



# 2

## Shaping Streets

Multiple agencies play a role in the various aspects of shaping streets. The blueprint of urban streets is informed by many stakeholders, from creating broad visions and policy agendas, providing local insights, or developing detailed plans and geometric designs. The lifespan of the street depends on well-coordinated project management, quality construction practices, and ongoing maintenance. Ensuring sustainable streets for coming generations is dependent on embedding change, updating policies, and educating future practitioners.

Identify the specific steps of the process in each local context, and engage with relevant stakeholders to clarify responsibilities and opportunities for shaping quality and equitable streets.

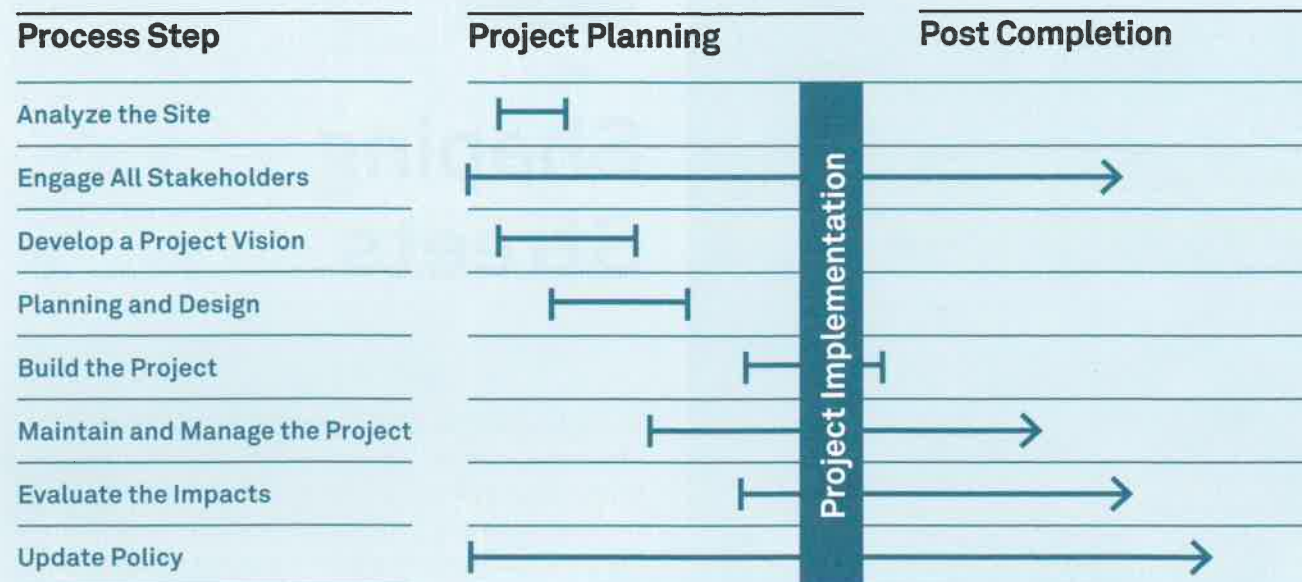
Melbourne, Australia



## 2.1 | The Process of Shaping Streets

### A TYPICAL PROCESS FOR SHAPING STREETS

While local processes vary in each context, use the typical steps in the diagram below to define and guide the process for each project before it begins. Street design is an iterative process. Processes should remain flexible and relevant, evolving and adapting over time as best practices, specific challenges, and contexts change. Use the following steps to guide the process of shaping streets.



While specific processes vary by place, coordination and collaboration during each stage is fundamental, and effective communication and engagement throughout the process is critical.

#### Analyze the Site

Start by analyzing and documenting the physical, social, and environmental context of the project site. Consider multiple scales of the street to identify how it functions as a part of its immediate surroundings and within larger network connections. Document existing infrastructure that will affect the street design. Observe who uses the street and at what time, and note the various activities. Analyze who lives and works in the area, while observing local customs, cultures, and political influences. Check legal and guiding documents in the city and region for specific goals or agendas that relate to the project site. Once the existing conditions are thoroughly observed and documented, identify and prioritize primary challenges and needs to discuss with the project stakeholders. See 3: *Measuring and Evaluating Streets* and 5: *Designing Streets for Place*.

