents and knowledge resources relevant to ITC interventions that the users of this document can refer to.

This document has been prepared to ensure that it does not overlap with other knowledge resources published by BvLF, yet is inspired by them and emphasises more on Udaipur specific solutions, their implementation and indicative benefits. Though, as far as possible, this is a comprehensive document, but in certain cases the users may feel the need to refer to the background research/ knowledge that forms the basis of this document. In such cases, the user may refer to the set of reference documents mentioned towards the end of this document or innovate contextual solutions.

1. Introduction

The four main focus areas for Urban95 pilot innovations are:



Green Public Space

Transforming existing public spaces into places for young children to play and explore nature and for caregivers to meet and rest.



Mobility for families

Facilitating caregivers and young children to walk or cycle to access healthcare, childcare, play areas and a source of mode of transport.



Data driven decision making

Collecting and applying neighborhood level data on young children and caregivers to target resources and facilitate coordination across sectors.



Parent coaching

Surrounding parents with ideas for ways to incorporate play and storytelling into daily routines, and nurture their children's developing minds.



In the Baseline Assessment Report of this assignment, types of urban spaces in Udaipur were classified into Streets, Parks and Public Spaces. These spaces were visited, surveyed and analyzed to assess methods of integrating infrastructure that make these areas friendly and comfortable for Infants, Toddlers and Caregivers. For Udaipur, it was also understood that there is a need for providing a contextual palette of requirements for these types of spaces that could be referred by local agencies and concerned design teams for planning, designing and implementation of such actions.

This report is the final submission and a continuation of the reports submitted earlier. It contains:

1. Assessment of all types of spaces to identify ITC infrastructure required for each of them.
2. Design recommendations for typical ITC Infrastructure elements for Streets, Parks and Public Spaces and Utilities.
3. Design exploration for selected type of spaces provided to visualize expected transformation of these spaces to make them ITC friendly.
4. The design solutions submitted for pilot sites are based on this recommended design palette.

How to Select an Intervention Area

Selection of Areas for ITC Interventions shall be based on the citywide assessments done as part of this assignment or similar approach adopted by local agencies from time to time. The approach for selection of Intervention areas shall be based on "Urban95 Starter Toolkit"

Urban95 Starter Toolkit is a test version for pilot projects and offers a range of tools for assessment of pilot areas including preparation of possible ideas to enable an Infant-Toddler - Caregiver-friendly environment in a city.

The Starter Toolkit recommends, a five step process

STEP 1

Anchoring the Zone and setting a perimeter

Finding an anchor institution like a childcare centre, playground, community toilet or health clinic and setting perimeter around it.

STEP 2

Signaling the Zone and raising awareness

Signage about Child Priority Zone (CPZ), activities like pop-up play and play-streets. Promoting CPZ zone in day to day life.

STEP 3

Connecting the Zone

Connecting places where young children and their caregivers go through physical interventions crosswalks, safe and playable pavements, traffic calming etc.

STEP 4

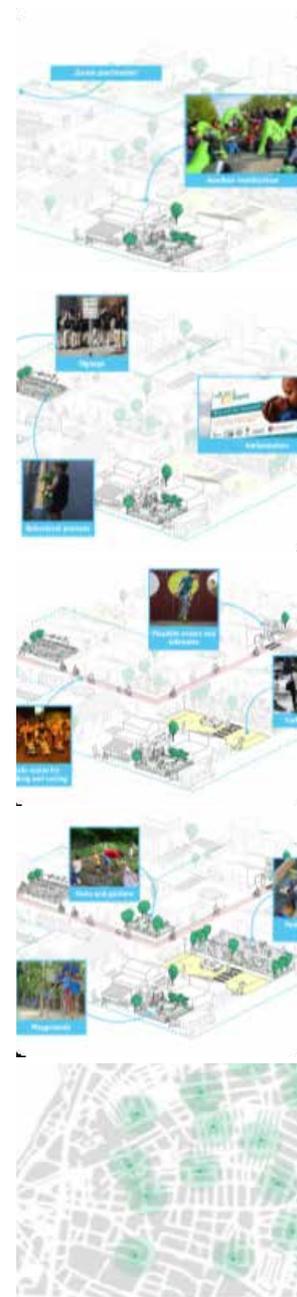
Constructing Landmarks

Infrastructural investments in new or revamped playgrounds, parks and pedestrianised areas, permanent traffic measures.

STEP 5

Scaling the Zone

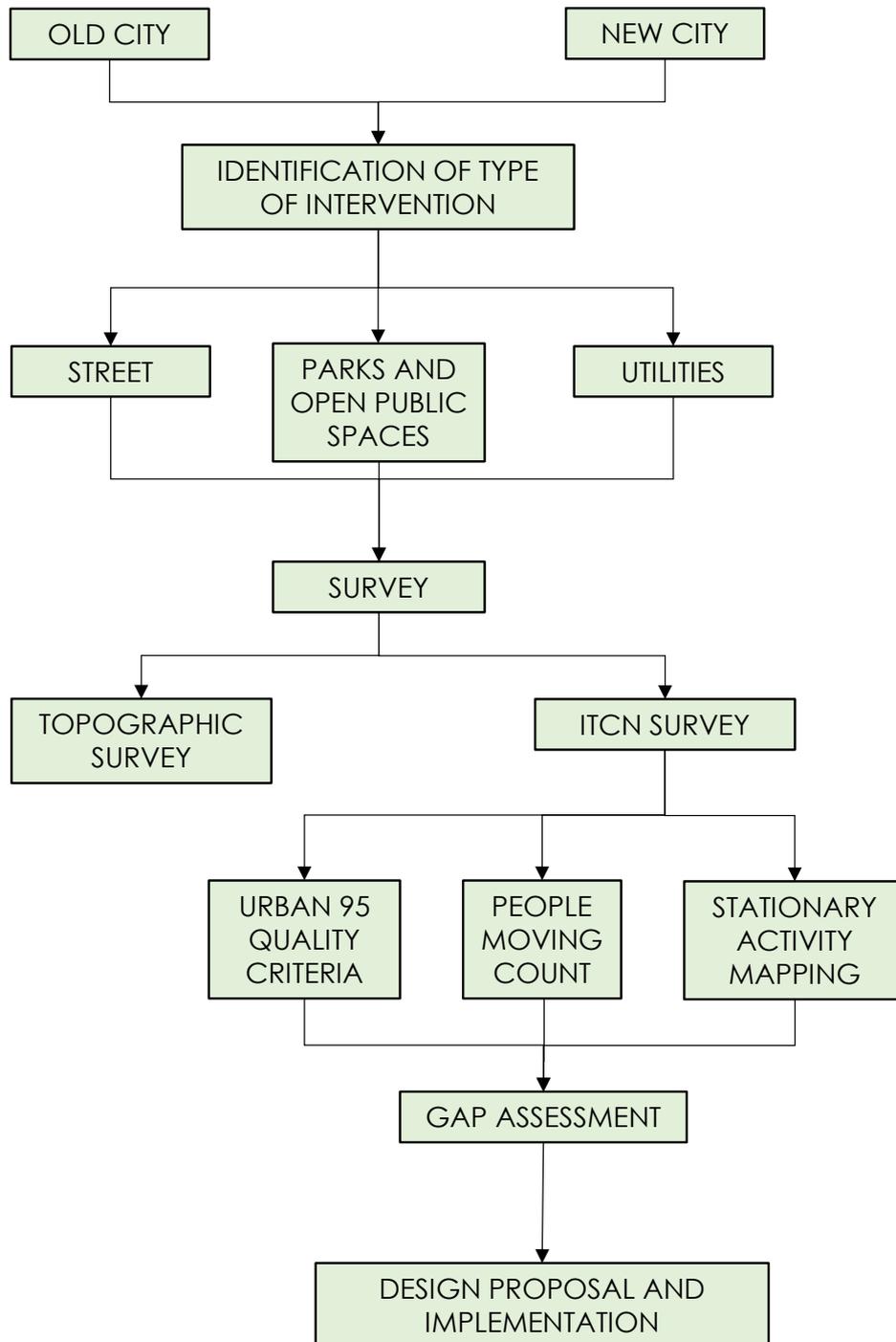
Scaling of Child Priority Zone by replicating it across the city by informing a set of planning guidelines.



Process flow for assessment recommended in the Urban95 Starter Kit

Process flow for ITC Interventions:

The process flow of ITC interventions has been derived based on extensive research done by field experts and published by BvLF as various knowledge resources. The reference of these knowledge resources are provided towards the end of this document. While this template shall be useful as a comprehensive tool for making Udaipur ITC friendly, the knowledge resources referred at the end of this document shall provide in-depth information on subject matter.



How to Read this Document

The document has been structured in the following manner:

- Components of Old City
- Components for new area
- Common components

Sidewalk Games



Width (Min.)

A. Dead Width	500 mm
B. Footpath (Clear Space)	1800 mm
C. MUZ Zone (Sidewalk Play Area)	1800 mm

Examples



Chalk Games



Mental Math Games



Hopscotch Games



Games with Objects

Surface Finishes and Textures


Solid Rubber Tile


Artificial Grass


Play Sand


Rubber Mulch


Engineered Wood Fibre

Guidelines specific to Udaipur

Sidewalk games can be stimulated by:

- Introducing patterned pavement over a small portion of the pavement area.
- Providing a smooth flat area of pavement, where children can draw their own pavement figures.
- Painting simple lines or squares onto pavement areas.
- Drawing the beginnings of a game or some shapes on the pavement for children to fill in.
- Using contextual games for easy and universal understanding.

Sidewalk games are an excellent example of how children can use their imagination to create a world of play within the boundaries of a pavement area. As a first step, designers need only to provide children with an empty and protected space and some stimulating pointers, to fire the imagination and keep them reinventing and interested for hours.

Name of the component

Illustration to demonstrate application of component

Application cases

Applicability of the component in old city or new area is shown in green indicator

Non applicability is shown in red indicator

Applicability

old city ●

new areas ●

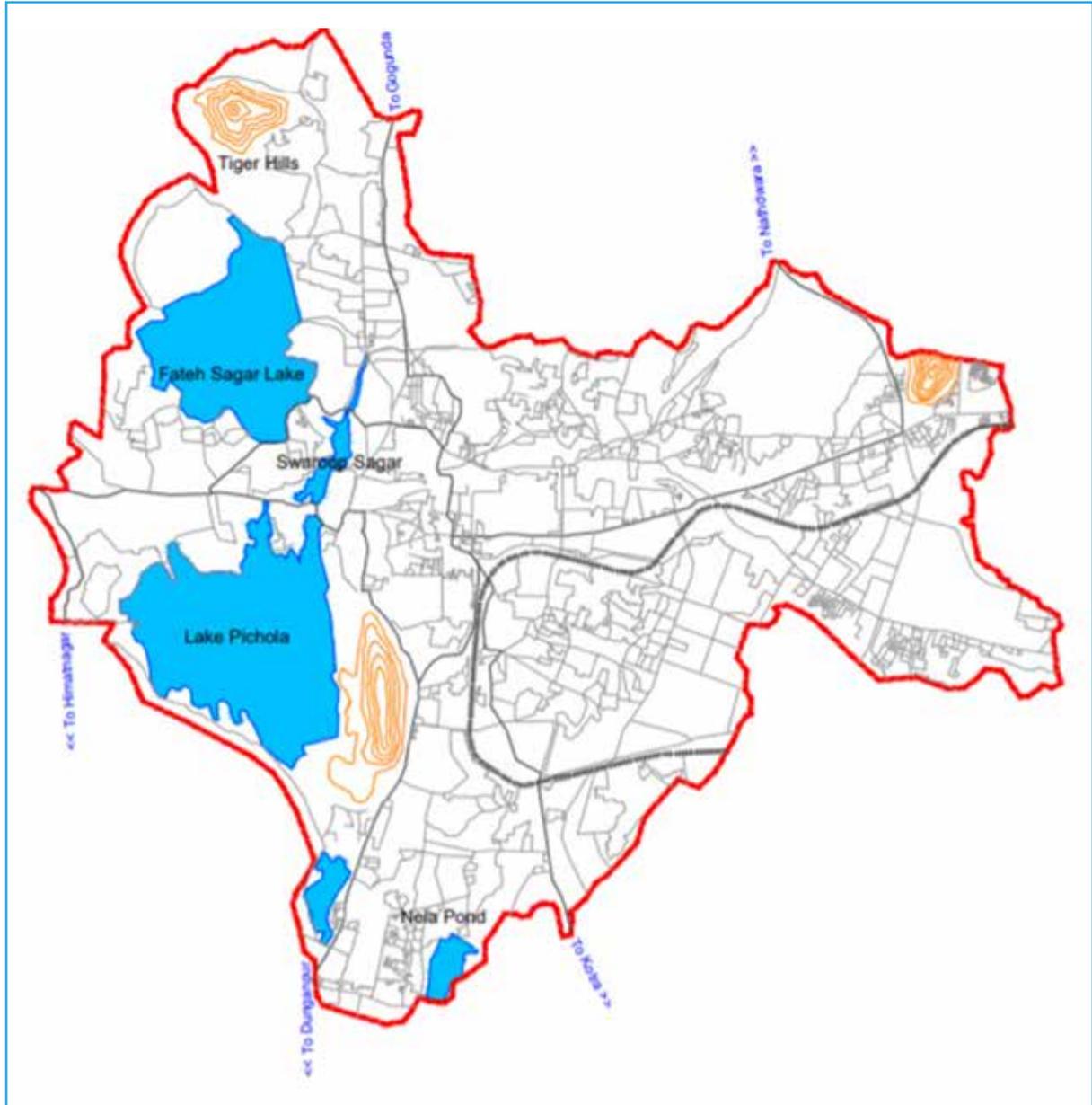
Description

How to Apply the Document

1. Check if the Identified Area is at :

 Old City

 New Areas



Old City- “Characteristics of Udaipur Old City areas. Referred as “Old City” in this document.”

- **Compact settlement with narrow streets:** Udaipur old city is characterized as a settlement with narrow winding streets. All streets in old City act as shared streets or public spaces with active edges. Some building interfaces also have in-situ seating areas which act like informal public interaction spaces.



- **Old City has more incidental space as public space:** Udaipur old city is characterized by narrow streets, chowks, ootlahs, and other nooks and corners acting as vibrant local public spaces. While most of these spaces cater to residents of immediate surroundings, some other like Jagdish Chowk cater to the whole city and even tourists.



- **Most of these public spaces function as multi functional spaces:** All streets and public spaces in Udaipur old city act as multi-purpose spaces. While most of the ‘purposes’ associated with these spaces, like informal interaction, shopping, walking, etc. also benefit ITC, while some others like parking, on-street waste disposal adversely affects ITC usage.



- **Traffic is already calmed and there is mixed use and eyes on street:** Due to mixed use street edges and narrow winding streets of Udaipur old city, traffic speeds are optimum. However, at certain points within the old city, two-wheeler traffic is seen to attain high spot speeds. These specific locations shall require traffic calming measures for two-wheelers.



New Areas - "Characteristics of Udaipur New City extensions. Referred as "New Areas" in this document."

- **Planned areas with wide streets:**

Most of the areas outside old city boundaries have been planned in phases. These areas are characterized with wide streets, designated large public spaces, etc.



- **Public spaces and green areas**

are designated, demarcated and planned. These larger green areas and public spaces require design solutions similar to those of planned areas.



- **Wider streets have heavy moving traffic:**

The new areas of Udaipur with wide streets are characterised with heavy vehicular traffic, traffic congestion and higher vehicle speeds. These areas require traffic calming and road safety measures.



- **Segregated land use:**

The new areas of Udaipur are predominantly based on principles of segregated land use with plotted development. In these areas designated market, parks etc., exist.



DATE	TIME	LOCATION	WEATHER
25/07/2019	05:30 PM	Vidya Bhawan	Pleasant, Moderate Sun
Protection Protection against traffic and accidents <ul style="list-style-type: none"> Eliminating fear of traffic Safe crossings with children Safe cycling routes Available of sidewalks adapted to strollers Clear waiting places Slow moving traffic 	Protection against traffic and accidents <ul style="list-style-type: none"> Eliminating fear of traffic Safe crossings with children Safe cycling routes Available of sidewalks adapted to strollers Clear waiting places Slow moving traffic 	Protection from crime and violence <ul style="list-style-type: none"> Lively public realm Passive surveillance options Well lit Human scale Mix of uses 	Protection against unpleasant sensory experiences <ul style="list-style-type: none"> Protection against: <ul style="list-style-type: none"> Wind/draft Rain/snow Cold/heat Dust, noise, glare Free from trash
Basic Needs The feeling of comfort <ul style="list-style-type: none"> Safe noise level at 55dB Protection against pollution at 95cm eye-level Surroundings that feel safe for children and caregiver 	The feeling of comfort <ul style="list-style-type: none"> Safe noise level at 55dB Protection against pollution at 95cm eye-level Surroundings that feel safe for children and caregiver 	Opportunities for good hygiene and health <ul style="list-style-type: none"> Access to fresh water Safety to breastfeed in private Diaper changing area separate from feeding areas Accessible bathrooms Well maintained bathrooms 	Convenient opportunities for consumption <ul style="list-style-type: none"> Close proximity to cafes or restaurants with eating and drinking possibilities Diversity in food options for shopping Nutritious food options for eating or buying
Comfort Opportunities to walk and cycle <ul style="list-style-type: none"> Walkability with children stroller Surfaces for slow moving children Accessibility for strollers Clear way-finding Sidewalk for stroller/good curb 	Opportunities to walk and cycle <ul style="list-style-type: none"> Walkability with children stroller Surfaces for slow moving children Accessibility for strollers Clear way-finding Sidewalk for stroller/good curb 	Opportunities to stop & stay <ul style="list-style-type: none"> Attractive & functional edges Invitations for intended use Zones for sitting with children Seats near play area Mix of seating typologies Resting opportunities Ability to park strollers Ability to observe child - passive & active 	Opportunities to see <ul style="list-style-type: none"> Opportunities to observe surroundings Lighting (when dark) Access to nature Visibility at 95cm eye level Rich sensory experiences Stimulating built environment
Interaction Invitations to interact with environment <ul style="list-style-type: none"> Presence of interesting and inviting environmental elements Variation in the natural elements and built environment that is present Possibility to interact with nature at the height of 95cm 	Invitations to interact with environment <ul style="list-style-type: none"> Presence of interesting and inviting environmental elements Variation in the natural elements and built environment that is present Possibility to interact with nature at the height of 95cm 	Opportunities to talk & listen <ul style="list-style-type: none"> Low noise levels Seating conducive to communicating Place for child & caregiver to talk about environment 	Opportunities for play & exercise <ul style="list-style-type: none"> Inviting playscapes for a mix of ages Children's physical activities Street playscapes Temporary activities Ability to interact spontaneously Challenging play In summer/winter/day/night
Connection Opportunities for flexibility <ul style="list-style-type: none"> Flexible and impermanent programming that encourages use at different times of day Convenient to spend time based on different purposes 	Opportunities for flexibility <ul style="list-style-type: none"> Flexible and impermanent programming that encourages use at different times of day Convenient to spend time based on different purposes 	Opportunities to access <ul style="list-style-type: none"> Ability to access the place with multiple modes of transportation Without physical barriers (e.g fences or traffic) 	Highly integrated <ul style="list-style-type: none"> A close proximity to amenities and services - highly mixed Opportunity to integrate this place into daily patterns and activities Clear routes to/from/through

Source: Urban95 Toolkit



People moving count : This tool records people moving through an area at a given time. It allows us to understand who is moving through and their form of mobility.

