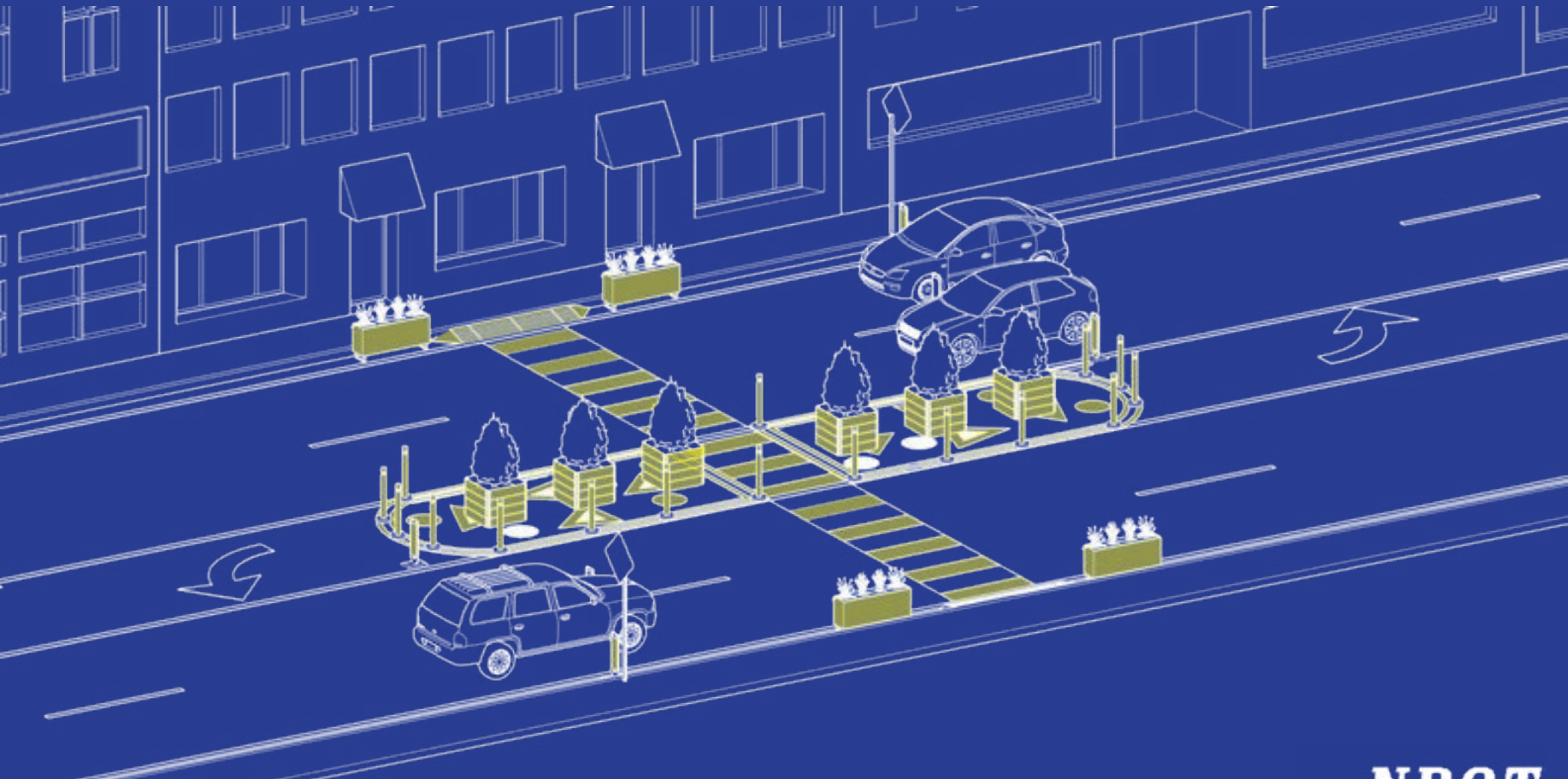


TACTICAL URBANISM

A GUIDE FOR STREET ACTIVATIONS AND DEMONSTRATION PROJECTS



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Why Tactical Urbanism?

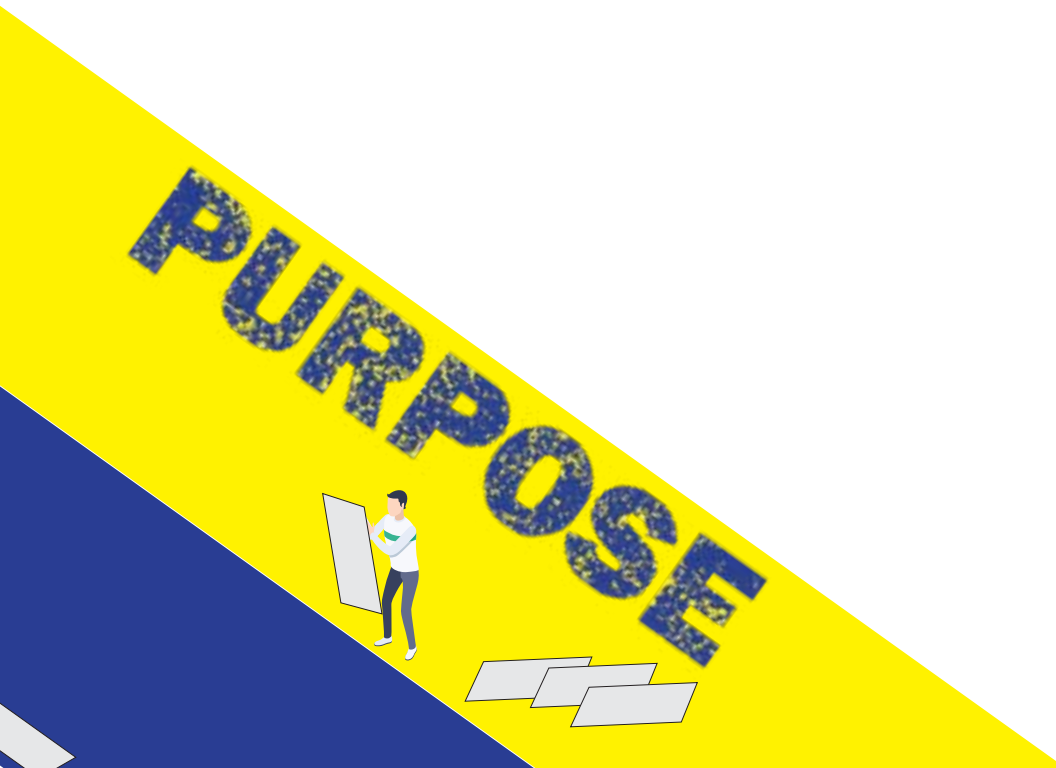
Executive Summary

Tactical urbanism is an action-oriented approach with temporary measures to offer and test solutions in the public realm. It is also known as planning-by-doing or pop-up urbanism. While many books and guidelines exist on the topic and methods, the Nashville Department of Transportation (NDOT) created its own customized guide and application process to help lead local applicants, staff, and administrators.

This document will help streamline the application process and provide a one-stop-shop for information on tactical urbanism. This guide or playbook for implementing these types of short-term projects provides suggestions on a variety of tools, materials, and methods for consideration. In addition, the document outlines best practices for tactical urbanism and compiles input from over a half dozen stakeholders.

Function

The process begins by identifying the safety challenges and/or design opportunities. It is essential to collaborate with relevant agencies and community stakeholders in order to develop the best proposal option. Next, follow this document's detailed instructions on applying for a permit, installation requirements, maintenance, and project removal. As these temporary improvements are designed and installed, applicants should gather public input and site observations. This feedback on how the project functions will inform the long-term solutions to increase safety and improve livability in the community.



5 Points Triangle - East Nashville



Key Stakeholders

NDOT

Nashville's Department of Transportation reviews and approves all tactical urbanism applications. NDOT manages the city's Vision Zero program and prioritizes project proposals that emphasize pedestrian safety.



The Tennessee Department of Transportation's (TDOT) Multi-modal division and Region 3 engineering team reviews any application proposed for installations on state routes or within TDOT right of way. TDOT has worked closely with NDOT and cities around TN to implement tactical urbanism and quick-build projects.

Advisory Stakeholders



The Civic Design Center is a local non-profit organization that advocates for civic design visions and actionable change in communities to improve quality of life for all. The Design Center manages the TURBO (Tactical Urbanism Organizers) initiative and has actively installed over a dozen tactical urbanism projects around the city.



Walk Bike Nashville creates opportunities for people to learn, grow and feel safe to move through our city by foot, bicycle, and transit.

PARTNERS



Local Tactical Urbanism Projects



Belmont-Hillsboro Traffic Circle



WeHo Pedestrian Improvements



10th Ave Traffic Circle



WeHo Intersection Mural



Green Hills Pop-Up Crosswalk



Porter Rd. Bike Buffer



Elizabeth Park/11th Ave N Reconfiguration



5 Points Triangle - East Branch Library

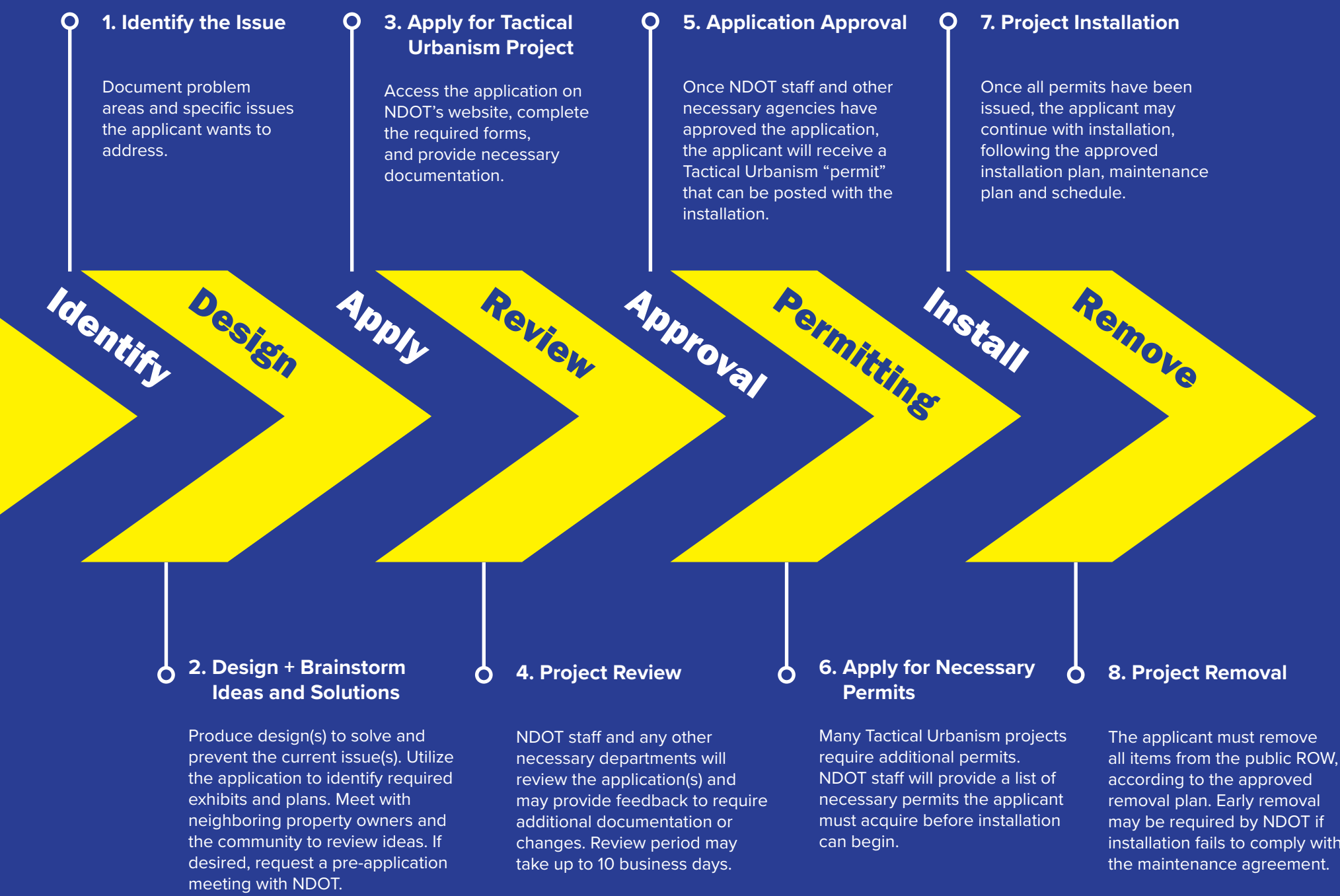


WeHo Intersection Mural

CONTEXT

A stylized illustration of a person in a white shirt and dark pants holding a large white sign. The person is standing on a blue and yellow background. The word "CONTEXT" is written in large, bold, blue letters with a white outline, slanted across the background.

Process Overview



Eligible Applicants

Community Organizations

Since 2012, community organizations have partnered with Metro to plan and implement tactical urbanism projects. The Civic Design Center and Walk Bike Nashville have played important roles in advancing the discussion around creating safer urban environments for all users, and have strong existing relationships with Nashville's neighborhood groups to help identify Urban Design issues and creative solutions.

Neighborhood Groups

Established neighborhood groups often meet to discuss the evolving needs of their community. Many groups may have specific committees for beautification or neighborhood improvements and present opportunities for community engagement and brainstorming ideas for potential installations and interventions.

Check [here](https://www.nashville.gov/departments/planning/long-range-planning/neighborhoods/neighborhood-links) to find your local neighborhood association.

(<https://www.nashville.gov/departments/planning/long-range-planning/neighborhoods/neighborhood-links>)

Individuals + Businesses

Individuals and business owners may submit Tactical Urbanism applications. Applicants must partner or consult a community organization and/or neighborhood group to demonstrate support for project.

Note: All applicants shall notify property owners directly impacted by any proposed installation, as well as engage with the broader neighborhood to achieve additional support. This collaboration is helpful to work through any conflicts and potential hurdles to address prior to implementation.



Credit: Civic Design Center. WeHo Intersection Mural, Nashville, TN

Eligible Locations

City of Nashville

The majority of roads and public right of way (R.O.W.) within Metro Nashville, Davidson County, are maintained and managed by NDOT. All roads and ROW with speed limits of 50 miles per hour (mph) or less are eligible for Tactical Urbanism proposals. NDOT's review process emphasizes the goals adopted from the Vision Zero goals, as well as general transportation engineering standards for maintaining safe installations and environments for all users.

Satellite Cities

Within Metro Nashville Davidson County, there are five satellite cities--each with their own governing bodies. Much of the roadway and right-of-way within these city boundaries is maintained by NDOT and may qualify for tactical urbanism installations. Proposals may require review and approval from the Satellite city staff, prior to NDOT's approval.

Satellite cities include:

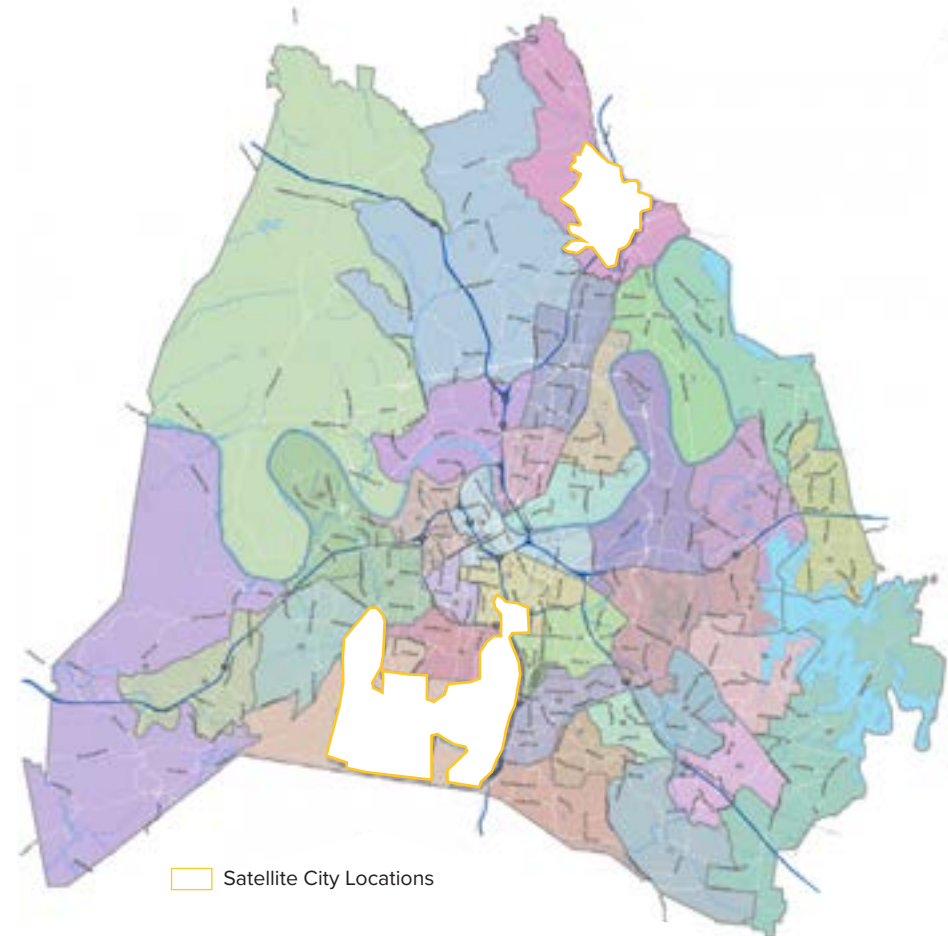
- Forest Hills
- Oak Hill
- Berry Hill
- Belle Meade
- Goodlettsville

TDOT Right of Way (R.O.W.)