#### Engage All Stakeholders

Identify and invite all stakeholders to engage in the process of shaping their streets to ensure long-term success and stewardship. Constituents are more likely to be supportive of a project if they have been a part of the process of identifying the constraints and opportunities that inform the design. Work with transportation, planning, development, public health, and environmental groups to identify how street projects align with shared goals and priorities. Align project proposals with existing and upcoming utilities and service projects in the area and take this opportunity to propose the introduction of progressive technology or retrofitting of vital utilities. Nobody knows a local street better than the people who use it every day, so welcome input from local constituents to make a project more applicable to a specific context. Discuss and clarify local priorities for public health and safety, quality of life, environmental sustainability, and local economy. Make decisions together and keep all parties involved throughout the process. See 2.5: *Communication and Engagement*.

#### Develop a Project Vision

With a thorough understanding of the existing site conditions, various stakeholder interests, and project constraints, develop a vision for the street's look, feel, and function in the future. Identify best-practice street design strategies and innovative examples that are most applicable to the local context. Use visual renderings, drawings, and metrics to show and explain what is possible, and test ideas with local stakeholders. Ensure the project vision aligns with citywide goals and community priorities for public health and safety, quality of life, and environmental and economic sustainability. Where possible, develop a few options that balance the project constraints and stakeholder interests through different designs, including communities, in the decision-making process. See 2.4: *Setting a Project Vision*.

#### Build the Project

Implement great streets projects by ensuring each part of the process is well-coordinated and that selected materials and resources are available. Secure adequate finances and construct interim phases and trial projects when initial budgets are limited. Use construction drawings, training sessions, and other tools to clearly communicate each step of the process to contractors. Ensure that appropriate skilled labor, equipment, and services are arranged to support quality construction. The long-term durability of the street will be determined at this stage of the process. Consider adopting suitable local skills and materials for economic, environmental, and social benefits. See 2.6: *Costs and Budgets*.

#### Evaluate the Impacts

Measure and communicate the impacts of a completed street transformation. Use metrics to convey information to decision makers and community members. Collect metrics before and after implementation to inform future design approaches and assist in building political and community support for other projects. Encourage stakeholders to agree on the right metrics to be collected early in the process, and use the results to benchmark the project against prior conditions, other local streets projects, citywide data, or national and international projects. See 3: *Measuring and Evaluating Streets*.

#### Planning and Design

Guide the transformation of a project vision into reality through planning and design. Ensure the proposed project is intrinsically linked to larger mobility frameworks and comprehensive planning strategies that shape sustainable transportation, land use, and density. Coordinate with relevant stakeholders to clarify budgets, timelines, and project scope. Ensure budgets not only cover the construction costs, but also account for funds to cover ongoing maintenance and management of the project. Design facilities and elements to align with functional priorities and local placemaking goals. Identify quick and easy wins, consider testing designs on site through interim solutions, and offer professional design reviews for further refinement. Ensure that local conditions, climate, ongoing maintenance, and implementation processes inform decisions about materials, design, long-term durability, and user behavior.

#### Maintain and Manage the Project

Increase the usable lifespan of streets by ensuring ongoing maintenance and management. It is always more cost-effective to use quality materials and proactively maintain a street rather than let chronic issues develop to the point of major disrepair. Work with local businesses and constituents to provide regular maintenance and to program pedestrian-priority spaces where appropriate. See 2.10: *Management* and 2.11: *Maintenance*.