DATE	TIME	LOCATION	WEATHER
25/07/2019	05:30 PM	Vidya Bhawan	Moderate Sun

People Moving Count

Timing Count for 10 minutes. If in a busy location - count only one age category at a time. This count will allow you to collect the total numbers of people moving according to the time of day, week, or year.

	10 MIN	TOTALS
BABY		
TODDLER		
CHILD UP TO 5	HHHH	
CAREGIVER	HHH	
OTHER		

Source: Urban95 Toolkit

Age and Mode Count

Timing: Count at least 200 people to get a validated sample size for finding the percentage of different age groups or modalities. It is helpful to pair with another person to count each category if in a busy location.

MODE CATEGORIES		BABY	TODDLER	CHILD UP TO 5	CAREGIVER	OTHER	TOTALS
PEDESTRIANS	WALKING (independently)				10	25	
	LIMITED MOBILITY (Pregnant or other)						
	SUPPORTED (supported. I.e.: stroller, hand in hand)			1			
	ROLLING MANUAL						
	CARRIED (any kind, I.e.: on someone's back or other)		1				
	TOTAL AGE						

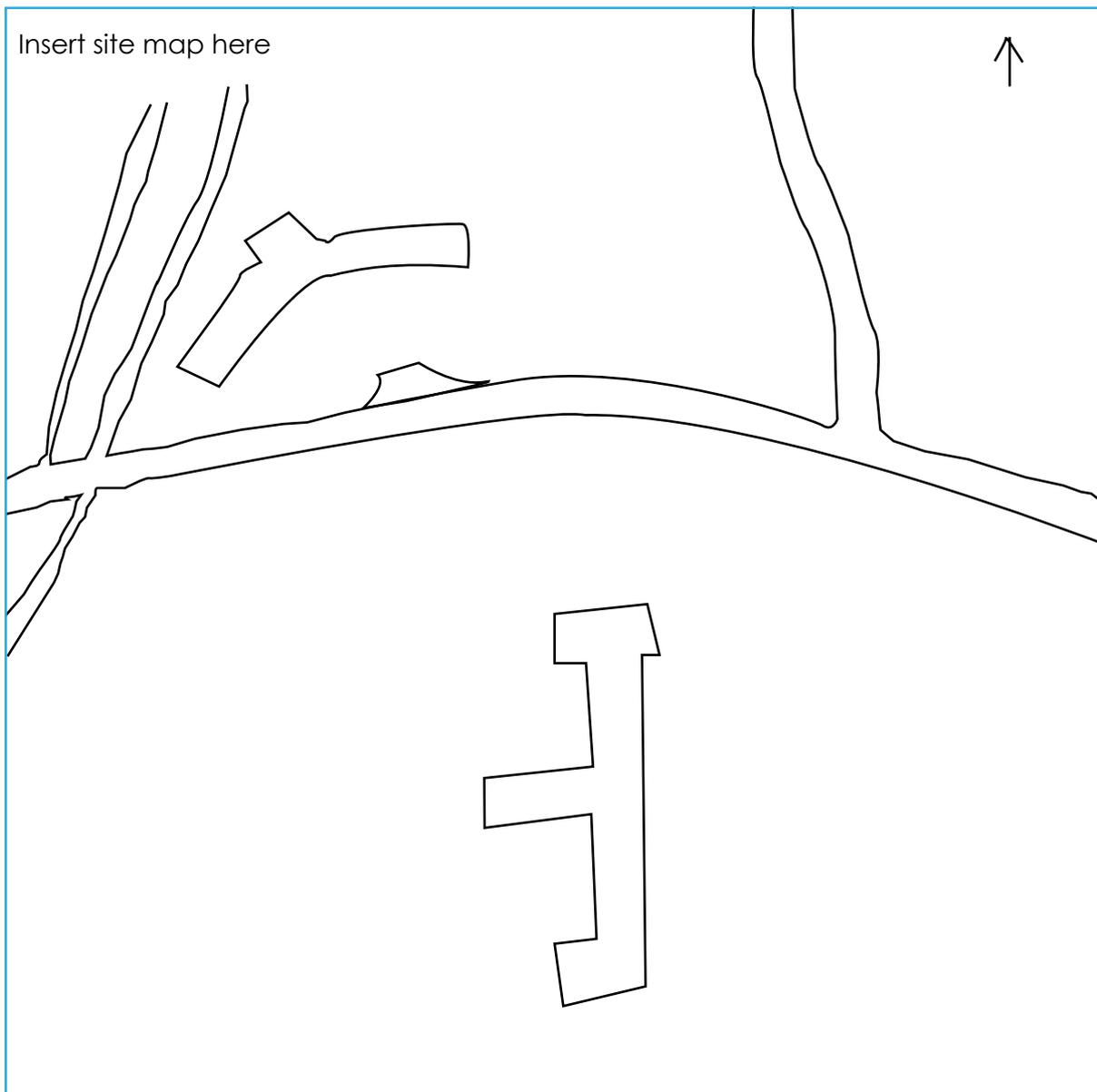
Source: Urban95 Toolkit



Stationary Activity Mapping: This tool observes what kinds of stationary activities are happening in a place. It allows us to understand who is present and how a place invites for different uses.

DATE 	TIME 	LOCATION 	WEATHER 
 25/07/2019	05:30 PM	Vidya Bhawan	Pleasant, Moderate Sun

Stationary Activity Mapping



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
GROUPING	ALONE						✓														
	PAIR																				
	- Child - child	✓																			
	- Child - caregiver																				
- Caregiver - other adult																					
3-6			✓	✓	✓																
7+																					
- Children																					
- Adults																					
- Mixed																					

Source: Urban95 Toolkit

Activities Menu

ACTIVITIES	RECREATION - ACTIVE	EXERCISING		
		PLAYING		
	RECREATION - PASSIVE	OBSERVING	PEOPLE / ACTIVITIES	
			LANDMARKS / BUILDINGS	
			NATURE / LANDSCAPES	
			OTHER	
	RECREATION - PASSIVE	PLAYING		
	RECREATION - PASSIVE	AFFECTIONATE	KISSING	
			HUGGING	
			BREAST-FEEDING	
			HAND HOLDING	
	RECREATION - PASSIVE	READING AND WRITING	NEWSPAPER	
			BOOK	
			NOTEBOOK	
	RECREATION - PASSIVE	CREATING	DRAWING	
			PAINTING	
			PLAYING MUSIC	
			OTHER	
	RECREATION - PASSIVE	RESTING	SLEEPING	
RELAXING				
HANGING OUT				
OTHER				

FORMAL	WITHOUT PROPS
	WITH NATURAL MATERIAL
	WITH BROUGHT OBJECTS
INFORMAL	WITHOUT PROPS
	WITH NATURAL MATERIAL
	WITH BROUGHT OBJECTS

FORMAL	WITHOUT PROPS
	WITH NATURAL MATERIAL
	WITH BROUGHT OBJECTS
INFORMAL	WITHOUT PROPS
	WITH NATURAL MATERIAL
	WITH BROUGHT OBJECTS

Instructions for Adding Categories and Sub-Categories for Activities

- All categories of stationary activities are optional. It is advised to look at different ways people are staying based on the unique context or specific research question. A study may choose to substitute or add categories.
- There are many ways to collect data on the type of play children are engaged in. Within the categories passive and active recreation there is a subcategory play. Play can be broken down into formal play (play with or on the built environment that is intended for play - IE: on a playground or with toys) or informal play (play that is self determined or on the built environment that is not intended for play - IE: on building steps or hide and seek).
- Playing without props, with natural material, or with called objects can be interesting depending on what you want to learn, but those categories can also be substituted.
- When filling in the survey sheet, write the activity in this manner:

Recreation_active/Playing/Formal/With natural material

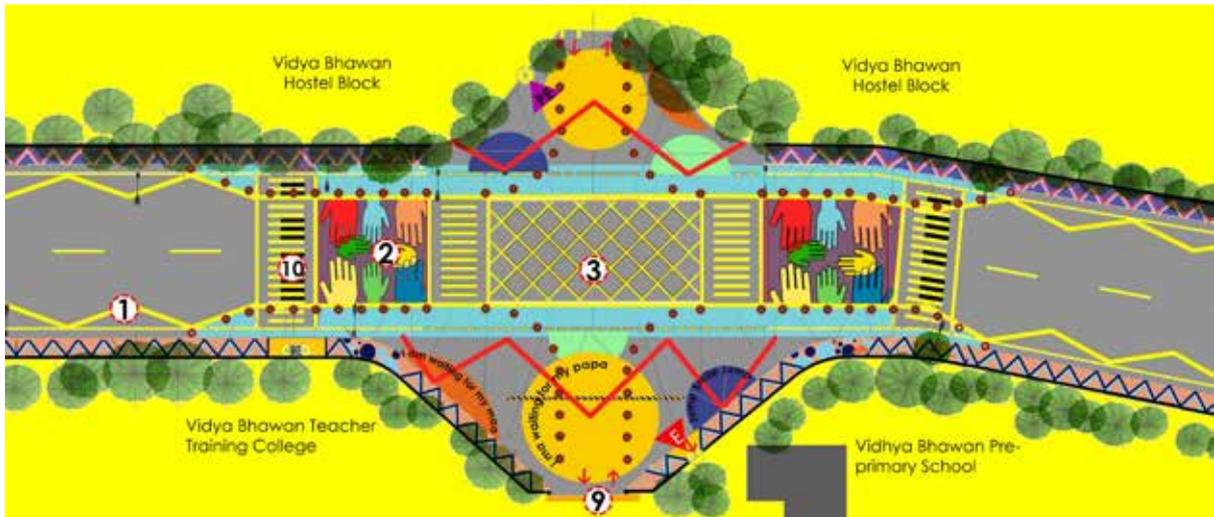
5. ITC Gap Assessment

The ITC Gap Assessment shall be based on data collected and studies conducted in previous steps. The intention of this step would be to identify contextual issues and gaps in streets, public spaces and utilities, which can then be addressed through design interventions. Following table outlines some of the typical issues witnessed in other cities and possible solutions. Some of the solutions may also address multiple issues. The table below is indicative and the designer for these interventions shall take an informed decision to identify and assess atypical issues.

S.NO	ISSUES	POSSIBLE SOLUTIONS
1	Protection	<ul style="list-style-type: none"> • Traffic Calming • Permeable Fencing • CCTV Monitoring • Lighting • Bollards • Hedges or Green Buffer • Safety Signages • Active Facades • Speed Limits
2	Basic Needs	<ul style="list-style-type: none"> • Utilities (toilets, drinking water facility, lactation and changing booth, dustbins)
3	Comfort	<ul style="list-style-type: none"> • Shading Areas (both artificial and natural) • Seating Spaces • Ease of Access • Resting Places • Way Finding Measures
4	Interaction	<ul style="list-style-type: none"> • Dedicated Spaces for children to play • Space for Caregivers • Games and installations/Sidewalk Games • Active Facades • Public Art
5	Connection	<ul style="list-style-type: none"> • Ramps • Unobstructed and Continuous Footpaths • Safe Crossings and Signilised Junctions
6	People moving count	<ul style="list-style-type: none"> • Width of footpath • Location of Public transport, bus stops, parking etc. • Location of Crossings • Modes of transportation
7	Stationary Actiity Mapping	<ul style="list-style-type: none"> • Type of amenities or services to be provided • User Profiling

6. Design has to be Prepared and Implemented

ITC Intervention shall be designed through a participatory approach, where local stakeholders are involved in the process. Some case studies of similar examples from other cities have been documented in various knowledge resources published by BvLF. Reference for those are provided towards the end of this document.



Traffic calming measures done in Udaipur after extensive stakeholder consultation

Design Measures

The design measures shown in the table below are based on the recommended design measures from BvLF's publication on **ITCN-DesignGuidelines**. These measures are only indicative and the designer may innovate new measure to suit issues of the site.

COMPONENTS	DESIGN MEASURES
<p>STREET DESIGN</p>	<p>3 STEP APPROACH</p> <p>LIMIT - TRAFFIC CALMING TO ALLOW MORE CHILDREN ON ROADS</p> <ul style="list-style-type: none"> • Preventing unnecessary traffic movement • Set speed limits • Calm one-way traffic movement • Chicanes • Shared street spaces • Crossings/ Speed Tables <p>LINK - ESTABLISH PRIORITY ROUTES THAT CONNECT DAILY ACTIVITIES OF CHILDREN</p> <ul style="list-style-type: none"> • Obstacle-free pedestrian right of way • Traffic calming measures such as shared surface • Micro markers of resting and play equipment • Mixed use shall be encouraged along these routes • Signages and wayfinding measures • Safety from strays • Large foliage trees/for better microclimate, shade and cleaner air <p>SHARE - ALLOWING CHILDREN TO USE THE FULL WIDTH OF THE STREET</p> <ul style="list-style-type: none"> • Choose a material • Planters or bollards • Clear signs at the beginning of the shared street • Introduce a clear speed limit to the zone <p>PARKING STRATEGY</p> <ul style="list-style-type: none"> • Designated, paid or shared parking <p>ACTIVE FACADE ALONG ROUTING</p> <p>PRIVATE - PUBLIC INTERFACE</p> <p>LIGHTING</p> <p>GREEN STREETS</p> <ul style="list-style-type: none"> • Lower plants at the scale of small children • Use indigenous plants and local species and potted plants along a façade. • Use trees, bushes and climbers for natural shading, continuous shade and also for cooling

COMPONENTS	DESIGN MEASURES
<p style="text-align: center;">Parks and Public Space</p>	<p>LEGIBILITY, SIGHTLINES & SIGNAGE</p> <ul style="list-style-type: none"> • Easy to locate, well connected with destinations, well sign-posted and clear visibility • No solid walls, planting edges along main routes that obstruct sightlines. • Signage at key entry points and activity areas. <p>LIGHTING</p> <ul style="list-style-type: none"> • Establish a hierarchy of lighting types and intensities in a parks layout • Provide lighting at the perimeter to complement street lighting • Consider the position of lighting elements relative to the position of trees and other plants • Ensure that the play areas are well lit. <p>FENCING/ PERMEABLE PERIMETER</p> <ul style="list-style-type: none"> • Use of hedges or plants in general, other objects and street furniture or simple ground demarcation. • Frequent openings every 50-80 metres. • Make entrances welcoming and with large dimensions, min. 1.8 m wide • Other uses can be combined with fences like playing and climbing for children, or combined with street art. <p>CAMERA MONITORING</p> <p>GREEN/ PLANTING</p> <ul style="list-style-type: none"> • Planting and green elements with a range of colour, texture, shape and use. • Seasonal varieties, scales of planting, indigenous plants <p>SHADING & COOLING ELEMENTS</p> <ul style="list-style-type: none"> • Natural shading, where possible: use trees, shrubs, herbs and climbers • Provide shaded spots where caregivers need to wait and have good sightlines of play areas • Shading over play areas and play equipment • Trellises overgrown with climbing plants <p>NATURAL PLAY ELEMENTS</p> <ul style="list-style-type: none"> • Simple, materials in low prices: water, sand, tree branches and trunks, stones and pebbles, different plants or insects and way more • Clean and non-allergenic • Carefully check safety regulations • Equipment that promotes adventurous and sensory play, especially for differently abled children and children with learning disorders
<p style="text-align: center;">UTILITY</p>	<p>TOILETS AND DRINKING WATER</p> <ul style="list-style-type: none"> • Ramp access to toilets • Provision of handrails, hoists • Clean drinking water facility easily accessible by kids • Stroller-friendly walkway <p>REST STATIONS / NURSING BOOTHS</p> <ul style="list-style-type: none"> • The space should be fitted with comfortable seats, washing facilities • The room should be dimly lit and quiet • The access to the space should be stroller-friendly and the room should have sufficient area to accommodate a stroller • Availability of a change table or a diaper deck is necessary • Ideally, should overlook a tot-lot and clubbed with toilet facilities





2. Design Palette

STREETS

Component	Applicability in Old City	Applicability In New Areas
Footpath		✓
Kerb Ramp		✓
Cycle stand	✓	✓
Cycle track		✓
Ramps for ITC	✓*	✓
Waiting area	✓*	✓
Handicapped parking	✓*	✓
Side-walk games		✓
Active facade along route	Already exist in old city	✓
Surface material and textures	✓	✓
Benches	✓*	✓
Shading devices		✓
Lighting	✓*	✓
ITC playful furniture	✓*	✓
Planters	✓	✓
Bollards		✓
Seating along planters	✓	✓
Wayfinding signages for destinations & utilities	✓	✓
Safety signage for traffic	✓	✓
Safe crossings	✓	✓
Kerb extensions		✓
Rumble strips	✓	✓
Lane marking	✓	✓
Chicanes		✓
Public Art	✓	✓

* All the components above can be incorporated as per availability of space.