TDOT owns and manages all State Routes and State R.O.W.. In more urban areas, TDOT and NDOT may share the maintenance and management responsibilities for specific corridors. All TDOT limited access routes (interstates) are ineligible for Tactical Urbanism projects. State routes with speeds 50 mph and under are eligible for consideration and may require thorough coordination and review from multiple departments within TDOT.

How to find your R.O.W. Zone:

Interactive city maps:
[NDOT Tactical Urbanism App](#)
[Parcel Viewer](#)
[Major + Collector Street Plan](#)



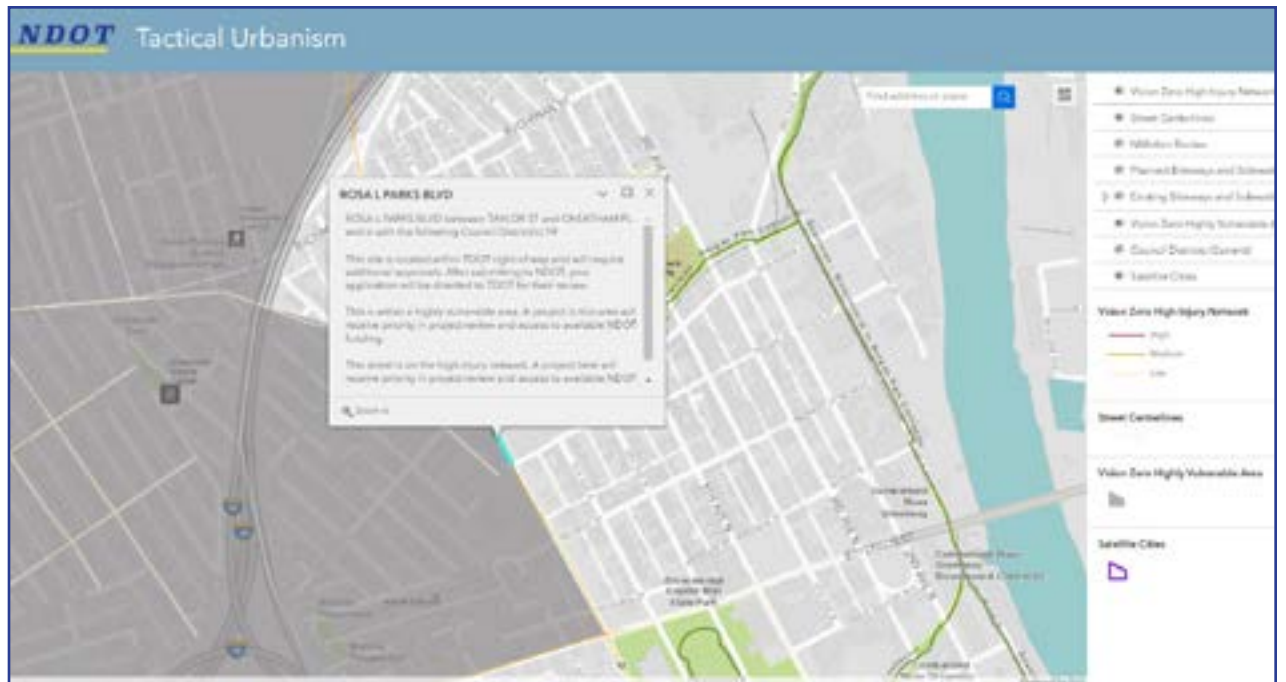
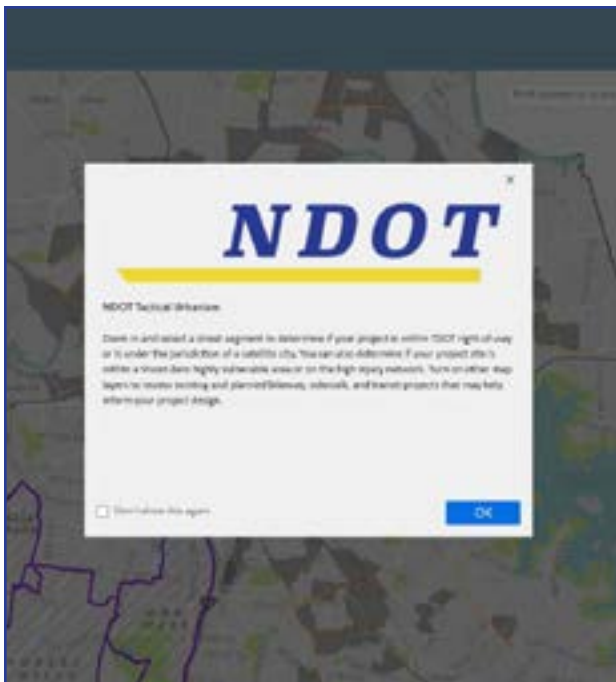
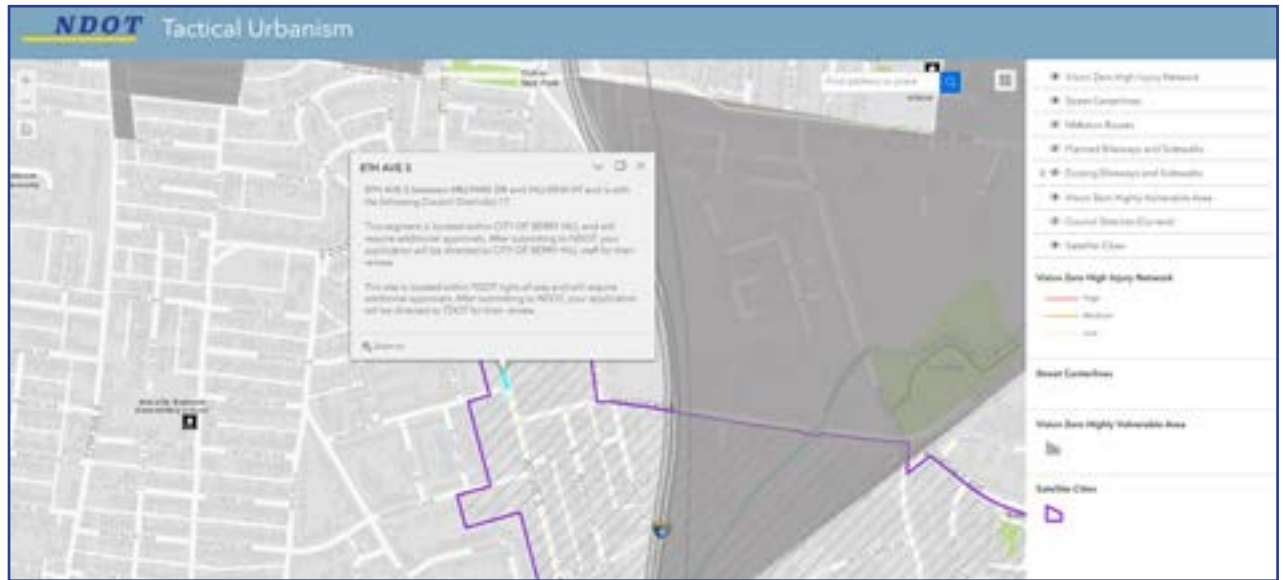
Interactive Tools

NDOT Tactical Urbanism App

NDOT has created an interactive app to provide necessary information about the Right-of-way (R.O.W.) within Davidson County. Users may select areas within the public R.O.W. to determine if it is within TDOT right-of-way or is under the jurisdiction of a satellite city. Locations within the Highly Vulnerable Areas and/or High Injury Network shall receive priority in project review and access to available NDOT funding.

Once projects have been approved, this app will display existing and historical tactical urbanism permits and installations.

Visit NDOT's Tactical Urbanism program page [here](#).



Project Planning Checklist

When starting a project, review this summary page to identify the elements needed to prepare an application submittal package.


Project Categories

- Sidewalk Zone
- Parking Zone
- Lane Closure
- Traffic Calming
- Active Transportation

Location Types

- City R.O.W.
- State R.O.W.
- Satellite City Boundary

Items to consider:

-  Obstructions to R.O.W./ADA compliance
-  Emergency Access

Budget

Items to consider:

-  Materials
-  Tools
-  Safety Equipment
-  Traffic Control
-  Insurance
-  Artist Fee/Installer Fee


Installation Duration

- Pop-Up - One Day
- Short Term - Up to 2 Weeks
- Long Term - More than 2 weeks. (One year maximum)






For Long-Term proposals incorporating artwork, applicants must submit an application to Metro Arts for review by the Public Art Committee. A project approved through the Tactical Urbanism Program is not guaranteed to be approved by Metro Arts. Temporary Art Guidelines can be found [here](#).

Following a project's installation completion, a renewal option may be available to maintain the current installation or revise with a new iteration for additional data collection requests.

Maintenance + Removal Plan

-  Ambassador(s) from community for daily check-in is recommended.

Items to consider:






-  Obstructions to R.O.W./ADA compliance
-  Graffiti removal
-  Trash/debris removal
-  Damaged installation replacement/repairs
-  Paint removal

Documentation Requirements

- Project Description
- Project Address
- Landmarks nearby
- Desired Start Date
- Desired End Date
- Total square footage of project area
- Detail of area(s) being requested
- Organization name sponsoring project
- Contact Name
- Contact Email
- Contact Phone number
- Neighborhood Notification
- Letter(s) of Support
- Design/Concept Plans
- Insurance Requirements
- Sponsor Organization/Commitment Letters

Data Collection

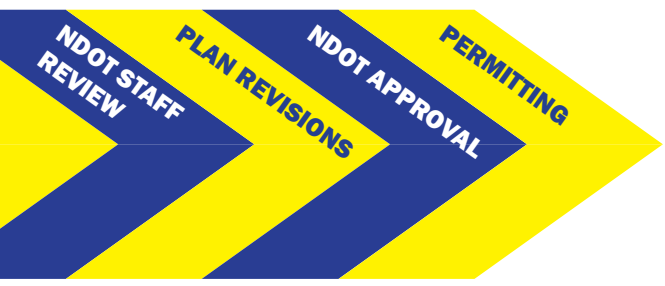
Items to consider:

-  Pedestrian Counts
-  Vehicular Speeds/Counts
-  Observational Surveys
-  Questionnaires
-  Reporting issues and information to HUB Nashville App

While not required, any data collected before, during and after the installation may be of benefit for future capital improvement projects.

Application Review | Step 1

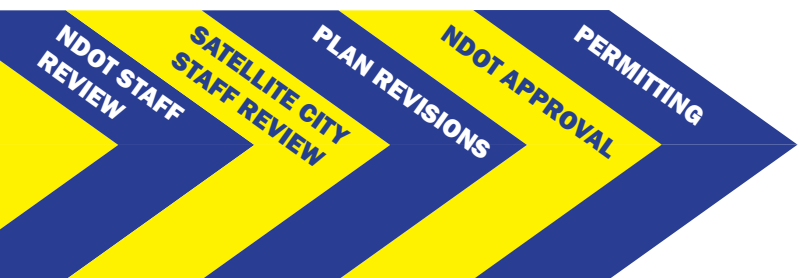
City of Nashville Right of Way



TDOT/State Right of Way

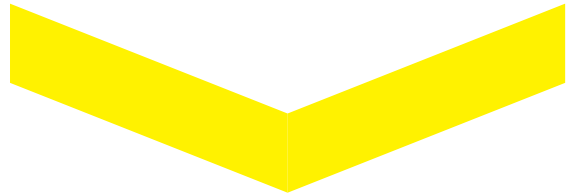


Satellite City Right of Way

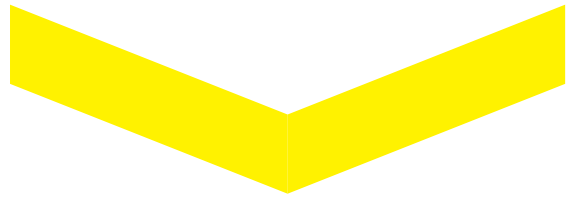


Required information to include with submittal:

- Project Description
- Project Address
- Landmarks nearby
- Desired Start Date
- Desired End Date
- Total square footage of project area
- Detail of area(s) being requested
- Organization name sponsoring project
- Contact Name
- Contact Email
- Contact Phone number
- Neighborhood Notification
- Design/Concept Plans
- Insurance Requirements
- Sponsor Organization/Commitment Letters
- Letter(s) of Support



Submit documents for approval for traffic engineering review.



Approvals sent to NDOT Permit Office

Priority Zones

Vision Zero Goals

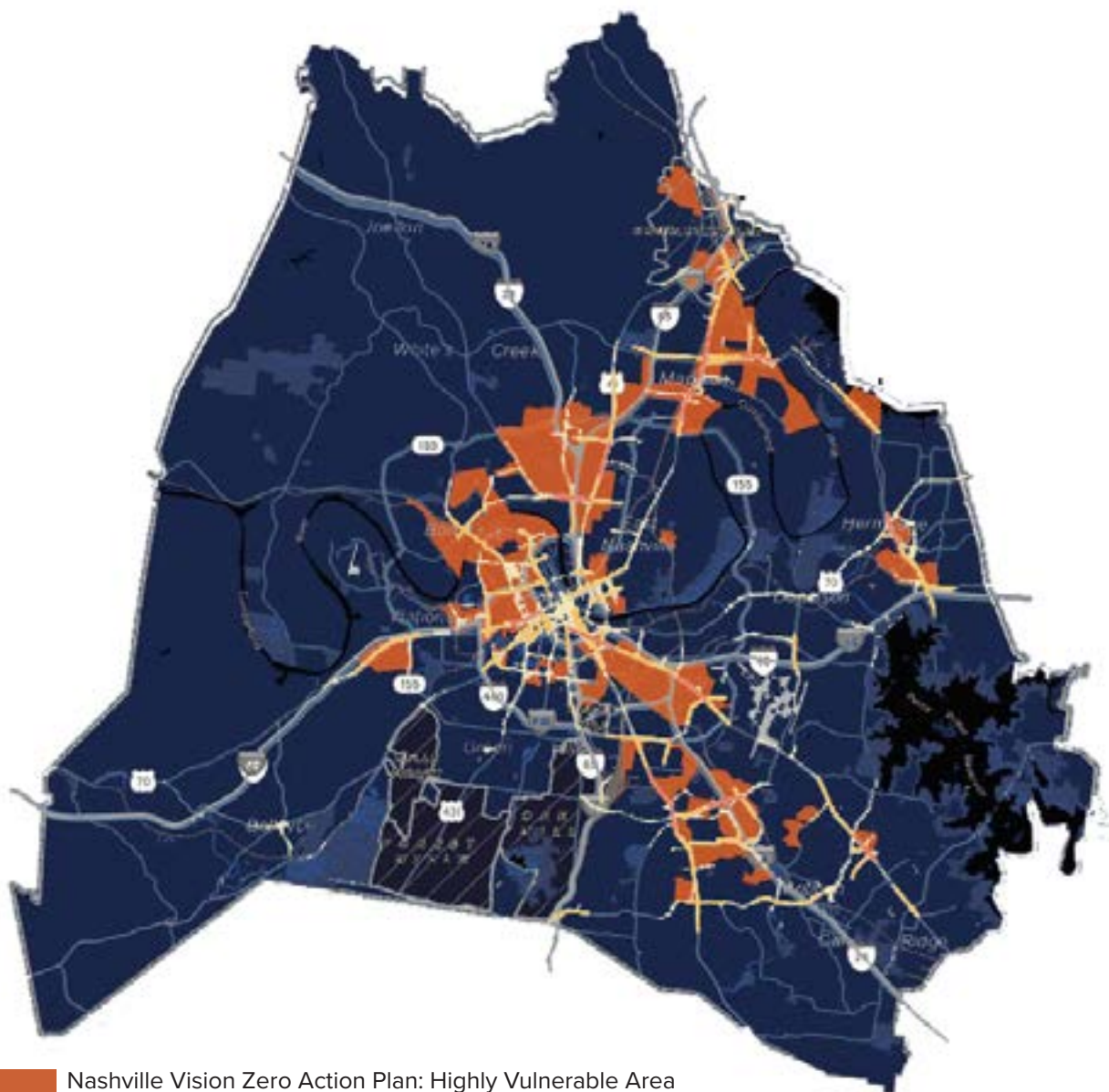
Vision Zero is a new way of thinking about traffic safety. The Vision Zero movement is a worldwide strategy to eliminate all traffic-related deaths and severe injuries and increase safety, equity, and mobility for all users.