#### Update Policy

Use the outcome of the evaluation to update local policies and guidelines. Develop new policies to support sustainable streets if they do not already exist. Ensure local codes and practices are revisited every few years to test their relevance rather than base policies on outdated best practices. Identify impediments and challenges to implementing contemporary approaches. Base policies on the most recent documents, relevant precedents, and research available. Base policy on the desired future conditions—not on projections of past trends. See 2.12: *Institutionalizing Change*.



## 2.2 | Aligning with City and Regional Agendas



**Sustainable streets and mobility projects must demonstrate how local actions can support and enhance city and regional goals.**

Cities and regions may have documents that set large-scale priorities and agendas, directing and guiding how they want to grow, develop, or change over time. These documents may be prescriptive, or play a role of guidance, identifying long-term goals.

Streets constitute the largest percentage of public space in the city, space which must be organized to best serve the city's population. Ensure local and regional governments integrate sustainable street design beyond their transportation policies and into their broader development goals.



### Work with Multiple Constituents

#### Politicians

Politicians can be strong advocates for sustainable streets in their communities. Work with elected officials who play a strategic role in defining priorities and directing investment toward streets and transportation infrastructure.

#### Local Government Agencies

Coordinate with departments for transportation, urban planning, public health, development, construction, and sustainability to embed sustainable streets principles into their practices and decision making.

#### Regional and National Authorities

Engage with officials who set goals and priorities based on large-scale interests. They are able to keep the bigger picture in mind and see past political boundaries to set priorities at different scales; from regional and national transportation to environmental sustainability and social justice.

#### Private Practitioners and Researchers

Partner with private practitioners such as urban and transportation planners, urban designers, architects, and engineers, who can share their expertise and practical knowledge of innovative sustainable streets. Collaborate with academics and researchers to bring global best practices and processes to the table.

#### Advocacy Groups

Identify organized groups of citizens, nonprofit organizations, or associations focused on specific interests to provide important expertise and support for specific causes or users.

#### Local Communities

Engage citizens to learn about their expectations and concerns and gain crucial local knowledge about specific streets. Residents and informal groups should participate in the effort toward achieving sustainable streets.



### Prioritize Areas in Need

City and regional agendas may identify the areas of most pressing need. These agendas can direct investment in sustainable streets and mobility options to areas where it can have the largest impact, and where particular strategies can help address specific challenges. These may be based on the following considerations:

#### Demographic Factors

Areas with high population densities, large numbers of residents or proportions of seniors, children, families, and people with disabilities.

#### Socioeconomic Factors

Communities with large proportions of disadvantaged populations such as those with low incomes, high unemployment rates, and low education levels.

#### Road Safety

Locations with the highest numbers of traffic fatalities and crashes.

#### Public Health

Areas with a high incidence of specific illnesses such as respiratory, cardiovascular, and other chronic diseases. Areas that are particularly polluted or close to heavy industrial sites.

#### Access and Mobility

Areas with poor transit access and gaps in pedestrian and cycle infrastructure. Areas with long commute times and high car-ownership rates, with lower demand for walking, cycling, or transit options.

#### Destinations

Areas with key destinations such as schools, hospitals, markets, open spaces, commercial corridors, and transit hubs.

#### Environmental Vulnerability

In some cases, investment is targeted toward areas that are particularly vulnerable to natural hazards and disasters such as coastal flooding, inundation, liquefaction, and mudslides.





Multiple levels of national, sub-national, regional, or local governments, technical professionals, the general public, and other constituents each have different interests. Understand and acknowledge each stakeholder's role—formal or informal—to facilitate a transparent process and help to reduce professional silos. Value diverse input to bring together local perspectives with technical expertise, and offer regular forums for intersectoral dialogue to support the long-term sustainability and retention of best-practice knowledge.

The following list gives a sense of some of the people, groups, and agencies whose various interests and efforts should be aligned to shape vibrant, engaging, safe, and functional streets.



**Transit authorities and operators control**  
the collective transport facilities and  
infrastructure within the street.