PARK AND OPEN PUBLIC SPACES

Component	Applicability in Old City	Applicability In New Areas
 Fencing/ Permeable perimeter		✓
 Camera monitoring	✓	✓
 Ramps for ITC	✓*	✓
 Benches	✓*	✓
 Shading devices		✓
 Lighting	✓*	✓
 ITC playful furniture	✓	✓
 Play equipment	✓	✓
 Planters	✓	✓
 Public Art	✓	✓
 Surface materials & Textures	✓	✓
 Natural Play elements	✓	✓

UTILITIES

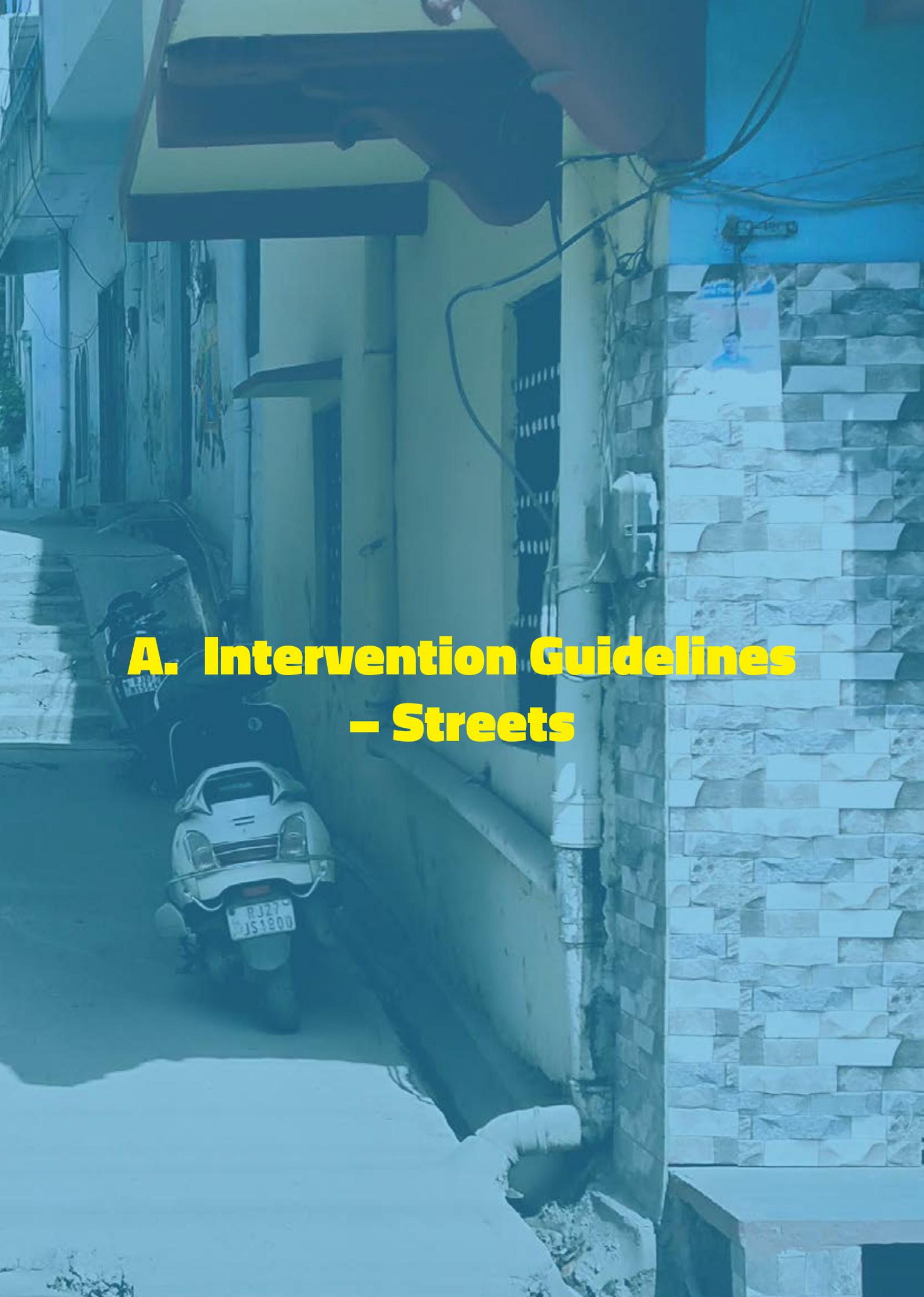
Component	Applicability in Old City	Applicability In New Areas
 Breast feeding booths	✓	✓
 Drinking water facility	✓	✓
 Toilets	✓*	✓
 Dustbins	✓	✓

* All the components above can be incorporated as per availability of space.



Handwritten text on the wall, possibly a name or address, in red or orange ink. The text is partially obscured and difficult to read.





**A. Intervention Guidelines
– Streets**

Interactive Streets

Old City



Proposed ITC Indicators

STREETS

-  Ramps for ITC
-  Waiting area
-  Surface material and textures
-  Benches
-  Lighting
-  ITC playful furniture
-  Wayfinding signages for destinations & utilities
-  Public Art

PARKS AND OPEN PUBLIC SPAES

UTILITIES

-  Drinking water facility
-  Dustbins

Neighborhood Streets

Bhatiyani Chohatta, Old City



Proposed ITC Indicators

STREETS

-  Side-walk games
-  Active facade along route
-  Surface material and textures
-  Benches
-  Lighting
-  ITC playful furniture
-  Planters
-  Seating along planters
-  Wayfinding signages for destinations & utilities
-  Public Art

PARKS AND OPEN PUBLIC SPAES

-  Camera monitoring

UTILITIES

-  Drinking water facility
-  Dustbins

Temple Chowks

Old City



Proposed ITC Indicators

STREETS

- Planters
- Bollards
- Seating along planters
- Wayfinding signages for destinations & utilities

PARKS AND OPEN PUBLIC SPAES

- Camera monitoring
- Ramps for ITC
- Benches
- Shading devices
- Lighting
- ITC playful furniture
- Planters
- Public Art
- Seating along planters
- Surface materials & Textures

UTILITIES

- Drinking water facility
- Dustbins

Local Streets

Local Streets at Dewali



Proposed ITC Indicators

STREETS

-  Footpath
-  Kerb Ramp
-  Cycle stand
-  Ramps for ITC
-  Side-walk games
-  Surface material and textures
-  Lighting
-  ITC playful furniture
-  Planters
-  Seating along planters
-  Wayfinding signages for destinations & utilities
-  Rumble strips
-  Lane marking
-  Chicanes
-  Public Art

PARKS AND OPEN PUBLIC SPAES

UTILITIES

-  Drinking water facility
-  Dustbins

Collector Road

Vidya Bhawan Road



Proposed ITC Indicators

STREETS

-  Footpath
-  Kerb Ramp
-  Cycle stand
-  Ramps for ITC
-  Side-walk games
-  Surface material and textures
-  Lighting
-  ITC playful furniture
-  Planters
-  Seating along planters
-  Rumble strips
-  Lane marking
-  Chicanes

STREETS

-  Cycle track
-  Shading devices
-  Bollards
-  Benches
-  Handicapped parking
-  Waiting area
-  Safety signage for traffic
-  Safe crossings
-  Active facade along route
-  Kerb extensions
-  Public Art
-  Wayfinding signages for destinations & utilities

PARKS AND OPEN PUBLIC SPAES

-  Camera monitoring
-  Natural Play elements

UTILITIES

-  Drinking water facility
-  Dustbins

Public Arterial Road

Hiran Magri Road



Proposed ITC Indicators

STREETS

-  Footpath
-  Kerb Ramp
-  Cycle stand
-  Ramps for ITC
-  Side-walk games
-  Surface material and textures
-  Lighting
-  ITC playful furniture
-  Planters
-  Seating along planters
-  Rumble strips
-  Lane marking
-  Cycle track

STREETS

-  Shading devices
-  Bollards
-  Benches
-  Handicapped parking
-  Waiting area
-  Safety signage for traffic
-  Safe crossings
-  Active facade along route
-  Kerb extensions
-  Public Art
-  Wayfinding signages for destinations & utilities
-  Chicanes

PARKS AND OPEN PUBLIC SPAES

-  Camera monitoring
-  Natural Play elements

UTILITIES

-  Drinking water facility
-  Dustbins
-  Breast feeding booths
-  Toilets

Parking Lots

Parking Lot, Pal Area, Fathesagar Lake



Proposed ITC Indicators

STREETS

-  Footpath
-  Kerb Ramp
-  Cycle stand
-  Ramps for ITC
-  Handicapped parking
-  Surface material and textures
-  Shading devices
-  Lighting
-  Waiting area
-  Planters
-  Seating along planters
-  Safety signage for traffic
-  Wayfinding signages for destinations & utilities
-  Lane marking

PARKS AND OPEN PUBLIC SPAES

UTILITIES

-  Drinking water facility
-  Dustbins
-  Breast feeding booths
-  Toilets

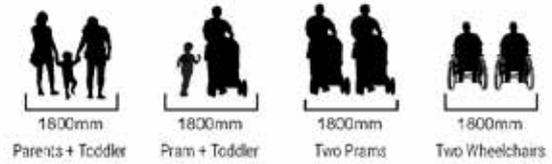
Footpath



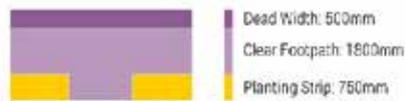
- A. Dead Width
- B. Footpath (Clear Space)
- C. MUZ Zone / Planting Strip

Width (Min.)
 500 mm
 1800 mm
 750 mm

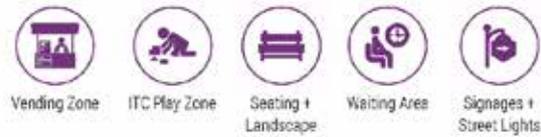
Contextual Standards



Types



MUZ Zone



Surface Finishes and Textures



Red Sandstone

Random Rubble Paving

Cobble Stone Paving

Tactile Paving

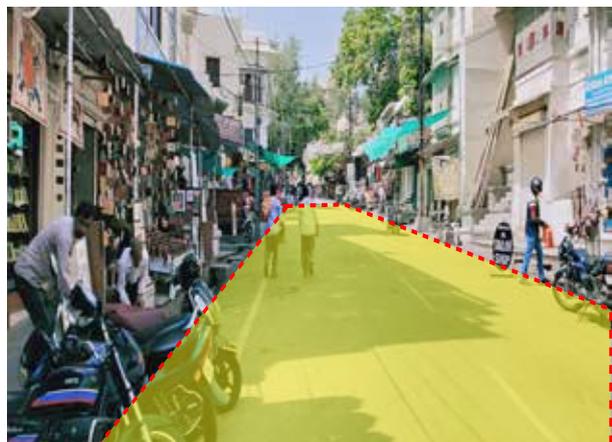
● Applicable in new areas

● Not applicable in old city

Component Applicability

Design Innovation for Old City

In the absence of footpaths in old city areas, streets can be treated as shared streets with cobbled surfaces which brings down the speed of vehicle and makes the area safe for pedestrians.



Guidelines Specific to Udaipur

- Obstruction free minimum walking zone shall be 1800 mm.
- Extra 500 mm to be added as 'Dead Width'.
- Multi Utility Zone (MUZ) shall mean the space between pedestrian movement space on footpaths and the cycle tracks or carriageways, which is wide enough to accommodate utility corridors, street lights, street furniture, signage poles, planter beds, parking, pick up, bus shelters etc. In areas with space constraint, where MUZ cannot be provided, a planting strip may be provided in place of MUZ for street lights, signage poles, planter beds etc.

Recommendations from Indian Roads Congress (IRC 103-2012)

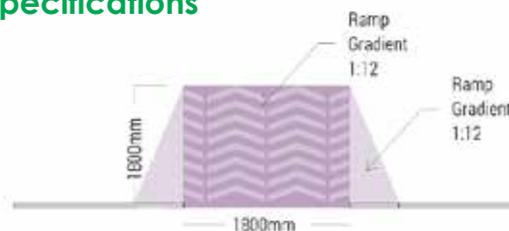
- The height of kerb at the end should not exceed 150 mm.
- The minimum 1800 mm (width) x 2200 mm (Height) Walking Zone should be clear of all obstructions both horizontally and vertically. No utility ducts, utility poles, electric, water or telecom boxes, trees, signage or any kind of obstruction should be placed within the Walking Zone.
- In situations where footpath pass next to building and fences, a dead with of 500 mm can be added

Kerb Ramps

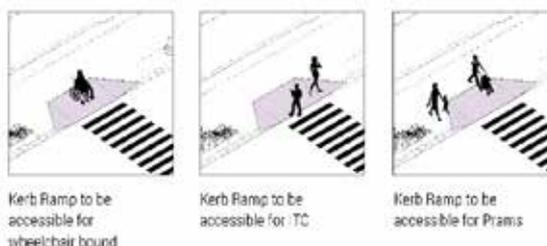


	Width (Min.)
A. Dead Width	500 mm
B. Footpath (Clear Space)	1800 mm
C. Footpath with Kerb Ramp	1200 mm
D. Kerb Ramp	1800 mm

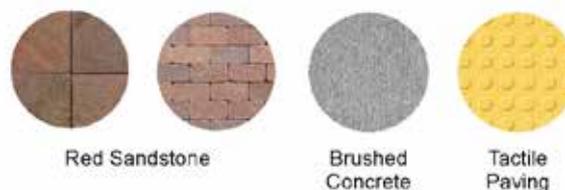
Specifications



Usability



Surface Finishes and Textures



Component Applicability

● Applicable in new areas

● Applicable in old city as per availability of space

Guidelines Specific to Udaipur

- Ramps with an minimum inclination of 1:15.
- Ensure that the ramp is minimum 1800 mm wide to accommodate an adult with a pram and a small child walking beside.
- In case bollards have to be added around the ramps, they should have 1200 mm clear space between them.
- Tactile paving at start and end of the ramps should be given for toddlers who are differently abled.
- Brightly coloured zebra crossing markings make the crossing identifiable for small children.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood design guidelines

- ITCs are especially vulnerable at crossings because they move slower than adults or older children. In addition, the views of children in age group 0-5 can easily be blocked by low planting or parked cars. The interface between the road and the crossing needs to be considered. Navigating high curbs without curb-cuts is an obstacle for small children and also when with their caregivers in pushing a pram.

Recommendations from Indian Roads Congress (IRC 103-2012)

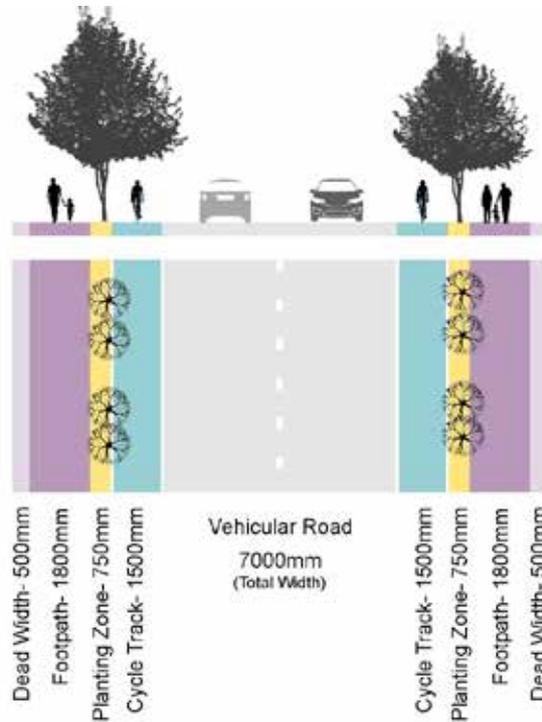
- Standard kerb ramps are cut back into the footpath (flush with roadway), at a gradient not greater than 1:12, with flared sides providing transition in three directions. At street intersection and turnings kerb ramps should be provided.
- Width of the kerb ramp should not be less than 1200 mm.
- Tactile warning strip shall be provided on the kerb side edge of the slope, so that persons with vision impairment do not accidentally walk onto the road.

Cycle Track



- A. Dead Width
- B. Footpath (Clear Space)
- C. Planting Zone
- D. Cycle Track

Width (Min.)	
	500 mm
	1800 mm
	750 mm
	1500 mm



Component Applicability

● Applicable in new areas

● Not applicable in old city

Guidelines Specific to Udaipur

- Minimum width of cycle track should be 1500 mm.

Recommendations from BvLF Urban95 Starter Kit

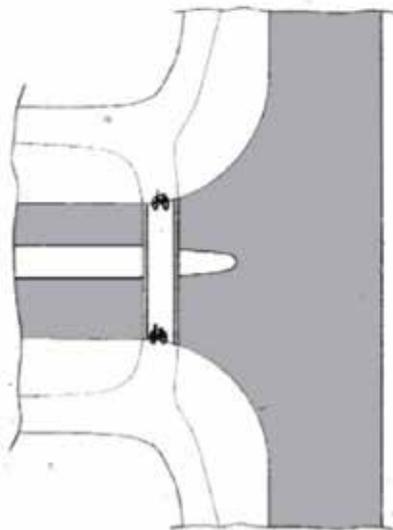
- Segregated cycle lanes encourage caregivers to ride with babies and toddlers, or toddlers to ride next to their parents. They reduce stress levels for caregivers by increasing safety. By encouraging children to cycle from an early age, they have a positive impact on healthy development. They help shift cities away from dependency on cars.

Lane Markings

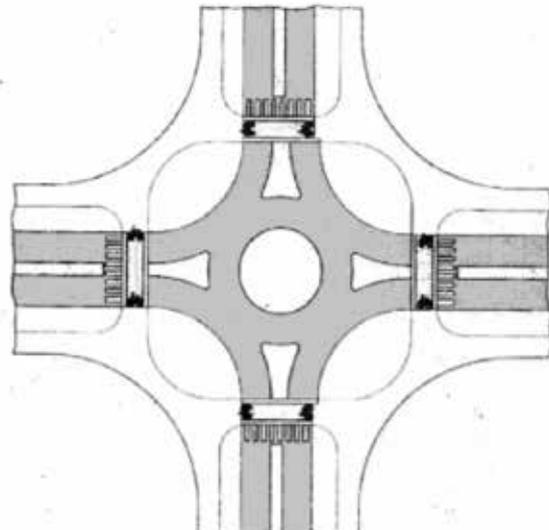
Markings for Bicycle Track Crossings

Note

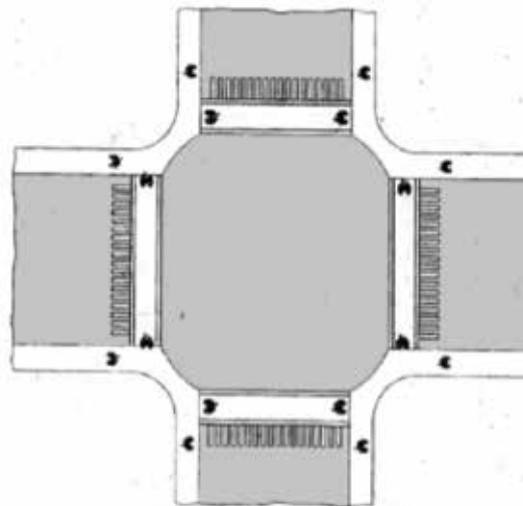
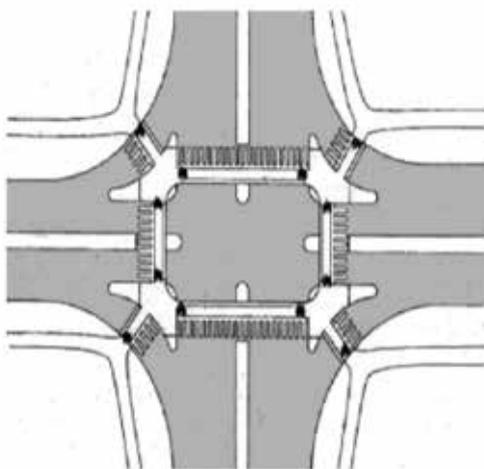
The marking for the cycle track crossing would comprise two white continuous lines across the carriage way to be crossed. These lines would be 100 mm wide, at the spacing equal to the width of the cycle track (1 m to 3 m)



At the road with central channeliser



At roundabout



Source: Guidelines for Road Markings (UTTIPEC) and Code of Practice for Road Markings (IRC:35-1997)

Component Applicability

● Not applicable in old city

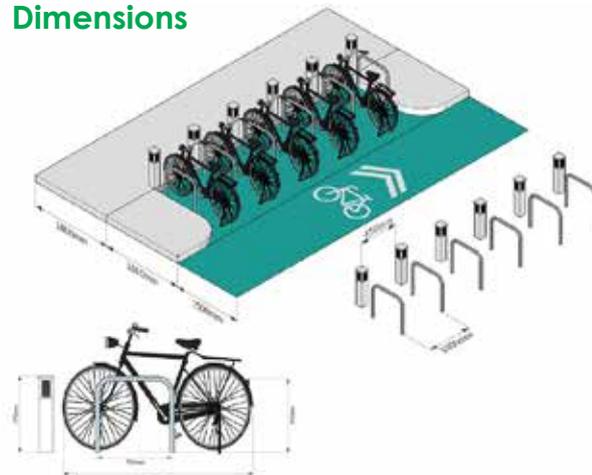
● Applicable in new areas

Cycle Stand

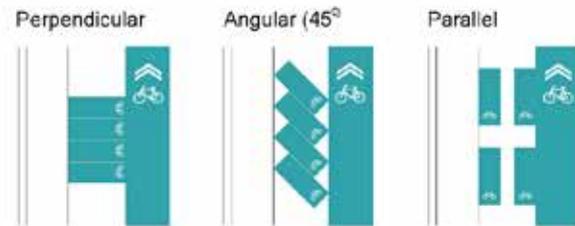


A. Dead Width	Width (Min.)	500 mm
B. Footpath (Clear Space)		1800 mm
C. Cycle Parking		1800 mm
D. MUZ Zone		1800 mm
E. Cycle Track		1500 mm

Dimensions



Types



Component Applicability

● Applicable in new areas

● Applicable in old city as per availability of space

Guidelines Specific to Udaipur

- Minimum width of cycle track should be 1500 mm.

