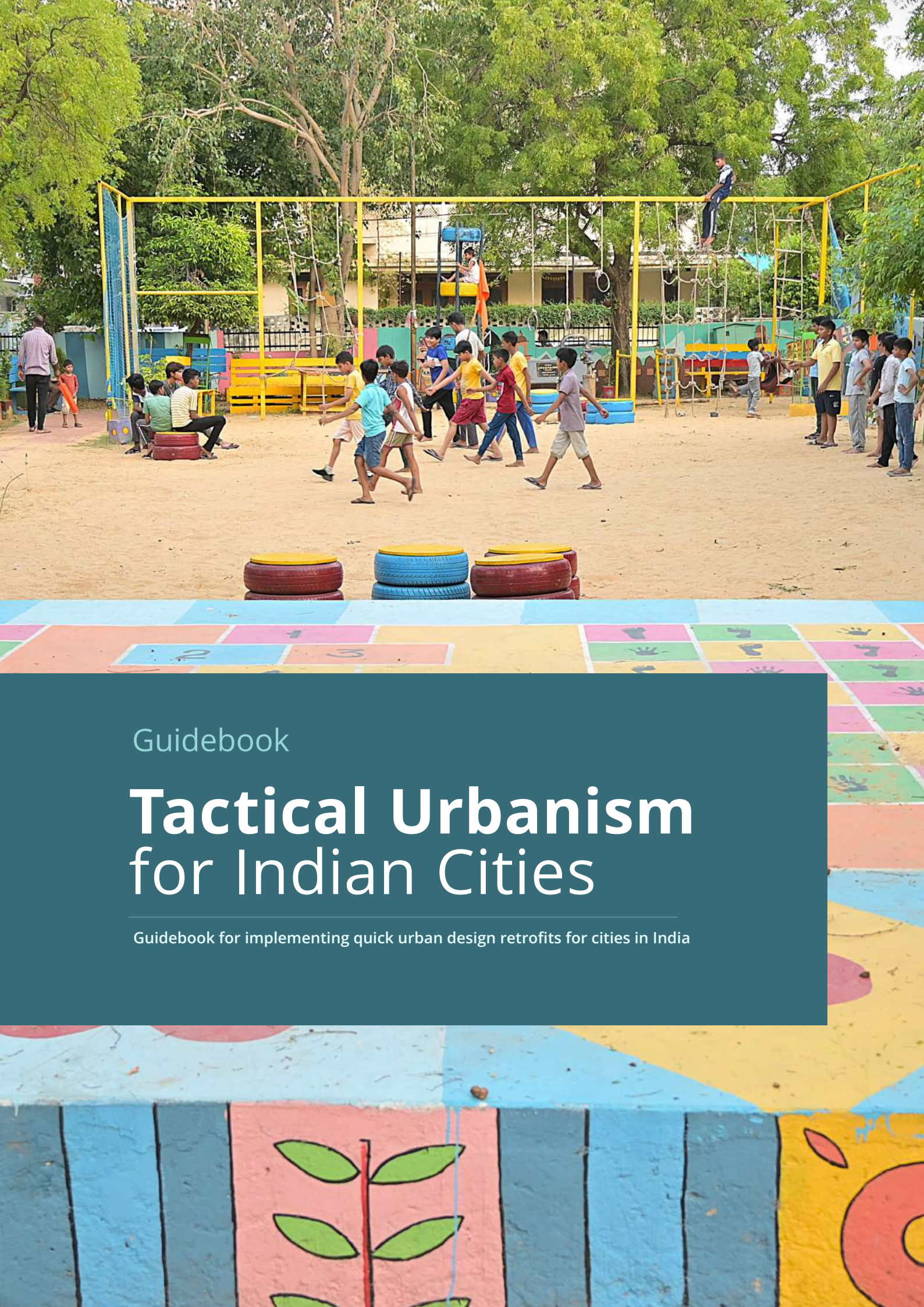




Guidebook

Tactical Urbanism for Indian Cities

Guidebook for implementing quick urban design retrofits for cities in India



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Chapter 1

Introduction

Tactical urbanism is a process for deploying rapid, low-cost, and short-term solutions to address public realm issues. It demonstrates public realm transformation to benefit all users. These modifications allow city governments and agencies to leverage the impacts of these short-term interventions to inform the design solutions for permanent implementation.

Cities in India are rapidly growing, putting a strain on existing infrastructure to meet the needs of all residents. This applies to the availability of usable public spaces that are safe, vibrant, and healthy. High population density means more users, including vulnerable groups such as pedestrians, cyclists, children, the elderly, and people with disabilities. In the absence of adequate infrastructure, such as footpaths, cycle lanes, safe crossings, and refuge areas, it increases safety risks for users. Additionally, our cities often lack safe, accessible public open spaces for play and recreation for all groups.

With citizens asking for safer and vibrant public spaces, the city governments have begun to recognize these challenges and understand the needs of the community. They have begun developing plans and proposals to create more people-oriented spaces that cater to all age groups and socio-economic backgrounds. However, such capital improvement infrastructure projects are expensive and have a long project cycle. These projects also, at times, run the risk of not meeting the anticipated project outcomes and are, therefore, often executed in a phased manner through pilot projects and/or tactical urbanism interventions to test the efficiency and impact of the deployed solution.

Many city governments in partnerships with non-profits and citizen groups are using 'tactical urbanism' as a tool for testing and evolving people-oriented solutions for the public realm, thus paving the way for impactful transformations of permanent urban interventions in the future.

1.1 What is Tactical Urbanism?

Tactical urbanism is a rapid, low-cost, and short-term project implementation process to address local urban issues with the intent to bring scalable, long-term positive transformations for the community by enhancing the built environment. It is often temporary in nature and provides an opportunity to reimagine the public space (street right-of-way, including sidewalks, parks, plazas, chowks, natural areas etc.) by quick deployment of people-oriented design to demonstrate the potential for a long-term change. They can include small-scale pilots like outdoor seating, street closures, junction improvements, child-friendly interventions etc. Also referred to as guerrilla urbanism, pop-up urbanism, or do-it-yourself (DIY) urbanism, these interventions can last from a few hours to days, weeks, or months.

While such interventions are typically designed to address community needs or challenges, they can be initiated and led by the local government, non-profit organizations, or citizen groups, but require approval from the municipal government or competent authorities.

1.2 Benefits of Tactical Urbanism

Tactical Urbanism is a means to an end, i.e., a tool or process to achieve an outcome of improved and enhanced urban experience. It allows citizens, communities, businesses, non-profit organizations, advocacy groups, and municipal departments to visualize the impact of any such interventions on the public space and gather support and funding for more permanent improvements to the public realm.

Tactical urbanism project can be used for:

Community participation



Community members are best placed to help improve their neighborhoods. Public outreach and stakeholder engagement can help to generate new ideas,

build community support, improve local understanding of urban issues, and help in identifying solutions that may later be taken to the authority for permanent implementation.

Showcase



Tactical urbanism interventions can be a tool to showcase and draw attention of the public to an interim transformation using colorful materials, art, and creative promotional materials.

Test and Measure



Testing of interventions can be done by collecting before and after metrics to measure the impact of transformation and generate support for permanent implementation.

Create Value



There's a lot of underutilized space in cities. Tactical urbanism can be used to uncover value, facilitate space management, and demonstrate how a space could be transformed to contribute to safety, community building, or economic goals.

Scale Up



Tactical urbanism can be used to pilot solutions that may then be scaled up through a need-based and contextual retrofitting approach and replicated in other parts of the city, change policies, or inspire new programs.

1.3 Guidebook and Purpose

This guidebook offers a methodology for planning, operating, implementing, and evaluating a tactical urbanism intervention, while explaining contextual variations through case studies. It also discusses the roles and responsibilities of the project team, stakeholders, and community members, and their interaction in executing a successful tactical urbanism intervention. Additionally, it provides a material palette for reference, and strategies for scaling up the intervention across the city, and pathways for transforming the tactical urbanism solutions into permanent urban infrastructure that benefits everyone.

Objectives

1. Facilitate **space management**
2. Understand **priorities** and **build consensus**
3. Develop **cost-effective** and **quick solutions**
4. Design **small-scale, but scalable** alternatives
5. Transformation from **pop-up to permanent**
6. Encourage **city-community collaborations**
7. Harness and promote **local culture**
8. Create an **awareness tool** for the public
9. Build for **emergency response and recovery**

Scope and Limitations

This guidebook will focus only on the tactical urbanism interventions to be carried out in cities. It will provide a general methodology that cities and communities can adapt to their contexts. Any permanent implementation stemming from the tactical urban intervention is not within the scope of this guidebook, as it requires detailed discussions regarding planning, design, construction detailing, including adherence to local codes, procurement, etc.

Covid-19 pandemic, cities, and Tactical Urbanism

The COVID-19 pandemic disrupted cities and countries worldwide, with many entering some form of lockdown to curb the spread of the virus.

This highlighted the need for outdoor public spaces for physical activities, recreation, and commute, while exposing the poor state of infrastructure and availability of spaces to ensure physical distancing.

Cities—both formally and informally—adopted various tactical urbanism interventions to reclaim the public open spaces to adjust to the “new normal”. Pop-up cycle lanes emerged in many cities by converting travel lanes into protected cycle lanes using traffic cones. In some places, travel lanes were used as extended footpaths and waiting areas for pedestrians, outdoor dining, and curb-side pickups. Other examples include parking lots being converted into outdoor markets and temporary health camps, and more informal citizen-driven measures such as circles marked in chalk outside stores emphasizing physical distancing.

These quick fixes or “tactical” interventions showcased how these public spaces and the urban built environment are flexible, and such temporary changes can be used to transform and enhance the neighborhoods. These cost-effective and (in many instances) guerrilla interventions have become catalysts for discussion and systematic changes in cities and can be made permanent.





Chapter 2

Tactical Urbanism process

The learnings from a tactical urbanism project help reveal how a space is transformed, how people use it, and how it influences the surroundings. These insights

also guide the implementation of future projects and inform the transition of tactical interventions into permanent urban infrastructure.



Step 1 Project Scoping	Step 2 Planning and Design	Step 3 Project Execution	Step 4 Monitoring and Evaluation	Step 5 Scaling Up
Identify the project lead and the key stakeholders, and through community engagement, establish the intent, goals, and type of tactical urbanism intervention to be designed, its duration, and ascertain how the project could be funded.	Through site visits, assessments, documentations and inputs from the community members, stakeholders and various public agencies, develop a tactical urbanism intervention, prepare a material palette, and obtain the required approvals and permits for implementation.	For seamless on ground execution of the tactical urbanism intervention, develop an Implementation Plan that includes traffic management, procurement and storage of materials, scheduling of activities during implementation and trial duration, and a plan for removal.	Along with monitoring the smooth functioning of the tactical urbanism intervention, monitor the impact on the users and the surrounding urban environment, and evaluate them through assessments and documentation to make necessary on-site adjustments to better suit the needs of the users.	Ascertain the future of the intervention based on the evaluation results and determine whether it can be made permanent using more durable materials and carry out more tactical interventions in the city based on the results and observations.



2.1 Project Scoping

The “Project Scoping” stage initiates the tactical urbanism project, by establishing its goals, identifying the project location and type of intervention, estimating duration for implementation, identifying the project lead and key stakeholders, forming the project team, exploring funding opportunities, and drawing on relevant best practices.

The project process is contextual and dependent on the desired outcome. The roles and responsibilities of stakeholders, as well as the process flow, may vary depending on who is leading the project. They may be initiated by the local municipal governments/ urban local bodies (ULBs), non-municipal entities such as public sector undertakings (PSUs) and non-profit organizations, or community groups.

Identify project lead, stakeholders and a project team

Project Lead/ Coordinator

A tactical urbanism project may be initiated and led by a municipal or a non-municipal entity such as a non-profit organization or citizen groups or individuals.

They must be able to:

- **Identify local challenges** and champion for tactical interventions as a tool for achieving permanent solutions
- **Select key stakeholders** and form a team with requisite skills and expertise to carry out such projects.
- **Engage with the community**, in an inclusive manner, to determine its needs and build consensus between all stakeholders
- **Create a channel of communication** between all stakeholders to ensure everyone is aware of and supports the interventions.
- **Coordinate with stakeholders** for requisite permissions, critical inputs, needs assessment, implementation, testing and monitoring.

All tactical urbanism projects require approval from the local municipal governments or relevant competent

Authorities, irrespective of who is initiating the project. Projects led by municipal organizations may require buy in from upper levels of management in the civic body/ Mayor’s office, as well as approvals and support from various departments such as traffic, transportation, engineering, planning, public works, parks and recreation, emergency services or other similar authorities as the case may be. Since streets and public spaces are owned by the urban local bodies or municipal government, projects not led by stated authorities require approval for any intervention to be carried out on public right-of-way (ROW) or public land. Therefore, such organizations could partner with the municipality or else seek permits to execute the projects themselves. Municipalities may develop context specific step-by-step “how-to-guidelines” for streamlining proposal submission and approval procedure to ensure smooth execution of the project and incorporate any updates to the proposal in a timely manner. On-boarding of upper-level management in the municipal government including mayor and IAS officers as well as maintaining communication channel with various departments and involvement of community members and other identified stakeholders is critical for the project. Community engagement must be carried out to build support and adapt the project based on feedback.

Stakeholders

Tactical urbanism is a quick, implementable and collaborative process that involves identifying a range of potential stakeholders. These stakeholders may perform various roles. Stakeholders may be categorized as:

1. Community members, citizen groups, local ambassadors

Grass-root organizations, citizen groups, Resident Welfare Associations (RWAs), and individual residents have better understanding of their needs and requirements. They not only provide support and advocate for changes, but are also helpful in design development, and may be involved during the implementation stage as volunteers. Their feedback is very critical for replicating and scaling up the project.

2. Non-governmental groups

Local need-based non-profit groups, think-tanks, NGOs, social services organizations, and institutions may be engaged to bring in their perspectives and understand the issues they face, generate ideas, gather feedback, and build local support for the project.