Nashville's Vision Zero Action Plan is a data driven document to guide Metro's investment in traffic safety improvements over the next five years. With the launch of the Vision Zero Action Plan, Nashville joins dozens of cities who have made the commitment to change the status quo and prioritize traffic safety for everyone. The action plan is just the start of Nashville's commitment to build strong partnerships, ensure transparency and accountability, and work with urgency to reduce the number of people killed and injured while traveling in Nashville.

The High Injury Network identifies areas where investment can be impactful in reducing serious crashes. The high injury network is weighted to elevate fatal and serious injury crashes, if the crash involved somebody walking or biking, and if the crash occurred in an identified vulnerable area.

Equity

Projects being proposed in areas located within the identified "Highly Vulnerable Areas," as well as those along the high injury network, will be given priority in the review process and access to available NDOT funds for materials, installation, and art components. Applicants may be able to borrow supplies from NDOT, if available.



- Nashville Vision Zero Action Plan: Highly Vulnerable Area
- High Injury Network: High
- High Injury Network: Medium
- High Injury Network: Low

Key Considerations

Emergency Access

To accommodate emergency vehicles, a minimum street clearance of 20 feet must be provided on all streets. Projects may not be approved if the design narrows the street width to less than 20 feet. Additionally, a fire hydrant must have a clearance of 15 feet minimum.



Credit: Wikimedia user ChicoCAEngine4

Blocking Driveways

Project shall not block a public or private, commercial or residential driveway without documented approval from property owner(s).



Credit: Wikimedia user 123TheBusHonolulu6969

Obstructing Public Utilities

Projects may not impede or restrict access to any public utility, such as manholes, fire hydrants, valves, utility poles etc. All public utilities must remain accessible at all times.



Credit: Wikimedia user Infrogmat of New Orleans

Path to Permanence

Successful Demonstrations

Tactical Urbanism projects involve implementing low-cost, temporary solutions that serve as prototypes to showcase innovative ideas for creating safer environments for public road users. The goal is to use these temporary projects as a stepping stone towards permanent changes. To assess the success of such initiatives, it is crucial to gather comprehensive data and relevant measurements throughout the project's duration. NDOT will assist project applicants with appropriate data collection for approved projects. NDOT will use this data to inform the development of long term investments. When tactical urbanism projects achieve measurable benefits within highly vulnerable areas and/or on the high injury network, NDOT will prioritize permanent capital projects for those locations using available Vision Zero funding.

Capital Improvement Projects (CIP)

In certain cases, planned capital improvement projects may provide opportunities for tactical urbanism projects serving as demonstrations. For example, when undertaking capital improvement projects to replace underground water pipes, a timeline for resurfacing and re-striping is established. As part of this process, tactical urbanism projects for traffic calming measures can be implemented prior to resurfacing, serving to demonstrate their effectiveness. The insights gathered from these temporary installations can then inform a redesign of the new streetscape, ensuring that the permanent changes align with the desired outcomes and goals of the community.



Credit: Civic Design Center. Permanent traffic circle built after



Credit: Google Street View 2023



GUIDELINES



Project Category Overview

Eligible Project Types

Tactical Urbanism projects take on many different forms, each with an intent to improve upon the built environment's existing condition. This guide organizes the project types into five general categories. Some installations may incorporate project types from different categories and can be combined into one application.



A. Traffic Calming



B. Parking Zone



C. Sidewalk Zone



D. Right of Way Closure



E. Active Transportation

Project Installation Durations

Project Duration

Tactical Urbanism projects are temporary in nature. The installation period, however, may have a significant impact on the material durability, safety measures and overall success of the project. Each project type includes recommendations for the various duration periods allowed.

Pop-Up



Credit: Civic Design Center

1 Day or Less

Short-Term



Credit: Wikimedia user Mariordo

Up to 2 Weeks

Long-Term



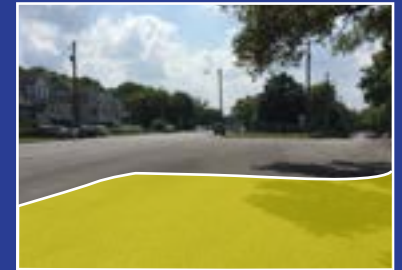
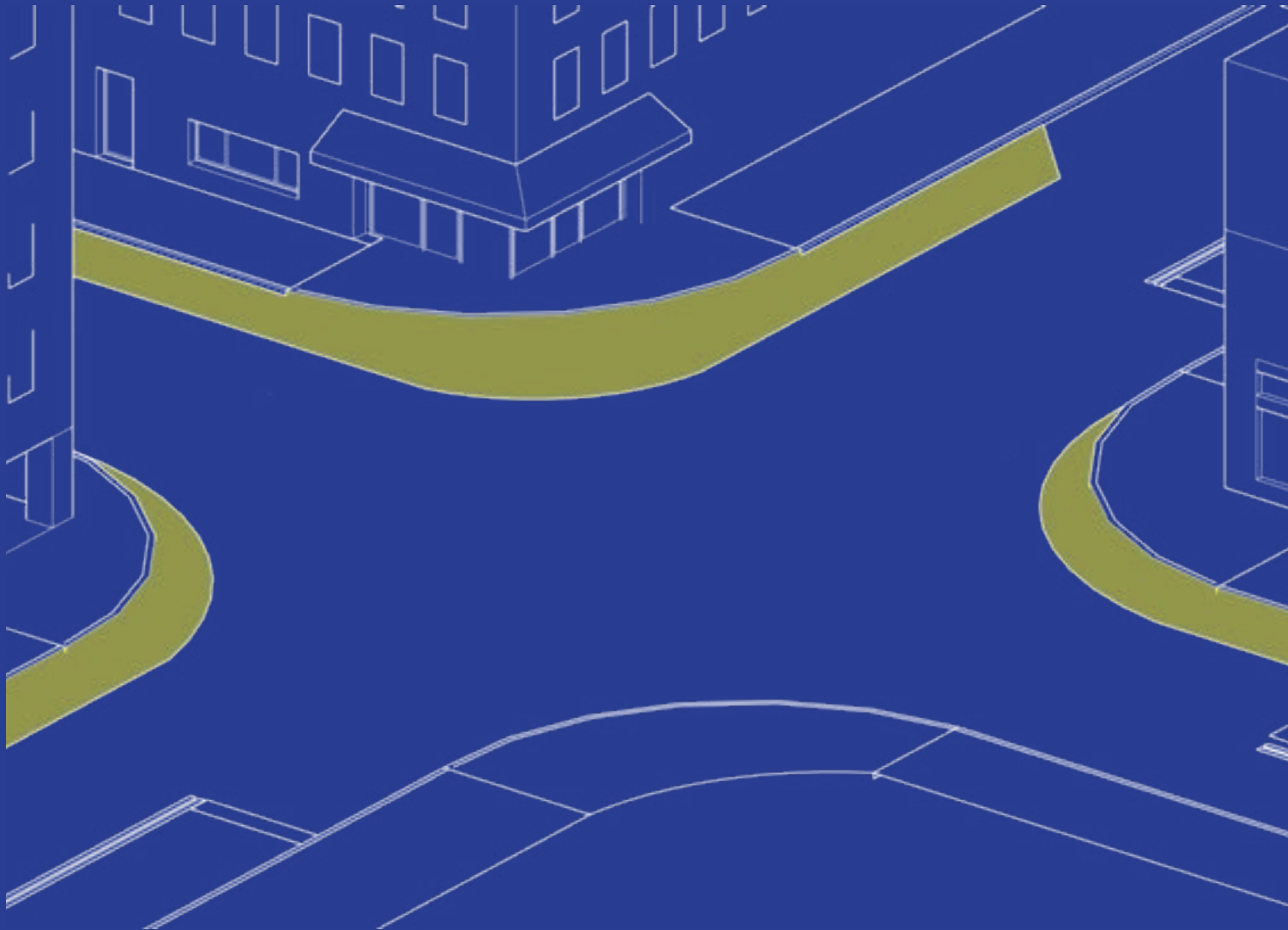
Credit: SDOT

Greater than 2 Weeks (Max. 1 year)

Project Category A: Traffic Calming

In Nashville, there has been an increasing effort to promote slower travel speeds at intersections and urban nodes experiencing higher pedestrian traffic. Many of Nashville's transit corridors are also state routes with heavy vehicular volume and higher speeds.

Project examples include, but are not limited to: Traffic circles, bulb-outs/curb extensions, road diets, street murals and mid-block crosswalks.



- **Items to consider:**
- NACTO
 - ADA Compliance
 - Perimeter Barriers
 - Traffic Control Devices
 - Surface Treatment
 - Existing + Allowable Turning Radius
 - Transit Corridor

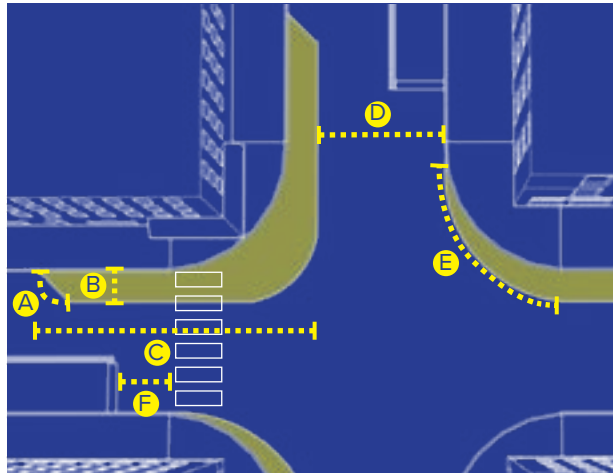
A1. Traffic Calming: Bulb-outs | Criteria

When to Use

A common use for bulb-outs and curb extensions is to tighten the existing curb radius and encourage slower travel speeds by turning vehicles, while reducing the physical distance for pedestrians to cross the street.

General Suggestions and Requirements

Bulb-outs must be banded in two rows of reflective paint or tape, 4" in width min. each strip 6" apart max. Movable traffic control devices such as traffic cones, flex posts, or solid modular planters border the bulb out. Optional features of the bulb-out include basic site furnishings such as chairs, plants, and removable surface paint, tape, or chalk.

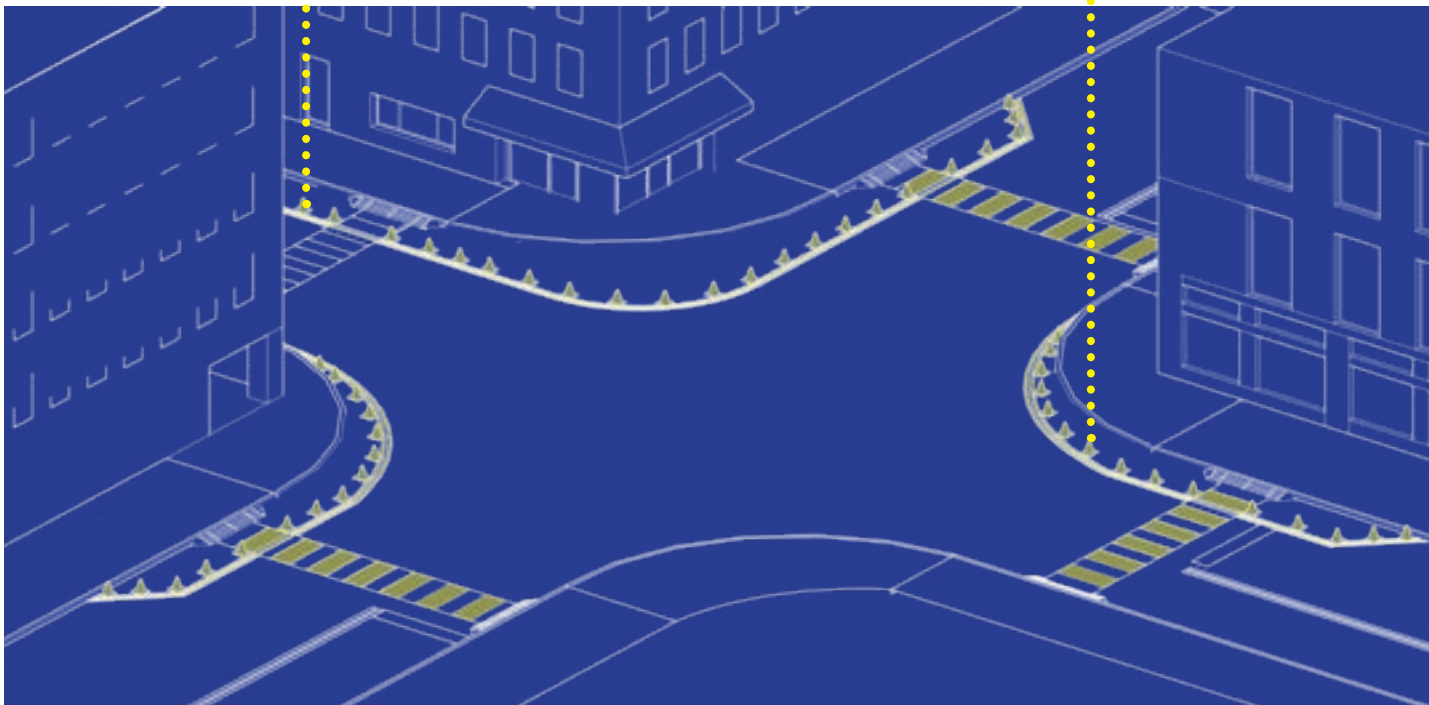


Typical Design and Placement

A	Extension returns at 45 degrees.
B	1' Less than Parking Width Max.
C	30' Min. Distance from Intersection.
D	20' Min. Road Width.
E	Maximum Radius of 25'.
F	4' min. Between Crosswalk to Stop Bar.