Recommendations from UTIPEC Street Design Guidelines

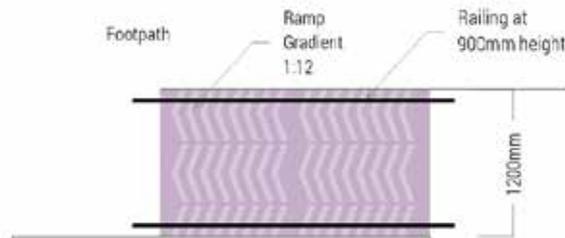
- **Long-Stay Parking** – Cycle parking lots must be enclosed, ticketed (like car-parking lots) and shaded from weather. Cycle parking lots can be combined with ticket counter booths, local police booths, cycle service stations or shared areas within private building complexes.
- **Short-Stay Parking** – should be open to view and close to entrances of destinations.

Ramps for ITC



- A. Dead Width
- B. Footpath (Clear Space)
- C. Planting Zone
- D. Kerb Ramp

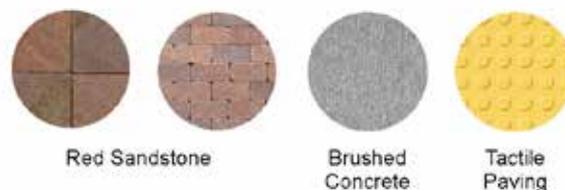
Width (Min.)
500 mm
1800 mm
750 mm
1200 mm



Usability



Surface Finishes and Textures



Guidelines Specific to Udaipur

- Ramps with minimum inclination of 1:15.
- Ensure that the ramp is minimum 1800 mm wide to accommodate an adult with a pram small child walking beside.
- In case bollards have to be added around the ramps, they should have 1200 mm clear space between them.
- Provide a good handrail beside the ramp. Include a lower rail at the height of a small child.
- Tactile paving at start and end of the ramps should be given for toddlers who are differently abled.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- ITCs have special requirements in the public realm where level differences are concerned. A small level difference, such as a kerb of just 10 cm high, is an obstacle for a small child and a pram. Kerbs should be inclined at all street-crossings, to ensure a safe and easy crossing. Steps in the public realm could pose an insurmountable
- Problem for a caregiver pushing a pram and a small child. Adding a ramp where there are larger level differences in the public sphere will ensure that all children, wheelchair-users and caregivers with buggies can have access to the full extent of the public realm.

Recommendations from Indian Roads Congress (IRC 103-2012).

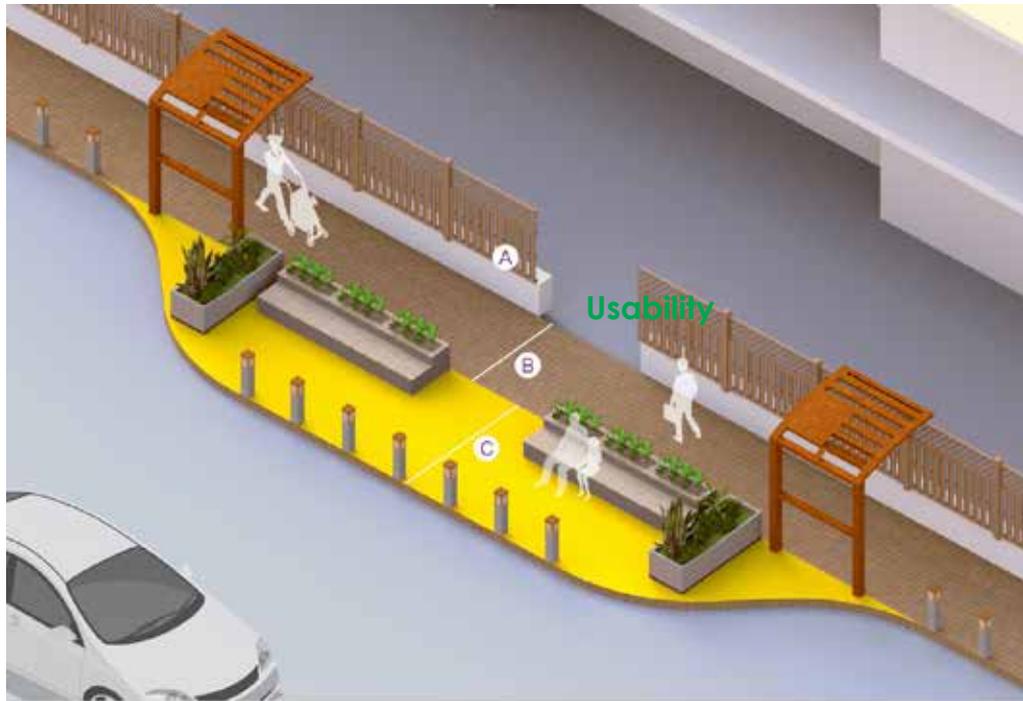
- A ramp should be accompanied by a flight of easygoing steps. Slope of ramp is to be a maximum of 1:12.
- Grill type gullies can be provided across the width of the ramp surface to ensure good drainage. Slip-resistant smooth surfaces can be used such as ribbed or brushed concrete, texture stone or macadam. Landings at every 750 mm of vertical rise should be provided and minimum width of the ramp will be 1200 mm.
- Handrails are to be on both sides at two levels 760 mm and 900 mm; both ends are to be rounded and grouted and to be extended to 300 mm beyond top and bottom of ramp. Surfaces (ramp + landing) should be slip resistant.
- Tactile warning tile 300 mm should be provided before and end of ramp to indicate change in gradient. On long ramps, one can provide passing bays, 1800 mm x 1800 mm every 20 m. Landings should be at least 1500 mm x 1500 mm. Where a door or gate opens onto a landing, the length of the landing should be at least 1300 mm clear of the door swing. Edge protection 100 mm high is required at the sides of ramps and landings to prevent persons falling through.
- A turning circle of 1800 mm diameter should be provided at the top and bottom of all ramps.

● Applicable in new areas

● Applicable in old city as per availability of space

Component Applicability

Waiting Area



	Width (Min.)
A. Dead Width	500 mm
B. Footpath (Clear Space)	1800 mm
C. MUZ Zone (Waiting Area)	1800 mm

Surface Finishes and Textures



Red Sandstone



Random Rubble Paving



Cobble Stone Paving



Tactile Paving

Component Applicability
● Applicable in new areas
● Not applicable in old city

Design Innovation for Old City

In old city, creation of new waiting areas may not required. The building types accommodate these small platforms in front of the houses can be used as waiting areas.

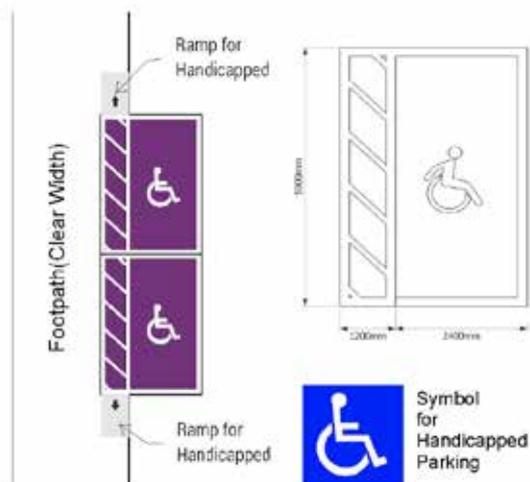
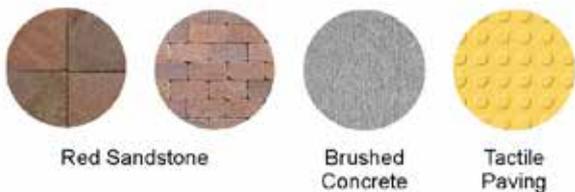


Handicapped Car Parking



	Width (Min.)
A. Dead Width	500 mm
B. Footpath (Clear Space)	1800 mm
C. MUZ Zone	2400 mm
D. Kerb Ramps	1200 mm
E. Handicapped Parking Space	3600 mm

Surface Finishes and Textures



Component Applicability

● Applicable in new areas

● Applicable in old city as per availability of space

Design Innovation for Old City

In old city area wherever parking lots exist, two parking slots for handicap parking have to be reserved. (*as per space availability)



Guidelines Specific to Udaipur

- Ramps with minimum inclination of 1:15.
- Ensure that the ramp is minimum 1800 mm wide to accommodate an adult with a pram small child walking beside.
- In case bollards have to be added around the ramps, they should have 1200 mm clear space between them.
- Provide a good handrail beside the ramp. Include a lower rail at the height of a small child.
- Tactile paving at start and end of the ramps should be given for toddlers who are differently abled.

Recommendations from Harmonised Guidelines and Space Standards for Barrier-Free Built Environment for persons with Disability and Elderly Persons'.

The accessible car parking lot should:-

- Have minimum dimensions 5000 mm × 3600 mm;
- Have a firm, level surface without aeration slabs; and wherever possible, be sheltered.
- Where there are two accessible parking bays adjoining each other, then the 1200 mm side transfer bay may be shared by the two parking bays. The transfer zones, both on the side and the rear should have yellow or white cross-hatch road markings.
- Consideration should be given to the distribution of spaces for use by the Persons with Disabilities in accordance with the frequency and persistency of parking needs.
- Two accessible parking lots should be provided for every 25 car parking spaces.

Sidewalk Games



	Width (Min.)
A. Dead Width	500 mm
B. Footpath (Clear Space)	1800 mm
C. MUZ Zone (Sidewalk Play Area)	1800 mm

Surface Finishes and Textures



Examples



Chalk Games



Mental Math Games



Hopscotch Game



Games with Objects

● Applicable in new areas

● Applicable in old city

Component Applicability

Design Innovation for Old City

Streets in the old city can be used as shared streets. During off peak hours with less or no traffic, streets can be used by children to play. Side walk games can be implemented as on-street games so that the it can be used for both movement as well as ITC play areas.



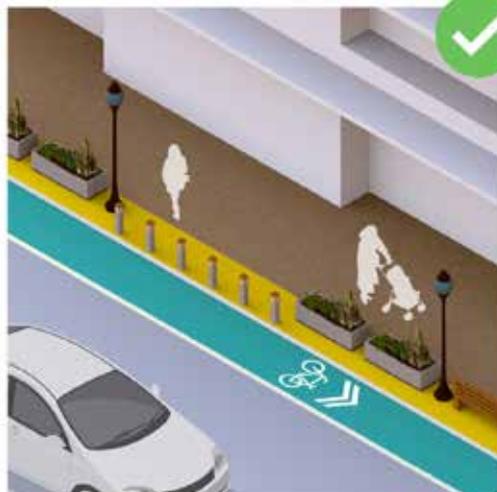
Guidelines Specific to Udaipur

- Introduce patterned pavement over a small portion of the pavement area.
- Provide a smooth flat area of pavement, where children can draw their own pavement figures.
- Paint simple lines or squares onto pavement areas.
- Draw the beginnings of a game or some shapes on the pavement for children to fill in.
- Use contextual games for easy and universal understanding.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

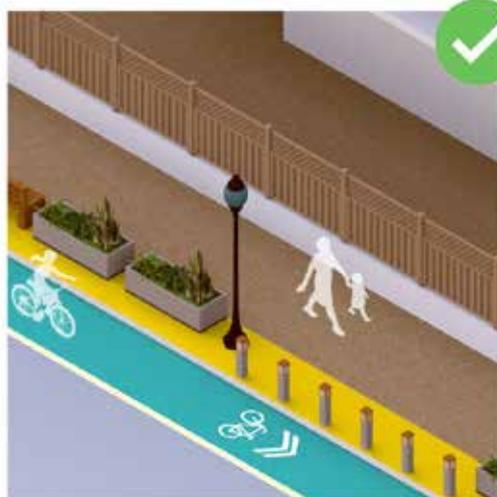
- Sidewalk games are an excellent example of how children can use their imagination to create a world of play within the boundaries of a pavement area. As a first step, designers need only provide children with an empty and protected space and some stimulating pointers, to fire the imagination and keep them reinventing and interested for hours.

Active Facade along Route



NOTE

Active Street frontage shall be required to ensure that pedestrian streets are made safe through "eyes on street". Dead boundary walls shall be discouraged. Retail frontages, transparent fencing, etc. may be encouraged in place of opaque boundary walls. The requirement and hence the mandate to ensure active frontages along pedestrian ones may be build into local area development plans and building bye-laws. Building bye-laws of cities like Kolkata, Mumbai, Pune, etc. have set good examples. Additionally, where such transformations may pose unforeseen challenges, atleast vending zones, retail frontages etc. may be allowed.



● Applicable in new areas

● Applicable in old city

Guidelines Specific to Udaipur

- Make sure that all corners of a street are visible from the surrounding buildings.
- Designing pedestrian routes along buildings that have open and active facades.
- Avoiding structures in the public realm that obstruct views.
- Introduce carefully placed neighbourhood amenities such as food vendors, local presswallahs.
- Dead boundary walls to be discouraged.
- Transparent fencing, retail frontages may be encouraged.

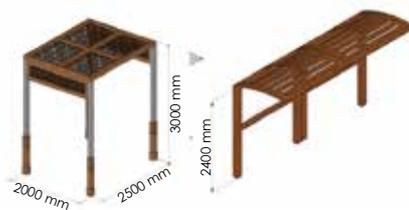
Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Caregivers are less likely to send children on an isolated street. The presence of people and activity along a street acts as a means of passive control, and form the 'eyes on street'. Vandalism and crime incidents can be reduced by unofficial, passive control of the public realm. This is provided by residents or passers-by having an unobstructed view of streets. If streets or seating areas are surrounded by buildings with windows looking onto them an active, open facades on the ground floors, then people feel safer.

Shading Devices



Surface Finishes and Textures Dimensions



Component Applicability
● Applicable in new areas
● Not applicable in old city

Design Innovation for Old City

In old city, narrow streets are naturally shaded by the surrounding buildings. Other areas where shading is required, fabric covers can be used for shading.



Guidelines Specific to Udaipur

- Provide natural shade wherever possible.
- Provide continuous shade on well-used neighbourhood routes.
- Consider trellises overgrown with climbing plants. These provide shade while also having a cooling factor.
- Make sure that resting elements like benches have shade.
- 2400 mm of vertical clearance above pedestrian movement zones should be maintained.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- A well-used street is a street that provides a comfortable environment to its users. In Udaipur, this often means protection from heat during majority of the year. Providing shaded areas on pavements, creating canopies along well-used routes is crucial for small children and their minders. Resting and seating areas should also be shaded from heat and rain for year round usage.

Lighting

Street Lights (Footpath)



Source: Street Light at Fateh Sagar Pal



Bollard Lighting



Source: Bollards at City Palace



Source: Bollards at City Palace



Component Applicability
 ● Applicable in new areas
 ● Applicable in old city

Design Innovation for Old City

In old city, due to lack of space along streets, wall mount street lights can be used.



Guidelines Specific to Udaipur

- High unadorned lights to shine onto road surfaces, and lower, attractive armatures to light footpaths and pavements.
- Add low-level lighting where the paving is uneven, or where there are steps to illuminate these obstacles better.
- Place lighting elements for pavement areas at frequent intervals (3000 mm).
- No shadow zones or dark spots should be left while placing lighting along a footpath.
- Ideally, the lighting level along the entire length of the pavement area should be constant at minimum 6-8 lux level.
- Avoid significant changes in lighting levels along a street.
- Consider the position lighting elements relative to the position of trees and other plants. Make sure that branches do not obstruct any light.
- Always keep in mind that apart from safety, lighting can give added value to a place in many creative ways.
- Cluster night time activities in parks such that they are connected by well illuminated routes.
- Ensure that play areas are well lit. Also lighting levels should not cause excessive glare.
- Attractive armatures to light footpaths and pavements.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- **Streets:** Good lighting plays a vital role in the perception of safety. Good lighting also prevents small children from tripping over obstacles lying on the pavement or uneven paving. Well-lit routes along streets will attract more people, be safer and allow for extended use of the street during the evening hours. Well-chosen light-poles and armatures can contribute to the character of a street and make them feel friendly.
- **Parks:** Good lighting in a park provides a caregiver with a good overview of the situation by emphasizing paths, focal points, entrance and exits and gathering places. The space should be lit adequately (15-30 Lux), uniformly, with low light pollution and aesthetically. The lighting should be easy to maintain regularly and made from vandal resistant materials. Lighting systems can be coordinated to provide a sense of order and clarity in a park.

Recommendations from Indian Roads Congress (IRC 103-2012)

- Lighting shall be directed downward at all times (up-lighting must be prohibited).
- Lighting must be provided every 20-30 m interval, focusing light on the pedestrian and bicycle lanes and not on the car lanes.
- Pedestrian lighting should illuminate the pedestrian walkway: appropriate lighting fixtures not exceeding a height of 4 m from ground grade level should be provided.
- Recessed lighting on the ground along vehicular access, ways and pedestrian walkways should be highly encouraged.
- Wall-mounted lighting, besides reducing street furniture, ensures a more even distribution of light, reducing the risk of damage due to vehicle impact and vandalism.
- All exterior lighting fixtures shall conform to the shielding requirements.
- A whiter light source, for example high-pressure sodium, is preferable in city and town centres for the aesthetic effect and for better colour definition, which benefit those with poor sight.
- White lighting at 25-40 lux for footpaths is recommended. It is recommended to maintain colour contrast from road and to ensure colour contrast of tactile tiles visible at night to persons with low vision.
- Location of lighting fixtures must consider the location of existing and proposed trees.
- Spacing of fixtures should be based on the intensity of light, height of the fixture and the clearances from tree canopies such that no light is blocked by the summer foliage.
- Higher lighting levels (80 lux) using special light poles for pedestrian crossing is recommended, while lower level light poles are preferred to avoid shadow where there are high trees.
- Under no circumstances should the lighting pole interfere with the clearance of the main pedestrian walkway of the footpath. Light pole may preferably be located within the tree-planting zone.