3. Local businesses, private companies

Through branding and advertisements, private companies and business associations help generate funds for materials. They may take “ownership” of some projects to undertake maintenance and security. Local businesses, such as cafes and eateries, may donate materials such as tables and chairs that may double up as their outdoor eating areas. Larger corporations through their Corporate Social Responsibility (CSR) funds, may take interest in larger programs such as road safety, child safety, creation of public spaces, and have funds directed toward tactical interventions.

4. City departments, public officials

As these projects will be implemented in public areas, it is prudent to involve different departments of the city government. They are aware of the local challenges, bye-laws, services and infrastructures, and would be able to provide information regarding these issues. They are also responsible for getting plans and hence need to be aware of any interventions taking place to provide insight and avoid future conflicts. Apart from final on-site implementation permits, approval of the city departments is also required for kick-starting the project.

5. Political leadership

Elected representatives (at municipal, state, and national levels) often inform budgets allocations and can help in “fast-tracking” approval processes. They are also directly in touch with their constituents and are aware of their needs and can be instrumental in facilitating tactical interventions and community interactions.

Project team

After ascertaining the stakeholders in the project, they may be invited to be part of the project team to undertake key project planning, design, budgeting, implementation, and monitoring activities.

The project team must include, but is not limited to, technical experts familiar with street design guidelines, public space design requirements, and the needs of vulnerable user groups such as children, adolescents, the elderly, and people with disabilities. They must also onboard artists who can help in creating graphics and color templates if required, and volunteers to organize and successfully execute the project on ground.

The project team's composition and skill-sets are specific to the context and available resources and may vary in size based on the project's type and scale.



Determine project Category

Public realms in cities face common challenges such as high number of motor vehicles on the roads, traffic fatalities, insufficient space for walking and cycling within the ROW, a dearth of usable, safe, vibrant and healthy public spaces for various user groups including adolescents and people with disabilities. To minimize these challenges, a city may develop its long-term vision and goals. Real-time interventions to achieve these goals usually take a lot of time and finances. As we have learned, tactical urbanism is a tool to address these challenges through short-term and scalable solutions. The requirement of such projects is specific to a place and is outlined by the needs of the community. Alignment of tactical urbanism projects with the overall vision and goals of the city are critical as they help in getting support to test these interventions and, accordingly, carry out long-term implementation of the project.

Tactical urbanism can help achieve the following intended outcomes:



1. Placemaking, Community cohesion

Placemaking refers to the “collaborative process of creating public spaces, enhancing the public realm and improving spatial quality of existing underutilized spaces.” It is important to develop a sense of ownership within a community to achieve social well-being. This may be attained through various participatory activities and decision-making processes. Social activities like community gardens, knowledge exchange events like informal discussions, book exchange and reading, improves social interaction and offers value addition. Through urban consultations, suggestions may be taken from the community on projects, ensuring acceptance and generating a sense of ownership.

These activities can be organized by creating a platform for formal/ informal discussions with the community through tools like digital presentations, movie or video screening, display and suggestion boards, and working on ground together to achieve results.



2. Vibrant Public Spaces

Public open spaces integrated with the urban built form and natural areas should be created with necessary infrastructure and universal accessibility to encourage social interaction and physical activities. Additional spaces, such as incidental open spaces or underused spaces like under flyover areas, and utility corridors may be identified and reclaimed. Universal design elements, signage, integration with the adjoining street network, and landscape features such as street trees, seating, shade, lighting, dustbins, drinking water, toilets, safety booths make public spaces inclusive and ensure user comfort.

These measures can be implemented temporarily using street furniture like benches, planters, visual and tactile elements, landscaping features, provision of various amenities and facilities etc.



3. Road Safety

Road safety refers to channelizing various modes of transport to achieve smooth flow of traffic and prioritizing vulnerable road users - pedestrians, cyclists, seniors, children and people with disabilities. This can be attained through the provision of necessary infrastructure facilities and traffic calming measures such as lane diets, wider footpaths, dedicated cycling infrastructure, adequate safe pedestrian crossings at intersections and mid-blocks, pedestrian refuge islands, proper lighting, signage, speed-humps, tabletop crossings, and raised intersections.

These measures can be implemented temporarily using traffic cones/bollards, planters, street surface treatments, temporary speed humps, road markings, sign boards, and lights during tactical urbanism intervention.



4. Activation of Spaces for all

Activities and programs to engage the public are important to sustain public spaces that are child, adolescent, and elderly friendly, and offer a platform

for people to interact and socialize. These can be both recreational and economic. On-street games (painted on streets such as: snake and ladder; or using objects such as: chess), activities like walks, cycling, yoga, zumba, and interactive experiences using music or AI provide recreational options to all age groups and gender.

On the other hand, street-side food carts and food trucks, local eateries and businesses, community-led kiosks, farmers' markets, flea markets exhibiting and selling local products ensure increased local business along with social interaction.

These may be organized on ground by providing necessary infrastructure facilities like parklets, carts, temporary roofs, seating spaces, activity areas, proper lighting, amenities, and surface treatments, supported by volunteers for management.



5 Visual Enhancement

Aesthetics and lighting are critical to the quality of spaces to make them more welcoming, ensuring interactions, reducing vandalism, and, most importantly, providing a sense of safety and security. Street art and installations can help enhance the visual aspect of any space and encourage interactions within a space.

Graffiti, wall paintings, art installations, sculptures, street surface painting, attractive street furniture etc. are some of the tools to enhance the aesthetics of a space.

Identify Intervention type

Tactical urbanism interventions follow an inclusive approach and may fall under one or more of these aforementioned categories of project functions that are dependent on the issues that need to be addressed, as well as the spatial quality and context of the intervention area. Tactical urbanism interventions are a combination of spatial (re) design and user activities to achieve these project functions. These may be implemented across different types of spaces, typically within the public realm, allowing easy access to the site and any required modifications by the project team. These intervention types are:



1. Streets and Public ROW

Cities may have streets that are unsafe for pedestrians and non-motorized transport (NMT) users due to high vehicular volume, and fast-moving traffic, or are underused due to poor infrastructure, safety and security, and lack of activities. Tactical urbanism can be adopted as a step toward improving infrastructure, quality of space, and activation of the public realm. This would improve the public ROW, including carriage way, footpaths, and residual spaces within it, as well as the public edges of private spaces along the streets, thereby enhancing its usability. Streets are thus treated as places made people-centric through pedestrian-scale infrastructure and by prioritizing pedestrians and cyclists over motorists.



2. Junctions, Intersections, Mid-block crossings

Junctions or street intersections are one of the most unsafe areas on streets for pedestrians and NMT users. Along with mid-block crossings, these can be improved both functionally and visually to make it safer for people through tactical urbanism. Reducing the intersection size and crossing distance, reclaiming the additional space for people, traffic calming, provision of pedestrian and NMT infrastructure, waiting areas, bus stops, and bicycle parking are some of the many strategies to make such spaces safe.



3. Public Open Spaces

Public spaces are of varying sizes and types, but many underperform due to inadequate access, non-inclusive design, deteriorating infrastructure, and inactivity. Tactical urbanism can help identify these issues and enhance these public spaces by improving the quality of space, provision of infrastructure and amenities, and activities for all age groups.



4. Residual and Underutilized Spaces

Residual or underused spaces are leftover spaces of public land in cities that either lack a defined function, are inaccessible, or both – such as street corners, irregular small plots adjacent to streets, spaces under flyovers, and edges of water bodies. Tactical urbanism helps reclaim these spaces for people and improve their quality in terms of usability of space and aesthetics, through the provision of more usable facilities and infrastructure.

Project Duration

Urban transformation projects can be carried out through tactical urbanism approach for testing and ascertaining the long-term feasibility of the project and for determining any changes in the design that needs to be made. These may be demonstrative for a few hours to a few days, months, or even a year, depending on the type of modification and the materials used. Such interventions are referred to as short-term and mid-term tactical urbanism (TU) interventions and may subsequently be followed by permanent interventions.

A summary of these interventions are presented in Table 1 on the next page.

Case Study : Cyber towers junction improvement, Hyderabad

In January 2020, WRI India along with Cyberabad Traffic Police and Greater Hyderabad Municipal Corporation (GHMC), redesigned the Cyber Towers junction on a trial basis, creating a safer pedestrian environment. The redesign aims to make it safer for the more than 4,600 pedestrians that move through the junction every hour during peak times.

WRI India made several changes across all the eight arms of the junction by creating:

- Continuous footpaths
- Access ramps
- Pedestrian refuge islands

These interventions correct the lane alignment at the junctions, encourage road discipline among two-wheelers, auto drivers, and car drivers, and help create safer, more walkable spaces for pedestrians crossing the busy junctions.

The month-long trial improved pedestrian safety at the junction, creating safe crossing points and better access to other transport modes. GHMC approved making the interventions permanent, and work is ongoing to complete the Cyber Towers junction redesign.

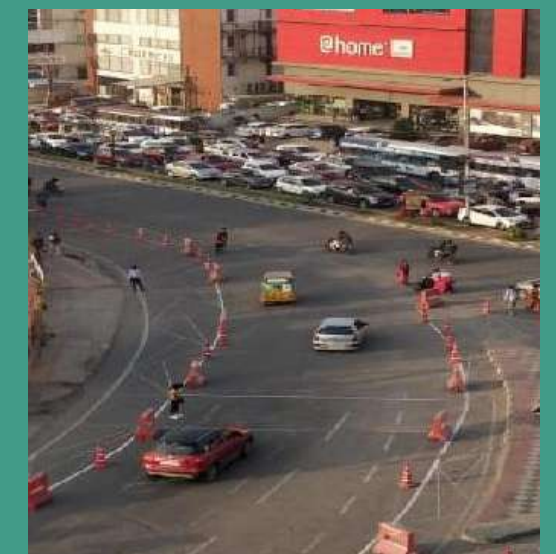


Table 1 | Tactical urbanism (TU) and permanent interventions

	Short-Term (TU) Intervention	Mid-Term (TU) Intervention	Permanent Intervention
Aim	To quickly test or demonstrate a solution on the ground	To temporarily address issues by using intermediate design solution, or to do a longer duration impact analysis, or both	On-ground permanent realization of the intervention
Duration	A few days to one month	One months to one year	More than a year
Materials	Temporary, low-cost, and make-shift items from scrap, etc	Semi-permanent, yet durable materials	Permanent and durable materials
Cost	low cost	Low to medium cost	Cost intensive
Flexibility	Can be easily altered and can be quickly executed and replicated	Can be altered, and require planning and logistical support for execution and replication	Can not be significantly altered



Depending on the intent of the project, capital availability, and other circumstances, following can be the scenarios in which different projects can transform:

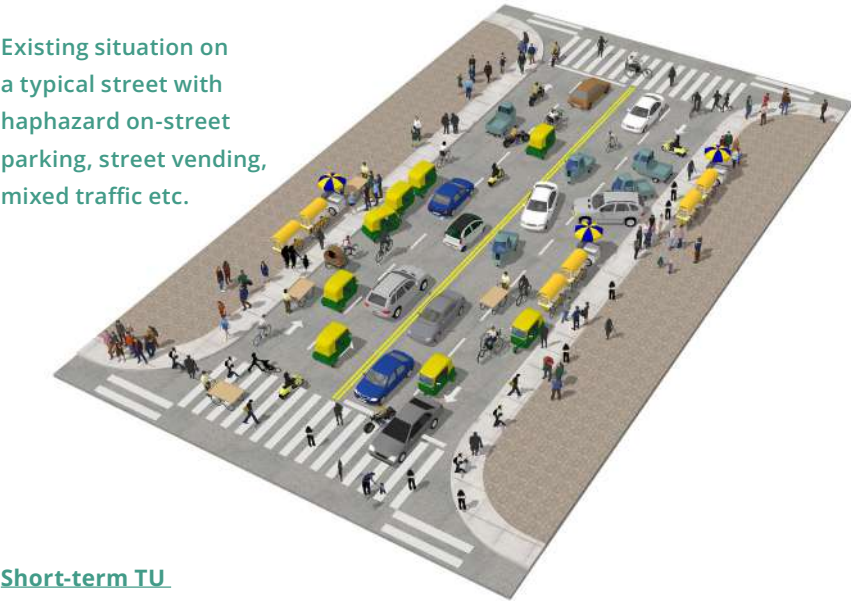
1. Short-term TU intervention to permanent intervention,
2. Short-term TU intervention to mid-term TU intervention to permanent intervention
3. Mid-term TU intervention to permanent intervention.

The next three pages explain these three scenarios with different types of interventions.

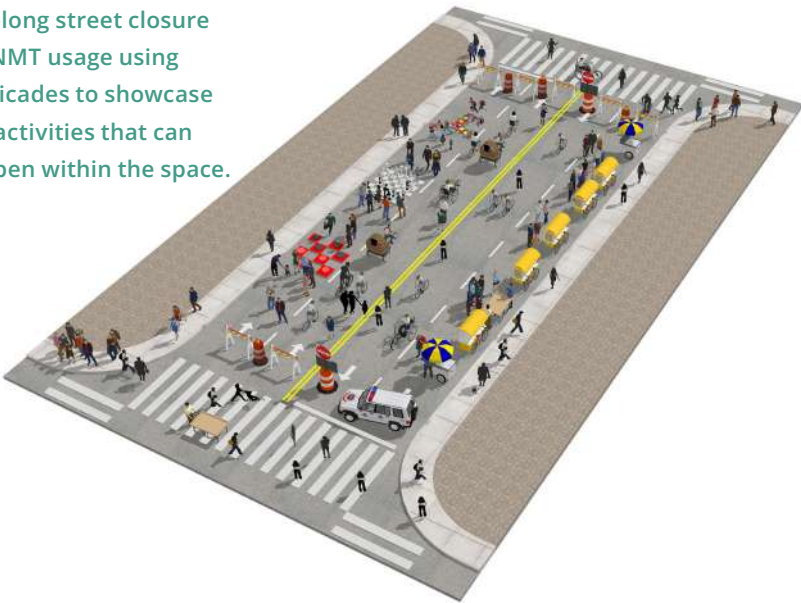
It must be noted that the images used are for explanation purposes only and should not be used as implementable solutions.