**Street operators** manage parking, limit access, and maintain streets, formally or informally.

**Parks departments** often manage and maintain street trees and landscaping.

**Environmental protection agencies often** manage the stormwater that runs onto the street through curbside drains, and, at times, are also involved in the planning strategies and design reviews.

**Construction and public works agencies** manage the implementation of street and public works projects.

**Sanitation and waste management agencies** organize waste collection and recycling, conduct snow removal, and manage the overall cleanliness of the street.

**Building departments** often regulate what can project beyond a building or private property line into the public right-of-way.

**Utility companies** install and maintain utility infrastructure such as electricity or communication.

**Consumer affairs organizations** often regulate sidewalk cafés, commercial uses, and vendors by issuing licenses and enforcing compliance.

**Departments and organizations supporting people with disabilities work to ensure safe and accessible streets for people with limited abilities.**

**Urban designers, landscape architects, and architects** design integral elements of the street and its surrounding context, shaping how interesting and engaging the buildings, streetscape, and public spaces can be.

**Planning departments** are responsible for long-term land use and growth plans, policies that regulate building heights, setback dimensions, ground-floor uses, curb cut locations, entrances, levels of transparency, and outdoor uses.

**Historic preservation organizations can identify and designate city landmarks and protect the character of streets.**

**Developers and development banks** may fund projects that, depending on the scale, include new streets or the transformation of existing streets.

**Health professionals** can enact policies that encourage active mobility choices and increase physical activity levels.

**Advocacy groups and neighborhood associations** can be enlisted to support certain street designs or transformations.

**Private property owners and tenants** formally or informally maintain and manage the use of sidewalks, front yards, and entrance spaces.

**Local businesses, vendors, and kiosk owners** provide goods and services to street users, and may fund or manage ongoing maintenance through the creation of locally organized groups.

**Local media** can help promote and communicate the benefits of complete street design to the general public, shifting perceptions and influencing reactions to new projects.

**Academic institutions** such as planning, architecture, and public health schools, can partner with local governments and communities to assist with research, gathering metrics, visualizing development plans, and providing other resources to support street projects.

**Enforcement entities** can play a role in shaping user behavior, regulating compliance, providing surveillance, and reducing crime on streets.





## 2.4 | Setting a Project Vision



### Driving extensive change in the process of street design globally requires setting a clear and strong vision for every street project worldwide.

A clear vision can provide a sense of direction for stakeholders and ensure that designs support the larger social, economic, and environmental goals of each neighborhood. A balance of technical expertise, global best practices, and input from local residents and business owners can increase support for the project and the sense of ownership in a shared vision.

Use the shared vision as a base to show what is possible and to test new ideas. Inspire participants to achieve collective goals, define actionable steps, and work strategically toward a coordinated outcome.

Having a shared vision can help maintain clear direction when projects and processes face challenges of increased complexity.

Cities adapt and change over time, so it is important to ensure a future vision that is flexible and robust in the face of growth, development, unforeseen decline, and climate change challenges.

#### Who Can Set Vision?

##### Local, Regional, and National Government Officials

- Demonstrate leadership by articulating and communicating clear, achievable, and shared goals.
- Allocate funding and resources to support implementation.
- Set precedents by achieving high-quality standards and showing what is possible.
- Work across departments to identify and realize synergies and mutual benefits from great street design.
- Enact supportive policies that simplify processes and change outdated practices.

##### Private Practitioners

- Visualize future visions in presented plans, projects, and competitions.
- Identify local codes, regulations, and policies that act as impediments to best-practice street design.
- Complete best-practice research and bring forward relevant precedents.
- Create best-practice streets through project implementation.

##### Community Advocates

- Ask for street designs that better function for all users.
- Demand a change of current street design practices to ones that support safe and equitable access for everyone.
- Communicate and advocate for identified priorities, and build community support around a future vision for your neighborhood.

#### Where to Start

Identify actionable steps and interim targets toward achieving a shared vision. Start with project elements that have clear community and political support, where the demonstrated need is the greatest, or the potential impact is the strongest.