Planters

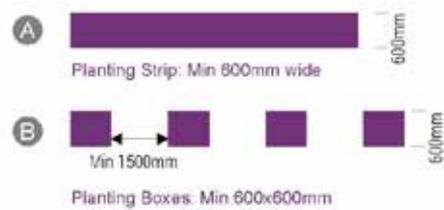


Source: Planter bed in Old City

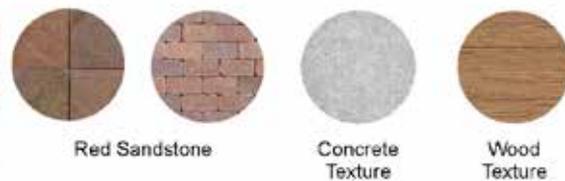


Source: Planter Near Vidya Bhawan School

Variations



Surface Finishes and Textures



● Applicable in new areas

Component Applicability
● Applicable in old city

Guidelines Specific to Udaipur

- Planting strip should be minimum 600 mm wide.
- Minimum 1500 mm space should be kept between two planter boxes.
- Use planting at different height trees for shading and lower plants at the scale of small children.
- Plants can be placed in various zones in the street: against facades, in a zone between traffic and pedestrians.
- If there is no space for planting on the pavement, consider planting between parked cars.
- Where streets are very narrow like in Old city areas, consider using climbing plants against the facades. Place potted plants along a facade. However, ensure that there is still enough pavement width for a caregiver pushing a pram. Use indigenous plants and local species.
- Try to retain existing trees when retrofitting a street. Large trees add instant character to a street.

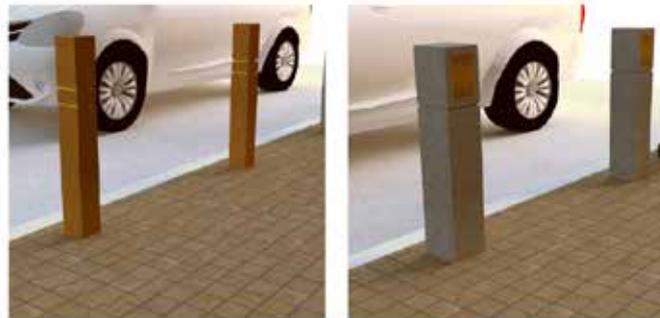
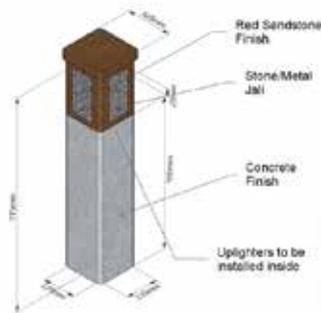
Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Planting is important to create shade and cooling on streets. Trees create a pleasant environment (protection from glare and heat). In a retrofit context, there are opportunities to add green to the public realm which do not require much space, such as window boxes or climbing plants against facades, and arbors across small streets. These do not require great amounts of time for maturation before healthy amounts of shade are provided.
- Planting zones, if placed alongside roads act as a buffer between the street and the pavement, double up as protection.
- Planting zones, if placed along facades, mitigate heat absorbed and radiated from the buildings (cooling factor).
- Plants let small children come in contact with nature.
- Underground utilities can obstruct root growth: It is important to consider how utilities are placed in relation to trees.

Bollards



Dimensions



Surface Finishes and Textures



Component Applicability

● Applicable in new areas

● Not applicable in old city

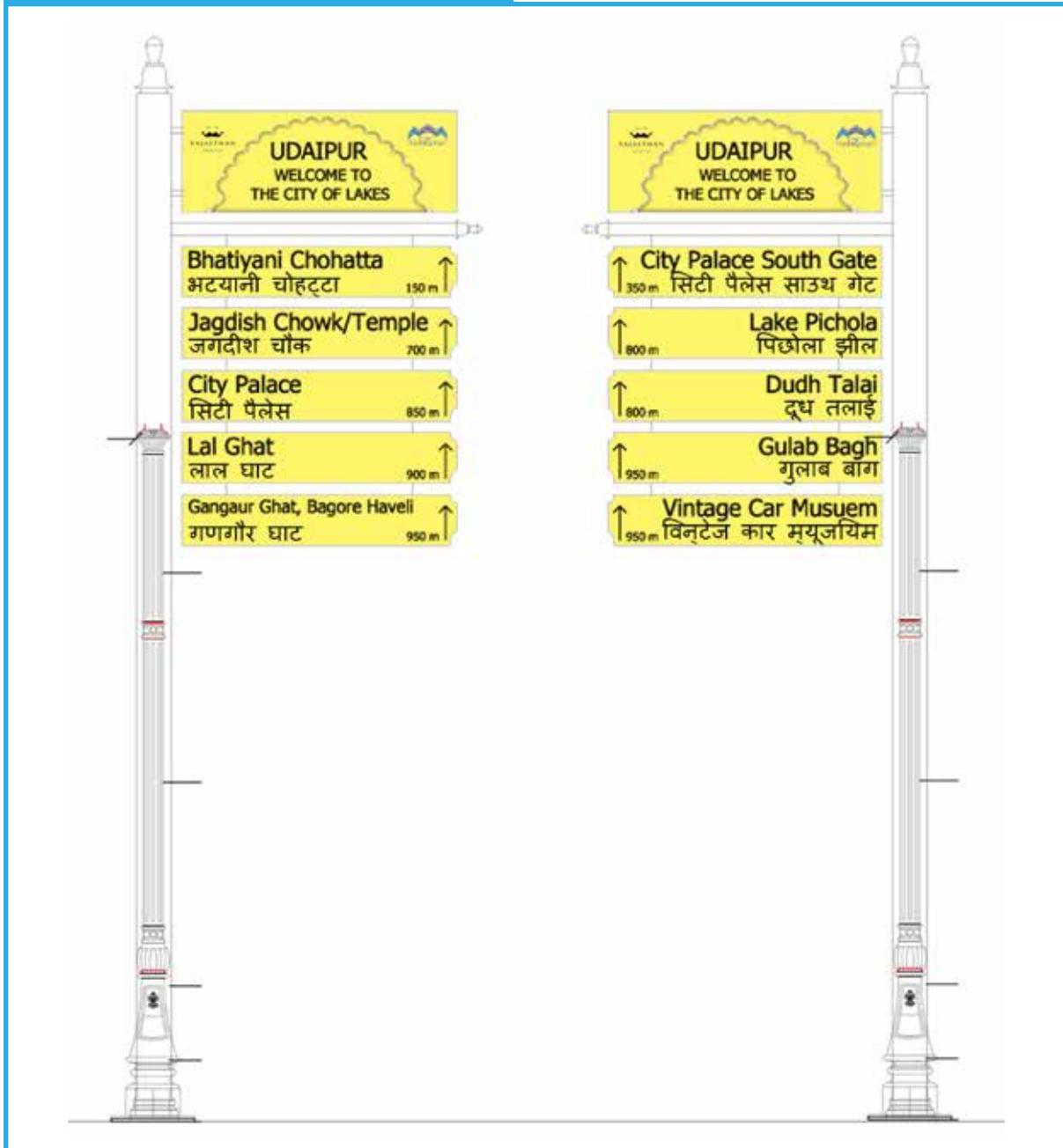
Guidelines Specific to Udaipur

- Boulders or sturdy bollards along street edges for deterring cars. The spacing between bollards to be minimum 1200 mm for single stroller to cross by.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Bollards are often used to stop vehicles from entering the footpath and to keep pedestrian away from vehicular traffic.
- Bollards with minimum 1000 mm high should be identifiable by using contrasting colours with the provision of reflective tapes.
- To stop use by bicycles/bikes, bollards at suitable locations should be provided with clear gap of 1200 mm between two bollards .

Signages



● Applicable in new areas

● Component Applicability

● Applicable in old city

Guidelines Specific to Udaipur

- Locate signage at key entry points and activity areas. Ensure that signage is positive, informational and well lit.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Visibility and clear sightlines are an important factor in enhancing the perception of safety. Signage to guide the user to interesting destinations and activities is also important. The signage should be easy to maintain regularly and made from vandal resistant materials.

Road Safety Signages



Fig. 14.51 Minimum Speed Limit



Fig. 14.52 Compulsory Cycle Track/Cycle Only

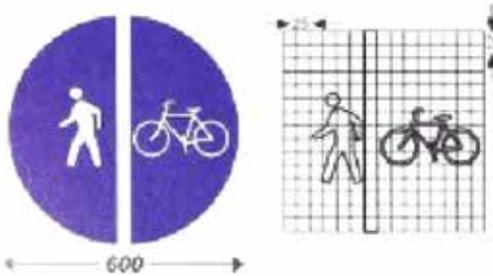


Fig. 14.53 Compulsory Cyclist and Pedestrian Route



Fig. 14.54 Pedestrian Only



Fig. 15.48 Dangerous Dip

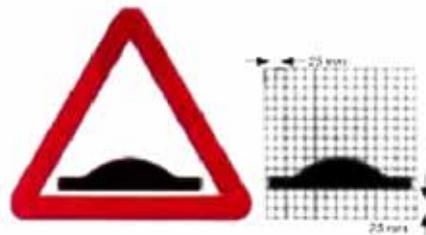


Fig. 15.49 Speed Breaker



Fig. 15.50 Rumble Strip

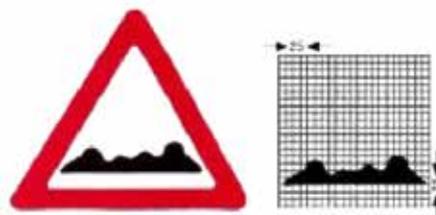


Fig. 15.51 Rough Road

● Applicable in new areas

● Applicable in old city

Road Safety Signages

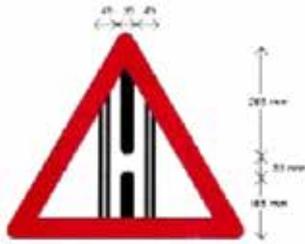


Fig. 15.32 Gap in Median

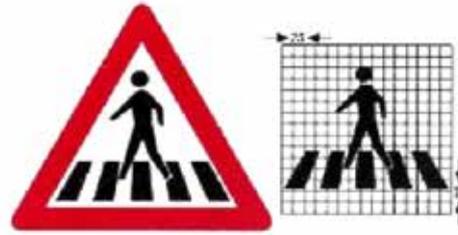


Fig. 15.33 Pedestrian Crossing

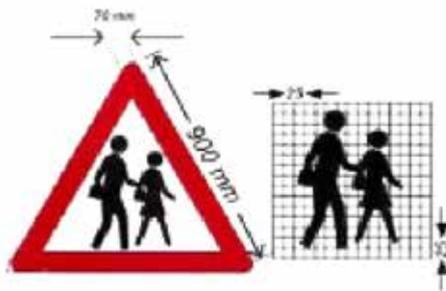


Fig. 15.34 School Ahead



Fig. 15.35 Built-up Area

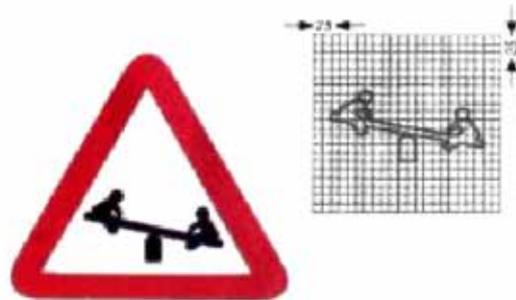


Fig. 15.58 Playground Ahead

● Applicable in new areas

● Component Applicability
● Applicable in old city

Guidelines Specific to Udaipur

- Traffic safety signage for pedestrian and cyclist safety as per relevant IRC Codes shall be required for ITCN safety. The sizes, location and specifications of such signs shall be as per IRC Codes.

Recommendations from Indian Roads Congress (IRC 067-2012).

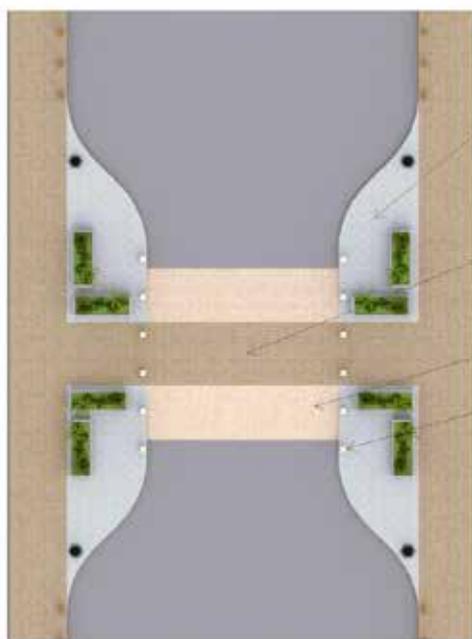
- The purpose of road signs is to promote road safety and efficiency by providing for the orderly movement of all road users on all roads in both urban and non-urban areas. Road signs notify road users of regulations and provide warning and guidance needed for safe, uniform and efficient operation.

Safe Crossings

Intersection Design



Mid-Block Crossing



Surface Finishes and Textures



● Applicable in new areas

● Applicable in old city

Component Applicability

Guidelines Specific to Udaipur

- Place crossings at regular intervals, to avoid ITCs having to walk extra to find a suitable crossing point.
- If there is a median, create a large enough space on the median for caregiver and toddler to wait halfway as they may not be able to cross a wide street at once.
- Keep crossings clear of obstacles that obstruct the view. No parked cars close to crossings, no low planting close to crossings should be allowed.
- Major crossings to be visible by motorists. For example, with flashing lights.
- Where there are crossings with traffic lights, consider that these will have to allow for more time for caregivers and toddlers to cross safely.
- Brightly coloured zebra crossing markings make the crossing identifiable for small children.
- Table-top crossing point with stroller friendly surface materials.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

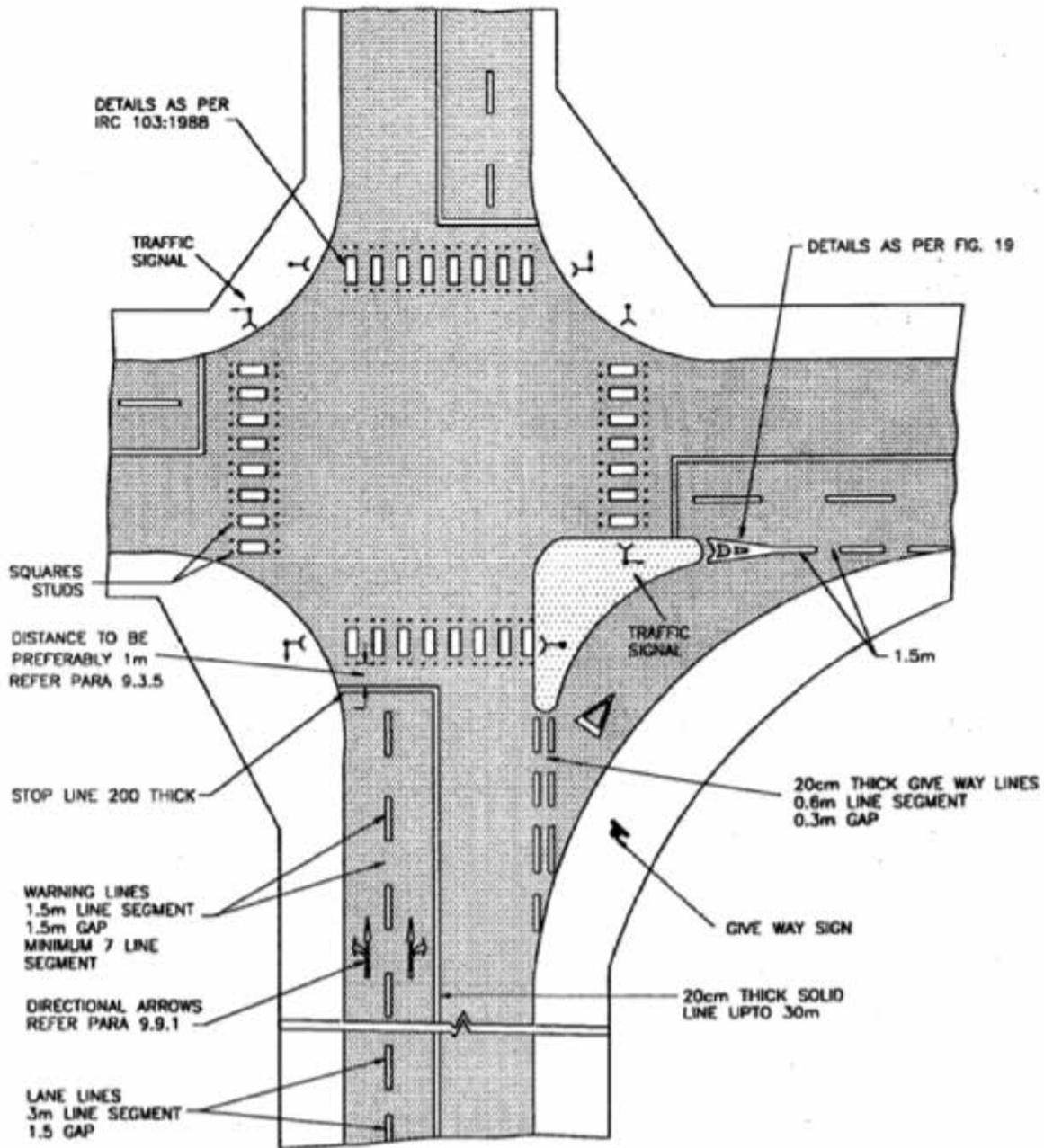
- ITCs are especially vulnerable at crossings because they move slower than adults or older children. In addition, the views of children in age group 0-5 can easily be blocked by low planting or parked cars. The interface between the road and the crossing needs to be considered. Navigating high curbs without curb-cuts is an obstacle for small children and also when with their caregivers in pushing a pram.

Recommendations from Indian Roads Congress (IRC 103-2012).

- A zebra crossing is a clearly specified pedestrian tracking across the carriageway and is delineated with the help of alternate black and white stripes, which should have embossed texture for easy detection by persons with vision impairment. Thermoplastic paint with +5 mm embossed texture can be used and raised pedestrian crossings (table top) be provided .
- Alternatively dropped kerb can be provided. A zebra crossing must always be accompanied by a "STOP" line as per IRC:35-1970 Code of Practice For Road Markings (First Revision).
- Width of zebra crossing: The width generally lie within a range of 2-4 m. For divided carriageway, the crossing should, as far as possible, proceed uninterrupted through the median strip. In the event of the median strip being used as pedestrian refuge, adequate width of median must be provided. In case of raised medians, such portion could be suitably depressed with kerb height not exceeding of the zebra crossing must be adequate and should be 150 mm.