Scenario 1

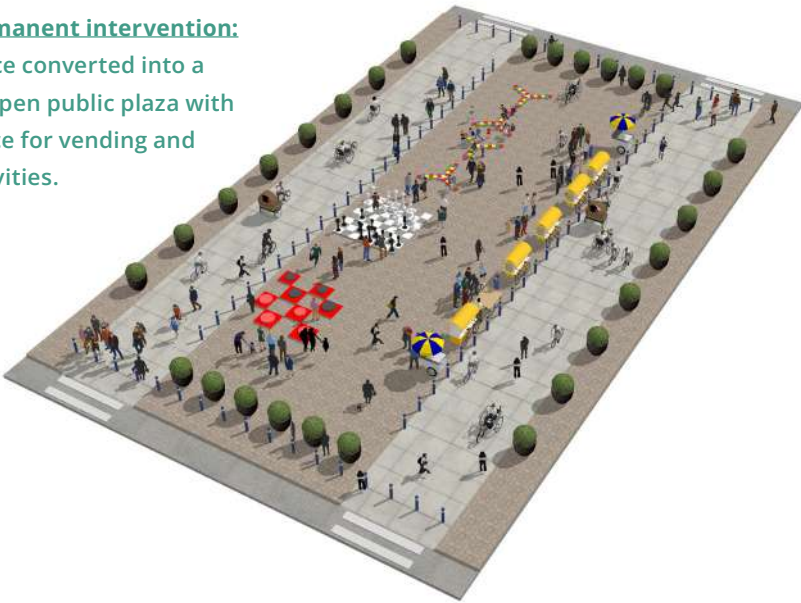
If the project team wants to test or experiment with a solution and has enough capital to implement the solution on the ground permanently, the short-term TU intervention stage may be followed by the permanent intervention stage.



Short-term TU intervention: Day-long street closure for NMT usage using barricades to showcase the activities that can happen within the space.



Permanent intervention: Space converted into an open public plaza with space for vending and activities.



Scenario 2

Where a project team wishes to test a solution using short-term TU intervention, but is unable to invest in permanent intervention, or requires more time to evaluate impact, a mid-term TU intervention can be adopted as an intermediate solution using more durable materials. This stage may later be followed by permanent intervention when the resources are available.

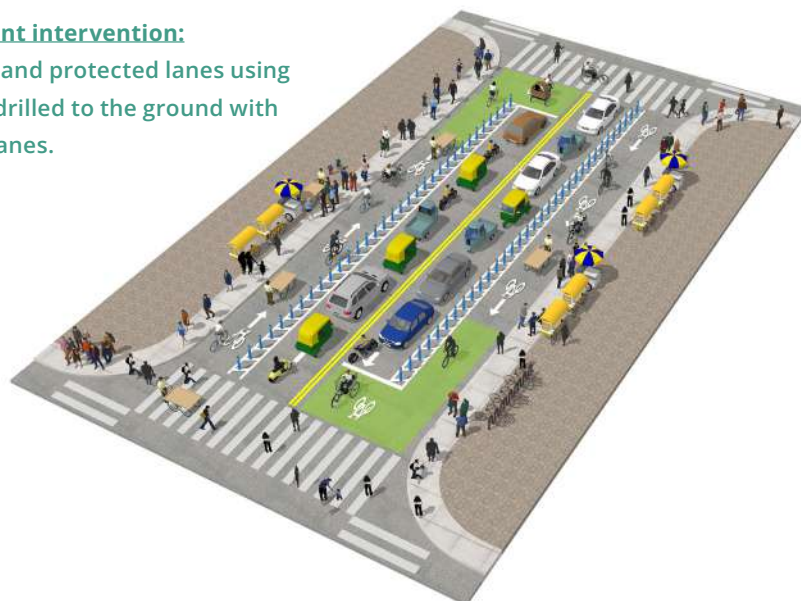
Short-term TU intervention: One traffic lane in each direction is used as shared bus and bike lane - separated using traffic cones only.



Mid-term TU intervention: Longer trial of intervention is carried out using concrete dividers and planters, with clearer lane markings.



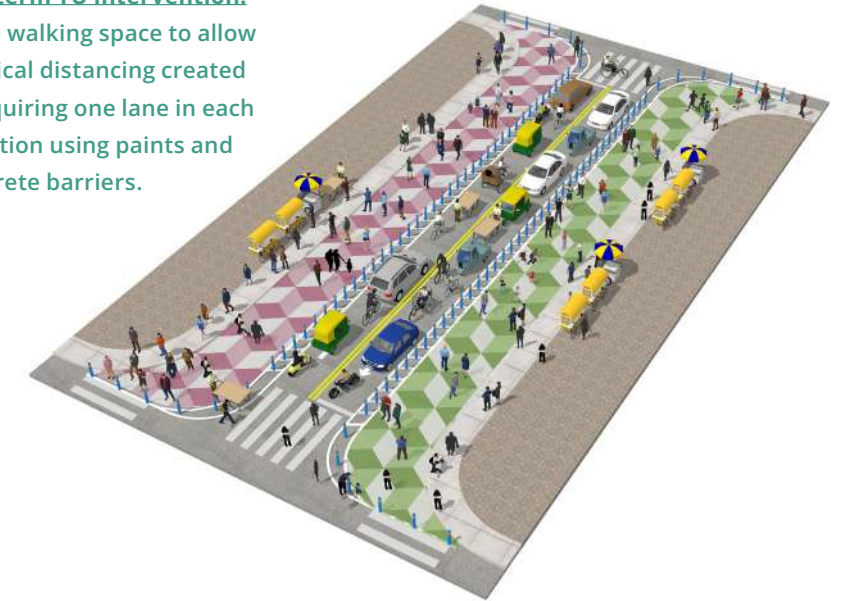
Permanent intervention: Buffered and protected lanes using bollards drilled to the ground with painted lanes.



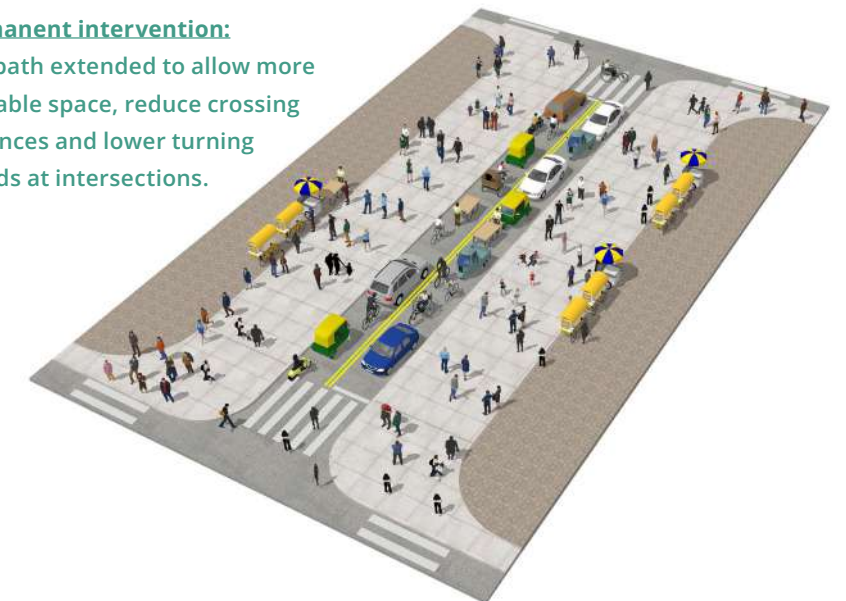
Scenario 3

If the project team has a feasible design solution but is not willing or unable to invest excessive funding and resources in permanent intervention, a mid-term TU intervention may be implemented and followed by permanent intervention when the resources are available.

Mid-term TU intervention: More walking space to allow physical distancing created by acquiring one lane in each direction using paints and concrete barriers.



Permanent intervention: Footpath extended to allow more walkable space, reduce crossing distances and lower turning speeds at intersections.



HOW: Funding opportunities

A tactical urbanism project may be initiated only if the project team has funds to manage and implement the interventions. Often, funding may not be available for multiple projects in the city. However, a pilot intervention can be undertaken to showcase and gain trust to acquire funds for future tactical interventions in the city. These funding sources are determined at the preliminary stages of project planning and often require a dedicated team member to manage and identify them. This helps define project scope and prioritize intervention areas. Funds may be sourced from:

1. Government Agencies

Agencies at the local and state levels can utilize resources available through different programs, such as road safety funds or capital improvement projects (road development, landscaping, and urban development.) A percentage of the annual state, municipality, or ward budgets can also be earmarked for tactical interventions. Additionally, elected representatives such as Members of Parliament (MPs) or Members of the Legislative Assembly (MLA) can also contribute using their annual Local Area Development funds received for their respective constituencies.

2 .Philanthropic Institutions/ Non-profit Organizations

Institutions such as the World Bank, Asian Development Bank are heavily invested in urban development projects across the country through partnerships with multiple think tanks and advocacy groups. Along with funds, these groups often include experts and personnel who can help in executing the project.

4. Corporate Social Responsibility (CSR) funds:

Companies are obligated to undertake CSR projects for social welfare. Partnering with organizations can help allocate some of the funds toward tactical urbanism improvements.

5. Private organizations:

Local businesses and private companies can contribute through donations, sponsorships, a 'barter' of materials and volunteers in exchange for branding, or non-monetary temporary 'loans' and contributions such as street furniture, planters, decorative lighting, and the like.

6. Neighborhood, local community:

Grass-roots level contributions can be collected through individual donations or social media crowd funding campaigns. Non-monetary contributions can include volunteering for set up, cleaning and maintenance, and other such materials.

CASE STUDY : Safe, Vibrant and Healthy Public Spaces

The Safe, Vibrant and Healthy Public Spaces (SVHPS) project aims to develop adolescent-friendly public spaces through an evidence-based, co-creative approach that advances adolescent health and well-being. The project is being implemented in Jaipur and Bhubaneswar under the Healthy Cities for Adolescents Initiative of Fondation Botnar, led by WRI India and managed by Ecorys. The project adopted a consortium model for implementation, engaging local partner organizations in both cities: I India and Magic Bus in Jaipur, and Aaina and HBT in Bhubaneswar, with Auom Impact and Consulting serving as the learning partner.

The initiative brought together adolescents, communities, educational institutions, designers, urban practitioners, and government stakeholders to collectively shape safer, more vibrant, and accessible public spaces. It recognized adolescents not merely as beneficiaries, but as active contributors to urban development.

As adolescent-friendly public spaces represent a relatively new concept, the project adopted tactical urbanism as a key implementation approach. Six public spaces across the two cities, representing diverse typologies including neighbourhood parks, city-level open spaces, and streets, were selected to test adolescent-friendly designs in real-world settings before committing to long-term investments. Depending on the nature of the interventions, available budget, and permissions, some interventions were short-term that lasted for a few days, while others were med-term interventions that utilized semi-permanent materials and remained in place for several months. In both cases, activity programming was conducted over a defined period to understand the full potential of the redesigned spaces and how adolescents and communities engaged with them.

Through these interventions across different public space typologies, urban contexts, and cities, the project established a proof of concept for adolescent-friendly public spaces. The demonstrations generated valuable evidence and insights that can inform future public space interventions, guide urban policy and practice, and contribute to broader systemic change in the way cities plan, design, and manage public spaces for adolescents. The image below illustrates a tactical urbanism intervention implemented in Jaipur.





2.2 Planning and Design

After establishing the project intent, selecting the intervention type and location, and ascertaining the funds; the next stage involves developing the design based on the findings from site assessments and documentation, through meaningful public engagement and consultation with key stakeholders especially the municipal departments. This is followed by identifying the materials needed, preparing the budget and getting approvals from the departments and any property or business owners if required.



Understand Site and Context

Data Collection and Site visit

The team must undertake data collection (socio-economic demographic data, travel patterns, traffic and pedestrian volumes) and review existing regulations and policies. It must also visit the site and interact with all stakeholders and community members to understand the site conditions, character, and physical constraints, and to prepare a list of requirements and concerns raised by the community and analyze them.

Context evaluation

The team should visit the site on different days and time to understand any change in activities that are taking place in the area. Activities in a space evolve through the day and may vary depending on whether it is a weekday, weekend, or a holiday. Such range of activities at the project site must be considered before designing. Alongside activity mapping and user perception surveys, public space assessments may be conducted using the audit tools such as the [Public Spaces Assessment Framework](#). These assessments help evaluate key aspects of a public space, including accessibility, inclusivity, usability, safety, and the availability of amenities. The findings provide a robust evidence base for understanding existing conditions and challenges, enabling the development of context-specific, solutions.

Design Development

Preliminary Design development

Drawing on site evaluations, stakeholder interactions, community inputs, local contexts, any prior crowd-sourcing or surveys conducted earlier, the team's experts may start developing preliminary designs. The team must refer to any existing design standards or codes such as the Indian Road Congress (IRC), Institute of Urban Transport (IUT), Unified Traffic and Transportation Infrastructure Planning and Engineering Centre (UTTIPEC), and various local and global design guidelines on street redesign, traffic calming, tactical urbanism and placemaking developed by National Association of City Transport Officials (NACTO), Institute of Transportation Development Policy (ITDP) and World Resources Institute (WRI), and adapt to making them more local and contextualized to Indian cities.

This design must be presented to the stakeholders and community members to discuss and seek further input and recommendations. The same must be sent to the municipal departments to get initial approvals so a preliminary materials plan and budgeting may be developed.

Final Design

Depending on the nature and scale of the project,



multiple discussions may be carried out to negotiate and develop a final design, that is supported by the community. It is essential to have the public officials and city departments review these iterations periodically and be updated as per all recommendations.

A final design is then developed through everyone's input and is presented to all the stakeholders for a final sign-off. A materials palette and final budget of the project is also simultaneously established.

The project team must, however, ensure some key considerations during the design development.