Movable Traffic Control Devices

Striped off Pedestrian Zone



Striped off Pedestrian Zone With Optional Art



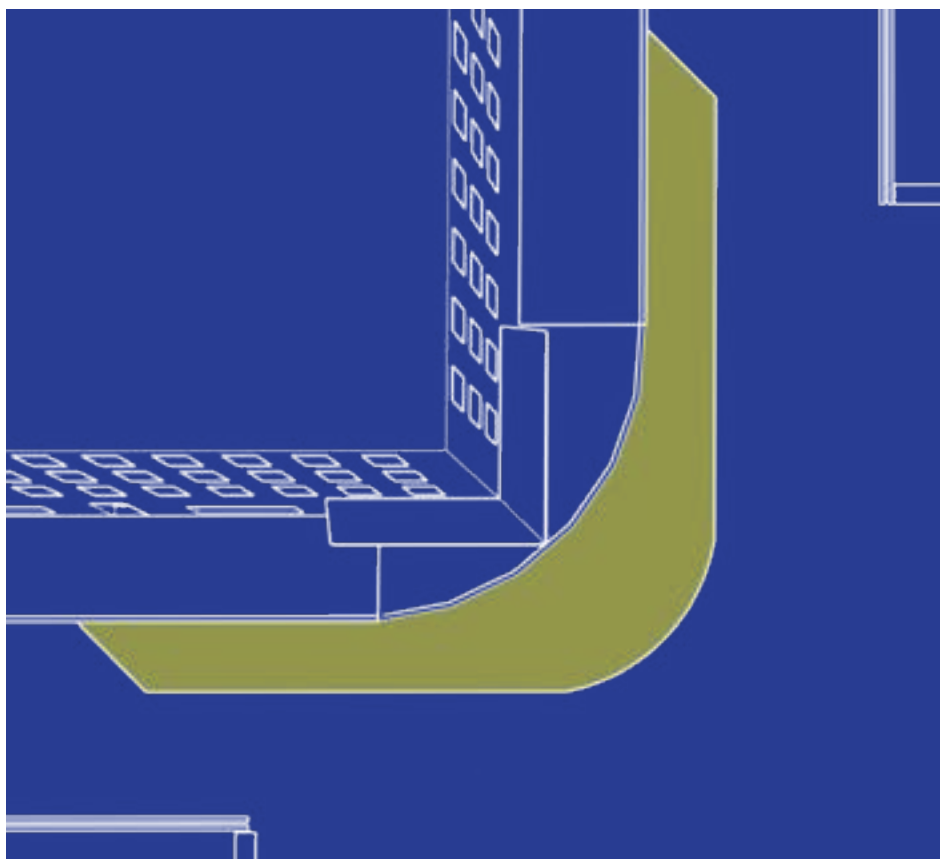
Movable Traffic Control Devices

A1. Traffic Calming: Bulb-outs | Alternatives

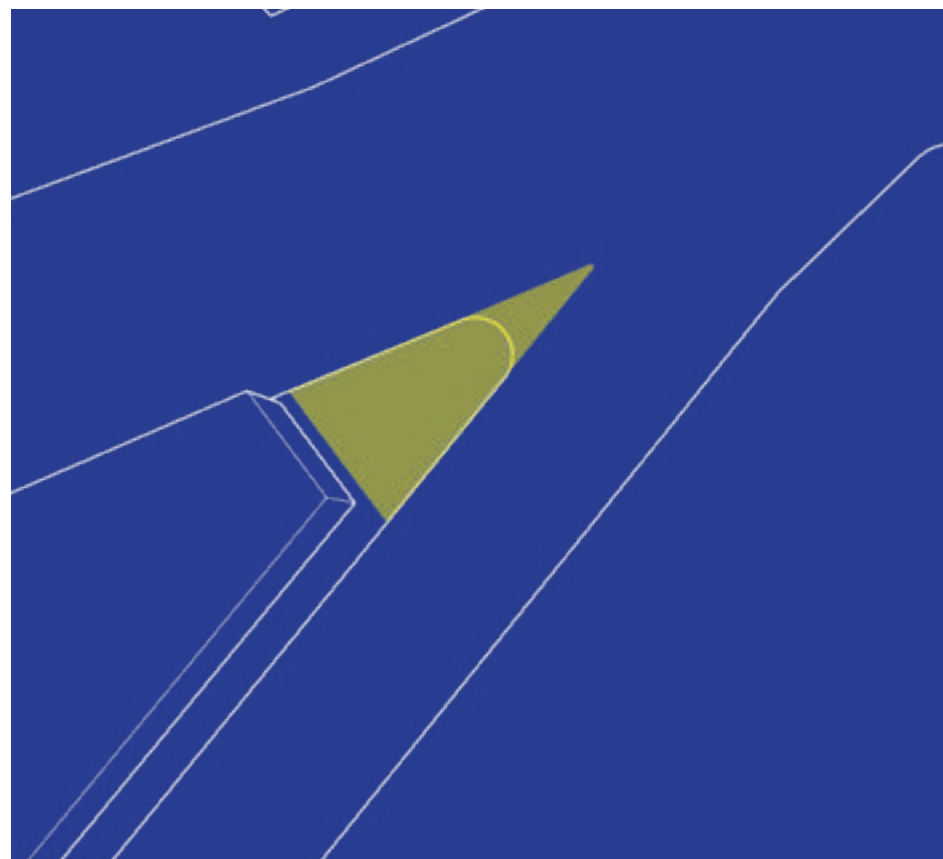
Bulb-outs or curb extensions can be applied to a variety of turns or intersections with dangerously large turning radius. The bulb-out reduces the turning radius, making it safer for pedestrians to cross. Bulb outs extending off a turn or mid-block can make drivers slow down and contribute to traffic calming. In some instances, the turn might be so large that the radius can be rounded out or tapered to create space for beautification elements and tactical plazas.

General Requirements

Speed Limit	Permitted on Streets at or below 25 mph.
Size	Maximum Radius of 25'.
Emergency Access	Alternate access provided for emergency vehicles. Must not block access to fire hydrants.
Loading	Alternate access is provided for maintenance and sanitation vehicles.
Clearance	Provide driveway and pedestrian clearance.
Traffic Flow	Existing traffic volume must be maintained. Must not interfere with existing public- transit routes.



Bulb-out off of 90 degree turn

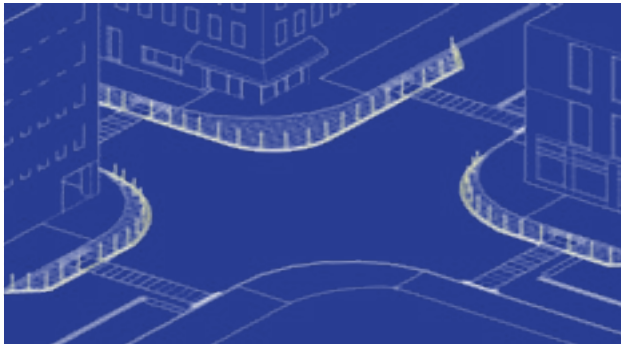


Bulb-out tapers extremely sharp turn

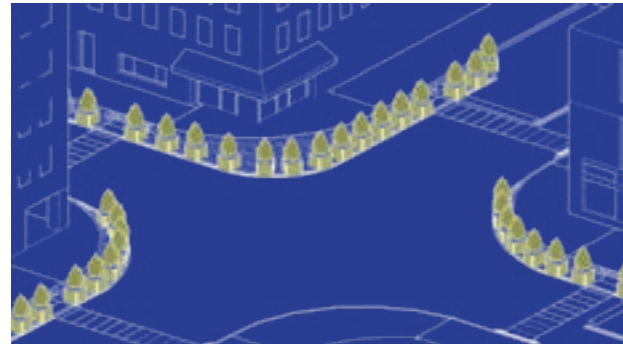
A1. Traffic Calming: Bulb-outs | Duration



Pop-Up
Pop-up examples of bulb-outs or curb extensions should provide basic level of protection from vehicular traffic with movable safety barriers visible from travel lanes approaching an installation.



Short-Term
Short-term should provide the same level of protection and visibility, but materials are more durable for longer durations and more disturbance like high-wind and vehicles scraping the barriers. Top grade weighted flex posts should be used. Semi-temporary art and movable planters could be used.



Long-Term
Long-term requires fixed delineators and a semi-permanent buffer that will last through any accidents, vandalizing or weather. Art or furnishings included in the interior of the bulb-out should be rugged and maintained over time to prevent an unpleasant appearance.



Credit: Arts Council for Long Beach



Credit: DDOT



Credit: Seattle Streets Illustrated

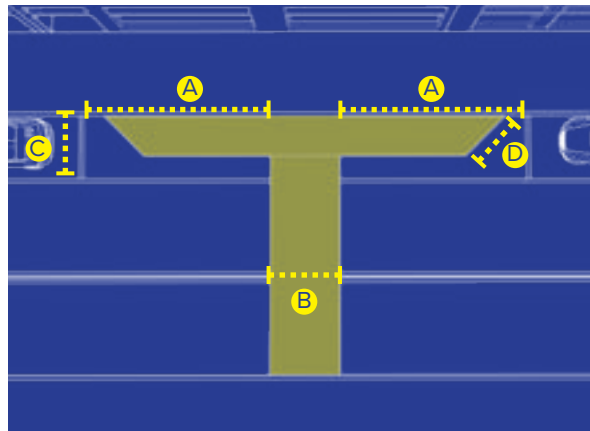
A2. Traffic Calming: Mid-Block Crossing | Criteria

When to Use

Long stretches of continuous roadway between traffic lights exist in many of Nashville's urban neighborhood zones. Mid-block crosswalks create additional safe crossings across high-traffic zones.

General Suggestions and Requirements

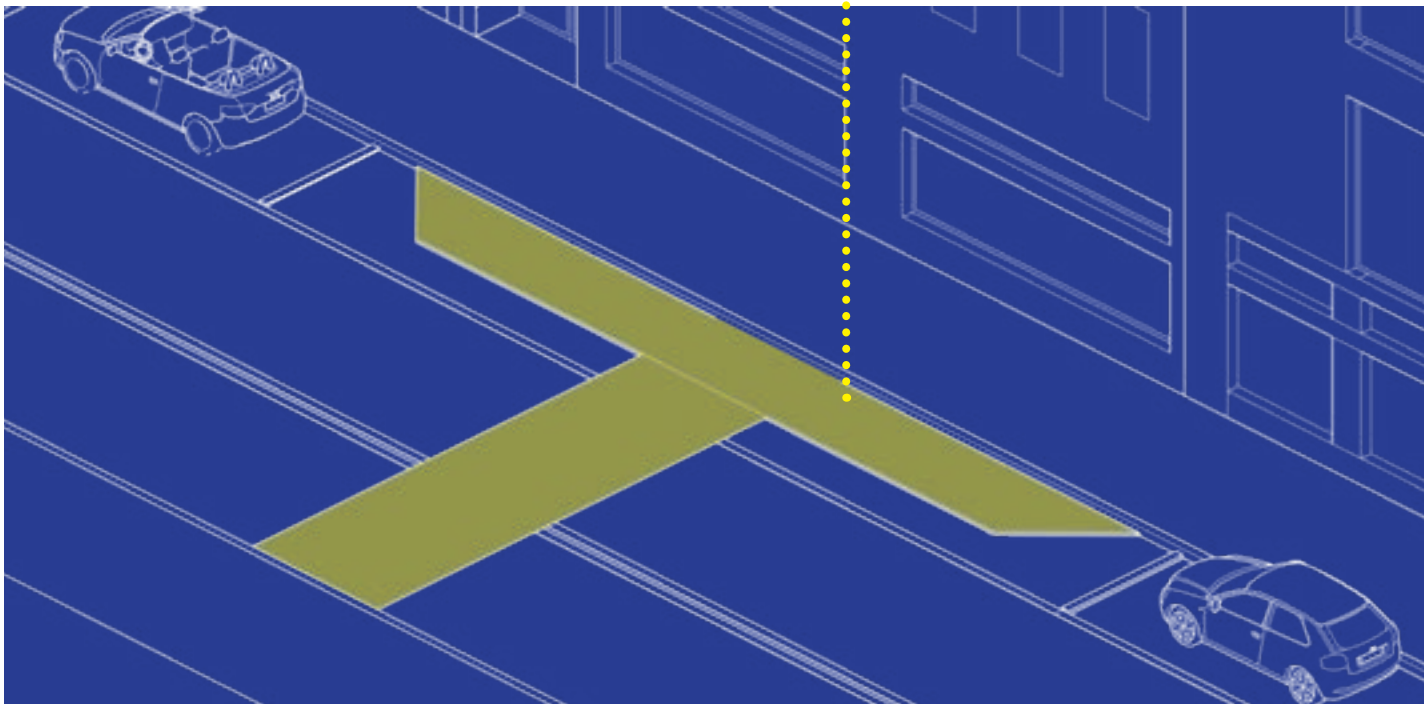
Mid-block crossings should be bordered by reflective delimiters and reflective tape or paint. Adjacent parking must be removed to ensure visibility. High speed or high density traffic roads might need a break in between lanes for pedestrians. Crossing warnings should be set up as signage and visible delineators such as cones or flex-posts. The crosswalk itself can be painted or even made from tape.



Typical Design and Placement

A	20' min. on each side of crosswalk.
B	10' min. crosswalk width.
C	1' Less than Parking Width Max.
D	Extension returns at 45 degrees.

● Buffer zone flanking both sides of the crosswalk
 ● when parallel parking is present.

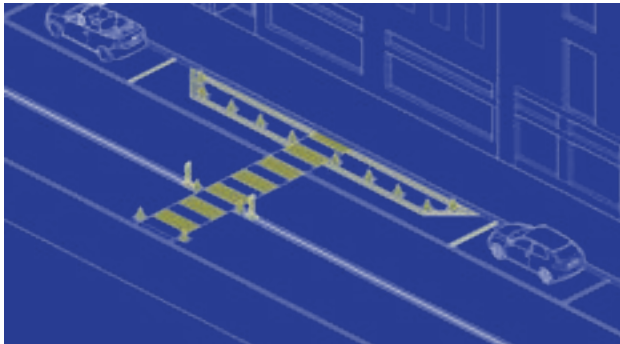


Crosswalk Break
 Credit: Seattle Streets Illustrated



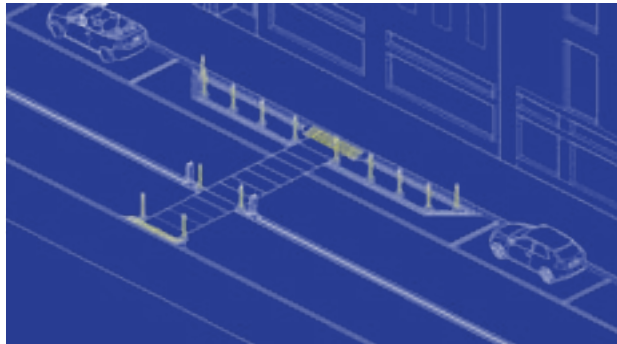
Crosswalk Sign
 Credit: Richmond Magazine

A2. Traffic Calming: Mid-Block Crossing | Duration



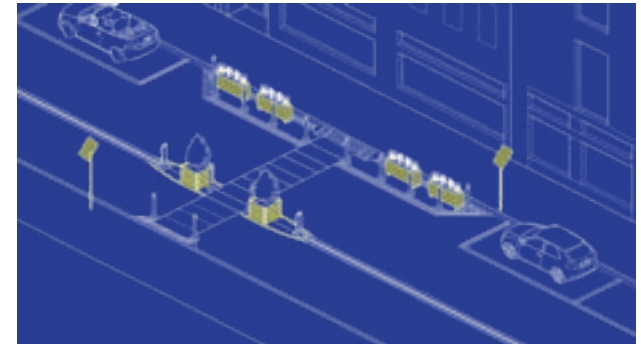
Pop-Up

Pop-up examples may be appropriate to pair with one-day special events and in areas with less vehicular volume and lower speeds.



Short-Term

Short-term crossings should incorporate movable but durable traffic delineators. Crosswalk signs need to be temporarily fixed to prevent vandalizing or damage. Art might be incorporated into the art extension.



Long-Term

Furnishings like seating and planters could be added to a long term crossing to beautify the area as well as providing a traffic break. Lower volume and lower speed roads with high pedestrian traffic can incorporate a wide crossing to create a pedestrian friendly shared street space.



Credit: Smart Growth America



Credit: Seattle Streets Illustrated



Credit: Congress for the New Urbanism

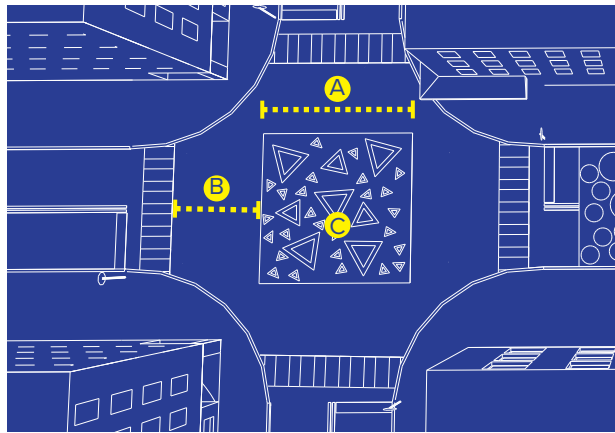
A3. Traffic Calming: Street Murals

When to Use

Street art on the surface of a roadway intersection can be an effective method to draw attention to crosswalks, neighborhood beautification and branding, as well as festival celebrations.