Lane Markings

Markings at Intersection



Source: Guidelines for Road Markings (UTTIPEC) and Code of Practice for Road Markings (IRC:35-1997)

Component Applicability

● Applicable in new areas

● Applicable in old city

Lane Markings

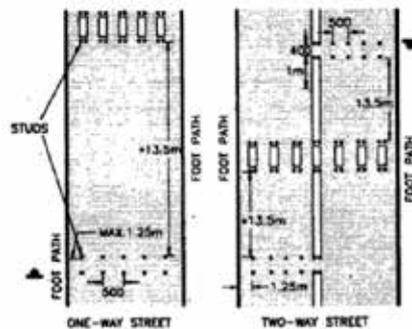
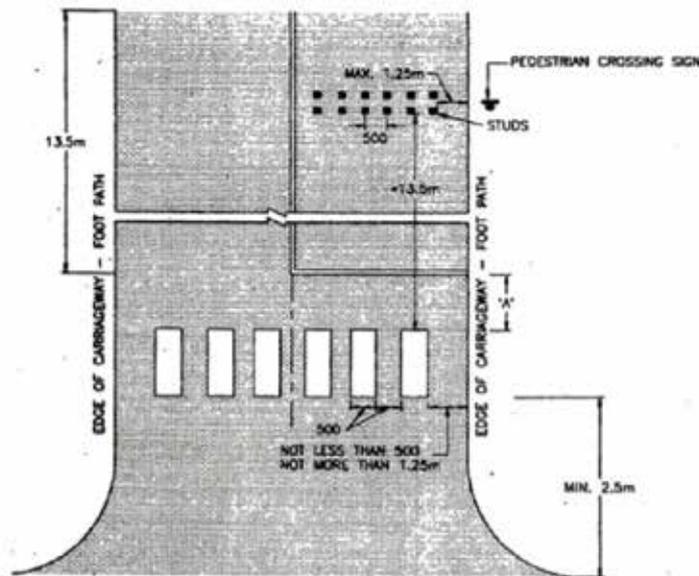
Markings at Intersection

Note

The width of the pedestrian crossing is governed by the pedestrian volumes crossing the road and by local requirements but in no case should it be less than the width of footpath subject to a minimum of 1.5 m. The width of the crossing generally lies between 2 m and 4 m. Marking for pedestrian crossing mostly used is the Zebra pattern consisting of equally spaced white stripes generally 500 mm wide should be marked. A warning sign to indicate that the pedestrian crossing is ahead should also be installed.

A mid-block pedestrian crossing in urban areas, may be advantageous to install flashing signals along with the markings, so that the drivers receive advance warning about the presence of the crossing.

Source: Guidelines for Road Markings (UTTIPEC) and Code of Practice for Road Markings (IRC:35-1997)



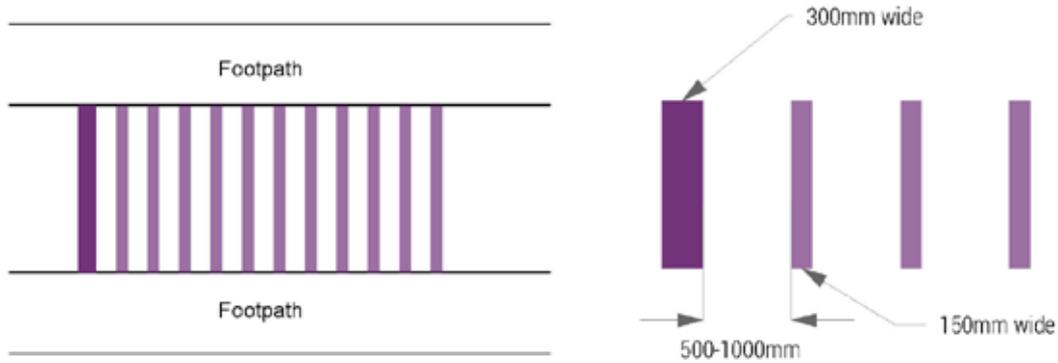
Source: Guidelines for Road Markings (UTTIPEC) and Code of Practice for Road Markings (IRC:35-1997)

Component Applicability

● Applicable in new areas

● Applicable in old city

Rumble Strips



Note

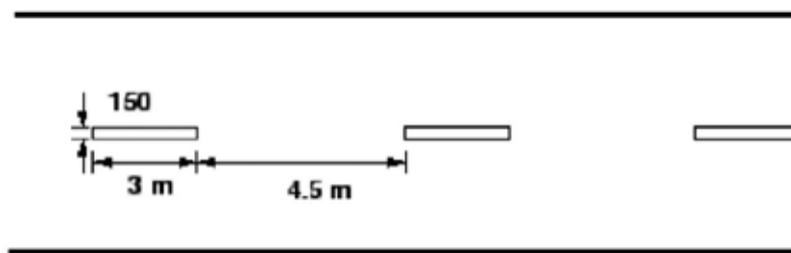
The raised rumble strip markings using thermo plastic paint or mastic sheets can be used with installation across the carriageway for deliberate reduction of speed for child friendly design in urban areas. The first application can be of 300 mm wide strips and second can be of 150 mm. These strips shall be provided at 500 mm to 1000 mm spacing's in a series / set comprising 15 to 20 strips at the distance of 130 m to 180 m from the start of the crossing point, for both directions of traffic.

Source: Guidelines on Traffic Management in Work Zones (IRC:SP:55-2014)

● Applicable in new areas
● Applicable in old city

Lane Markings

Centre line Marking for Two-Lane Road



Source: Guidelines for Road Markings (UTTPEEC) and Code of Practice for Road Markings (IRC:35-1997)

● Applicable in new areas
● Applicable in old city

Lane Markings

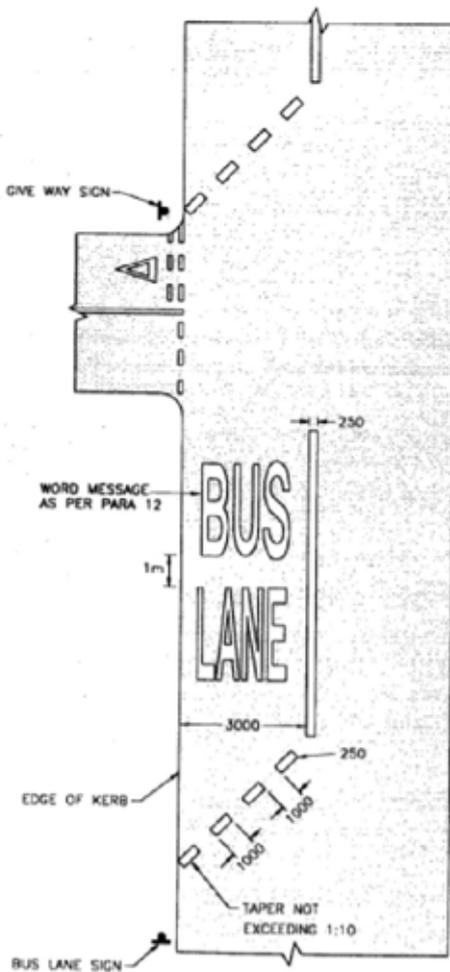
Centre line Marking for Two-Lane Road

Note

On roads with less than four lanes or on those roads having four lanes and on which parking is permitted thus reducing the operational width, the centre lines shall consist of single broken line 150 mm wide of 3 m long segments with 4.5 m gaps. On curves and approaches to intersections, the gap shall be 3 m. The colour of the centre line shall be yellow.

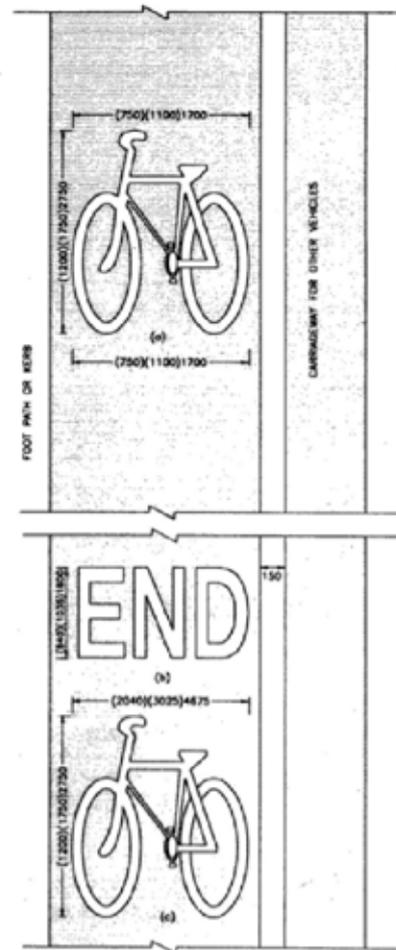
Source: Guidelines on Road Markings (UTTIPEC) and Code of Practice for Road Markings (IRC:35-1997)

Bus-lane Marking



Source: Guidelines for Road Markings (UTTIPEC) and Code of Practice for Road Markings (IRC:35-1997)

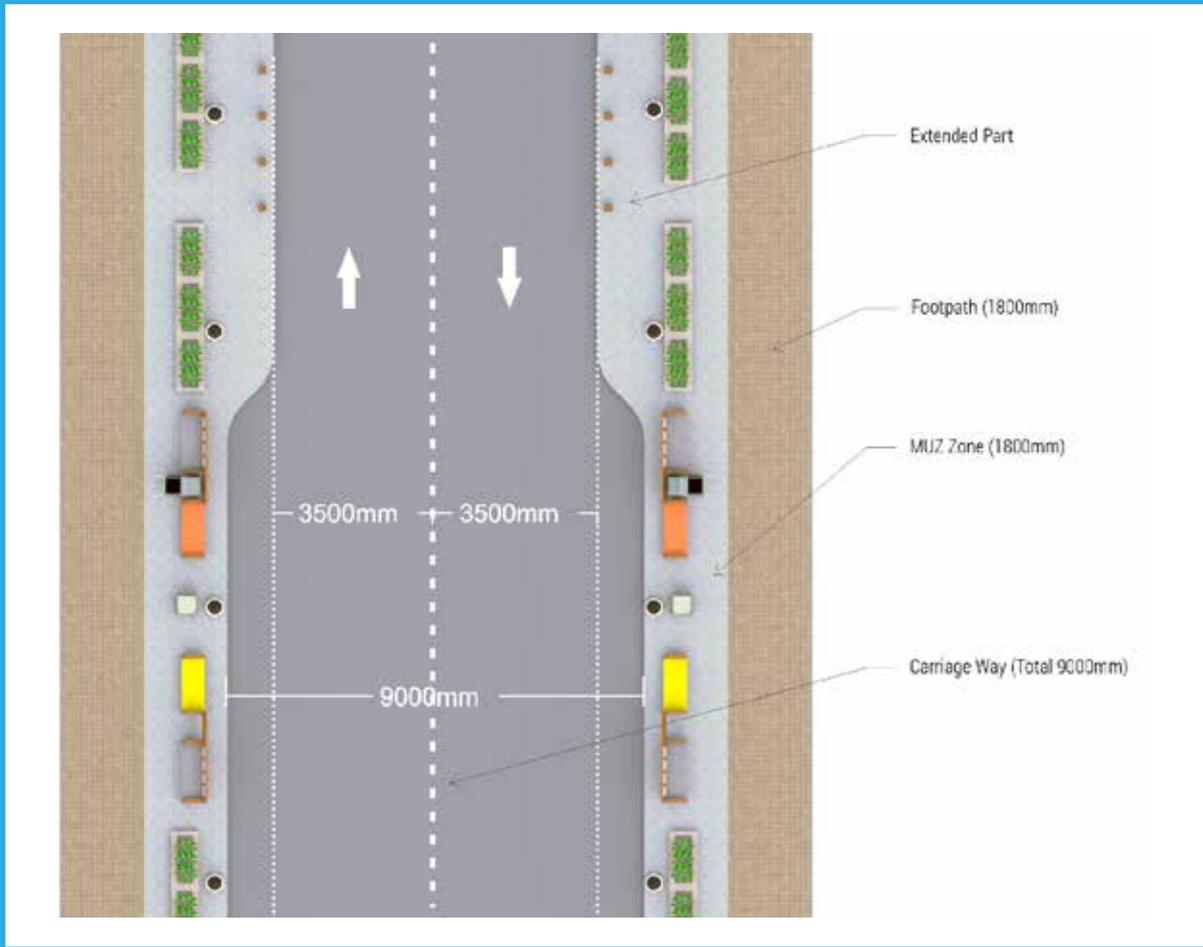
Cycle-lane Marking



● Applicable in new areas
● Not applicable in old city

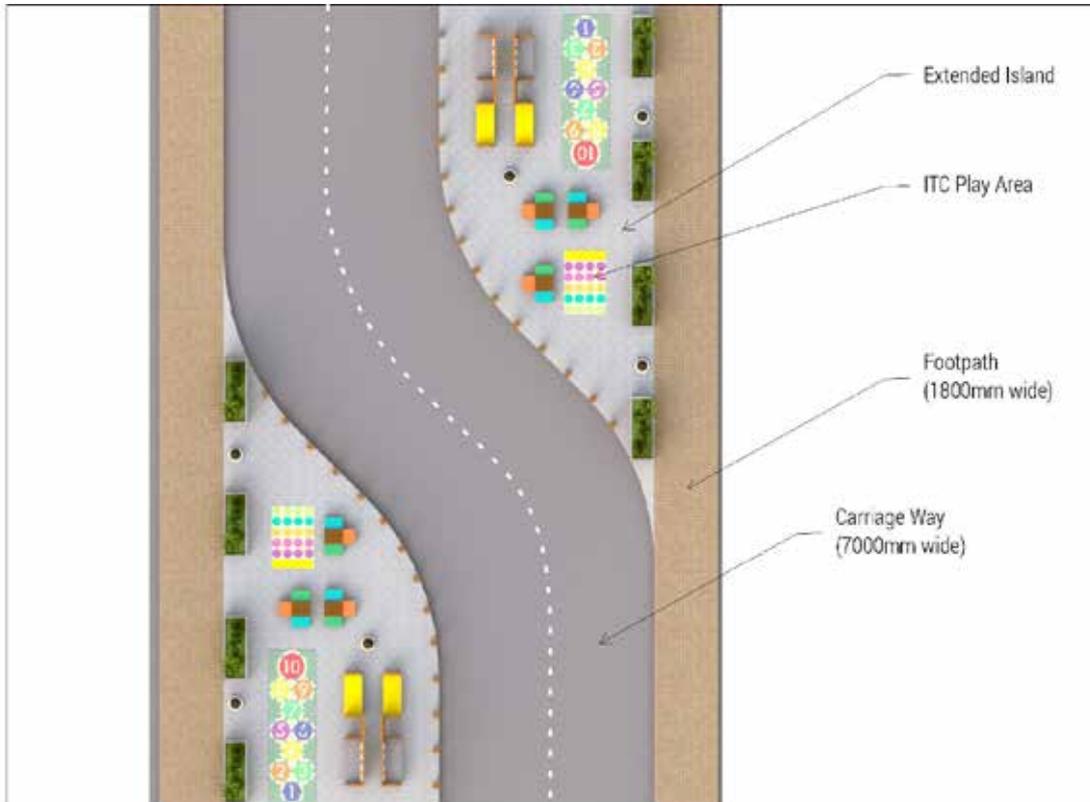
Component Applicability

Curb Extensions



Component Applicability
● Not applicable in old city
● Applicable in new areas

Chicanes



Surface Finishes and Textures



Component Applicability

- Applicable in new areas
- Not applicable in old city

Guidelines Specific to Udaipur

- Carriageway width should be minimum 7000 mm.
- Chicanes increase the amount of public space available on the street.
- The public space can be used for benches, bicycle parking, ITC play areas and other amenities.
- Signage must be provided to inform driver about the subtle turn in carriageway to avoid accidents.

Recommendations from UTIPEC Street Design Guidelines

- A chicane is a series of alternating mid-block kerb extensions or islands that narrow the roadway and require vehicles to follow a curving, Serpentine path – thus reducing vehicular speeds and increasing safety for pedestrians and NMVs.
- Chicanes can be used on one-way or two-way streets and can be single lane or two-lane configurations.

Street Art



Component Applicability

- Applicable in new areas
- Applicable in old city

Guidelines Specific to Udaipur

- Use bright colours that stimulate children.
- Think about what the artwork looks like, from a children's eye level.
- Depict scenes that relate to and interest small children, such as animals or everyday activities.
- Consider how children can learn through the artwork; add numbers to the work, use distinct shapes.
- Engage caregivers and children in the process of co-creation. This will have significant benefits in connecting the community.

Recommendations from UTIPEC Street Design Guidelines

- Through public art, cities can empower citizens to contribute to the appearance of where they live. Public art can have an educational character, so children can learn by looking at it. There are major overlaps between public art and kinetic modes of learning in the design of public space. Public art can be as simple as painting a wall with the community. When it functions most effectively for ITCs is when the creation of playful images and sculptures in a neighbourhood are carried out as learning activities with children. These kinds of events are both stimulating for ITC brain and social development, but they also gel communities around ITC planning goals. Making art with children is a way of claiming space for them too, which can contribute to greater perception of safety of a place. It can also help to encourage a sense of ownership of public spaces, which means visitors can tend to clean up after themselves better and treat furniture and materials with more care.
- Finally, managers should consider commissioning professional artists to run workshops with neighbourhoods, and to contribute their own work as part of that effort.

It is advised that all streets, public spaces, parks and utility areas be planned comprehensively with all the applicable elements mentioned in the table below, as far as possible. In the event, implementation of the interventions are phased out, the same shall address the following categories in decreasing order of priority.