Key Considerations

While developing the design of the project (including the site location and scope), depending on the city and neighborhood, there may be specific considerations that need to be incorporated. However, there are some key considerations, or 'must-haves', to bear in mind when designing for Indian cities as listed below. While these may not be exhaustive, they may be altered by municipalities based on their requirements and local guidelines.

1. Community participation and Stakeholder consultation

It is prudent to involve the community and stakeholders at each and every stage of tactical urbanism process. The goals and objectives of the project, challenges and concerns, design development and implementation

must be carried out based on the feedbacks and inputs received from the community members and stakeholders.

2. Ease of access

The designed interventions must consider the needs of the most vulnerable users, which include people with disabilities, senior citizens, children, and their caregivers.

3. Emergency services

The design must include permissible widths and clearances for access by emergency vehicles especially for projects involving streets and junction improvements.

4. Obstructions

The proposed intervention should not restrict access to any public utilities such as manholes, drain covers, gas lines, electrical boxes, telephone poles, among others. Care must be taken to avoid blocking access to any property without any alternate access or approval from owners.

5. Maintenance and Removal

The project should include a maintenance plan detailing the responsibilities of groups or individuals who are responsible for maintenance, upkeep, and security as required. A dismantling or removal plan must also be developed simultaneously.

6. Graphics themes

It is advisable to adopt neutral themes for developing artwork and display during tactical urbanism interventions, to avoid controversies that defeat the intent of the intervention.

7. Weather conditions

Seasonal variations and local weather conditions should be taken into consideration while determining the project duration and for on-ground execution. Many parts of India have long summers and experience heavy rainfall during the monsoon seasons which would affect the implementation process and also impact the number of people using the facility.

8. Festivals and Events

It is advisable to avoid festivals and local events (including seasonal sales) as it may pose hindrance to executing the tactical urbanism project and may also give different results during monitoring and evaluation phases.

9. Communication

It is essential to establish and maintain a communication channel throughout the life cycle of the project. Decisions taken by the project team regarding design development, funding opportunities, costs, materials, implementation, and approvals must be communicated to the community members, stakeholders, donors

and public officials, or departments periodically or as needed.

Project Budgeting

Once the design is finalized and approved by the stakeholders, public officials, and the city departments, the project team must finalize the materials and the quantities required, equipment and tools that may be used including signage, planters, and traffic control devices and the overall cost of execution. As identified earlier, some of these materials and equipment could be a "one-time investment" and be reused for future tactical urbanism interventions in the city. They may also be loaned to/ from other organizations, businesses and even the city departments.

Project Costs

The project execution comprises direct and indirect costs. Direct costs include expenses for installation of the project such as material (traffic cones, bollards, dividers, planters, paints, and stencils), purchase of equipment and tools including safety gears for the teams, volunteers or technical experts, transportation and storage of material, printing of documents, etc.

On the other hand, indirect costs comprise back-end support for the main execution and miscellaneous expenses such as traveling costs of team members and volunteers, site clean-up (before and after the project duration), waste disposal, food and water during the on-ground work, artists' fees, social media campaign advertisements, outreach and communication..

Choice of Material and Equipment

A list of materials can be adopted and customized from the “Guide to Tactical Urbanism materials” - <http://tacticalurbanismguide.com/>. It is always advisable to select material that are environmentally suitable – especially paints and those that can be reused or re-purposed. When designing spaces for children specifically, the team must ensure that the materials used do not have sharp edges and are of appropriate heights to be used by children. They must ensure that the paints or chalks that are being used are non-toxic and the area doesn't have any other harmful object lying around.

Keeping some of these costs in mind, a municipal agency can invest in some of the material and equipment procurement keeping a long-term vision in mind as these can be reused for multiple projects. Despite higher initial investments, these components can serve as strong cost cutting measures (because of their reusable capabilities) creating a sustainable approach toward scaling up of projects (such as traffic cones, concrete barriers, or signage).

A suggested, non-exhaustive material palette is provided in Appendix C.

Approvals and Permissions

Apart from getting buy-in from all stakeholders and community members, it will be the responsibility of the project team to get all approvals and permits from the municipal agency and collect necessary permission letters from the land-owning and enforcement agencies to conduct the tactical urbanism implementation. Typical permissions or approvals that would be required include:

1. Land Owning Agency

A development authority or municipal corporation who is the owner of the public space must provide permission/no objection certificate.

2. Enforcement agencies

Enforcement agencies such as traffic police would be required to maintain law and order and safety during installation, security during the trial period, and enforce the required diversions and traffic movements.

3. Other owners

If the site or a part of it is owned privately or will impact access to private properties, additional permissions should be requested from the owners.

The permitting and approval process is iterative in nature and like community engagement, may require design modifications. It is therefore advisable to work closely with the appropriate departments and staff members to avoid significant changes toward the end. The permitting/approvals process is where formal permission is granted to implement the project. This step involves working closely with the appropriate municipal staff to address specific design concerns and logistics. It is an iterative process that may require design alterations. This is applicable for projects that are being led by non-municipal groups. Alternatively, if such a project is being undertaken by the municipal agency, they may require internal approvals from department directors or other managers. This kind of process will vary based on the jurisdiction.

Case Study : Mumbai

In 2015, 611 people lost their lives on Mumbai streets due to road traffic crashes, of whom 56% were pedestrians. WRI India's analysis of road crash data revealed that about a third of road traffic fatalities occurred at intersections. In an effort

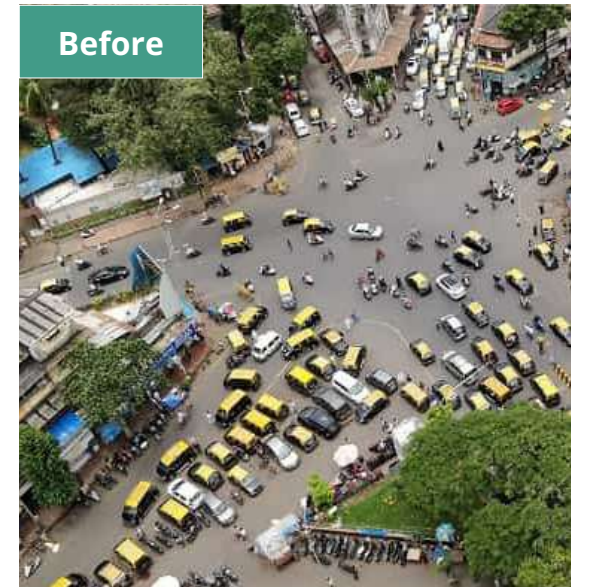
to reduce crashes and fatalities, particularly at busy intersections, WRI India carried out tactical urbanism trials at various intersections across the city. The Nagpada intersection improvements were carried out in consultation and partnership with “E” Ward Office and Traffic Department of the Municipal Corporation of Greater Mumbai (MCGM), Mumbai Traffic Police (MTP), the local councilor and representatives from the neighboring community—Madanpura Welfare Association.

The Nagpada intersection is a triangular junction connecting six major streets and serving many school districts. Besides traffic congestion during peak hours, pedestrians had little to no footpath space, and the space that existed, was in poor condition. The area also had an illegal parking space which contributed to the chaos. Children and senior citizens found it particularly hard to navigate the intersection safely, and together these factors made it inefficient, dangerous and confusing. In 2017, the intersection's triangular geometry was temporarily modified to channel traffic and provide safe pedestrian pathways. Modifications included:

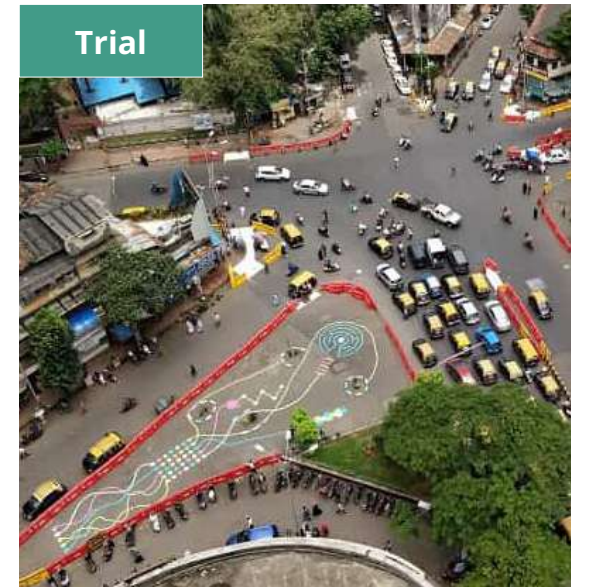
1. Reducing intersection area to create more defined vehicular movement.
2. Designated pedestrian crossings on all sides of the intersection with reduced crossing distances.
3. Reclaiming large public space which was taken over by illegal parking of taxis and private automobiles, into pedestrian plaza.
4. Interactive art work and a safe and vibrant space for children to play.

This tactical urbanism intervention experiment helped in consensus building, and its success has led the MCGM to make the proposed and tested design permanent.

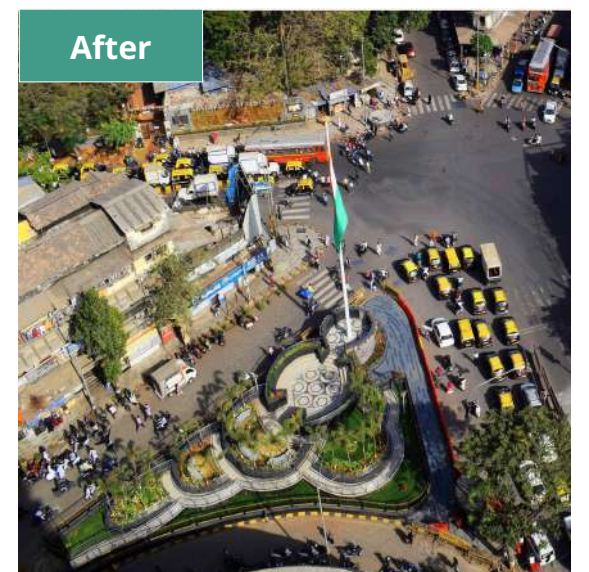
Before



Trial



After



CASE STUDY : Safe Vibrant and Healthy Public Spaces Project

The Safe, Vibrant and Healthy Public Spaces (SVHPS) project adopted an adolescent-led approach to public space assessment, design, and improvement through tactical urbanism (TU) interventions to establish a proof of concept for adolescent-friendly public spaces. Moving beyond conventional consultation methods, the project actively engaged adolescents in assessing public spaces, identifying challenges, developing solutions, shaping designs, and implementing interventions within their neighbourhoods and cities.

Public space assessments were conducted by adolescents and other stakeholders using the Public Space Assessment Framework (PSAF), a hands-on tool designed to evaluate public spaces through an adolescent lens. The assessments captured both observation- and perception-based information on public spaces across four key parameters: accessibility, inclusivity, amenities, and activity, comprising 29 sub-parameters in total.

Following the assessments, a series of three Design Thinking workshops were conducted to plan the tactical urbanism interventions in a structured and participatory manner. The first workshop focused on solution mapping, during which adolescents worked with facilitators to analyse PSAF findings, identify key issues, explore potential solutions, and develop a shared vision for the selected public space.

The second focused on zoning and conceptual design, where adolescents translated the identified solutions into actionable concepts through functional zoning, selection of design elements, and planning of activities. This ensured that the proposed interventions reflected their needs, preferences, and everyday experiences of the space. The conceptual designs were subsequently refined through consultations with community members and other stakeholders, leading to the preparation of detailed designs and drawings with the help of an expert architect. The third workshop, TU Readiness, focused on

translating the detailed designs into an implementable tactical urbanism intervention plan. This involved identifying appropriate TU design elements and materials, developing implementation schedules and a plan of action. During this stage, adolescents also developed space activation plans comprising games, performances, exhibitions, and creative activities to demonstrate the full potential of the space and encourage community participation during the intervention period.

The planning and design process under the SVHPS project demonstrated how structured participatory methods and tools such as the PSAF and Design Thinking workshops, can enable adolescents and other stakeholders to meaningfully contribute to shaping public spaces. The process not only generated context-responsive design solutions but also strengthened ownership, collaboration, and confidence among participants, reinforcing the value of adolescent-led approaches in urban planning and design.



Figure 1: Analysis of scoring sheets to understand assessment results



Figure 2: Translation of assessment results into zoning plans



Figure 3: Zoning plan for Rajdhani college front developed as part of this project



2.3 Project Execution

After completing the design iteration processes and acquiring the required permissions, the project team may begin working towards the actual on-site installation or construction. This stage focuses on the final on-ground execution of the tactical urbanism project and requires developing a detailed work plan or schedule to ensure coordination between team members, volunteers, vendors, and city departments, and timely execution of the project. The foremost criterion while preparing the work plan is to ensure the safety of all team members, volunteers, and support staff assisting with the installation.



Planning for Project Execution

While the tactical urbanism design is getting finalized, the project team must simultaneously start gearing up for on-ground project execution. These tasks look at the logistics that need to be ironed out before any kind of on-site work can begin. A well-thought-out execution plan will reduce the number of hiccups that may arise during implementation. Typical tasks include:

1. Develop traffic management plan

The final project design must also include a traffic management plan—during project execution and for the duration of project intervention.

Depending on the day and time the execution is scheduled, appropriate traffic control and/or diversions need to be planned and determined after discussions with the traffic department. This would require notifying stakeholders and adjoining property owners too. Some of the tactical urbanism interventions will be taking place on public ROW and it is thus advisable to avoid working during peak traffic hours to ensure safety of the workers and volunteers, and not cause hindrances to commuters. Additionally, any noise generating activity such as material loading-unloading, drilling, or construction must be carried out during daytime hours.

2. Project Scheduling

Scheduling involves creating a set of tasks that outline the schedule for the day(s) of implementation and

assigning tasks and responsibilities for team members and volunteers. A contingency plan must also be placed in a situation that may arise due to unforeseen circumstances like unpredicted weather, absence of some members on the day, or on-the-spot volunteers who wish to participate in the tasks. If paints and sprays are being used extensively, the implementation timeline must also consider the time required for drawing outlines and drying of the paints. Scheduling would also include a plan for material procurement and storage.