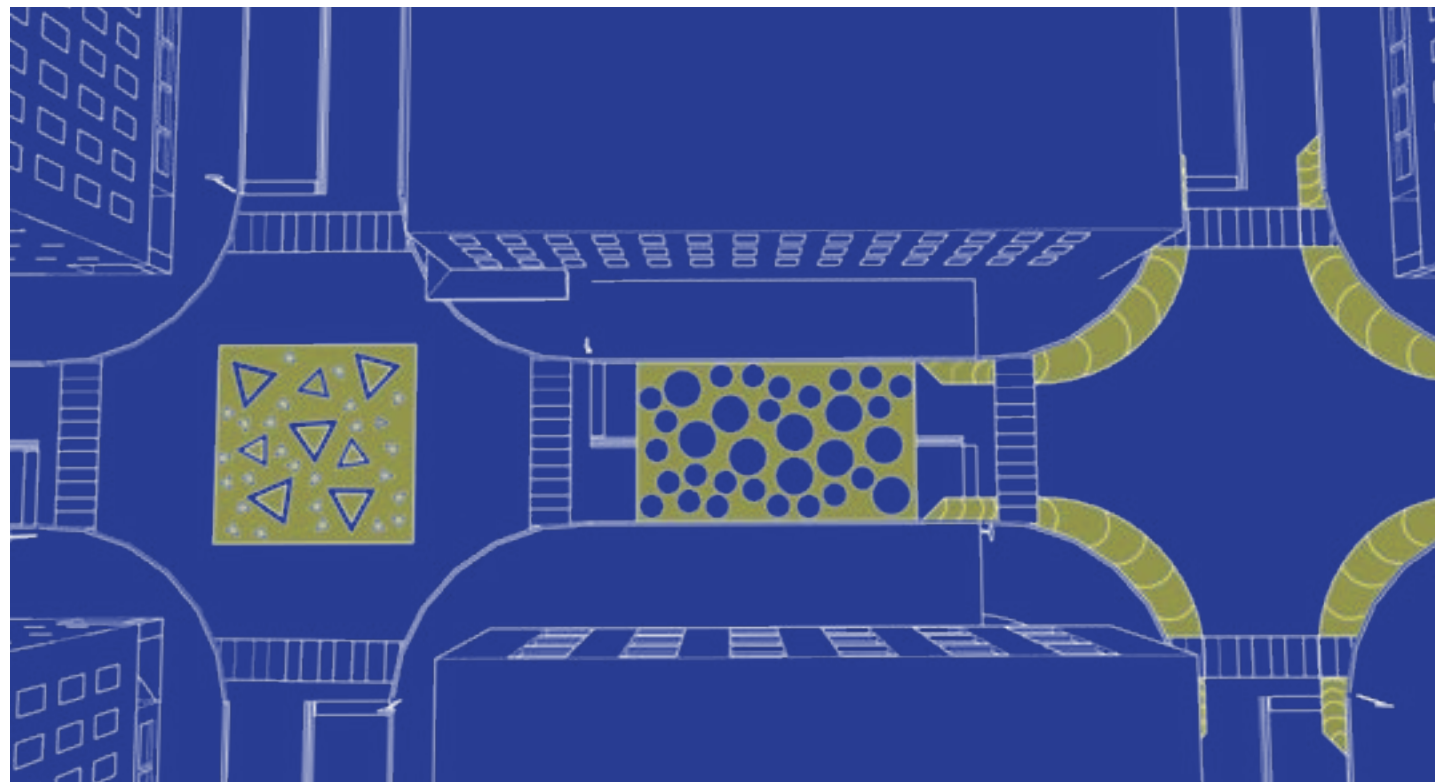
General Suggestions and Requirements

Paint type and design of the art should be approved in the application process. Size, shape and colors shall be reviewed by NDOT staff prior to installation. Long-Term projects incorporating art components must be approved by both NDOT and Metro Arts. Please reference the Temporary Art Guide [here.](https://www.metroartsnashville.com/) (<https://www.metroartsnashville.com/>)



Typical Design and Placement

A	Max. size varies by street.
B	4' min. distance from crosswalk.
C	Mural design and shape to be reviewed by NDOT & Metro Arts.

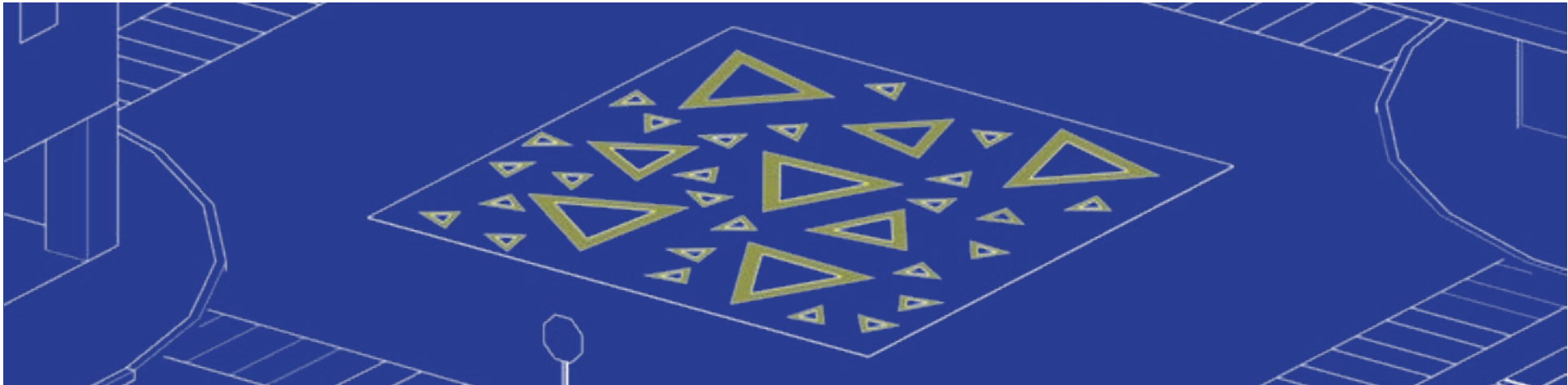


Full Street Mural



Intersection Mural

A3. Traffic Calming: Street Murals | Duration



Pop-Up

Examples of pop-up street murals primarily consist of easily removable sidewalk chalk. Art should not interfere with traffic or confuse drivers. Complex art should occur within pedestrians or other paved surfaces that are closed to vehicles.



Credit: Nate Baranowski

Short-Term

Washable paint can be used to treat the surface of short-term murals. This is the most frequent application of traffic calming street murals.



Credit: Civic Design Center

Long-Term

Semi-permanent paint can be applied to create long lasting art installations. Artwork should have traffic calming effects and drivers should be able to clearly identify the area in which they can drive.



Credit: Bogota District Mobility Office

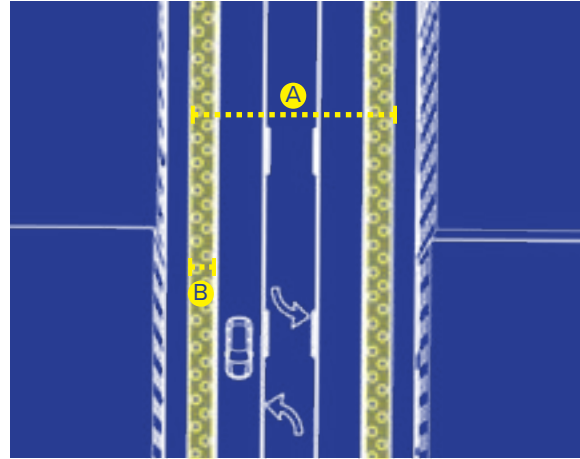
A4. Traffic Calming | Reconfiguration: Lane Narrowing / Reduction

When to Use

Streets may exist with travel lanes exceeding appropriate widths for slower, urban traffic flow. It may be possible to reduce lane widths using various road diet techniques, including re-striping.

General Suggestions and Requirements

Lane re-striping and narrowing can be achieved with reflective tape or paint. Temporary traffic delineators can be used to further enhance safety of using narrowed space, which could be reallocated for bike lanes or parklets. Existing lane stripes must be covered by removable tape or other material. **Lane stripes must not be removed**, though could be covered temporarily.

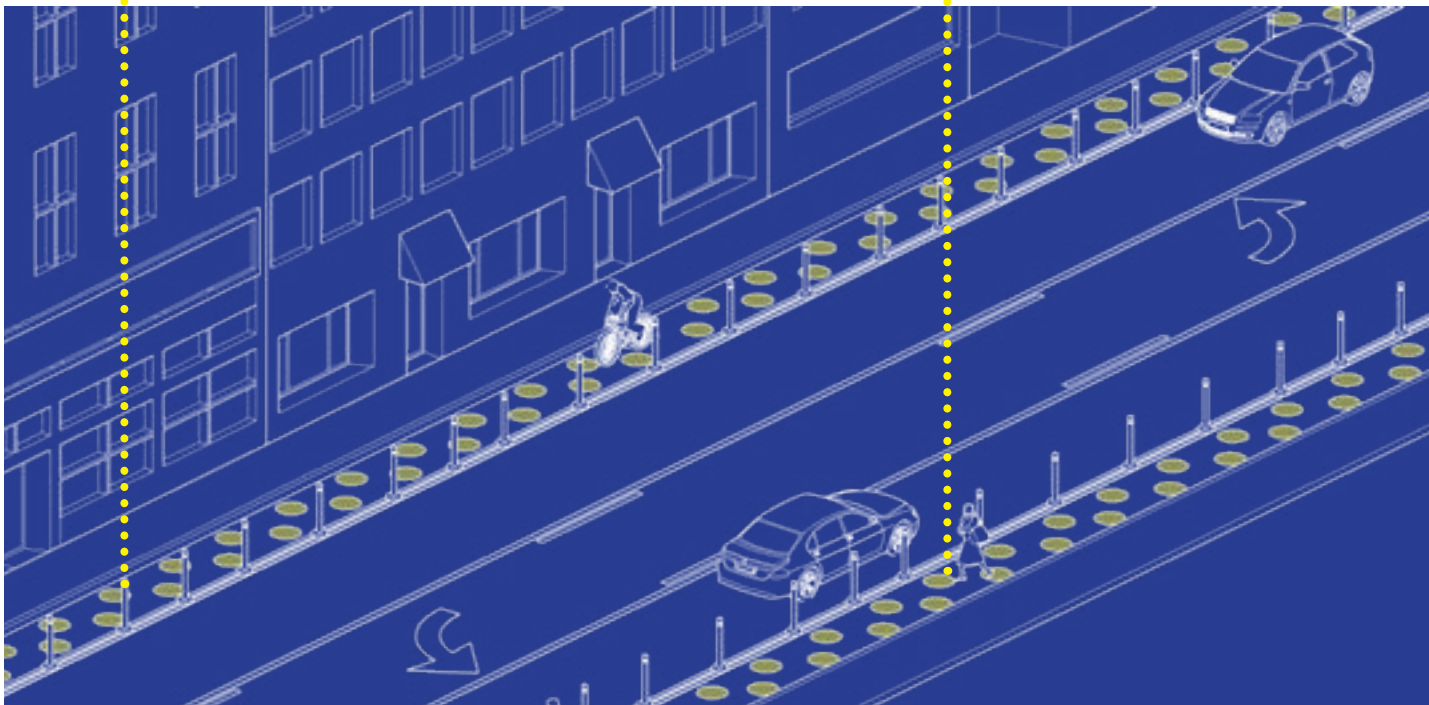


Typical Design and Placement

A	More lane capacity than traffic volume.
B	Reduction should result in standard widths.

Movable Traffic Control Devices

Striped off Pedestrian Zone or Bike Lane

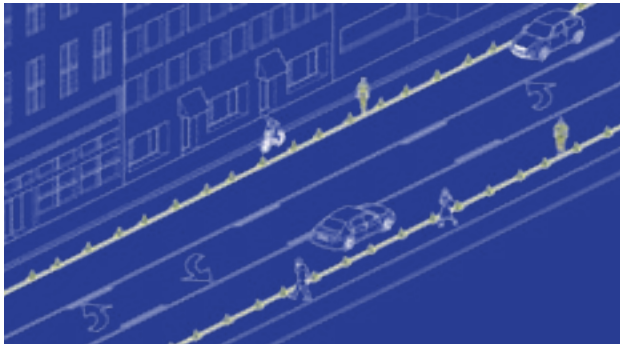


Conceptual Street Layout
Credit: Civic Design Center



Temporary Reflective Striping

A4. Traffic Calming | Reconfiguration: Lane Narrowing | Duration



Pop-Up

Pop-up road reconfiguration demonstrations are a great way to showcase and test changes to dangerous or excessively large roads. Demonstration projects can often inform the design of road projects prior to the implementation of permanent changes that are difficult to undo.

*PPE - Personal Protective Equipment



Credit: Strong Towns Journal



Short-Term

Short-term road reconfigurations provide an opportunity to better understand the effects of changing traffic flow and patterns over a longer period of time to gather additional data that can inform more permanent changes to road infrastructure.



Credit: Orlando Sentinel



Long-Term

Long-term examples of road reconfigurations can include lane narrowing, lane closure, or other semi-permanent traffic calming techniques. With this time frame the positive benefit of the road diet should be evident before implementation. Beautification elements can supplement the project as placemaking components that enhance the overall experience.



Credit: Civic Design Center

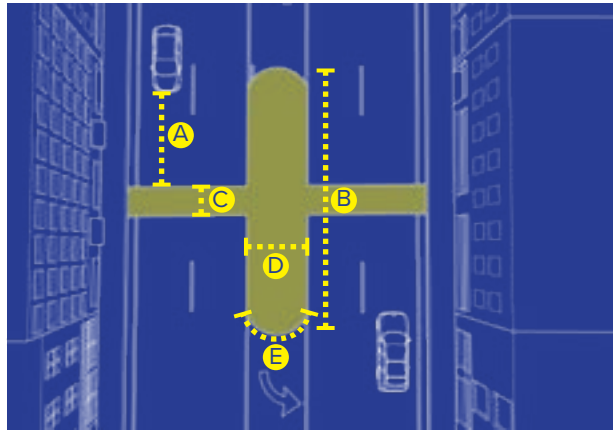
A5. Traffic Calming | Reconfiguration: Pedestrian Refuge

When to Use

Multi-lane, high-volume roads are dangerous places to cross for pedestrians. Sections of turning lanes or medians can be used as pedestrian refuge islands.

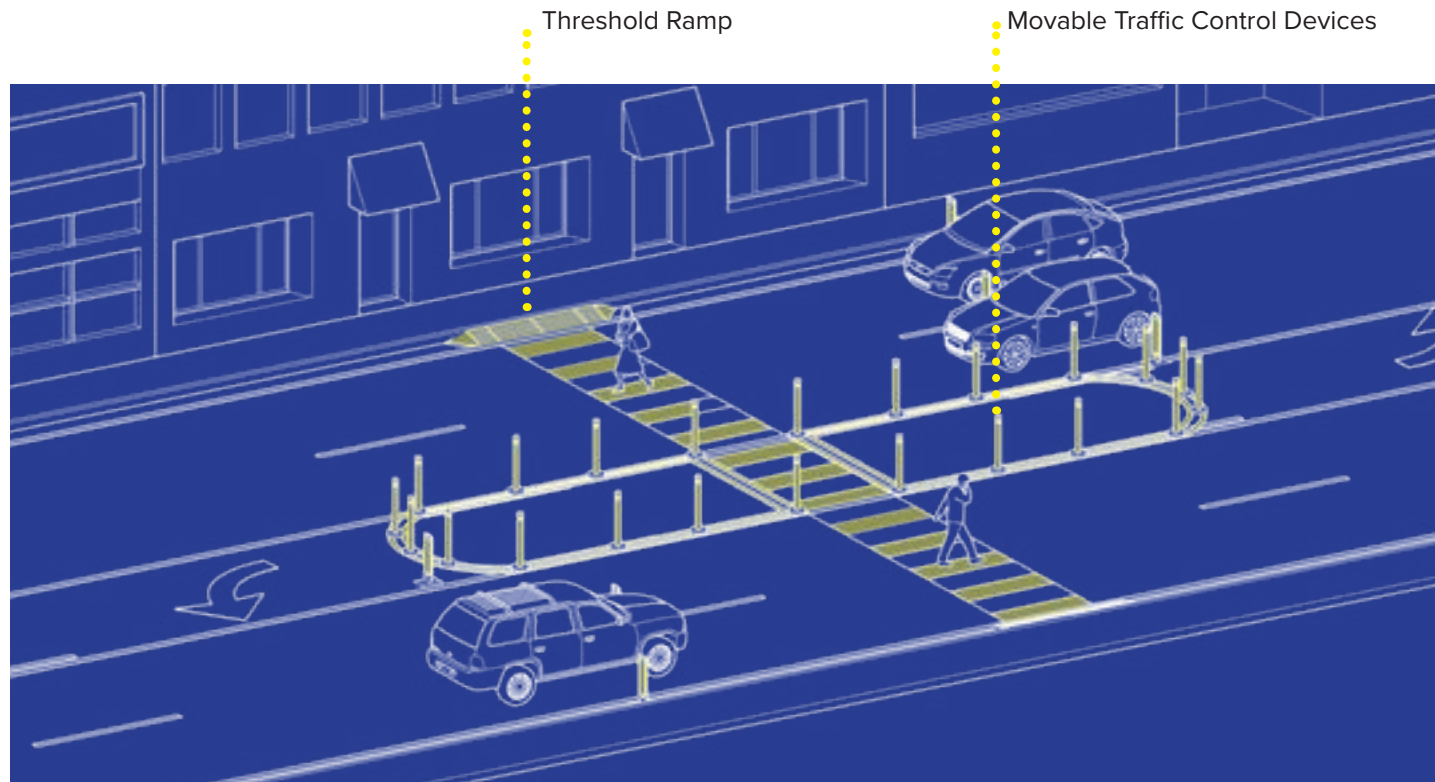
General Suggestions and Requirements

Basic necessities of refuge islands include 4" reflective striping and sturdy traffic barriers. Flex-posts are commonly used. If crosswalk clearance is provided, the interior of the island can contain artwork, plants, or other beautification elements. Threshold ramps can be built or purchased to provide access to the curbs.