1. **Essential Component** - Non Negotiable Components
2. **Supportive Components** - Help in ensuring that all the other facilities associated to ITC are also integrated
3. **Thriving Components** - Value additions done to the space and areas

CATEGORY OF COMPONENTS FOR OLD CITY

COMPONENT	ESSENTIAL	SUPPORTING	THRIVING
Footpath	✓		
Kerb Ramp			✓
Ramps for ITC	✓		✓
Waiting area			
Handicapped parking	✓		
Side-walk games	✓	✓	
Active facade along route			
Surface material and textures	✓		
Benches		✓	
Shading devices			
Lighting	✓		
ITC playful furniture		✓	
Planters		✓	
Bollards			✓
Seating along planters			✓
Wayfinding signages for destinations & utilities	✓		
Safety signage for traffic	✓		
Safe crossings	✓		
Kerb extensions			✓
Rumble strips	✓		
Lane marking	✓		

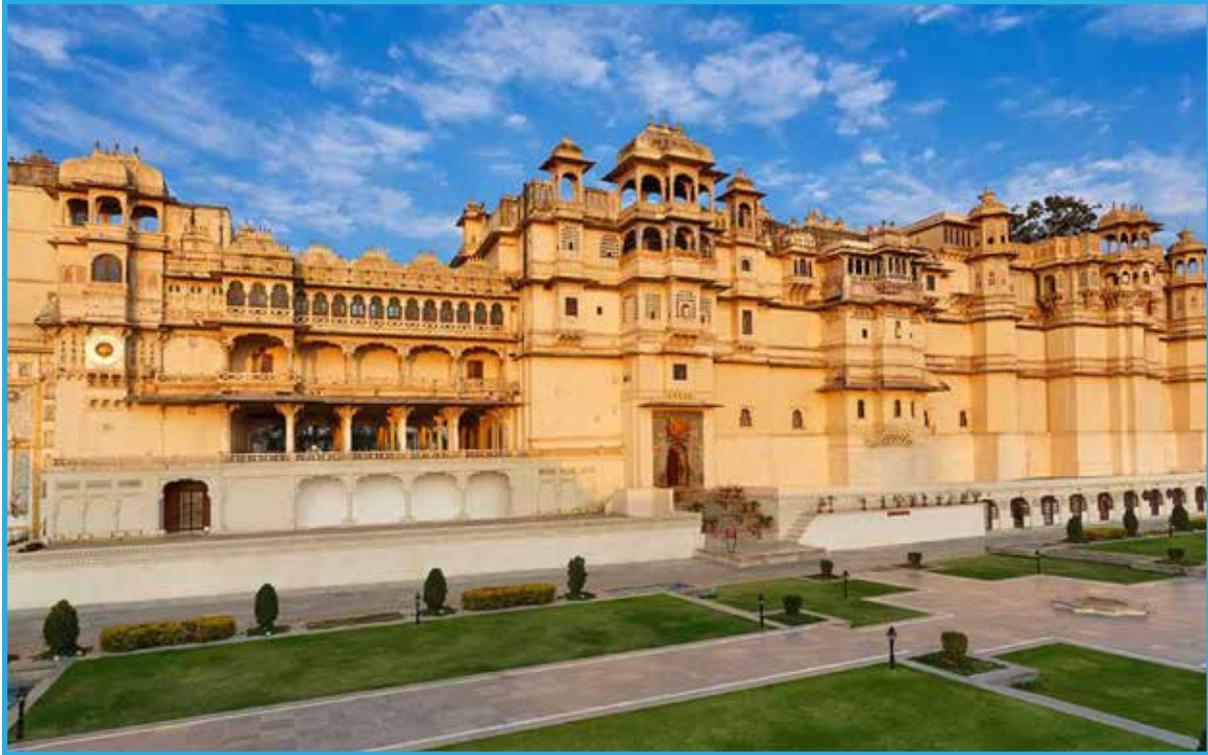
COMPONENT	ESSENTIAL	SUPPORTING	THRIVING
Chicanes			✓
Public Art			✓
Footpath	✓		
Kerb Ramp	✓		
Cycle stand	✓		
Cycle track			✓
Ramps for ITC	✓		
Waiting area	✓		
Handicapped parking	✓		
Side-walk games	✓		
Active facade along route		✓	
Surface material and textures		✓	
Benches	✓		
Shading devices	✓		
Lighting	✓		
ITC playful furniture	✓		
Planters		✓	
Bollards	✓		
Seating along planters		✓	
Wayfinding signages for destinations & utilities	✓		
Safety signage for traffic	✓		
Safe crossings	✓		
Kerb extensions		✓	
Rumble strips	✓		
Lane marking	✓		
Chicanes			✓
Public Art			✓

A photograph of a park with a playground and trees, overlaid with a blue tint and a yellow text box. The text is centered and reads:

B. Intervention Guidelines – Parks and Public Spaces

Monument Spaces

City Palace, Old City



Proposed ITC Indicators

STREETS

-  Cycle stand
-  Handicapped parking
-  Wayfinding signages for destinations & utilities

PARKS AND OPEN PUBLIC SPAES

-  Fencing/ Permeable perimeter
-  Camera monitoring
-  Ramps for ITC
-  Benches
-  Shading devices
-  Lighting
-  ITC playful furniture
-  Play equipment
-  Planters
-  Seating along planters
-  Public Art
-  Surface materials & Textures
-  Natural Play elements

UTILITIES

-  Drinking water facility
-  Dustbins
-  Breast feeding booths
-  Toilets

Lakefronts

City Palace Lakefront, Old City



Proposed ITC Indicators

STREETS

-  Footpath
-  Cycle track
-  Cycle stand
-  Handicapped parking
-  Wayfinding signages for destinations & utilities

PARKS AND OPEN PUBLIC SPAES

-  Fencing/ Permeable perimeter
-  Camera monitoring
-  Ramps for ITC
-  Benches
-  Shading devices
-  Lighting
-  ITC playful furniture
-  Play equipment
-  Planters
-  Seating along planters
-  Public Art
-  Surface materials & Textures
-  Natural Play elements

UTILITIES

-  Drinking water facility
-  Dustbins
-  Breast feeding booths
-  Toilets

Traditional Garden Spaces

Saheliyo Ki Bari, New Fatehpura



Proposed ITC Indicators

STREETS

-  Cycle stand
-  Handicapped parking
-  Wayfinding signages for destinations & utilities
-  Safe crossings

PARKS AND OPEN PUBLIC SPAES

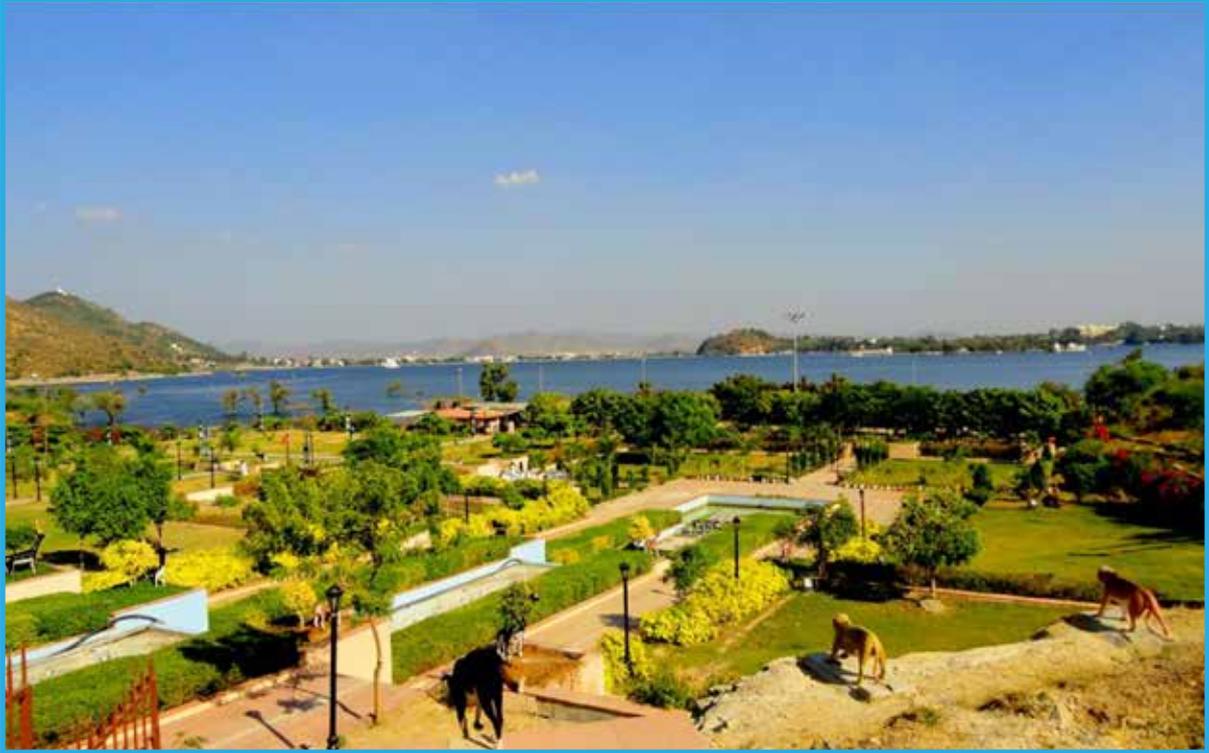
-  Fencing/ Permeable perimeter
-  Camera monitoring
-  Ramps for ITC
-  Benches
-  Shading devices
-  Lighting
-  ITC playful furniture
-  Play equipment
-  Planters
-  Seating along planters
-  Public Art
-  Surface materials & Textures
-  Natural Play elements

UTILITIES

-  Drinking water facility
-  Dustbins
-  Breast feeding booths
-  Toilets

Parks and Gardens

**Rajiv Gandhi Park, Rani Road,
Fatehsagar Lake**



Proposed ITC Indicators

STREETS

-  Cycle stand
-  Handicapped parking
-  Wayfinding signages for destinations & utilities
-  Safe crossings

PARKS AND OPEN PUBLIC SPAES

-  Fencing/ Permeable perimeter
-  Camera monitoring
-  Ramps for ITC
-  Benches
-  Shading devices
-  Lighting
-  ITC playful furniture
-  Play equipment
-  Planters
-  Seating along planters
-  Public Art
-  Surface materials & Textures
-  Natural Play elements

UTILITIES

-  Drinking water facility
-  Dustbins
-  Breast feeding booths
-  Toilets

Waterfronts and Ghat Spaces

Gangaur Ghat, Old City, Pichola Lake



Proposed ITC Indicators

STREETS

-  Cycle stand
-  Handicapped parking
-  Wayfinding signages for destinations & utilities

PARKS AND OPEN PUBLIC SPAES

-  Fencing/ Permeable perimeter
-  Camera monitoring
-  Ramps for ITC
-  Benches
-  Shading devices
-  Lighting
-  ITC playful furniture
-  Play equipment
-  Planters
-  Seating along planters
-  Public Art
-  Surface materials & Textures
-  Natural Play elements

UTILITIES

-  Drinking water facility
-  Dustbins
-  Breast feeding booths
-  Toilets

Ootlas

Old City



Proposed ITC Indicators

STREETS

PARKS AND OPEN PUBLIC SPAES

UTILITIES



Camera monitoring



Drinking water facility



Benches



Dustbins



Shading devices



Lighting



ITC playful furniture



Planters



Public Art



Surface materials & Textures



Natural Play elements

Parks/Tot Lots

**Guru Gobind Singh Park,
Near Fathesagar Lake**



Proposed ITC Indicators

STREETS

**PARKS AND
OPEN PUBLIC SPAES**

UTILITIES



Fencing/ Permeable perimeter



Drinking water facility



Camera monitoring



Dustbins



Ramps for ITC



Benches



Shading devices



Lighting



ITC playful furniture



Play equipment



Planters



Public Art



Surface materials & Textures



Natural Play elements

Raised public Platform

Old City



Proposed ITC Indicators

STREETS

PARKS AND OPEN PUBLIC SPAES

UTILITIES



Fencing/ Permeable perimeter



Drinking water facility



Camera monitoring



Dustbins



Ramps for ITC



Benches



Shading devices



Lighting



ITC playful furniture



Play equipment



Planters



Public Art



Surface materials & Textures



Natural Play elements

Temple Chowks

Old City



Proposed ITC Indicators

STREETS

- Planters
- Bollards
- Seating along planters
- Wayfinding signages for destinations & utilities

PARKS AND OPEN PUBLIC SPAES

- Camera monitoring
- Ramps for ITC
- Benches
- Shading devices
- Lighting
- ITC playful furniture
- Planters
- Public Art
- Seating along planters
- Natural Play elements

UTILITIES

- Drinking water facility
- Dustbins

Fencing / Permeable Perimeter



Surface Finishes and Textures



Component Applicability

- Applicable in new areas
- Not applicable in old city

Guidelines Specific to Udaipur

- Public spaces and parks should be designed as barrier free areas with no boundary walls.
- In case boundaries are required to make areas safe, semi-transparent fencing should be used.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Fencing around a playground or play area is required for a variety of reasons. If the perimeter of the park is permeable and inviting from the street, people will be more inclined to enter it. Also fencing as a safety measure, will prevent children from accidentally running out onto oncoming traffic and wandering off. A fenced playground may be closed and locked at night, to deter, if not prevent vandalism.

Camera Monitoring



Note
 Making parks and other public spaces safe for ITCN is an important aspect for making these areas ITCN friendly. Crime prevention and deterrent measures should be encouraged, which shall include making the areas safe through "eyes on street" mixed use development, "community watch" programs or designing areas for 24 x 7 use. However, some areas may require additional measures to make them safe. In such situations, CCTVs and other similar techniques may be use.

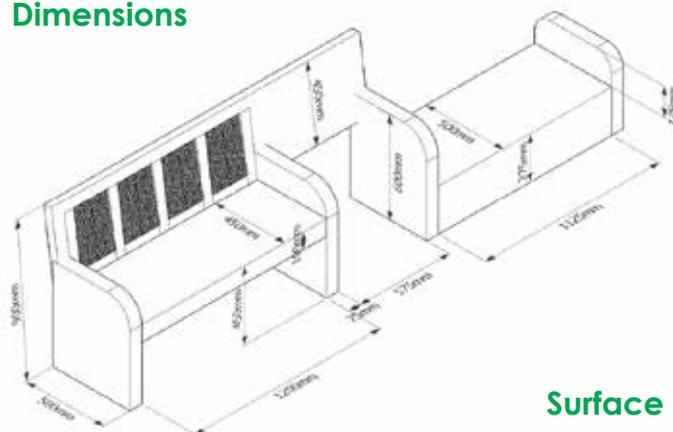
Component Applicability

- Applicable in new areas
- Applicable in old city

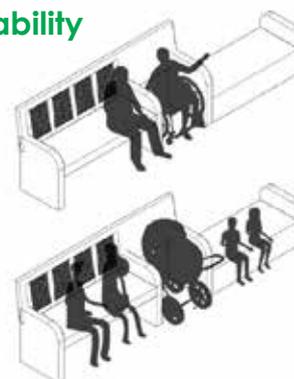
Benches



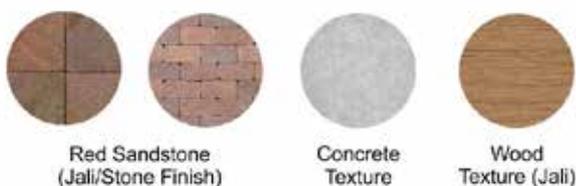
Dimensions



Usability



Surface Finishes and Textures



Guidelines Specific to Udaipur

- Group benches together so that caregivers can socialise.
- Position benches so that they give a clear view of the area where small children will be playing.
- Choose benches that can be used by both caregivers and small children.
- Benches need to be at least 500 mm wide to accommodate a toddler to sit comfortably.
- Bench should also have the provision for Stroller/Wheelchair.
- Besides benches, consider how a drink or a snack can be given at the playground. Place an element with a flat top close to the benches.
- Place litter bins close to benches.
- Provide shade over benches.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

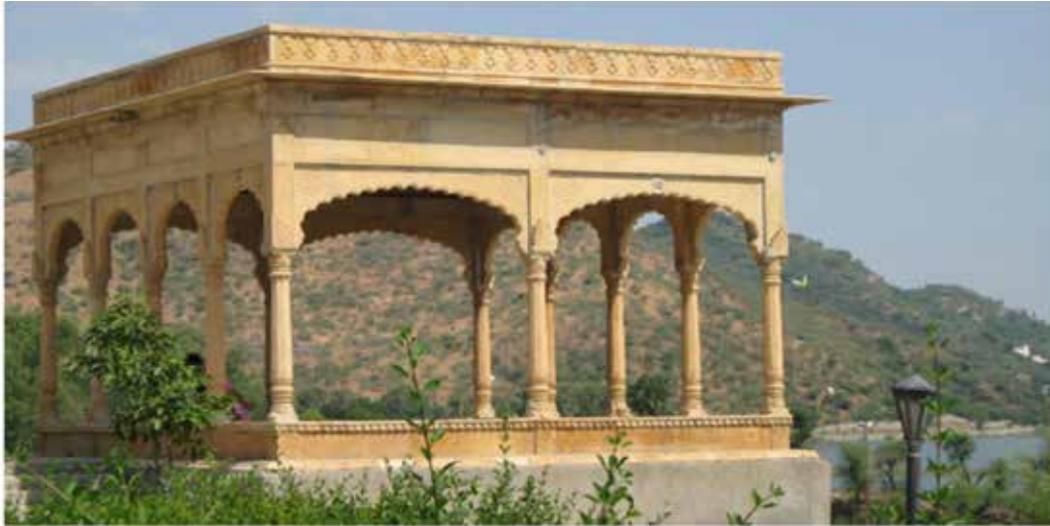
- Well chosen and well design resting equipment can extend the time spent in a space. Resting equipment for caregivers needs to provide a comfortable space where they can sit and watch their children play. Also, parks are an ideal place for caregivers to meet other adults. Grouping benches together make it possible for relaxation and socialising. Small children need more downtime than bigger children and would want to rest between playing. Consider benches that are low in height for toddlers to crawl onto, wide for a young child to lie down safely. Vandalised and broken furniture make a park or open space feel neglected. Choose robust, vandal proof furniture that is easy to maintain. Caregivers and small children spend longer time in a park than along a street. They may become thirsty or hungry. Consider where and how a drink or a snack may be eaten in the open space.

Component Applicability

● Applicable in old city as per availability of space

● Applicable in new areas

Shading Devices



Shading at Rajiv Gandhi Park



Shading at Rajiv Gandhi Park



Tree shade at Gulab Bagh



Shading at Gulab Bagh

Surface Finishes and Textures



Wood Texture



Tensile Fabric



Fibre Glass Roofing Material

Guidelines Specific to Udaipur

- Ideal shading is natural shading, where possible: use trees, bushes and climbers.
- Provide shaded spots where caregivers need to wait and have good sightlines of play areas.
- Consider providing shading over play areas and play equipment as well to ensure that children are cool and comfortable during the hot months.
- Incentivise shading playgrounds by giving grants to schools and NGOs for providing shaded structures.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- A well-used open space provides a comfortable environment year round to its users. In Udaipur, this often means protection from heat for most parts of the year. A caregiver is less likely to bring a young child to a park, if he/she does not have a shaded and comfortable spot to rest whilst children play. Providing shade in outdoor play areas is crucial for small children and their minds. Shade structures can be provided over seating areas, protect playground equipment and allow visitors to spend more time at parks.

Component Applicability
● Applicable in new areas
● Not applicable in old city

ITC Play Furniture



Surface Finishes and Textures



Solid Rubber Tile



Artificial Grass



Play Sand



Rubber Mulch



Engineered Wood Fibre

Note

ITC playful furniture should be designed such that there are no sharp corners or edges, are colourful and appealing to the children, do not pose threat to children due to its height or location and require low maintenance.

Component Applicability

● Applicable in new areas

● Applicable in old city

Play Equipment



Play Equipment at Gulab Bagh



Play Equipment at Gulab Bagh



Play Equipment at Gulab Bagh



Play Equipment at Gulab Bagh

Surface Finishes and Textures



Solid Rubber Tile



Artificial Grass



Play Sand



Rubber Mulch



Engineered Wood Fibre

Guidelines Specific to Udaipur

- Play equipment should be designed such that there are no sharp corners or edges.
- Equipment should be colorful and appealing to the children and should not pose threat to children due to its height or location.
- Combine playing objects with the adequate floor covering: soft, elastic, artificial rubber, sand or cork etc.
- Carefully check safety regulations.
- Introduce equipment that promotes adventurous and sensory play, especially for differently abled children and children with learning disorders.
- Always combine a minimum of 3 playing objects for a successful playground.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Indian playgrounds are still dominated by manufactured steel or plastic equipment, that consists of the standard suite of slides, see-saws, swings and monkey bars. These have limited repeat play value for a young child. It is important to consider other equipment that promotes adventurous and sensory play. Besides the use of natural play elements, other objects such as balance beams, vine walks, playhouses, treehouses, use of sound enabling objects can be considered. Another point to consider is to allow risk-taking opportunities in children's play. Parent's risk-averse approach towards play has resulted in boring playgrounds. Allow children to run around, climb, make and discover.