3. Material Procurement

With the material palette fixed based on the final design, materials must be procured and stored as per the procurement schedule. In certain cases, vendors may be onboarded. Additional tools and equipment to be used for installation should be acquired well in advance, stored, and promptly transported to the site. These include:

- Protective equipment for everyone on site, such as hard hats, gloves, bright colored reflective traffic vests, and masks.
- Tools to carry out execution such as brushes, stencils, and electrical equipment.
- Signage and road safety equipment such as traffic cones, metal barriers, beacons, and other such items indicating road closures or diversions.

Note that these are not the material to be used directly as part of tactical intervention, but only to support and ensure safety of volunteers and staff.

4. Prepare Site

Site preparation includes leveling and cleaning before the project execution. For certain tactical urbanism interventions, a rough pre-marking may be required beforehand.

5. Removal Schedule

Removal of material will happen after the duration of the tactical urbanism intervention. However, the project team must develop a schedule for uninstalling the project at this stage. It requires having a similar traffic management, scheduling, transportation, and storage plan.

On-ground Implementation

Depending on the scale and type of project, on-site execution can be carried out in a few hours, overnight, over the weekend, or over a couple of days. Once the site has been prepared and all materials have been transported to the site, the on-site work can then be carried out. As mentioned earlier, some of the tasks, like lane markings or graphics markings, may be completed before the installation or painting can be done.

Any sort of documentation and recording of the installation should be carried out as well to showcase and gather support for future projects and for social media promotions or reports.

Case Study : 'My Fort Kochi - Thanalkoottu'

WRI India, in collaboration with the Kochi Municipal Corporation and Cochin Smart Cities Limited, is working on the heritage development master plan of the Fort Kochi area. This plan aims to create a framework for the development of streets and public spaces, tangible and intangible heritage, and adopts a "people-centric approach" through stakeholder participation throughout the project life cycle. In 2018, to kick-start the process, WRI India collaborated with KMEA

School of Architecture to organize 'My Fort Kochi - Thanalkoottu' at Vasco da Gama Square. This community-led one-day event adopted a 'tactical urbanism process' of revitalizing the public square into a vibrant people-oriented activity space.

This event was intended to demonstrate the need for public spaces in the city and to revitalize them through contextual activities, suitable for all age groups and gender. It was divided into two categories -

1. Build your Space

Residents of the Fort Kochi area were welcome to contribute in creating the public space along with students and WRI team through temporary installations, furniture and planned activities.

2. Claim your Space

The recreated public space was complemented with a series of activities like Heritage Walks and cycling tours, conversations with city representatives, interactive board activities about Fort Kochi, treasure hunts, and cleanliness drive.

The 'My Fort Kochi - Thanalkoottu' as a tactical urbanism process is the first step toward creation of Heritage DPR for Fort Kochi area and can be scaled up by setting a similar process to showcase utilization of other public spaces in Fort Kochi and Ernakulam area. Learnings from this day-long showcase can be adopted to develop permanent interventions for public spaces within the historic precinct.

This event was followed by a 'Fort Kochi Visioning Workshop' that provided a platform to identify key issues and strengths of Fort Kochi area and derive strategies for heritage development, streets and public spaces for the historic core.

Monitoring Project Execution

Project monitoring is a parallel ongoing process that starts from the project inception and continues till the dismantling of the tactical urbanism intervention. These actions include:

1. Monitoring Project Timeline

Many capital projects often get delayed due to procedural holdups and other unforeseen situations, and thus lose trust of the community and other stakeholders. A tactical urbanism intervention on the other hand being temporary and low-cost in nature is able to circumvent some of the challenges and showcase the benefits of the urban design interventions within a short period of time. Therefore, it becomes even more essential for the project team to work within a stipulated time frame (with contingency) agreed upon by all.

2. Monitoring finances & materials

The project team is responsible for managing the finances, since the majority of the cost is for project execution (material and equipment), the team must ensure that the project scope and costs remain within the available funds. It may seek other innovative financing tools that are non-monetary or are based on a 'barter' principle.

3. Project Execution

The project team must ensure that the design is replicated in spirit when it is done from paper to ground. It is understood that there may be some site-specific challenges that are typically physical in nature, such as utility boxes, drainage, trees, which need to be accounted for and may lead to on-site changes. Any other contextual conflicts must be amicably resolved by adopting a solution with the least impact after taking everyone into confidence. Such conflicts can be minimized through adequate prior consultation and sharing of design with the community, stakeholders, and public officials. Care must be taken to ensure that design intent is not lost.

4. Security

A big challenge for urban projects in cities is vandalism and thefts, and a tactical urbanism intervention is no exception. These issues can be addressed depending on the type of intervention and duration. Mostly cheap and scrap material is used, which can be easily procured and replaced at no significant costs. However, for projects with longer trial periods, often heavier material is used which can't be easily stolen or removed. For example, cities testing cycle lanes for few months to a year would use painted concrete dividers or water-filled barriers or bolted bollards instead of traffic cones.

Removal of Installation

Project On many occasions, a tactical urbanism intervention may not be immediately followed by permanent installation, or it might be an unsuccessful intervention. In such scenarios, the project team must carefully remove the interventions from the site and restore it as close to the original condition as per the removal schedule established earlier.

CASE STUDY : Safe Vibrant and Healthy Public Spaces Project: Executing Tactical Urbanism Intervention at Maharana Pratap Park, Jaipur

Under the Safe, Vibrant and Healthy Public Spaces (SVHPS) project led by WRI India, Maharana Pratap Park in Jaipur was selected as one of the sites for implementing a Midterm Tactical Urbanism (TU) intervention. Following the planning and design stages, the project moved into the execution phase, where ideas developed through adolescent participation

were translated into on-ground interventions using temporary, low-cost, and adaptable materials.

The first step involved planning for execution. Based on the action plan developed during the design process, cost estimates were prepared, and resources were identified and mobilized. The implementation partner team anchored this process and onboarded volunteers, vendors, adolescents, and other community champions to form an execution team, with support from the WRI India team and the expert architect. Activities such as securing stakeholder buy-in and permissions, procuring materials, coordinating with vendors, and organizing implementation logistics were planned in advance, with clear roles and responsibilities assigned to the members of the execution team.

The second step involved physically transforming the space, which became a collaborative exercise involving adolescents, community members, and vendors. Vendors were engaged for tasks such as preparing wooden seating, creating temporary and semi-permanent shaded structures, fabricating interactive installations, and developing hybrid risk-play structures for adolescents and young children. These elements were designed to be low-cost yet durable enough to remain in place for several months, in line with the project's mid-term TU approach. Adolescents actively participated in setting up different areas within the park, including interactive seating zones, floor games, shaded corners, and visual enhancements that made the space more welcoming and engaging for users.

The TU execution process provided adolescents with an opportunity to observe how designs are translated into reality and to understand practical aspects of implementation, such as material selection, spatial arrangement, team coordination, and on-site problemsolving. The visible transformation of the park also strengthened a sense of ownership among

adolescents and community members, as they could directly see their ideas shaping the space and influencing how it was used by others.



Figure 4: Conceptual design of the site



Figure 5: Tactical Urbanism inventions being installed



Figure 6: Before vs after photos of Maharana Pratap park



2.4 Monitoring and Evaluation

As is valid for any kind of project, monitoring and evaluation is essential for a tactical urbanism project as well. It focuses on the smooth functioning of the intervention throughout its duration, and examining how effectively the implemented solutions addressed the intended challenges and influenced the context and user behavior.

Results from monitoring and evaluation help assess the impact of the tactical urbanism intervention, inform necessary adjustments for future projects, and support the development of strategies for a more permanent intervention.



Monitoring the Impact

The impact of the project on the surrounding environment and users can be assessed through both qualitative and quantitative methods. These tests should be carried out in a comparative manner, with information and understanding from before and after intervention, as it would be useful in highlighting the change in the surroundings and user behavior.

1. Quantitative methods

Based on the type of tactical urbanism intervention, different quantitative methods may be deployed and compared with existing metrics. Existing data can be collected from the city departments or be collected before implementation during the “planning and design” stages.

For projects aimed at reactivating and improving public spaces or providing infrastructure for walking and cycling, user counts can be collected using AI technologies through CCTV video footage, or on-site user counts collected manually by staff or volunteers at predetermined typical hours. Sample templates for manually conducting footfall and activity mapping surveys are provided in Appendix B. Other automatic data collection tools such as infrared devices, pneumatic tubes installed on the roads, or GPS-based public data collection tools and mobile applications such as Google, or Strava can be used to create heat maps. For mid-block crossings, junction and intersection improvements, road crash data or near-miss counts collected over a period of time

may be analyzed.

Some tactical interventions look at creating climate-controlled spaces using shaded walking paths created from fabric, planters, diffusers, or reflective paints. In these cases, temperature collected during project duration may be compared with historic data to determine the impact. Other long-term assessments include economic studies for businesses, and operating hours.

2. Qualitative methods

Non-empirical data highlights individual users and stakeholders’ experiences, which may not always be captured by quantitative tools. Feedback and testimonials from the users can be collected on tape or through well designed surveys that can be both off-line or online (through QR codes and websites). A sample template for offline user perception survey is provided in Appendix B. Care must be taken to include surveys in different languages. Photographs can be used to compare as well. These are useful to be incorporated for projects with longer durations where photographs are collected at different days, times of the day, and in different conditions. It must be noted that all tactical interventions may not always have positive outcomes only. Many businesses do not prefer cycle lanes on streets outside their shops, as it impacts availability of on-street parking spots, impacting overall footfall. Outdoor eating and seating in parklets along busy streets or during peak hours may not be a positive experience for the diners and other users.

In the case of adolescent-friendly public space interventions, the [Public Spaces Assessment Framework \(PSAF\)](#) can serve as a useful tool for both quantitative and qualitative assessment. By combining observational data with user perceptions, the framework enables a comprehensive understanding of how public spaces perform across key parameters such as accessibility, inclusivity, amenities, and activity. Assessments conducted before and after an intervention can be compared to identify changes in the quality and use of the space, helping to measure its effectiveness. This approach provides a holistic understanding of how tactical urbanism interventions influence both the physical environment and user experiences over time.

Evaluation & Adjustments

These results, need to be evaluated to ascertain if the project goals are being achieved. Additionally, the project team must assess the effectiveness of the implementation including traffic movement, multi-modal access and connections, accessibility to adjoining spaces, properties and businesses.

The team should also identify who all are using the spaces, and at what time of the day, and the week, including most and least used elements or activities. This helps in making quick adjustments to the ongoing intervention in an iterative manner addressing concerns as identified and allows for continuous evaluation to arrive at the best fit design for future scaling and converting into a permanent solution,

Case Study: Bengaluru Pop-Up Cycle Lens

The onset of COVID-19 led more people to take up cycling and walking as their preferred modes of transport to maintain physical distancing. In cities like Bengaluru, with nearly 139,000 cyclists, cycling only amounts to 2.2% of trips in the city, compared to two-wheelers (at nearly 30%). To encourage the use of cycles as a preferred mode of transport, the Directorate of Urban Land Transport (DULT) has pioneered cycling initiatives in Bengaluru over the last few years in collaboration with community groups, government agencies, experts, and other stakeholders. Prior to the pandemic, initiatives like the “Namma Cycle” bicycle sharing program and DULT’s Cycle Day initiative brought neighborhoods together to reclaim the streets through cycling and recreational activities. As more cyclists took

to the streets during the COVID-19 lockdown, this presented an opportunity to reimagine the city’s congested streets through pop-up cycle lanes. Pop-up cycle lanes are temporary, dedicated cycle lanes that are quick to install, need-based and cost-effective. They have emerged in many cities including Berlin, Toronto, Barcelona, and London as a useful, cost-efficient solution as a pandemic response measure and a means of incentivizing more people to use cycles by providing protected and dedicated cycle lanes. Initiated by DULT, the pop-up cycle lane project in Bengaluru involves:

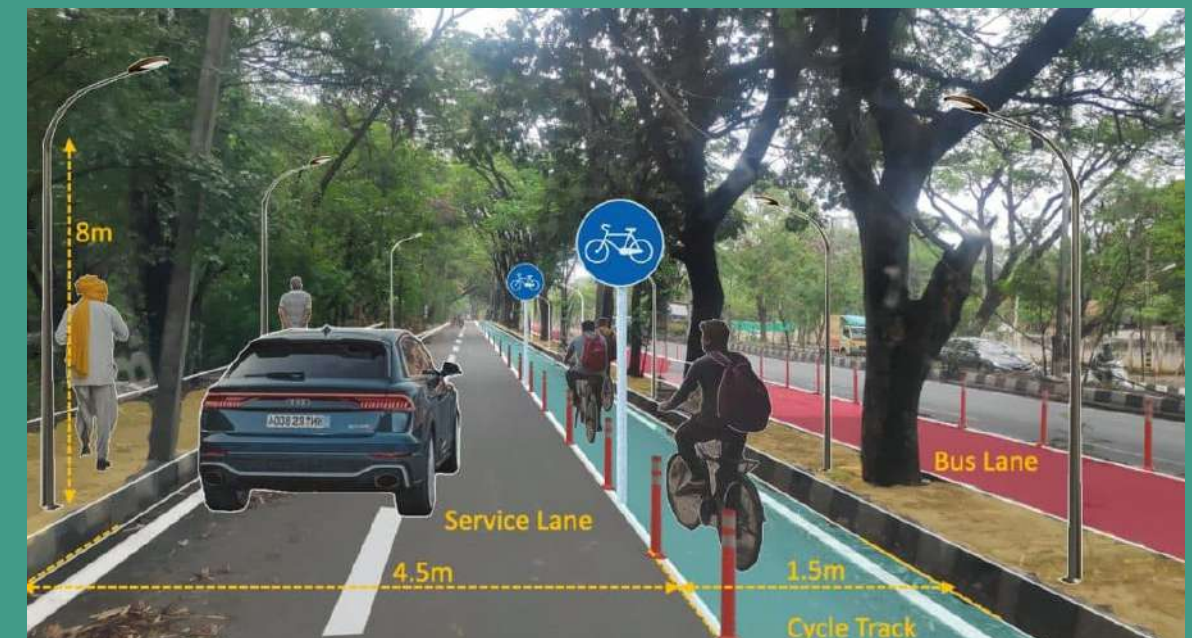
1. Creating safe and dedicated cycle lanes
2. Reconfiguring junctions for safe cycling and pedestrian crossings

3. Using semi-permanent yet durable materials like thermostat paint and bollards along the cycle lane
4. Cleaning and re-surfacing the lanes with asphalt layers
5. Creating pocket spaces and bicycle parking zones as pause points, based on space and funding availability

The pilot pop-up cycle lane will stretch for 34 km along the Outer Ring Road (ORR) and is set up along ORR’s service roads. The road is currently used by over 1,000 cyclists as part of their daily commute. The existing ORR has two-lane service lanes on either side. A cycle path in the service lane prevents conflicts with motorists in the main vehicular lanes, making cycling safe. The entire project stretch was then surveyed on cycles to determine the physical conditions, obstructions and connections in the

vicinity to determine a suitable alignment along the identified road stretches. The team also identified and developed 14 intersections along the planned stretch by reconfiguring the lane widths, adjusting vehicular movements, and creating crossings and refuge areas for cyclists and pedestrians.