Typical Design and Placement

A	20' Min. Yield Line or Signage.
B	40' Preferred Length.
C	10' Min. Crosswalk Width.
D	6' Min. Island Width.
E	Preferred "Nose" Extends off Island.

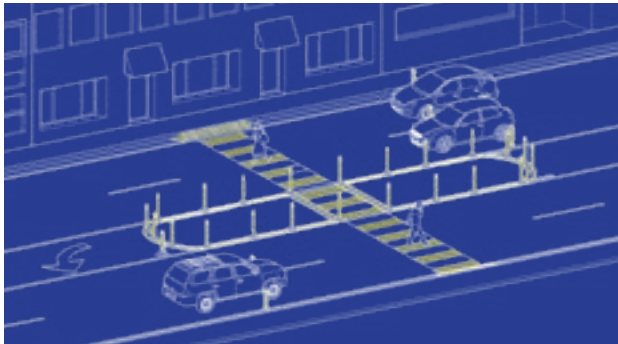


Movable Traffic Barriers
Credit: San Jose Tactical Urbanism



Semi-Permanent Bollards and Curb

A5. Traffic Calming | Reconfiguration: Pedestrian Refuge | Duration



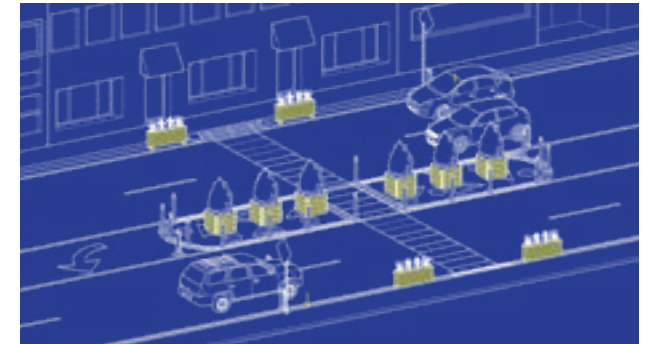
Pop-Up

Homemade traffic barriers can be made from a variety of movable materials. It is recommended that the perimeter of the refuge is striped off with reflective tape. Washable paint or chalk paint can be used to create the crosswalk. High visibility cones or flex posts and signage should signal drivers to yield.



Short-Term

Short-term installations can have a greater priority of beautification elements like surface art, higher maintenance plants and if the refuge is large enough other small furnishings. Reflective striping, traffic barriers, and crosswalk paint should consist of longer-lasting materials and surface treatment.

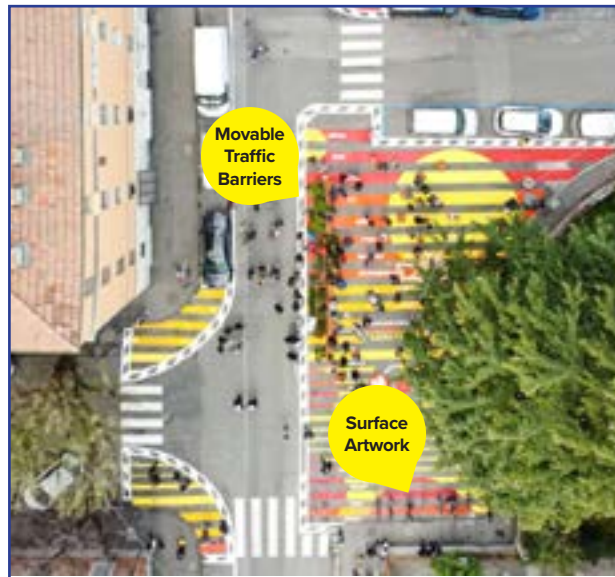


Long-Term

A greater amount of coordination and design input with NDOT will be required to install semi-permanent curbing, traffic delineators, and yield signage. The typical busy road locations of refuge islands make strong durable materials a high priority.



Credit: Strong Towns Journal



Credit: Orlando Sentinel



Credit: Google Streetview 2023

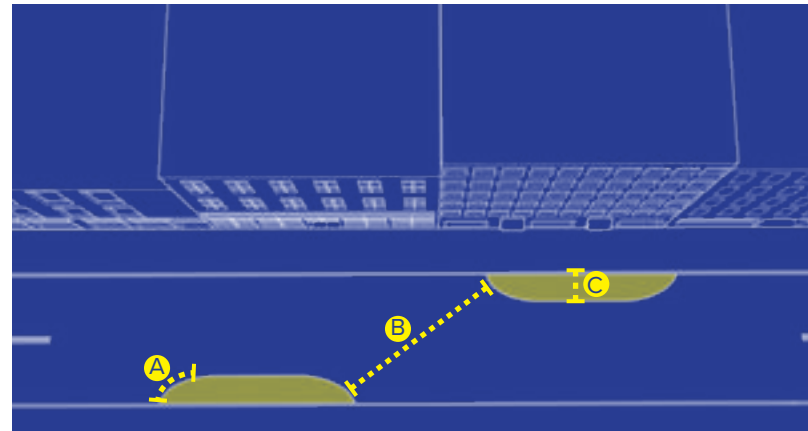
A6. Traffic Calming | Reconfiguration: Chicane

When to Use

Chicane functions as a road-diet/ traffic calming method to slow down traffic. Curb extensions are added to straight roads to create slight S curves and focus drivers. This can help draw attention to upcoming mid-block crossings.

General Suggestions and Requirements

The Curb extension must be bounded by reflective striping and high visibility traffic barriers which function like a curb. The interior of the chicane can contain beautification elements like plants and artwork. For all durations, existing lane striping must be covered temporarily but not removed or damaged. Examples include duct tape and chalk paint.



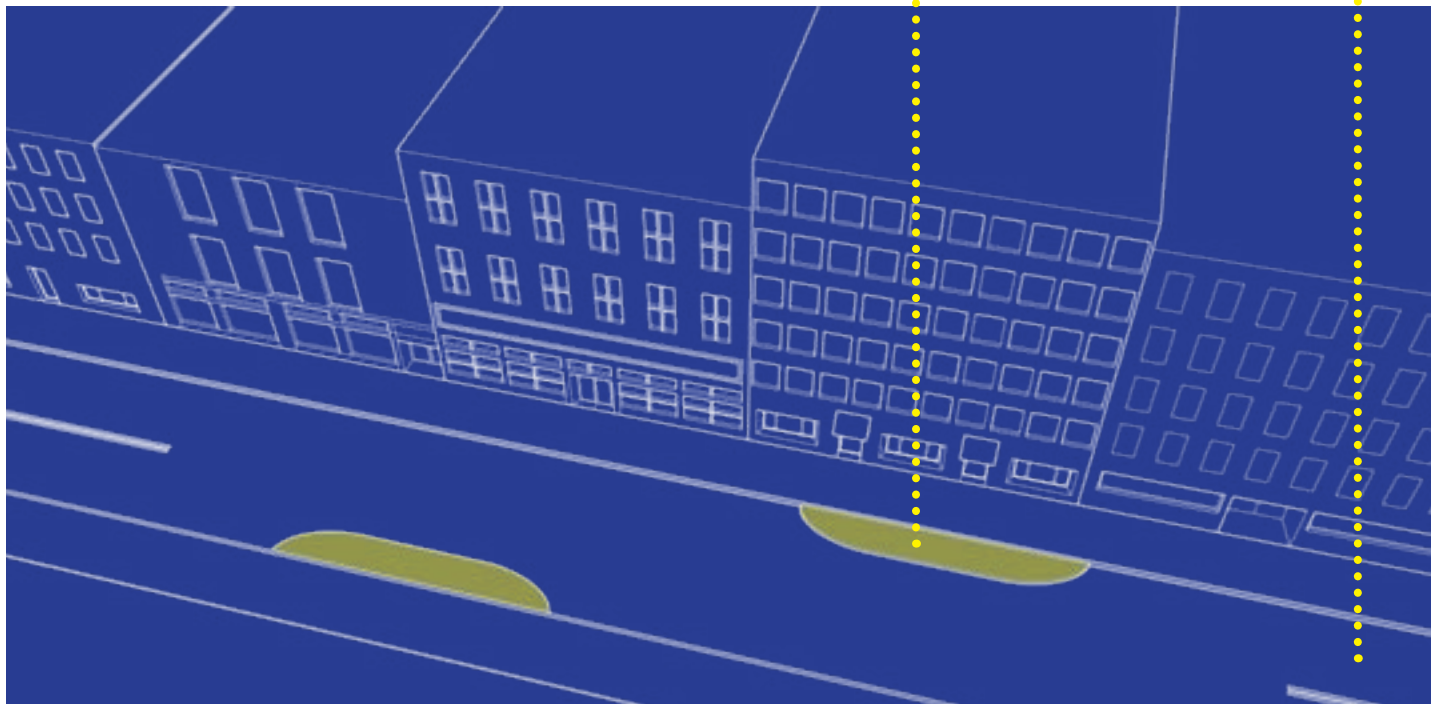
Typical Design and Placement

A	Min. 45 Degree Return Angle.
B	Maintain Existing Road Clearance.
C	2' Min. Less than Lane or Parking Width.

*If more than 1 set of Chicanes, They are to be no closer than 300' from the last set of Chicanes.

Striped off Curb Extension

Max. Two Moving Lanes



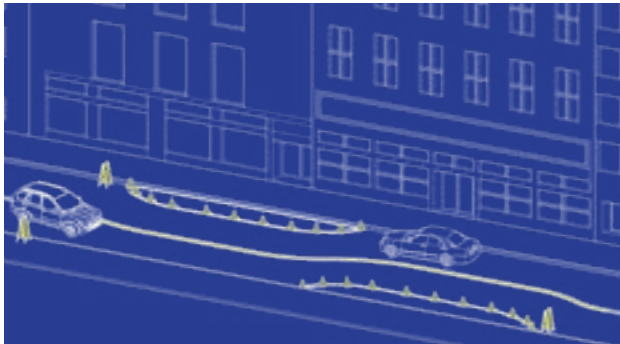
Movable Delineators and Plants

Credit: Melendrez



Art within Chicane Interior

A6. Traffic Calming: Road Diet- Chicane | Duration



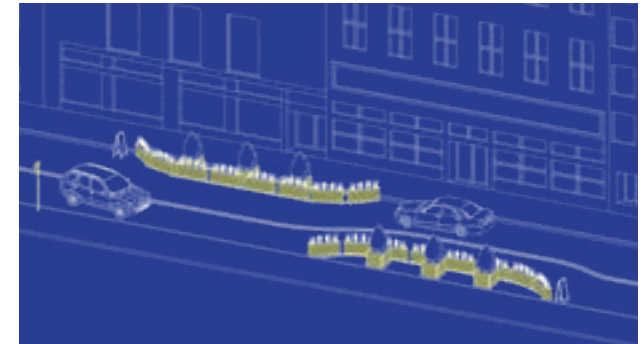
Pop-Up

Examples use affordable and easy to construct materials. Movable barriers act as a curb extension to guide traffic through the curve. For all durations existing roadway lane striping must be covered temporarily but not removed. Signage should be provided to orient drivers to yield or use caution.



Short-Term

Longer lasting materials should be used to create the curb extension. Traffic barriers should be weighted to withstand bumps from traffic. More elaborate planting can be incorporated. Washable paint can be added to the surface of the bulb-outs.



Long-Term

Longer installation times for chicanes can gather more data on effectiveness of installation for traffic calming effects. Fixed semi-permanent yield signs and traffic barriers must be used to withstand damage and intense weather. Larger more complicated beautification elements can be added.



Credit: Melendrez



Credit: Big Car dot org



Credit: New York City DOT

A7. Traffic Calming: Traffic Circle

When to Use

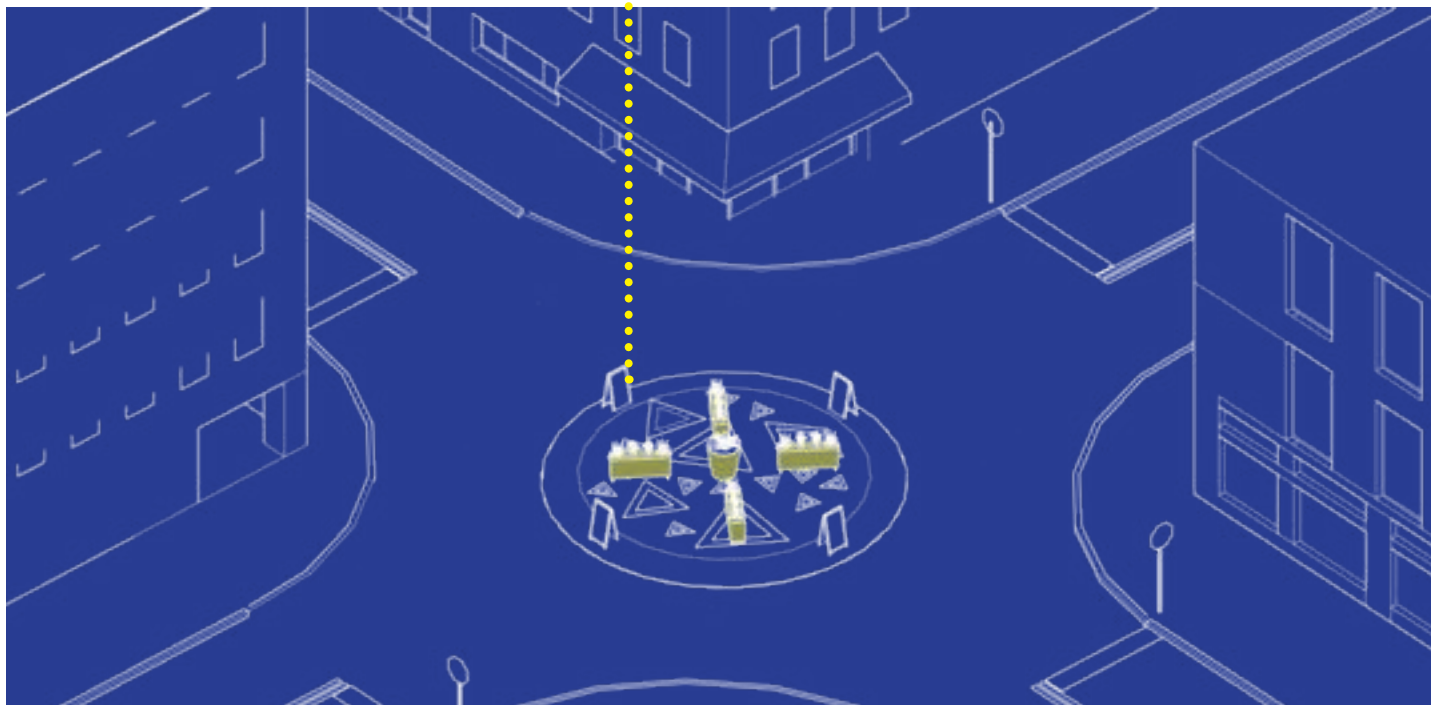
Traffic circles can be one method to change a typical intersection with one or more traditional stop signs. Shifting the travel direction with a forced circular motion reduces vehicular speeds through the intersection.