##### Look, Listen, and Learn

Listen to what people have to say about an area; many of them use the streets every day and know them more intimately than other stakeholders. Use various transportation modes when doing field work to consider different user experiences. Identify how areas within the project site function differently. Identify best practices from other places and ask how they might be relevant if adapted to the local context.

##### Engage

Engage relevant agencies and local organizations to develop a shared project vision. Understand how they shape and use streets and what matters most to them. Host workshops and meetings, and engage many groups to participate in the process.

##### Challenge Existing Perspectives

Be bold in questioning existing perspectives, practices, and procedures that shape streets. These have led to the current existing conditions and a different future will require different processes.

##### Identify Shared Goals

Set the goals and targets together. Allow flexibility for streets to adapt and change over time while still allowing the goals to be relevant.

##### Set Actions and Timelines

Be specific about what you want to achieve. Provide clear short- and medium-term targets that allow the shared vision to be realized.

##### Partner

Foster and create new partnerships in which different groups can share resources, stay informed, and work together toward shared visions.

##### Determine Constraints

Balance the big-picture goals with an understanding of what is realistic given the existing constraints, practices, procedures, and budgets.

##### Identify Metrics

Identify metrics relevant to the project vision and use these to set goals and targets.

##### Communicate

Share the action plan for the project and the intended steps and timelines in place to achieve it. Develop a communication strategy to keep the public informed so that they can be a part of the process of achieving change.

##### Start Now

Find somewhere to start to demonstrate quick wins and achievable change in order to build momentum and trust. Consider pilot, temporary, or interim solutions as a first step.

#### Identify Priorities to Shape the Vision

##### Based on Need

- **Opportunities:** To help a city become more equitable, target investment in areas of need within the project, based on factors such as income, commute time, congestion, public health challenges, and lack of safe access to walking, cycling, or public transport.
- **Recommendation:** Map traffic crashes and fatalities geographically and identify areas where these cluster as targets or hotspots. Overlap income levels and transit maps geographically to identify where gaps exist for transit service. Work with communities, local health departments, and academic institutions to identify neighborhoods facing public health and environmental challenges.

##### Based on Destination

- **Opportunities:** Identify important destinations where people gather on a daily basis, such as schools, markets, open spaces, commercial corridors, and transit hubs as they can present valuable sites for street reconstruction and traffic calming.
- **Recommendation:** Map key city destinations in the project area. Identify potential locations for public transit stops, car share or bike share stations, and other facilities that support sustainable mobility around these destinations. Discuss and analyze the state of repair of sidewalks, cycle tracks, and transit stops in these areas, while noting the provision of street trees, seating, lighting, and other elements that support a safe and healthy street environment.

##### To Align with Other Projects

- **Opportunities:** When projects are funded and already in progress, they present opportunities to ensure that street designs align with larger vision goals.
- **Recommendation:** Identify projects and programs that already have political, community, and financial support, and streets that are already scheduled for regular or upcoming maintenance and reconstruction. Leverage these to support and enhance the project vision.

##### To Attract Other Investment

- **Opportunities:** Improved transportation infrastructure can proactively catalyze other investments. Strategically attracting public and private developments to certain areas of a city supports compact and sustainable development patterns and prioritizes them over areas where residents and workers rely on private vehicles.
- **Recommendation:** Identify the anticipated growth rate in the project area to inform the level of investment required to accommodate future street users in a sustainable development pattern. Align with land use and density goals to select limited geographic areas along existing or new transit lines that support growth in a compact form, protecting natural resources.



## 2.5 | Communication and Engagement



**Successful street design projects rely heavily on effective communication and stakeholder engagement strategies to help constituents understand the project scope and impact.**

When a project site and initial scope is identified, engage constituents through workshops, meetings, site visits, and presentations to find out what matters to them. Local constituents can offer critical insight to supplement the technical expertise of design professionals. Involving them in the process will help develop long-term stewards of the street, keeping it safe and well-maintained.