The project has been submitted to the BBMP and the implementation is expected to be completed in the coming months. DULT has also formed a ‘Cycling Committee’ to bring together government agencies, Smart City officials, community representatives, WRI team, and others who are working to improve cycling ecosystems and infrastructure in the city. The project will serve as a pilot for ‘Cycles4Change’ challenge, an initiative of the Smart Cities Mission to support cities to quickly realize cycling-friendly streets.



CASE STUDY: SAFE Vibrant and Healthy Public Spaces Project, Comparative Analysis Using PSAF

Under the Safe, Vibrant and Healthy Public Spaces (SVHPS) project led by WRI India, monitoring and evaluation formed a critical component of the tactical urbanism process, enabling teams to assess how interventions influenced public space use over time. Using tools such as the Public Space Assessment Framework (PSAF), perception surveys, activity mapping, and footfall mapping, assessments were conducted before the intervention and at multiple stages after implementation, including during and after the activation phase. Baseline assessments identified existing challenges and usage patterns, while monitoring during activation captured immediate behavioural and spatial changes. Post-intervention assessments evaluated the effectiveness of the interventions in addressing identified issues.

Comparative analysis across these stages provided valuable insights into changes in accessibility, inclu-

sivity, amenities, activity, safety, and community ownership. The findings helped identify successful design elements, highlight areas for improvement, and generate evidence to inform future adolescent-friendly interventions and long-term public space development

Below is a snapshot of one of the tactical urbanism intervention sites in Bhubaneswar: OUAT Farmgate Open space: The OUAT Farmgate tactical urbanism site is located along the community frontage of OUAT in Bhubaneswar, between major educational institutions and dense residential neighbourhoods. Despite serving as a key movement corridor for students, adolescents, residents, vendors, and commuters, the space was underdeveloped and perceived as unsafe prior to intervention. Overgrown vegetation, unmanaged waste, poor lighting, and the absence of seating, pathways, and



activity areas limited its use and discouraged social interaction, particularly among adolescents, girls, and women.

Selected for its strategic location and community interest in improvement, the site was transformed through adolescent-led public space audits, community consultations, and participatory design processes. The intervention reimagined the area as a safe, inclusive, and vibrant public space that supports play, rest, interaction, and community life.

PSAF assessments captured the impact of the intervention. The PSAF audit, conducted with 120

adolescents before intervention, recorded 25 red, 4 yellow, and 0 green sub-parameters, highlighting significant deficiencies across safety, accessibility, amenities, and inclusivity. After TU intervention, during the six-day activation phase, reassessment by 50 adolescents showed substantial improvements, with 0 red, 20 yellow, and 9 green sub-parameters. A post-activation audit recorded 2 red, 12 yellow, and 15 green sub-parameters, demonstrating that most gains were sustained. The shift from 25 red to only 2 red indicators reflects a significant improvement in the quality, safety, and usability of the space.

Pre-TU						During - TU						Post - TU					
Parameter	Sub-parameter	Quantitative Performance	Qualitative Performance	Sub-parameter Performance	Parameter performance	Parameter	Sub-parameter	Quantitative Performance	Qualitative Performance	Sub-parameter Performance	Parameter performance	Parameter	Sub-parameter	Quantitative Performance	Qualitative Performance	Sub-parameter Performance	Parameter performance
Accessibility	Public Transport	Yes	Yes	Yes	Yes	Accessibility	Public Transport	Yes	Yes	Yes	Yes	Accessibility	Public Transport	Yes	Yes	Yes	Yes
	Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes
	Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes
	Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes
	Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes		Public Transport	Yes	Yes	Yes	Yes
Inclusivity	Age Friendly	Yes	Yes	Yes	Yes	Inclusivity	Age Friendly	Yes	Yes	Yes	Yes	Inclusivity	Age Friendly	Yes	Yes	Yes	Yes
	Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes
	Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes
	Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes
	Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes		Age Friendly	Yes	Yes	Yes	Yes
Amenities	Light	Yes	Yes	Yes	Yes	Amenities	Light	Yes	Yes	Yes	Yes	Amenities	Light	Yes	Yes	Yes	Yes
	Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes
	Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes
	Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes
	Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes		Light	Yes	Yes	Yes	Yes
Activities	Playing and Recreation	Yes	Yes	Yes	Yes	Activities	Playing and Recreation	Yes	Yes	Yes	Yes	Activities	Playing and Recreation	Yes	Yes	Yes	Yes
	Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes
	Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes
	Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes
	Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes		Playing and Recreation	Yes	Yes	Yes	Yes

Red: 25 sub-parameters
Yellow: 4 sub-parameters
Green: 0 sub-parameters

Public Space Rating: Red

Red: 0 sub-parameters
Yellow: 20 sub-parameters
Green: 9 sub-parameters

Public Space Rating: Yellow

Red: 2 sub-parameters
Yellow: 12 sub-parameters
Green: 15 sub-parameters

Public Space Rating: Yellow



5. Scaling Up

At this stage, tactical urbanism intervention is complete. The project team and the public agency need to decide on how to scale up the intervention. The pilot intervention can be made permanent by using more durable materials in a detailed design developed by a team of experts including engineers, designers, and contractors, through community engagement. Scaling up also involves replication of the tactical urbanism intervention to showcase the benefits of the project to a wider audience.

Interpret Evaluations

After making all the necessary adjustments to the on-going tactical urbanism interventions, they are further monitored and evaluated to see how the project goals are being met. It is then determined if the project has been successful, and what next steps must be taken by the project team after discussing with the public officials, stakeholders and community members. These next steps are either replicating the intervention or transforming it into a permanent solution at the site, after incorporating any necessary design changes based on the insights gathered.

Some short-term or mid-term TU interventions may be extended briefly till a decision is made. This must be carried out within the project budget or additional funding must be acquired, and accordingly necessary adjustments to the project schedule are made. It must be noted that in such a situation, a tactical urbanism intervention must not be considered as an alternative to a permanent intervention, and efforts must be made to come to a conclusion as soon as possible.

Replication

A city is a non-homogeneous entity where a particular intervention cannot be applicable to all spaces and neighborhoods. Therefore, a tactical urbanism intervention may be modified and replicated across multiple locations to understand its impact on a wider population. A similar process of ideation, planning and design, execution, and monitoring and evaluation must be undertaken.

Pilot to Permanent

Depending on the project type the intervention can be made permanent using more durable and long-lasting materials (junction improvement), or the pilot showcase can be expanded as a permanent solution over a larger area (elevated cycle tracks).

This guidebook does not cover details regarding scaling up through the permanent execution of the tactical urbanism intervention. It must be carried out like a typical capital infrastructure project.

Case Study: Scaling-up of tactical urbanism interventions in Mumbai

To increase safety of pedestrians and cyclists, especially at intersections, WRI India partnered with the Mumbai Traffic Police and the Mumbai Municipal Corporation in 2017 to audit and improve high-risk intersections across the city. This initiative was part of the Bloomberg Initiative for Global Road Safety, supported by Bloomberg Philanthropies and aimed at reducing nearly 500 road fatalities every year in the city.

These intersection improvements were carried out using tactical urbanism interventions to showcase the modifications in the design and alignment of the intersections. For the pilot intervention, HP Petrol Pump intersection in Bandra, a western suburb of Mumbai was selected. Based on community engagement and inputs from traffic police and other stakeholders in the area, the proposed intersection redesign included expanded, dedicated pedestrian infrastructure, streamlining of traffic lanes, accessibility ramps, crosswalks and median refuge areas. With successful trial of the design proposal through tactical urbanism interventions, city authorities decided to permanently implement

WRI India's recommended design in December 2018, and there has not been a single major crash at the HP Petrol Pump intersection since.

The success of this pilot project at a major intersection has prompted the city to examine other high-risk intersections using the same framework. It has also encouraged ward officers, corporators and others to bring similar transformations within their wards as well. WRI India has since worked on multiple street transformation projects with city authorities and corporators, and has partnered for the Mumbai Street Lab competition, a platform for designers and the city government to meet and pilot innovative and creative street design solutions as a demonstration of the success of this model. Since the success of the HP Intersection pilot intervention, WRI India has designed 85 intersection improvement projects, of which seven similar design trails using tactical urbanism tools have been carried out. Seven intersections have been constructed, and five are currently under construction in the city.



Appendix A

Process Quick guide

The following set of quick guides are indicative and created to help the project lead and/ or project team to

undertake a tactical urbanism project. It will also assist the public agencies to smoothly execute the project.

Quick Guide 1: Initiation and execution of Tactical Urbanism Project

Project Kick-off	Design Development (Continued)
☐ Identify stakeholders* and create project team. ☐ Get the project initiated at the public agency or relevant departments, establish a liaison. ☐ Identify project location, category, intervention type, strategies and duration (Check Quick Guide 2). ☐ Undertake data collection and analysis. ☐ Identify project challenges and formulate goals and opportunities through stakeholder engagement. ☐ Identify funding opportunities.	☐ Share preliminary design with public officials and all relevant departments for their inputs. ☐ Create final design in discussion with all stakeholders. ☐ Prepare a materials pallette. ☐ Develop project budget. ☐ Develop project schedule and timeline. ☐ Develop traffic management plans for project installation and duration of project. ☐ Develop maintenance plans for project installation and duration of project. ☐ Develop a removal schedule to for the end of project. ☐ Develop quantitative and qualitative monitoring and evaluation metrics and benchmarks. ☐ Carry out data collection for existing scenario (before project implementation based on formulated metrics). ☐ Apply for design approval.
Stakeholders Engagement	Project approval & Implementation permits
It is a continuous process that happens throughout the project cycle. ☐ Develop stakeholder engagement plan, share for inputs and information (Check Quick Guide 3). ☐ Develop preliminary designs and brainstorm with stakeholders and public officials to create final design. ☐ Final proposal to be reviewed and accepted by stakeholders. ☐ Collect letters of support and NOCs from stakeholders on final design (Optional, depending on the context and project).	☐ Design approval package should include: ☐ Site plan including final design and construction details. ☐ Materials list. ☐ Installation schedule ☐ Traffic management plans. ☐ Maintenance plans. ☐ Letters of support and NOCs from stakeholders on final design. ☐ Project budget for funding (if entire or portion of funding is sourced from city/ municipal government). ☐ Collect approval from ALL relevant departments and agencies including police department.
Design Development	
☐ Based on data collection and analysis, project challenges, goals and objectives, and availability of funds, establish scope of project. ☐ Project team develops preliminary designs based on inputs received during stakeholders engagement. ☐ Share preliminary design with stakeholders for their inputs.	

* As outlined earlier, stakeholders include community members, citizen groups, local ambassadors, non-governmental groups, local businesses, private companies, public officials and the political leadership.

Project approval & Implementation permits (Continued)
☐ After project approval, obtain permits from ALL relevant departments and agencies as identified earlier.
Project Installation
☐ Develop scheduling plan: ☐ Develop material procurement schedule. ☐ Develop project team schedule and assign tasks. ☐ Develop volunteer schedule and assign tasks. ☐ Procure materials based on material palette and store them at a secure location and/or transport to the site. ☐ Prepare site for installation. ☐ Install project as per the approved design and intent within the stipulated time. ☐ Ensure safety and security of workers during installation.
Project Testing and Evaluation
☐ Ensure safety and security of the site and users through the duration of project. ☐ Monitor the project and collect quantitative data at pre-determined time intervals as relevant to the project after installation of the project based on the formulated monitoring and evaluation metrics and benchmarks. ☐ Carry out qualitative tests including online and offline surveys and interviews after the project is installed and is opened for users. ☐ Evaluate and make necessary changes and updates to the project if required and repeat the testing process. Keep repeating this process till design is suitable for permanent implementation.
Project Removal
☐ Uninstall the project as per the removal plan after the duration of the project. ☐ Identify material that can re-used for other similar interventions and store them in a secure location in coordination with public authorities.

Quick Guide 2: Determine strategies for tactical urbanism project

A: Determine Project Category

Determine the project category based on the goals and objectives of the project:

- ☐ **Placemaking, Community cohesion**
- ☐ **Vibrant Public Spaces**
- ☐ **Road Safety**
- ☐ **Activation of Spaces for all**
- ☐ **Visual Enhancement**

B: Identify Intervention type

Identify the type of tactical urbanism intervention to be carried out:

- ☐ **Streets & Public ROW**
- ☐ **Junctions, Intersections, Mid-block crossings etc.**
- ☐ **Public Open Spaces**
- ☐ **Residual & Underutilized Spaces**

C: Choose your combination

Select the strategy or combination of strategies that can be adopted based on the requirements of the stakeholders or context or the project budget.