General Suggestions and Requirements

Center island of traffic circle should be demarcated with 4" reflective yellow stripe (Paint or tape). Movable traffic barriers should create a deflection of travel for each approaching driver. Barrier options include planters, traffic cones, or flex posts. Yield and traffic circle signs should be placed within sight-line of driver.



• Signage and traffic barriers deflect vehicles traveling through the intersection.



Typical Design and Placement

A	10' min. diameter.
B	9' min. between splitter island.
C	2' max. rolled curb.
D	15' min. clearance.



Modular Traffic Circle Materials

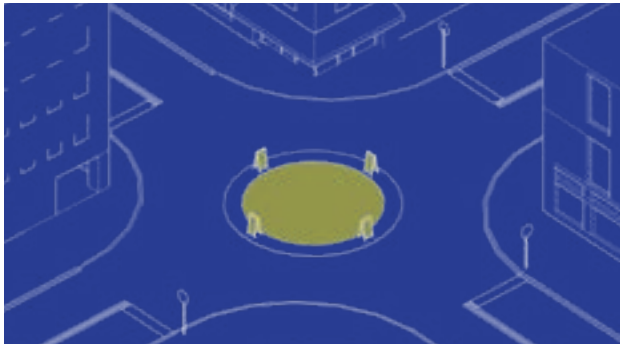
Credit: Project for Public Spaces



Traffic Circle Sign

Credit: City of Nanaimo

A7. Traffic Calming: Traffic Circle | Duration



Pop-Up

Pop-up examples of traffic circles are ideal for slow neighborhood roads to gather traffic calming data. Materials are minimal although traffic control professionals should be hired during installation. Art and plants can easily be included to enhance appearance and add visual delineation to drivers.



Short-Term

Short-term examples of traffic circles have more durable semi-permanent reflective striping and barriers. Larger plants that require more maintenance can be included. The “curb” of the circle will require a sturdier material as well, such as sandbags or erosion prevention socks.



Long-Term

Requires fixed semi-permanent traffic delineators and striping. Semi-permanent surface treatment can be used to create longer-lasting artwork within the perimeter of the circle. Heat/drought resilient plant material should be used. Lane splitters should be installed to guide drivers around the circle.



Credit: Civic Design Center



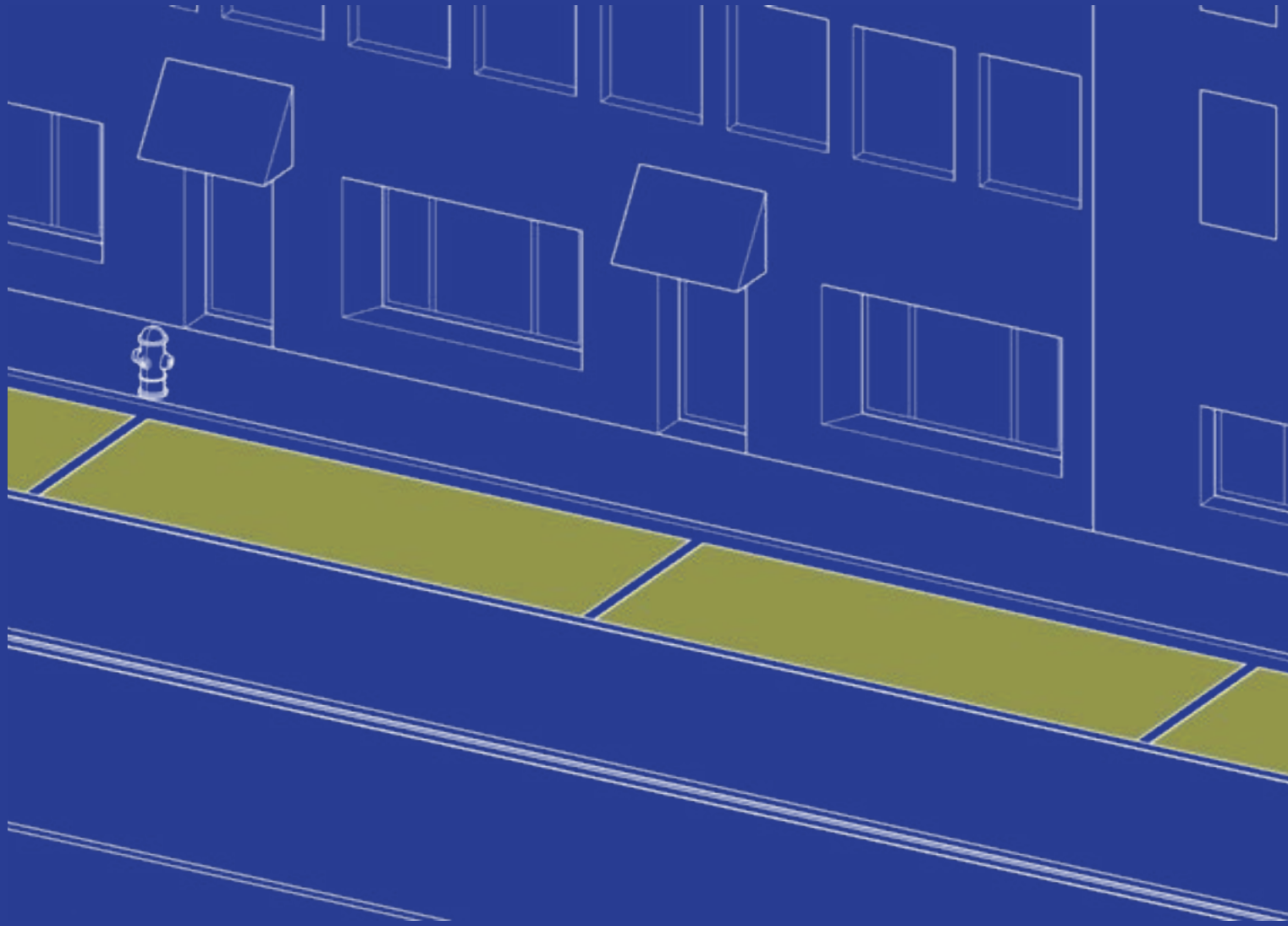
Credit: Culver City



Credit: Planet Bike

Project Category B: Parking Zone

Typical installations within the parking zone may include elements to extend the function of a narrow sidewalk. For longer-term + permanent parklet inquiries, please see the “Parklet Program” guidelines and application at [NDOT’s website](#).



- **Items to consider:**
- Clearances
 - ADA Compliance
 - Material Selection
 - Planters
 - Art
 - Maintenance
 - Safety Features

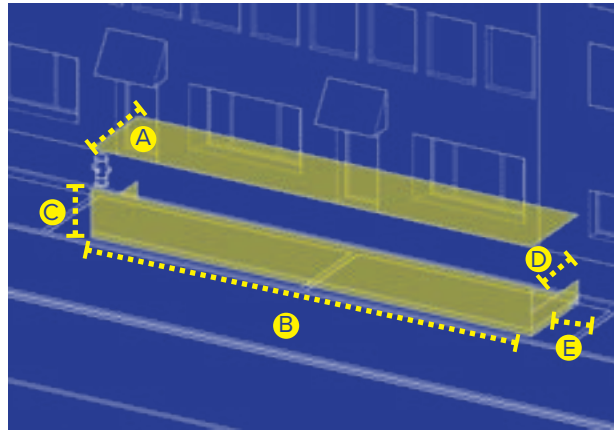
B1. Parking Zone: Temporary Parklet

When to Use

Parklets may include pedestrian-friendly amenities such as: outdoor furniture, planters, artwork, bus + bike amenities, shading devices and other solutions to create a more functional and enjoyable public realm in urban environments.

General Suggestions and Requirements

The options and activities included in parklets are practically endless. Critical components of the parklet include a deck or curb ramp to allow for ADA access. Once the parklet moves beyond pop-up duration, there should be a solid barrier between the flow of traffic and the inside of the parklet. Barrier protection should be appropriate to the context of the street speed.



Typical Design and Placement

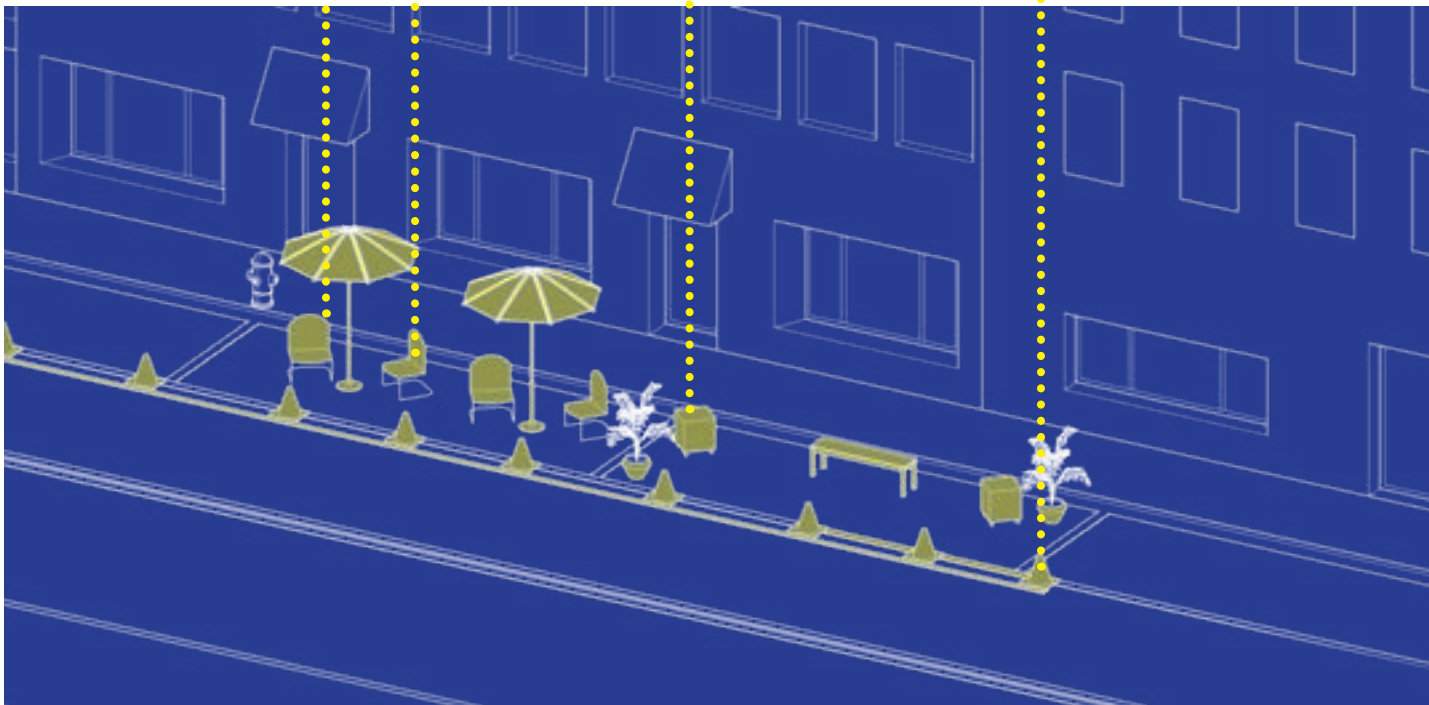
A	8' Max. Width
B	Max. Width of Business
C	4' Max. Height opaque wall
D	3' Min. Path of travel
E	2' Min Stop Bar Buffer

Maintain Curbside Drainage

Movable Furniture

Modular Furnishing

Movable Barrier/Buffer Device



Parklet Safety and Access Features

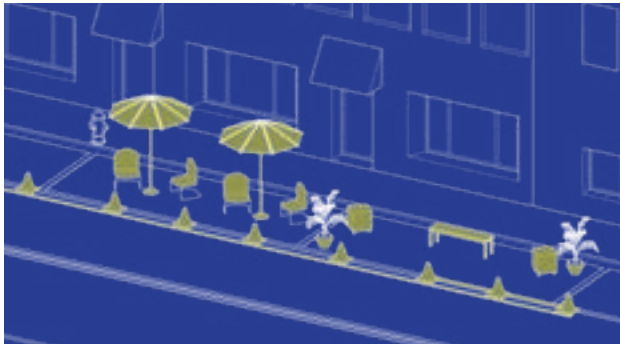
Credit: Nextcity.org



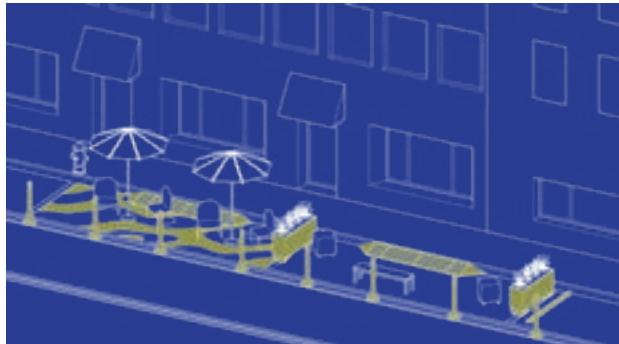
Modular Furnishings

Credit: Civic Design Center

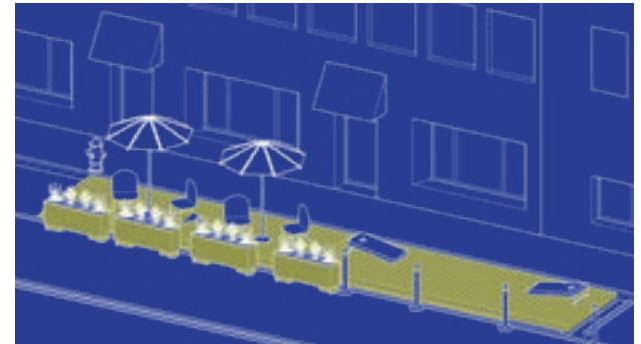
B1. Parking Zone: Parklet | Duration



Pop-Up
 Furnishings and objects in pop-up parklets should be light-weight and easily moved. Frequently parklets in this duration range are created for events like Parking Day. Reflective flex-posts or cones should be included at a minimum but reflective striping can also be included for additional safety.



Short-Term
 This duration can include semi-permanent artwork. Durable flex posts and wheel stops must be placed at either end of the parklet. Larger more intricate beautification elements can also include planters which must be maintained. ADA access in the form of a deck or curb ramp should be prioritized.



Long-Term
 Long-term parklet installations must include a deck for full pedestrian access. A solid barrier for safety is required between the road and parklet. The barrier can be plants, fencing/railing, or a row of fixed flex posts. Shelters can be built but must maintain sight line and access gaps for emergency access.



Credit: Civic Design Center



Credit: Idaho Smart Growth



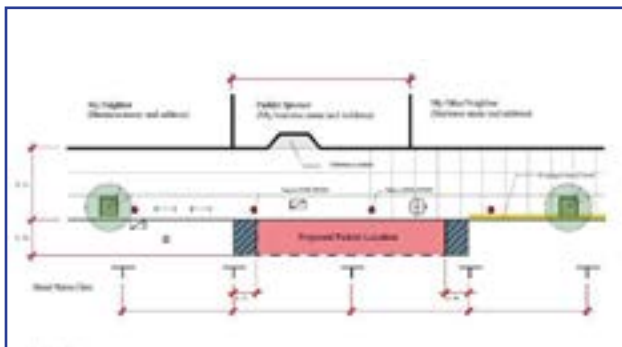
Credit: Possible

B1. Parking Zone: Parklet Program Application Process

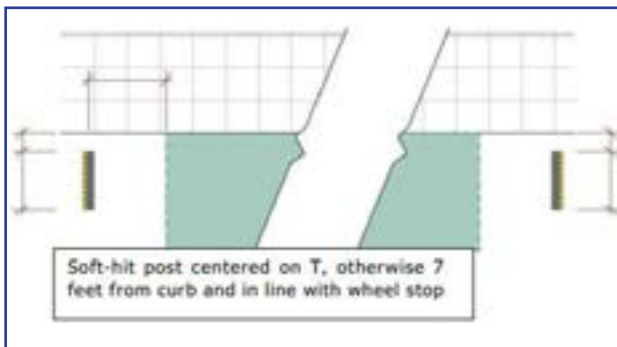
Obtain a Parklet Permit

For parklet proposals longer than two weeks, it must follow the process for applying to Metropolitan Nashville's Parklet Program. The program provides business owners, civic groups and individuals with the opportunity to transform underutilized on-street parking spaces to publicly accessible open space.