Component Applicability
● Applicable in new areas
● Applicable in old city

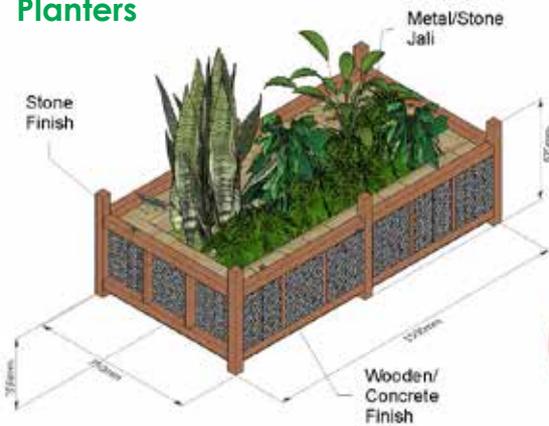
Planters / Seating along Planters



Planters with Seating



Planters



Surface Finishes and Textures



Component Applicability

- Applicable in new areas
- Applicable in old city

Guidelines Specific to Udaipur

- Build planters up to a suitable seating height; 400-500 mm for adults and 275-300 mm for toddlers and children
- Design the edges wide enough to double up as seating, atleast 450 mm to 600 mm for laying babies down.
- Design the tops of the planters or retaining walls with a slight incline so rainwater runs off.
- Consider wooden slats or locally available durable material (red sandstone) placed at intervals on low structures to become informal benches.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

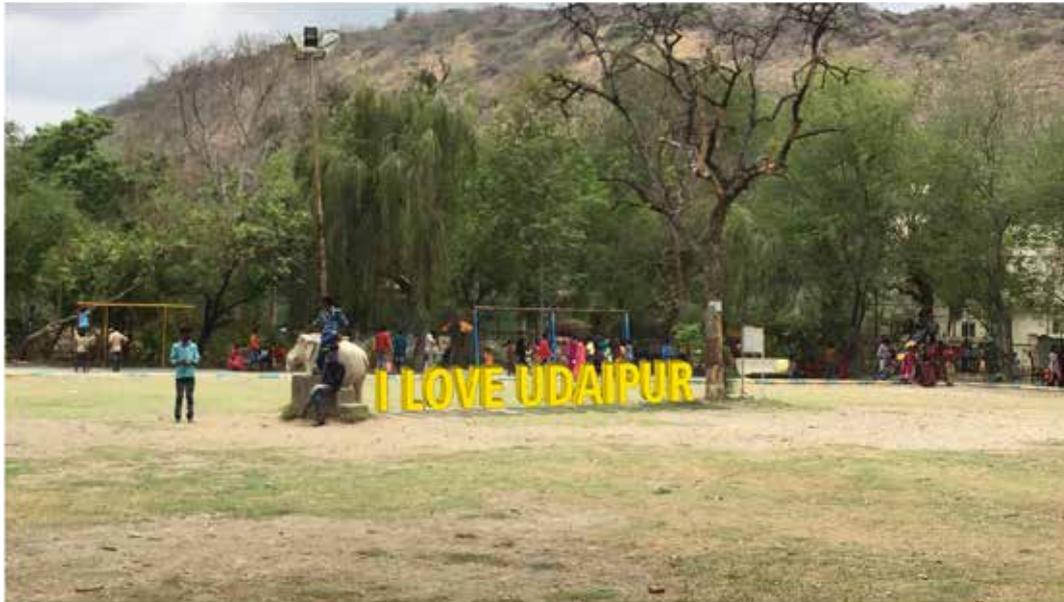
- Informal seating can be provided by structures along pavements areas such as built edges for planters or retaining walls where there are level differences. This generally provides long, continuous seating surfaces and could become small informal gathering spaces for a group of caregivers.

Component Applicability

● Applicable in old city

● Applicable in new areas

Art in the Park



Surface Finishes and Textures



Note

Art forms in the park should be designed with two objectives. First, it should attract children to the park for its active use. Second and as far as possible it may be designed with an educative message, like environmental consciousness, sensitivity towards flora and fauna, etc. These art form should not have any sharp corners and should allow children to touch, feel and play with it.

Guidelines Specific to Udaipur

- Art maybe designed with an educative message, like environmental consciousness, sensitivity towards flora and fauna etc.
- Art work should attract children to the park.
- Think about what the artwork looks like, from a children's eye level, 950 mm.
- Depict scenes that relate to and interest small children, such as animals or everyday activities.
- Art forms should not have any sharp corners and allow children to touch, feel and play with it.
- Engage caregivers and children when designing street art.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- There is a natural synergy between combining Public art with play spaces. Artwork can give identity to a playground, and make it a destination. Children naturally engage with art and works of art can stimulate young children's imagination. Public art can be combined with play as an interactive element, or also as individual art works/elements integrated with the play spaces. Sometimes park spaces are fronted with dead walls, which could be an excellent canvas for young children to paint on, or engage. Or litter bins and toilet walls could be painted on. Engaging children and their caregivers in co-creating art can have a powerful impact.

● Applicable in new areas

● Component Applicability
● Applicable in old city

Natural Play Elements



Surface Finishes and Textures



Artificial Grass



Play Sand



Rubber Mulch

Component Applicability

- Applicable in new areas
- Applicable in old city

Guidelines Specific to Udaipur

- There is an abundance of such, simple, materials of low prices: water, sand, tree branches and trunks, stones and pebbles, different plants or insects and way more.
- Be sure that the used materials are clean and non-allergenic.
- Keep in mind that natural materials are maintained under different conditions compared to artificial materials.
- Be sure of safety regulations.
- Some other common surface materials include: bark softfall, impact absorbing sand, artificial grass, wet pour rubber, rubber tiles and pavers etc.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Children have an unlimited imagination and they never miss a chance to use it, especially when they are playing. Apart from the pre-designed play devices that children love playing with, less defined objects offer countless possibilities of play.
- Natural playing objects are open ended materials. A stick can be used to draw patterns on the ground or become a boat in a puddle. "In this process of reinvention and assigning new meaning to objects, it is possible to mobilize skills related to divergent thinking, creativity, problem solving, among others". Natural materials are eco-friendly, cheap, easy-to-find and they can offer children a unique experience: to get contact with nature and the materialization of natural objects have: textures, smells, properties and colours. Contact with such elements can also stimulate their learning ability in a very creative way, whilst also developing a sensibility towards nature from a young age.

It is advised that all streets, public spaces, parks and utility areas be planned comprehensively with all the applicable elements mentioned in the table below, as far as possible. In the event, implementation of the interventions are phased out, the same shall address the following categories in decreasing order of priority.

1. **Essential Component-** Non Negotiable Components
2. **Supportive Components-** Help in ensuring that all the other facilities associated to ITC are also integrated
3. **Thriving Components** - Value additions done to the space and areas

CATEGORY OF COMPONENTS FOR OLD CITY

COMPONENT	ESSENTIAL	SUPPORTIVE	THRIVING
 Fencing/ Permeable perimeter	✓		
 Camera monitoring	✓		
 Ramps for ITC		✓	
 Benches		✓	
 Shading devices		✓	
 Lighting	✓		
 ITC playful furniture	✓		
 Play equipment	✓		
 Planters	✓		
 Public Art			✓
 Surface materials & Textures		✓	
 Natural Play elements	✓		
 Fencing/ Permeable perimeter	✓		
 Camera monitoring	✓		
 Ramps for ITC	✓		
 Benches	✓		
 Shading devices	✓		

COMPONENT	ESSENTIAL	SUPPORTIVE	THRIVING
 Lighting	✓		
 ITC playful furniture	✓	✓	
 Play equipment	✓		
 Planters		✓	
 Public Art			✓
 Surface materials & Textures	✓		
 Natural Play elements	✓		



**C. Intervention Guidelines
– Utilities**

Breastfeeding Room



Component Applicability

- Applicable in new areas
- Applicable in old city

Guidelines Specific to Udaipur

- The space should be fitted with comfortable seats, washing facilities.
- The space should be homey and not shabbily put up.
- The space should be checked on routine basis for cleanliness.
- The room should be dimly lit and quiet.
- The access to the space should be stroller friendly and the room should have sufficient area to accommodate a stroller.
- Availability of a change table or a diaper deck is necessary.
- Ideally, it should overlook a tot-lot and clubbed with toilet facilities.
- Temporary structures or mobile structures can be used for placing these pods across ITCN.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Resting station or nursing booths / pods are an integral part of a child-friendly neighbourhood. Breastfeeding is associated with everything from better resistance to disease to the healthier bodyweight of the infant. With cities worldwide integrating lactation stations or booths in their neighbourhood design, it is necessary to keep in mind some of the most important aspects for booth setup.

Drinking Water Facility



Component Applicability

- Applicable in new areas
- Applicable in old city

Guidelines Specific to Udaipur

- Drinking water facility shall be provided near high footfall areas.
- For areas with high footfall of toddlers, the height of water taps shall be less than 950 mm.
- Stroller-friendly walkway access to drinking water taps shall be provided.
- Maintenance of drinking water facility is as important as installing it.

Recommendations from BvLF Infant, Toddler, Caregiver-friendly Neighbourhood Design Guidelines

- Young children and toddlers frequently require fresh drinking water while they are engaged in high-energy activities in the park. And along with them, their caregivers as well. Thus, it is necessary to have fresh drinking water sources in all parks, which can also be independently accessed by children.

Dustbin



Component Applicability

- Applicable in new areas
- Applicable in old city

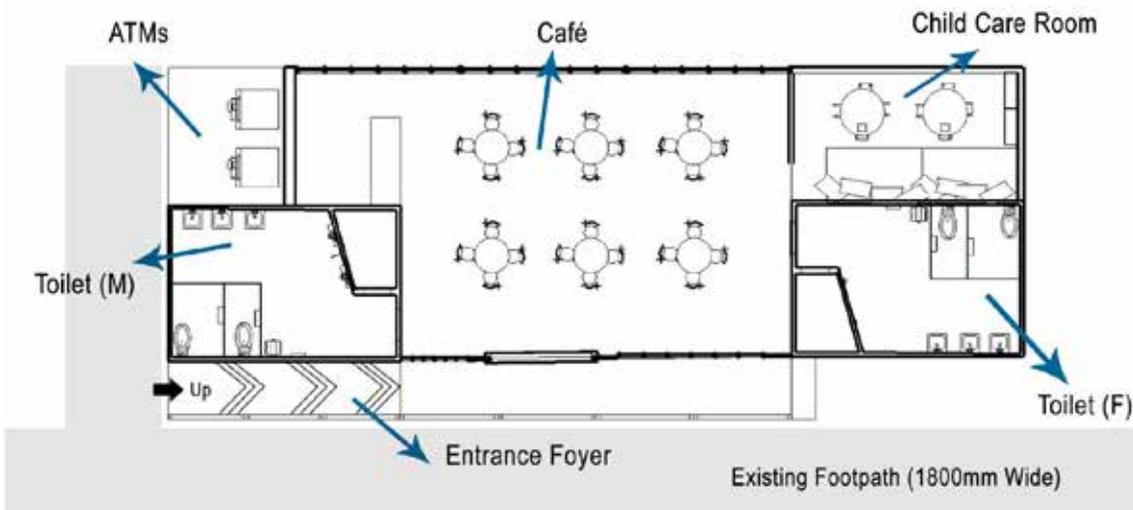
Guidelines Specific to Udaipur

- Dustbins shall be provided at regular intervals, with provision of separate bins for "wet waste" and "dry waste".
- In places with high footfall of toddlers, the height of such dustbins should be less than 950 mm.
- Dustbins should be colorful and appealing.

Recommendations from UTIPEC Street Design Guidelines

- Dustbins – their frequent provision, cleaning and maintenance are key aspects to the cleanliness of a city.
- Dustbins must be provided at each bus-stop and street intersection in order to discourage people from throwing trash on the road.

Public Toilet Complex



Component Applicability

- Applicable in new areas
- Applicable in old city as per availability of space

Guidelines Specific to Udaipur

- Design public toilets complex close to large public spaces where people tend to gather and spend longer periods of time.
- Protected (with a door) toilets are preferred since the chances of vandalism will be less.
- Child-sized toilets should also be provided.
- Toilet complex shall be designed as an integrated unit with cafe, toilets, breastfeeding rooms, first aid kit and ATMs.
- Maintenance and periodic cleaning of the toilet is probably the biggest problem and no toilet should be designed unless the issue of maintenance is resolved.

Recommendations from UTIPEC Street Design Guidelines

- To extend the hours spent outdoors some basic facilities such as toilets are needed for both parents and young children.

CATEGORY OF COMPONENTS FOR OLD CITY AND NEW CITY

COMPONENT	ESSENTIAL	SUPPORTIVE	THRIVING
 Breast feeding booths	✓		
 Drinking water facility	✓		
 Toilets	✓		
 Dustbins	✓		

All these components are essential and need to be implemented upfront

Essential - Non Negotiable Components

Supporting - Help in ensuring that all the other facilities associated to ITC are also integrated

Thriving - Value additions done to the space and areas

A photograph of a child sitting on a multi-lane slide in a park. The slide has three lanes: a green one in the middle and two red ones on either side. The child is wearing a bright green jacket and is looking to the left. The background shows a large, leafy tree and other playground equipment. The text "3. Possible Transformations to Make Area ITC Friendly" is overlaid in yellow on the image.

3. Possible Transformations to Make Area ITC Friendly

Vidya Bhawan Road



LAT- 24, 36, 30.9308000000019945
LONG-73;41:7.595499999999592274



Gulab Bagh Park



Fencing

Tree shade

ITC play furniture



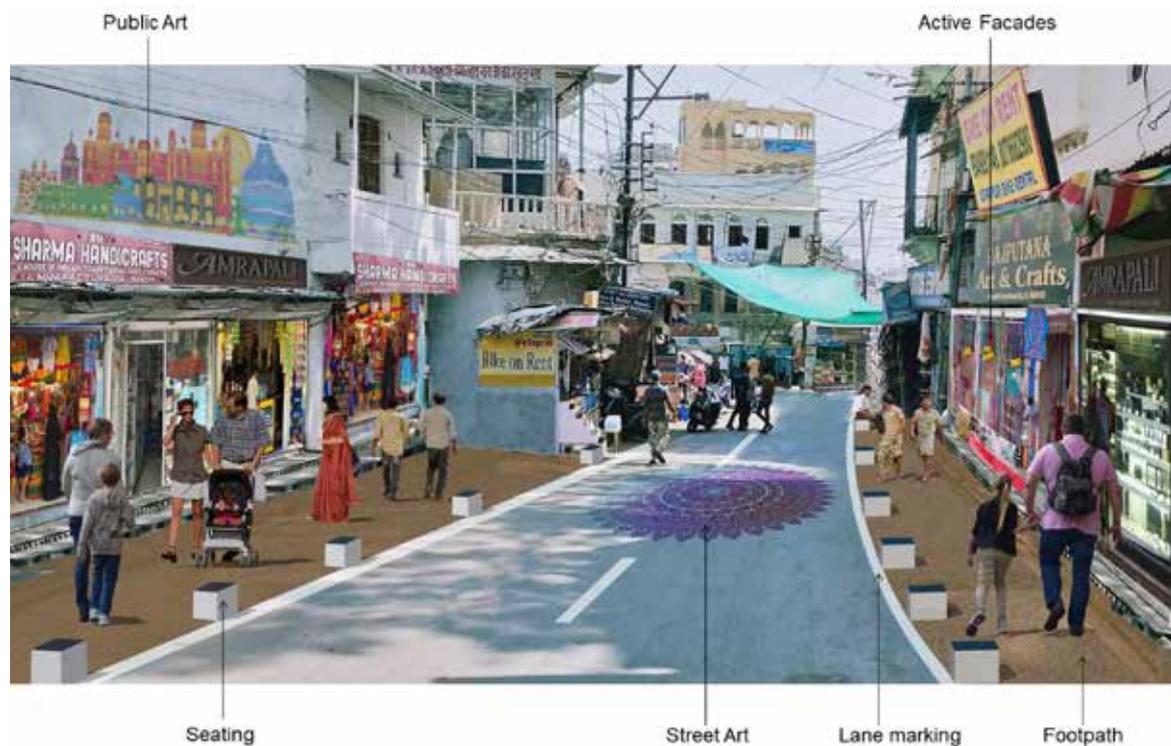
Play Equipment

Benches

Old City Road



LAT- 24: 34:45.6260999999940964
LONG-73:41:1.72820000001209451



Hiran Magri Road



LAT-24; 33:40.8459000000000572
LONG-73;43:4.79489999997909422



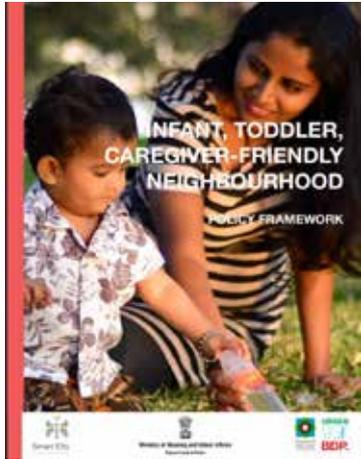
School Park



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LONG-73:41:7.595499999999592274

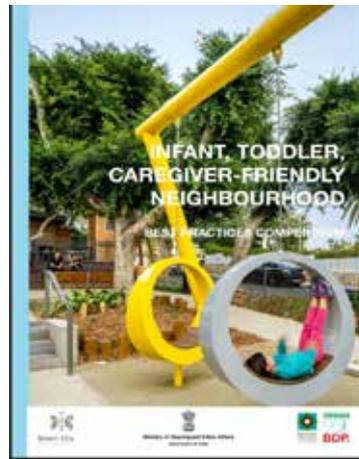


4. Other ITC Reference Documents



Title-
Infant , Toddler,
Care giver
- Friendly
Neighbourhood

Referred for -
Policy
Framework



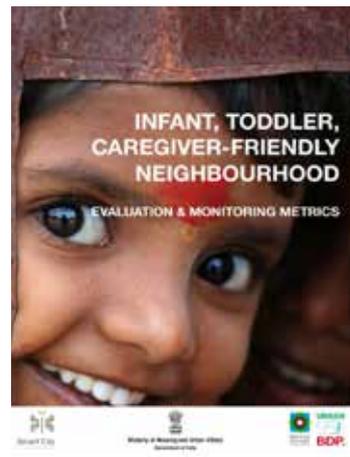
Title-
Infant , Toddler,
Care giver
- Friendly
Neighbourhood

Referred for -
Best practices
compendium
(Case Studies)



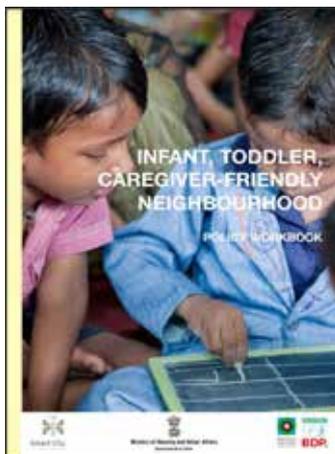
Title-
Infant , Toddler,
Care giver
- Friendly
Neighbourhood

Referred for -
Design Guidelines



Title-
Infant , Toddler,
Care giver
- Friendly
Neighbourhood

Referred for -
Evaluation &
Monitoring Metrics,
Surveys etc.



Title-
Infant , Toddler,
Care giver
- Friendly
Neighbourhood

Referred for -
Policy and
Institutional
Framework