Note: This is an indicative list, but not limited to the strategies listed below. The project lead/ team may add more strategies based on their local requirements and engagement with stakeholders with approvals from the public officials .

Suggested Project strategies based on intervention type			
Streets & Public ROW	Junctions, Intersections & Crossings	Public Open Spaces	Residual & Underutilized Spaces
☐ Reclaim additional carriage way width ☐ Reclaim ROW leftover spaces ☐ Reclaim on-street parking spaces ☐ Protected cycle lanes ☐ Pocket spaces or parklets ☐ Outdoor dining ☐ Seating and outdoor activities ☐ Universal accessibility elements ☐ Way-finding and signage ☐ Road safety measures ☐ Extended sidewalks ☐ Raised intersection ☐ Mini roundabouts ☐ Traffic islands ☐ Tabletop crossing ☐ Extended medians ☐ Pedestrian refuge islands ☐ Painted intersections ☐ Painted crosswalks ☐ Gateways ☐ Bicycle docking stations/ Public bike share ☐ Artwork ☐ Street art/ graffiti ☐ Ground surface painting	☐ Reclaim additional carriage way width ☐ Pocket spaces or parklets ☐ Outdoor dining ☐ Seating and outdoor activities ☐ Universal accessibility elements ☐ Way-finding and signage ☐ Road safety measures ☐ Extended sidewalks ☐ Raised intersection ☐ Mini roundabouts ☐ Traffic islands ☐ Tabletop crossing ☐ Extended medians ☐ Pedestrian refuge islands ☐ Painted intersections ☐ Painted crosswalks ☐ Gateways ☐ Bicycle docking stations/ Public bike share ☐ Artwork ☐ Street art/ graffiti ☐ Ground surface painting	☐ Participative activities (community gardens, area clean-up etc.) ☐ Group activities (nature walks, cycling, yoga etc.) ☐ Knowledge exchange events (informal reading rooms, exhibitions etc.) ☐ Landscape elements ☐ Seating ☐ Dustbins ☐ Lighting ☐ Child friendly activities and spaces ☐ Shaded walking space ☐ Public utilities ☐ Drinking water ☐ Toilets ☐ Safety/ information booths ☐ Universal accessibility elements ☐ Way-finding and signage ☐ Cycle parking/ Public bike share ☐ Outdoor interactive games and sports (snakes & ladder, chess, ping-pong, basketball half courts etc.) ☐ Dog parks ☐ Pop up food carts, eateries, kiosks etc. ☐ Farmers/ flea markets ☐ Outdoor events (dance, music, theatre, stand-up, movie screening etc.) ☐ Artwork ☐ Street art/ graffiti ☐ Ground surface painting ☐ Art installations/ sculptures	☐ Participative activities (community gardens, area clean-up etc.) ☐ Pocket spaces or parklets ☐ Outdoor dining ☐ Seating and outdoor activities ☐ Pocket parks ☐ Multi-purpose trails ☐ Landscape elements ☐ Seating ☐ Dustbins ☐ Lighting ☐ Child friendly activities and spaces ☐ Shaded walking space ☐ Universal accessibility elements ☐ Way-finding and signage ☐ Cycle parking/ Public bike share ☐ Outdoor interactive games and sports (snakes & ladder, chess, ping-pong, basketball half courts etc.) ☐ Dog parks ☐ Pop up food carts, eateries, kiosks etc. ☐ Farmers/ flea markets ☐ Outdoor events (dance, music, theatre, stand-up, movie screening etc.) ☐ Artwork ☐ Street art/ graffiti ☐ Ground surface painting ☐ Art installations/ sculptures

Quick Guide 3: Stakeholders engagement strategy

A: Develop stakeholder engagement plan

Project lead and team must establish a stakeholder engagement plan based on the types of stakeholders being involved. For example community members, non-government agencies, local business owners etc would require greater engagement in comparison to city agencies and political leadership.

Plan must include project milestones with duration for each, and include site visits and design development processes.

B: Identify innovative tools for engagement

Tactical urbanism projects aim to add value to the area and improve the quality of life of the users of the space and its surroundings. It is therefore essential to include the suggestions of the stakeholders and get their acceptance for the project. Below are some indicative strategies that can be adopted for this purpose.

Public Consultations	Participative Activities
☐ Capacity building including sharing of knowledge through presentations, case studies, and sharing benefits of tactical urbanism interventions. ☐ Group site visits and on-site discussion of issues and challenges. ☐ Formal/ informal discussions with all stakeholders and focus groups. ☐ Online and offline surveys and interviews. ☐ Display and suggestion boards	☐ Design charrettes. ☐ Exhibitions, survey boards, dot-voting using stickers, suggestion boards, post-its etc. ☐ Role-playing activities. ☐ Discussion on maps and physical models.

Appendix A

Survey Forms

PERCEPTION SURVEY
(100 pax (20+ yrs old) 40/50-50 gender)

Form No.:Date:Time:

NameAge

Male/Female/Others.....Occupation.....

Contact No. (Optional)

1. Where do you live?

2. How often do you come here?

☐ Daily☐ 4-6 times a week☐ 2-3 times a week

☐ 1-2 times a week☐ Once in a month☐ Very rare

3. How accessible is this public space, for people coming from distant neighbourhoods?

☐ Very easily accessible☐ Somewhat accessible☐ Difficult to access

4. Who else do you find using the space?

☐ Elderly men☐ Middle aged men☐ Young men

☐ Elderly women☐ Middle aged women☐ Young women

☐ Children☐ Adolescents

5. Are there any activities or facilities you wish the park would offer or improve upon?
(Open-ended response)

.....

.....

.....

6. How satisfied are you with the overall cleanliness of the park? Rate from 1(very dissatisfied) to 6(very satisfied).

☐ 1☐ 2☐ 3☐ 4☐ 5☐ 6

7. Do you need any other facilities in this public space such as (benches, paths, play areas, more seating, more shade, landscaping, introducing activities, improved lighting etc.)? Why? (Open-ended response)

.....

.....

.....

8. How well-maintained do you find the park's landscaping and greenery? Rate from 1(very poorly maintained) to 5(very well maintained).

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

9. How do you rate the sense of safety in this space? Rate from 1(very unsafe) to 6(very safe).

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

10. How safe is this space at night? Rate from 1(very unsafe) to 6(very safe).

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

11. If not very safe, what do you think are the reasons for it? (Select all that apply)

☐ Poor lighting at night

☐ Anti-social activities in pocket spaces

☐ Lack of activity at night

☐ Overgrown or hidden areas that feel unsafe

☐ Lack of surveillance (no eyes on street)

☐ Others (specify).....

12. How would you rate your overall experience of visiting the park? Rate from 1(very poor) to 6(excellent).

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

13. Would you recommend this park to others?

☐ Yes

☐ No

☐ Maybe

Post – TU

14. Have you visited this space before? If yes, with these new elements in place, how has your experience with the space changed? Kindly share with an example. (Open-ended).....

.....

TU SURVEYS

1. AGE-GENDER-BASED FOOTFALL MAPPING (Pre-TU/ During TU Festival/After TU Festival)

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

WHAT TO SURVEY?

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

- Children 0-9
- Adolescents 10-19
- Adults 20-60
- Seniors above 60

Pedestrians are recorded in the worksheet using the following abbreviations:

Male:

- MC - Male child
- MAd – Male Adolescent
- MA - Male adult
- MS - Male senior citizen

Female:

- FC - Female child
- FAd – Female Adolescent
- FA - Female adult
- FS - Female senior citizen

Other Genders: (Specify age)

PwDs: People with Disabilities (specify age and gender)

WHEN TO SURVEY?

This survey can be repeated five times a day (during week and a weekend), in sync with the morning and evening peak hours and lunchtime.

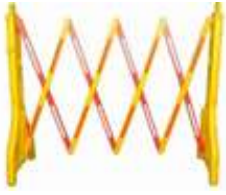
TIME	MALE				FEMALE				OTHERS (Specify Age)	PwDs (Specify Age and Gender)	TOTAL
	MC	MAd	MA	MS	FC	FAd	FA	FS			
8:00-8:30 AM											
12:00-12:30 PM											
4:00-4:30 PM											
7:00-7:30 PM											
9:00-9:30 PM											
TOTAL											

2. ACTIVITY MAPPING (Adolescents Specific/Others)

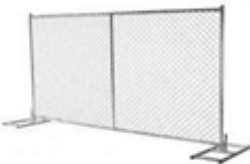
Activities Timing	Users	6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM	7-8 PM	8-9 PM	9-10 PM
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1
Hanging out with family/friends	Adolescents																
Others	Others																
Waiting for transport	Adolescents																
	Others																
Consuming food/Bev.	Adolescents																
	Others																
Attending a cultural activity/event/performance	Adolescents																
	Others																
Recreation play/exercise	Adolescents																
	Others																
Just passing through	Adolescents																
	Others																
Sitting/Relaxing	Adolescents																
	Others																
Drinking water/using washroom	Adolescents																
	Others																
Selfie Point	Adolescents																
	Others																
Number of shoppers	Adolescents																
	Others																
Vending/Shops																	

Appendix c: Material Palette

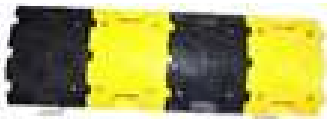
Safety & Barrier Elements

NAME	PVC Traffic Cones	PVC Bollards	Stainless Steel Bollards	Collapsible Barricades
				
DIMENSION	0.15m x 0.15m x 0.75m	0.3m x 0.3mx 0.7m	0.2m x 0.2mx 0.5m	1.6m x 0.4mx 1.0m
USE	A visual safety and spatial demarca- tion element.	A visual safety and spatial demarca- tion element.	A visual safety and spatial demarca- tion element.	A spatial demarcation element to control access or mark boundary.
TYPE OF INSTALLATION	Quick and easy installation, portable and cannot be fixed on ground.	Quick and easy installation, free- standing and portable. Variants available that are fixed to ground or to curb barriers.	Easy installation, bolted to the ground.	Quick and easy installation, portable and cannot be fixed on ground.
COST (IN₹)	600-800	400-500	5,000-6,000	4,000-5,000
APPLICATION TIPS	• May be rented and reused instead of buying for each intervention. Borrow from transportation/ public works/ road safety departments. • Can get easily moved and knocked over and require frequent monitoring, thus use only for short-term projects. • Reflective cones recommended particularly if used at night.	• May be rented and reused instead of buying for each intervention. Borrow from transportation/ public works/ road safety departments. • Free-standing bollards can get easily moved or knocked over, and require frequent monitoring.	• May be rented and reused instead of buying for each intervention. Borrow from transportation/ public works/ road safety departments. • Team must ensure that the use of stainless steel bollards is not confused as an alternative to permanent execution of the project.	• May be rented and reused instead of buying for each intervention. Borrow from police/ road safety departments. • Can be stabilized using weights such as sand bags placed at the base to avoid toppling over on windy days. • As they are light weight and can be moved easily, frequent monitoring is required.

Safety & Barrier Elements

NAME	Metal Barricades	Temporary fencing	Plastic Jersey Barriers	Concrete Jersey Barriers
				
DIMENSION	1.5m x 0.45mx 1.2 m	Running x 0.6mx 1.0 m	1.6m x 0.4mx 1.0 m	1.8m m x 0.6mx 1.0 m
USE	A spatial demarcation element to control access or mark boundary.	A spatial demarcation element to restrict access or mark boundary.	A spatial separation element and a barrier for bike lanes and pedestrian facilities.	A spatial separation element and a barrier for bike lanes and pedestrian facilities.
TYPE OF INSTALLATION	Quick and easy installation, portable - typically with wheels and can be pushed and dragged, cannot be fixed on ground.	Quick and easy instal- lation, portable and cannot be fixed on ground.	Quick and easy installation, portable and cannot be fixed on ground.	Heavy, installation is slightly difficult and may require machinery or tools and cannot be fixed on ground.
COST (IN₹)	8,000-9,000	100- 200 per running meter	7,000-8,000	5,000-6,000
APPLICATION TIPS	• May be rented and reused instead of buying for each intervention. Borrow from police/ road safety departments. • Can be noisy while installing or removing. • These barricades are often associated with security agencies and police departments and may not be perceived as neighborhood or “people-friendly”. • Therefore use should be limited to traffic movement management.	• May be rented and reused instead of buying for each intervention. • Can be stabilized using weights such as sand bags placed at the base to avoid collapse on windy days. • Ensure that height of the fence does not interfere with sight lines	• May be rented and reused instead of buying for each intervention. • Can be filled with water or sand to increase weight, stabilize and avoid theft. • Requires periodic maintenance to check water level and breeding of insects. • Use for short term interventions, and require large vehicles for transportation. • Avoid usage in areas with water scarcity or droughts.	• May be rented and reused instead of buying for each intervention. • Require large vehicles for transportation, machinery and tools for installation. • Can be modified with light fixtures or reflective tapes. Art work can be made on the surface for visual enhancements using DIY initiative with the community members or hiring artists. • Individual units should have bottom spacers for surface runoff. In case these gaps are absent, the barriers must be place at some gaps. • While these are more durable, team must ensure that its use is not confused as an alternative to permanent execution of the project.

Safety & Barrier Elements

NAME	Speed Breaker/ Speed Cushion	Plastic or Rubber Parking Bumper/ Curb Barrier	Concrete Curb Barrier
			
DIMENSION	1.0 m x 0.4mx 0.05 m	0.6mx 0.12m x 0.1m	
USE	A safety element placed on streets as a traffic calming measure.	A spatial barrier element for separation especially for cycle infrastructure.	A spatial barrier element for separation especially for cycle infrastructure.
TYPE OF INSTALLATION	Quick and easy installation by screwing or pasting the element to the street surface.	Quick and easy installation by screwing to the street surface.	Easy installation by placing or screwing to the street surface.
COST (IN₹)	1,000-1,200	800-1,000	
APPLICATION TIPS	• Suitable for local streets with less than 40km/h posted speed. • Must be repaired or replaced depending on the duration of tactical urbanism intervention and damages that may have occurred during the trial.	• May be rented and reused instead of buying for each intervention, especially for short term interventions. • Can be paired with small light blinkers. • Must be repaired or replaced depending on the duration of tactical urbanism intervention and damages that may have occurred during the trial.	• May be rented and reused instead of buying for each intervention. Borrow from transportation/ public works/ road safety departments. • Require large vehicles for transportation, machinery and tools for installation. • Must be repaired or replaced depending on the duration of tactical urbanism intervention and damages that may have occurred during the trial. • Can be modified by pairing with vertical flex posts as barrier elements with reflective surface. • Individual units should have bottom spacers for surface runoff. In case these gaps are absent, the barriers must be place at some gaps.