Identify effective communication and engagement strategies that are appropriate for each context and stakeholder group. Work together to clarify long-term goals, specific considerations, and top priorities. Maintain ongoing communications and engagement throughout the process of planning, design, and construction of a street, and continue to communicate successes or lessons learned as the project matures.

### Effective Communication and Engagement Strategies

#### Spend Time On Site

Meaningful discussion about the future of a street requires experiencing its current conditions, and observing how different people use the space.

- Try walking, biking, using transit, driving, pushing a stroller, or even using a wheelchair on a site to better understand the perspectives of different users.
- Visit the site at different times of the day and night, week, and year, and document what works well and what does not.
- Study the flows, and identify places where people stay and spend time. Observe the activities people engage in and the relative speeds at which they move.
- Use photographs, drawings, and marked plans to document on-site conditions, and use this material to facilitate workshop discussions.
- Use bollards, chalk, paint, and planters to create temporary installations on site. Measure and observe the impact of these changes on movement patterns and behavior.



#### Understand Current Conditions

Discussing potential trade-offs between different uses in a limited space requires understanding spatial and functional constraints. Confirm dimensioned drawings during site visits or conduct on-site measurements to build accurate plans and sections, and use these as a base for redesign.

#### Offer Workshops, Meetings, and Presentations

Invite constituents to gather and discuss site conditions, identify opportunities, set visions, and clarify priorities. Offer multiple meeting times and choose locations near the site so local stakeholders of various demographics can easily attend. Use input and feedback from various constituents to inform designs.

#### Listen

Try to understand people's concerns. At times, misunderstanding project goals and impacts or the lack of meaningful engagement can result in a lack of community support for the vision.

#### Know the Audience

Adapt the message and presentation to suit the target audience. Avoid jargon or overly technical data that may lead to confusion. Offer stories, providing local examples and memorable anecdotes that can be easily remembered and repeated. Provide translation or use multiple languages when needed.

#### Think Long Term

Consider asking people how they want their city to look and feel in 20 years or for the next generation. Using a longer time frame can assist in reducing the level of fear many people have about changing the area they live or work in.

#### Find Local Champions

Identify key players in the local community and help them understand the benefits of an improved street. It is easier for the local champions to further communicate with the community about benefits of the street project.



#### Provide Precedents

Use examples of similar projects from other places to help people see already constructed improvements. In spite of diverse nature and geographic variations, many of the challenges cities face are similar and strategies can be easily adapted from one place to another.

#### Present Evidence

Identify relevant scientific evidence to help people understand the multiple benefits of a street improvement. For example, show that the designs can reduce urban heat island effect by planting trees, that more sustainable and active mobility choices can mean healthier citizens, or that fewer on-street parking spots can mean more space for other uses. See 3: *Measuring and Evaluating Streets*.

#### Manage Media

Identify the most appropriate media to engage various stakeholders. Certain populations engage more with digital online media, some with radio and printed news, and others with visual drawings and videos. Online and in-person surveys can be an efficient way to gather important information, and participatory mapping can give the community a chance to feel that they are active contributors.

#### Engage the Press

Proactively engage local press to keep them informed. Ensuring that they have accurate information about a street project can assist in building awareness and communicating success. When proposed street transformations or new construction do not balance the needs of different users, engage the media to raise awareness and build support for alternative designs that put people first.

#### Engage the Youth

It is important to expand the community involvement to include youth. Young people bring innovative ideas and need-based solutions. They can be involved in the decision-making process and can be motivated to help activate and maintain their neighborhood streets.



## 2.6 | Costs and Budgets



**The Commission for Global Road Safety recommends that 10% of total project costs be allocated to safety, inclusive of Non-motorized Transportation (NMT) infrastructure.<sup>1</sup>**

The costs of building great streets are vastly different in different countries and depend upon a number of variables. The scale of a street is a primary determinant of overall costs, as wide streets that run for longer distances cost more than narrow profiles. It is also critical for long-term planning to consider the overall balance of up-front capital costs with lifecycle costs, including operation, maintenance, repair, and replacement. Investing in quality design and materials early in a project will save costs over its lifecycle.

Consider local budget timelines, multiple sources of funding, and aligning projects with new sustainable streets initiatives where possible.

### Cost Variables

Ensure the following variables are considered at the outset of each streets project:

#### Materials

Material costs will vary based on local availability, location, and transportation. Modular units installed on site can be more cost effective.

#### Labor

Labor affordability and availability differ greatly across various countries and regions.

#### Technology

Signals and enforcement cameras are prohibitively expensive in some places, and ongoing repair or maintenance costs can see them installed but not used. Reliable sources of energy are not available in all places, and so renewable energy back-up systems are needed, and these may add to the cost.

#### Duration

Design and construction duration can impact the overall cost, influencing labor costs, equipment rental, or lost income for adjacent businesses. Large capital projects are also affected by inflation rates.

#### Climate

Certain climates require specific construction materials that can endure extreme heat or cold, impacting overall costs. Places with extreme climates may also need to account for additional maintenance costs in their recurring budgets.

### Maintenance

Build maintenance into the City budget and establish partnerships with local organizations, business groups, and adjacent property owners to participate in maintenance efforts. Build local pride and stewardship in the community.

### Topography and Geology

Natural site conditions can impact construction processes and required materials. Particularly soft soils might be prone to erosion or require additional construction steps, while harder bedrocks might impact construction duration.

### Hidden Costs

Site complexity and incomplete site analysis can result in unanticipated costs, such as finding an unexpected utility line or moving a drain which was not accurately noted in original drawings. Ensure contingency costs are included in total budgets to cover such circumstances.



### Types or Scales of Projects To Be Funded

Sustainable streets can be identified and achieved at multiple scales. Consider the following project types for funding opportunities:

#### Large-Scale Projects

- Major area or neighborhood redevelopment
- Full corridor reconstruction
- Introduction of a light rail or BRT corridor
- Single block reconstruction

#### Smaller-Scale Projects

- New sidewalks for a corridor
- Protected bike lane
- Parklet
- Neighborhood street tree program
- Street activity program and temporary closure

### Funding Sources

Available funding sources vary by context, and may include the following:

#### Government Budgets and Funding

- **Local Governments**
  - Capital budgets
  - Operational budgets
  - Participatory budgeting
- **Regional and National Governments**
  - Grants and capital funding
- **Supranational and International**
  - Economic communities
  - Development banks
  - Unions grants

#### Private Sector Partners

- **Project Financing.** Plan for long-term financing of infrastructure and industrial projects based upon the projected cash flow required for the project rather than the capacity of its sponsors.
- **Institutions and Organizations.** Consider working with local hospitals, academic institutions, or other philanthropic organizations that could benefit from the nearby transformation.
- **Developers.** Large projects should incorporate best-practice street design strategies from the outset. Local authorities can provide construction incentives to developers in return for street improvement and maintenance responsibilities.

#### International Development Banks

Sustainable streets and multimodal mobility should be considered in any grant or loan proposal for international development bank funding.

#### Project-Generated Cashflows

Funds sourced as a direct result of transit operations.

#### Crowd Sourcing and Donations

More conducive to temporary or small-scale, community-led street transformation projects, crowd funding and crowd sourcing solicit small contributions from a large number of individuals to achieve a bigger impact. Financial donations or the provision of labor or services are usually conducted using an online platform. This form of fundraising can complement larger donations or grants.

#### Social Impact Bonds (SIBs)

SIBs allow investors to cover upfront project costs. Investing in infrastructure that supports physical and social health can reduce long-term public expenditure. The public sector pays the return to the investor based on the delivery of successful results.