Safety & Barrier Elements

NAME	Nylon rope	Floor marking tape	Road marking tape (Retro-reflective)	Duct tape
				
DIMENSION	12mm thickness	2 inch wide, 30 m length	2 inch wide,50 m length	2 inch wide, 50 m length
USE	For fastening, pulling, hanging, demarcating boundaries etc.	A spatial demarcation element to warn, mark boundary, provide orientation etc.	A safety element to increase the visibility of items at night in the light of an approaching vehicle's headlight.	For sticking together items or parts.
TYPE OF INSTALLATION	Quick and easy installation.	Quick and easy installation.	Quick and easy installation.	Quick and easy installation
COST (IN₹)	100-150 per meter.	200-250	800-900	250-300
APPLICATION TIPS	• May be rented and reused instead of buying for each intervention. Borrow from transportation/ public works/ police/ road safety departments. • Light and easy to use material. Project team may prefer using ropes made out of recycled materials. • Needs to be used in combination with other barrier elements such as traffic cones or bollards etc.	• Single use material, to last longer surface must be cleaned with minimal dust or protrusions before application.	• Single use material, to last longer surface must be cleaned with minimal dust or protrusions before application. • Used in combination with other barrier elements and requires flat surfaces for application such as traffic cones, bollards, barricades, jersey barriers etc.	• Single use material, to last longer surface must be cleaned with minimal dust or protrusions before application.

Landscaping & Barrier Elements

NAME	Vertical Garden pots	Planters	Partition Planters	Tyre Planter
				
DIMENSION	0.1m x 0.1mx 0.12m	Varies	1.0m x 0.4mx 0.4m	Varies
USE	A landscape element for aesthetic purpose, and spatial barrier and demarcation.	A landscape element for aesthetic purpose and spatial barriers.	A landscape element for aesthetic purpose and to demarcate spaces through careful arrangement	A landscape element for aesthetic purpose and spatial barriers, created using tyres and other scrap material.
TYPE OF INSTALLATION	Quick and easy installation, portable and flexible on the kind of use.	Quick and easy installation, portable	Quick and easy installation, portable	Quick and easy installation, DIY item, portable.
COST (IN₹)	20-50 per pot	1,500-3,500	4500-5,000	
APPLICATION TIPS	• May be rented and reused instead of buying for each intervention. Borrow from nurseries, landscape businesses forestry/ parks and recreation/ public works departments. • When used as a barrier between cycle lane and car lane, ensure height is not more than sight lines. • Ensure maintenance/ watering during the demonstration period, with space for water tankers.	• May be rented and reused instead of buying for each intervention. Borrow from nurseries, landscape businesses forestry/ parks and recreation/ public works departments. • Placed at fixed intervals. Ensure the total height is below sight line and plant foliage is within the buffer and does not spill into travel lanes. • Ensure maintenance/ watering during the demonstration period, with space for water tankers.	• May be rented and reused instead of buying for each intervention. Borrow from nurseries, landscape businesses forestry/ parks and recreation/public works departments. • Can be placed at closer intervals with gaps to allow surface run-off. Ensure the total height is below sight line and plant foliage is within the buffer and does not spill into travel lanes. • Ensure maintenance/ watering during the demonstration period, with space for water tankers.	• May be created using DIY initiative with the community members using scrap tyre materials, paint, potting soil and saplings. • Can be reused or donated to parks community spaces after tactical urbanism intervention. • Ensure maintenance/ watering during the demonstration period, with space for water tankers.

Landscaping & Spatial Elements

NAME	Synthetic Grass	Tyre seating	Portable Chairs	Benches
				
DIMENSION	2.0m x 0.6mx 0.05m			1.6m x.7mx 1.0m
USE	A carpeting element for recreational spaces like play areas for kids, seating spaces etc.	Furniture element created out of used tyres and other scrap materials.	Provide a space for seating and resting and can be repositioned easily.	Seating for spatial enhancement.
TYPE OF INSTALLATION	Quick and easy installation, portable and should not be fixed on ground	Easy installation, but can be slightly time consuming depending on the design, DIY item, portable.	Quick and easy installation. Portable, can be folded as well.	Easy installation but placement can be difficult due to the weight of material and cannot always be fixed on ground
COST (IN₹)	1600-1800			Varies
APPLICATION TIPS	• May be rented and reused instead of buying for each intervention. Borrow from nurseries, landscape businesses forestry/ parks and recreation/public works departments. • Ensure a smooth surface and that it does not create a tripping hazard. • Easily washable and requires periodic maintenance.	• May be created using DIY initiative with the community members using scrap tyre materials, paint and flat surface tops. • Can be reused or donated to parks community spaces after tactical urbanism intervention. • Easily available material, flexibility to explore aesthetically and functionally best solution.	• May be rented and reused instead of buying for each intervention. Borrow from local businesses or eating outlets. • May require securing or additional storage facility for long duration interventions. Borrowing from local businesses helps in overnight storage. • Preferably use cheap material, so it can be replaced if incase stolen. • Some project teams use bright painted, with city or organization logos to identify if stolen. • Can use light-weight furniture for easy transportation and moving around the space.	• May be rented and reused instead of buying for each intervention. Borrow from nurseries, landscape businesses forestry/ parks and recreation/public works departments. • Different materials such as concrete, plastic, wood, cane, bamboo etc can be used.

Landscaping & Spatial Elements

NAME	Crates 	Portable Tables 	Shipping pallets 	Concrete solid block 
DIMENSION	0.45m x 0.3mx0.3m		1.5m x 1.5mx0.2m	0.4m x 0.2mx 0.2m
USE	An element to make furniture - seating, table tops, planters etc.	Provide a space for outdoor dining and other activities.	An element to make furniture - seating, table tops etc. and for aesthetic purposes.	An element to make furniture - seating, table tops etc.
TYPE OF INSTALLATION	Quick and easy installation.	Quick and easy installation. Portable, can be folded as well.	Quick and easy installation.	Quick and easy installation.
COST (IN₹)				40-50
APPLICATION TIPS	• May be reused instead of buying for each intervention. • Can be painted to match with designs and graphics used in the project using DIY initiative with the community members. • Can be easily adjusted and combined with other elements to create more utilitarian spaces.	• May be rented and reused instead of buying for each intervention. Borrow from local businesses or eating outlets. • May require securing or additional storage facility for long duration interventions. Borrowing from local businesses helps in overnight storage. • Preferably use cheap material, so it can be replaced if incase stolen. • Some project teams use bright painted, with city or organization logos to identify if stolen. • Can use light-weight furniture for easy transportation and moving around the space.	• May be reused instead of buying for each intervention. • Can be painted to match with designs and graphics used in the project using DIY initiative with the community members. • Can be easily adjusted and combined with other elements to create more utilitarian spaces.	• May be rented and reused instead of buying for each intervention. • Require large vehicles for transportation, machinery and tools for installation. • Can be modified with light fixtures or reflective tapes. Art work can be made on the surface for visual enhancements using DIY initiative with the community members. • Modular nature of the material gives flexibility to design

Shading & Spatial Elements

NAME	Cloth shading 	Umbrella 	Tensile cloth shed 	Display panels 
DIMENSION	Running length x 1.0m	1.0m x 1.0mx 2.0m		2.4m x 1.2m
USE	An element to provide shade in open activity areas, particularly walking.	An element to provide shade in open activity areas, particularly seating or outdoor dining.	An element to provide shade in open activity areas, particularly seating or outdoor dining.	Vertical panels for displaying information or exhibiting certain items like project programme, suggestions board etc.
TYPE OF INSTALLATION	Easy instillation, but time consuming depending due to installation of supporting framework.	Quick and easy installation. Portable, can be folded as well.	Easy instillation, but can be time consuming depending on the tensile design and operation mechanism.	Quick and easy installation.
COST (IN₹)	50-100 per meter of fabric	1,600-1,800	500-550 per sqft.	12,000-13,000
APPLICATION TIPS	• May be rented and reused instead of buying for each intervention. Borrow from local businesses like event planning etc. • Requires support from expert workers for installation of supporting structure using bamboo or metal pipes. • The fabric might fade due to long exposure to weather, and would require replacement. • Project team must ensure that its use is not confused as an alternative to permanent execution of the project.	• May be rented and reused instead of buying for each intervention. Borrow from local businesses like eating outlets, landscaping businesses, event planning etc. • Need to be put strategically with seating elements with additional anchoring or weights especially in windy areas. • Installations can be created using multiple umbrellas for a shaded walkway.	• May be rented and reused instead of buying for each intervention. Borrow from local businesses like eating outlets, landscaping businesses, event planning etc. • Pre-fabricated fixed designs available in the market. Can be personalized using colors and logos. • Installation may often require drilling the base to the ground. • While these are more durable, team must ensure that its use is not confused as an alternative to permanent execution of the project.	• May be rented and reused instead of buying for each intervention. Borrow from various departments. • Can also double up as separator for large spaces, or for short duration way-finding pinup signage boards. • Additional anchoring may be needed in windy areas.

Surface Treatments

NAME	Acrylic distemper	Chalk	Floor coat emulsion	Spray Paint
				
DIMENSION	10 L	250 ml	10 L	400 ml
USE	Water based paint for interior and exterior wall surfaces.	A kind of paint ideal for various surfaces like wall, wood, metal etc. to provide a chalky finish	A paint for finishing exterior floors and protecting the same from algal or fungal attack.	Gives a smoother finish and may be used for drawing patterns on various surfaces.
TYPE OF INSTALLATION	Quick and easy application.	Quick and easy application.	Quick and easy application.	Quick and easy application.
COST (IN₹)	500-600	350-400	1,500-1,800	200-300
APPLICATION TIPS	To last longer, clean the surface to remove dust before application.	To last longer, clean the surface to remove dust before application.	To last longer, clean the surface to remove dust before application.	- To last longer, clean the surface to remove dust before application. - Can be used in combination with stencils for road markings and signage.

Surface Treatments

NAME	Spray Chalk	Thermoplastic paint	Stencils	Outdoor carpet
				
DIMENSION	400 ml	1kg		3.0m x 1.0m
USE	Gives a chalky finish and may be used for drawing patterns on various surfaces.	A powder paint which is melted and applies on road surfaces for marking lines, crossings etc.	An easy to use tool in the form of a thin sheet with letters or design cut from it, to create graphics/text on surfaces.	An element to cover outdoor floor surfaces for a cleaner finish, highlighting areas and like platforms, stages, aisles etc.
TYPE OF INSTALLATION		Quick but application of the paint requires a thermoplastic marking machine.	Quick and easy application.	Quick and easy installation.
COST (IN₹)	3,000-3,200	40-60		1,200-1,500
APPLICATION TIPS	To last longer, clean the surface to remove dust before application.	Variants available where contractors provide pre-fabricated 'stickers' with graphics to be placed on streets.	- May be reused for future interventions. - Helps create standardized lettering for critical safety elements such as bikeway markings, parking, pedestrian areas etc. - Project team must take care that such stencils are pre-made using approved design standards and out of light and durable material.	- May be rented and reused instead of buying for each intervention. Borrow from businesses dealing with events, catering etc. - Ensure a smooth surface and that it does not create a tripping hazard. - Easily washable and requires periodic maintenance. - Joints and edges may be taped to prevent tripping over

Accessibility Elements

NAME	Temporary metal wheelchair ramps	Curb Ramp	
			
	DIMENSION	1.8m x 1.3mx 0.1m	0.6m x 0.3mx 0.1m
	USE	An element to provide a sloped access for wheelchairs to spaces at a different level by maintaining a 1:12 slope.	An element to provide a sloped access to footpaths from the road for use of wheelchairs, bicycles etc.
	TYPE OF INSTALLATION	Quick and easy installation, portable and does not required to be fixed to ground.	Installation by screwing the element to floor.
	COST (IN₹)	30,000-35,000	3,000-4,000
APPLICATION TIPS	• May be rented and reused instead of buying for each intervention. Borrow from transportation/ public works/ road safety departments. • Different cheaper variants with wood planks can also be used. • Must be repaired or replaced depending on the duration of tactical urbanism intervention and damages that may have occurred during the trial.	• May be reused depending on trial duration and wear and tear. • Must be repaired or replaced depending on the duration of tactical urbanism intervention and damages that may have occurred during the trial. • Care must be taken that it does not block surface run-off	

Signage& Way-finding

NAME	Cardboard/ Flex Board	MDF board	Bamboo post	GI/Steel pipe
DIMENSION				
USE	1 kg	1 sq ft	5 ft long	1kg
TYPE OF INSTALLATION	An easily available element to make boards for displaying information etc.	An element to make boards for displaying information, to create furniture etc.	An element used as support for roofing structures, installations, sign boards etc.	An element used as support for roofing structures, installations, sign boards etc.
COST (IN ₹)	Easy application, offers a flexibility of design	Easily available material but installation is slightly time consuming	Readily available material but installation is slightly time consuming and needs expert workers.	Readily available material but installation is slightly time consuming and needs expert workers like welders.
APPLICATION TIPS	40-50	50-70	120-150	70-80
	• May be reused instead of buying for each intervention. • Scrap may be used like old cartons.	• May be reused instead of buying for each intervention.	• May be rented and reused instead of buying for each intervention. • Easily available in varying diameters and can be used for multiple purposes.	• May be rented and reused instead of buying for each intervention. • Easily available in different cross-sections and can be used for multiple purposes.

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