## 2.7 | Phasing and Interim Strategies



**Interim design strategies offer an opportunity to quickly demonstrate change, allowing communities to experience an alternative condition and see progress in a short time frame.**

Changing decades of embedded practice in designing urban streets can be challenging. A lack of proven local precedents, limited funding, and regulatory restrictions can lead to hesitation in the face of innovative solutions. Lengthy construction periods and frustrating wait times for nearby residents and businesses further add to reluctance toward implementation.

Interim materials or phased solutions provide opportunities to quickly demonstrate change, at a lower cost, and are therefore more easily approved. Before and after comparisons reveal solutions that work and ones that don't. Interim phasing should be used to inform long-term solutions.

Some cities brand the interim design as a pilot or test phase for a project, and others view the design as equivalent to permanent reconstruction. While a majority of these pilot projects go on to become permanent capital projects, some are altered or redesigned in the process based on their performance. This results in a better final product and saves the expenditure of future improvements or revisions.

### Interim Elements and Material

During the life cycle of a street, the original design and roadway geometry may no longer meet the needs of the community. To address the need for roadway retrofits and urban traffic calming, use inexpensive, easily deployable, and non-permanent solutions that work on an area-wide scale.<sup>2</sup>

#### Modular Curbs

Small concrete dividers or parking bumpers can be installed for overnight transformation of streets to reflect the desired configurations, without expensive and permanent infrastructure.

#### Flexible Bollards

Plastic delineators are easy to install and remove. They can help in directing traffic flows and offer resistance to vehicular speeding without posing a risk. These also augment other vertical devices such as stone bollards and jersey barriers.

#### Paint and Thermoplastic

Surface materials can be applied quickly and relatively inexpensively. They do not create a physical barrier and may be combined with other elements for that purpose. These generally act as visual devices that force drivers to slow down, carefully read the roadbed for movement, and yield to pedestrians.

#### Planters

Planters can be used to create inexpensive yet aesthetically pleasing installations that define medians, islands, curb extensions, plazas, footpaths, and cycle tracks. Planters also add vegetation and greenery to the street.

#### Temporary Site Interventions

Temporary interventions can be implemented and tried on site for varying durations, from a few hours, a day, or even a week. They help street users visualize alternate uses of the street space and can be effective tools for public engagement.

### Moving the Curb

Many streets have a curb to indicate a separation of space between pedestrians and other modes of transport. Rethinking the curb and moving it to better balance all the users of the street can transform how the street functions, looks, and feels. Interim strategies allow streets to adapt quickly to changing contexts. Use the following strategies to transform streets and intersections to make them safer and more convenient for sustainable mobility choices.

#### Parklets

Parklets are public seating platforms that replace several parking spaces. They serve as a gathering place for the community and can revitalize local businesses. See 10.3: *Pedestrian-Priority Spaces*.

#### Sidewalk Widening

Sidewalks can be expanded using interim materials, such as epoxied gravel, paint, planter beds, and bollards, easing pedestrian congestion in advance of a full reconstruction.

#### Intersection Redesign

Interim markings with bollards or planters can change the geometry of an intersection and help revitalize a neighborhood, while increasing accessibility and making mobility more intuitive.

#### Traffic Calming

Temporary traffic calming devices may be installed using pedestrian curb extensions at mid-block crossings or at street corners, or by using landscaping and narrow drainage channels. These may be designed as quick, inexpensive elements using paint and plastic bollards, or with use of permanent elements such as raised islands.

#### Cycle Corrals

Cycle corrals typically replace one parking space at the request of a local business or property owner and accommodate 12–24 cycles. Corrals can be installed at corners to increase visibility.<sup>3</sup>

#### Vendors and Food Trucks

Vendors and food trucks can provide valuable services where they are lacking. Areas close to key destinations such as transit stations may dedicate parking spaces for these uses so that clear walking paths may be safely maintained.



Movable chairs and table reclaim pedestrian space in a parking lot.



Flexible bollards delineate an interim bike lane.



Parklet installed to provide additional pedestrian space.



Planters and paint used to create an interim plaza.