Applicants must submit a filled Parklet Permit Application along with a site plan of the proposed parklet and additional business and site information. The city will work with applicants to ensure that the plans meet the necessary requirements. Review the online [Parklet Program Application Process here](#).



Credit: Nashville.gov



Credit: Nashville.gov



Credit: City of Sacramento

Parklet Location Criteria

Parklets are restricted to streets posted at 35 mph or less, sited along the curb line where on-street parking spaces exist. Generally parklets may only be constructed on streets with a slope of 5% or less. Reflective elements must be placed on corners. Wheel stops must be placed on adjacent open parking spaces. Parklet should not interfere with sight lines or existing public infrastructure. Site plan must include parking meter location numbers.

Required Materials

Before installation, parking spaces must be cleared 72 hours in advance with temporary no parking/parklet under-construction signs. Signs can be obtained from TDOT Multi-modal infrastructure, (615-862-8700). Place two soft-hit posts centered on T, otherwise 7 feet from curb and in line with wheel stop. Posts must be, safe Hit Type 2 Guide Post 36", White, Surface Mount Pin Lock Base, Butyl Adhesive Pad or 10 oz. Epoxy Kit.

Enclosure and Platform

The Parklet construction guide includes required and recommended parameters for building the parklet enclosure and platform. Important factors of the enclosure include: buffering the edges, maintain a visual connection to the street, avoid overhead elements that span sidewalk. Platform factors include: bolting, platform surface, access, concrete, surface materials, drainage, platform cross slope, and street tree crown and curb height.

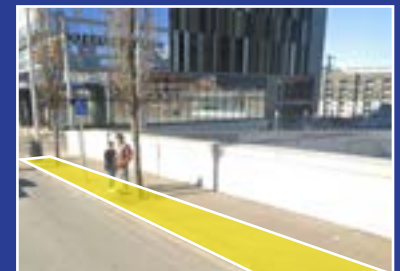
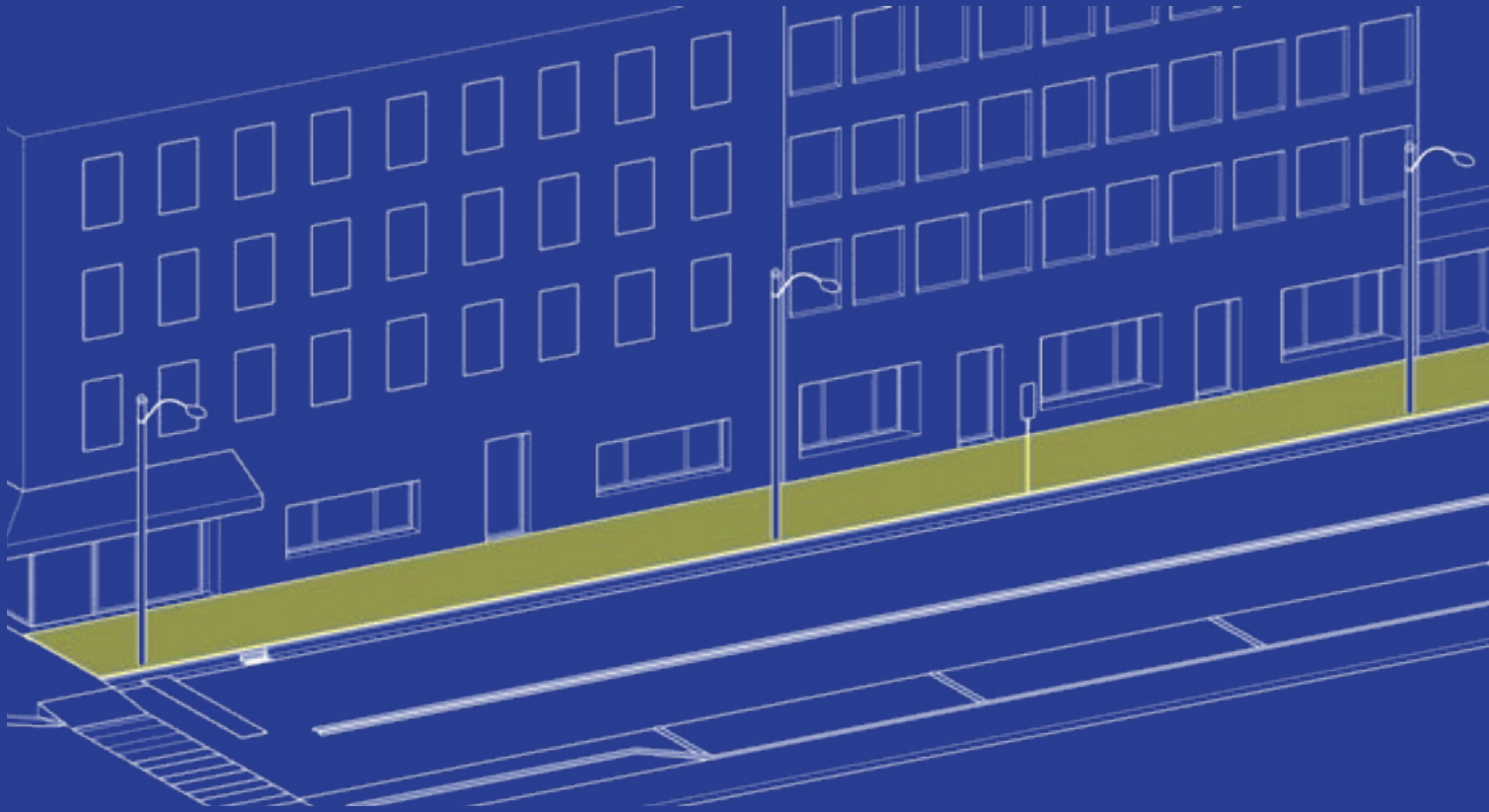
Parklet Permit Process

- 1. Submit Application
 - a. Application Form
 - b. Site Plan
 - c. Parklet Programming
 - d. Support.
 - e. Indemnity and Hold Harmless Statement.
- 2. Departmental Review
- 3. Permit Application
- 4. Construction Permit Approval
- 5. Construct Parklet
- 6. Other Permits
- 7. Parklet Removal
- 8. Transfer of Permits
- 9. Program Changes

Project Category C: Sidewalk Zone

Sidewalk Zone Installation

Examples include, but are not limited to:
Outdoor seating areas, transit stop improvements,
sidewalk extensions, planters, and ground murals.



- **Items to consider:**
- Clearances
- ADA Compliance
- Prohibited Materials

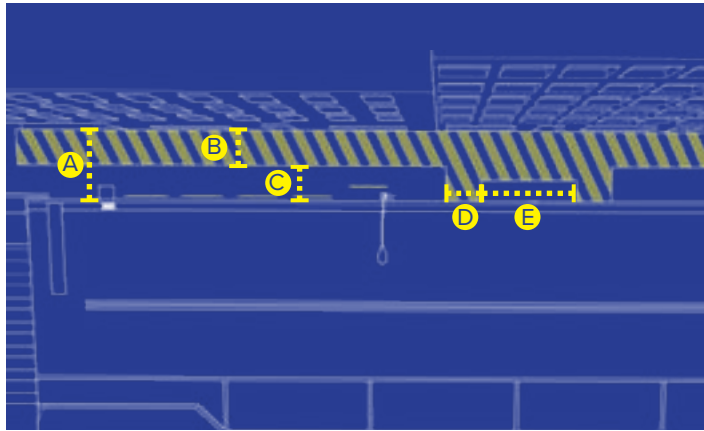
C1. Sidewalk Zone

When to Use

Improvements in the sidewalk zone can enhance appearance, comfort, and success of businesses. Amenities like plants, art, bike parking, bus stop enhancements, and seating can be added but should not interfere with pedestrian clearance.

General Suggestions and Requirements

Beautification elements like art and planter boxes can be fabricated or purchased. Wide sidewalks are ideal locations for creating small gathering spaces offset from the pedestrian clearance area. Bus stop enhancements and bicycle parking can also be fabricated or purchased and placed within the amenity zone.

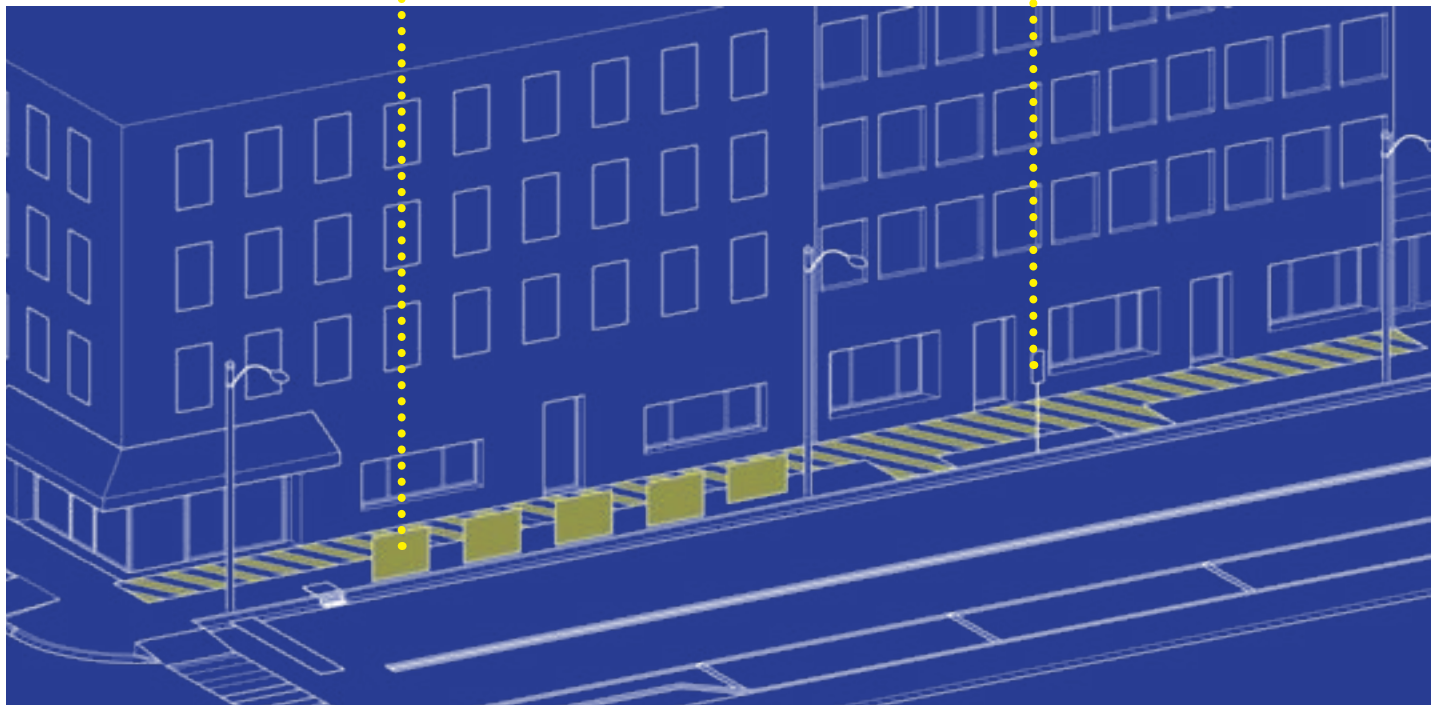


Typical Design and Placement

A	8.5' Min. Width.
B	5' Min. Clearance Zone.
C	3.5' Min. Amenity Zone.
D	5' Min. Bus Stop Loading Clearance.
E	10' Min. Bus Stop Enhancement Area

42" Max. Height in Amenity Zone

Bus Stop Enhancement Area

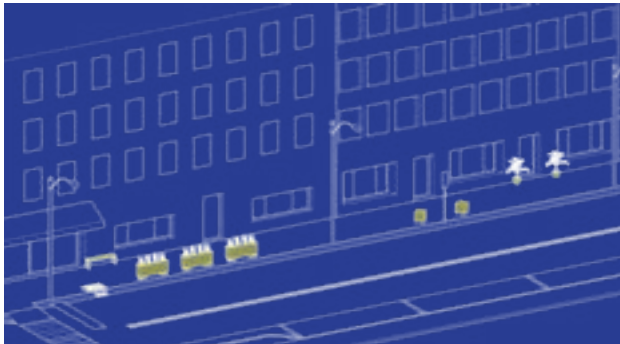


Bus Stop Seating
Credit: Reconnect Rochester



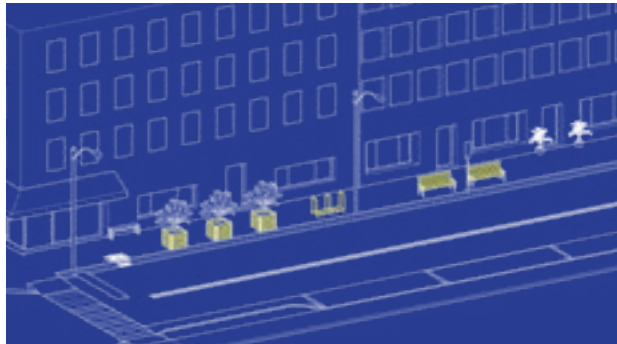
Movable Planters and Trashcan
Credit: Architonic

C1. Sidewalk Zone: Duration



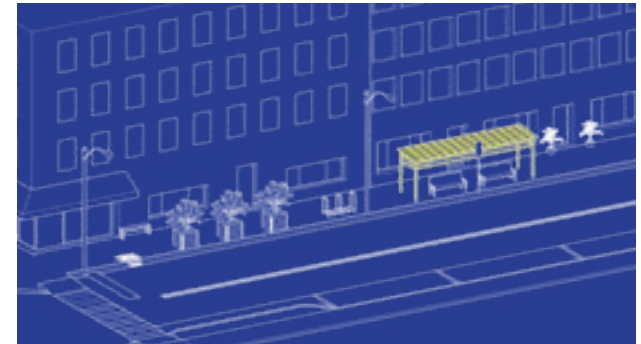
Pop-Up

Furnishings and objects within this duration of the sidewalk zone must be easily movable and safe for frequent interaction with pedestrians. Due to the small span of time, it is perhaps best for the installer to rely on purchased prefabricated materials like benches, chairs, and light planters.



Short-Term

Longer durations of sidewalk improvements can use materials and objects that will need more time to gather data and determine success. Larger, heavier planters, seating nodes, and bicycle parking can be purchased. Within this time frame it is more viable to take the time to construct your own furnishings.



Long-Term

Long-term sidewalk installations can include heavy duty materials like sturdy overhead structures for outdoor seating areas, dining spaces, and bus stop enhancement areas. Bicycle parking, and other movable furnishings should be either temporarily fixed to the sidewalk or locked up to prevent theft.



Movable Seating

Credit: Rochester Business Journal



Bike Rack

Temporary Artwork

Credit: Geography Compass



Temporary Shelter

Credit: Three Seven

Project Category D: Right Of Way Closure

Right Of Way closure is frequently associated with temporary closure for events. Lanes are also closed to add traffic calming and active transportation projects like bulb-outs and bike lanes. Slow Streets rose in popularity during the pandemic, converting residential streets to pedestrian friendly areas.

Project examples include, but are not limited to: Single Lane Closure, Slip Lane Closure, Block Parties, Slow Streets, and Tactical Plazas.



- **Items to consider:**
- Clearances
- ADA Compliance
- Prohibited Materials

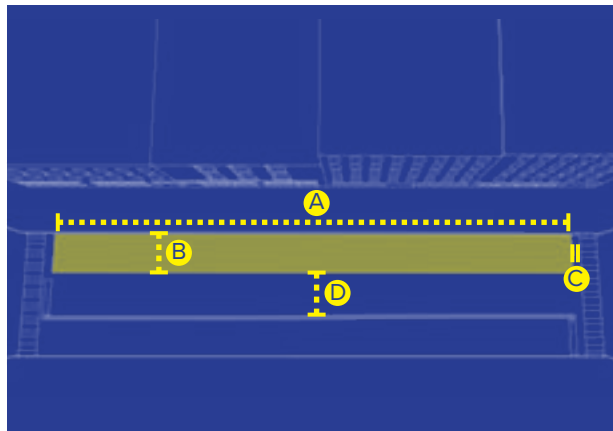
D1. Right Of Way: Single Lane

When to Use

Single lanes closures may be appropriate for pop-up to short term events and for long-term adjustments to roads with extra lane space and low traffic volume. If safe conditions are provided the interior of bulb outs or slip lanes can be converted to pedestrian plaza space and/or beautify the space.

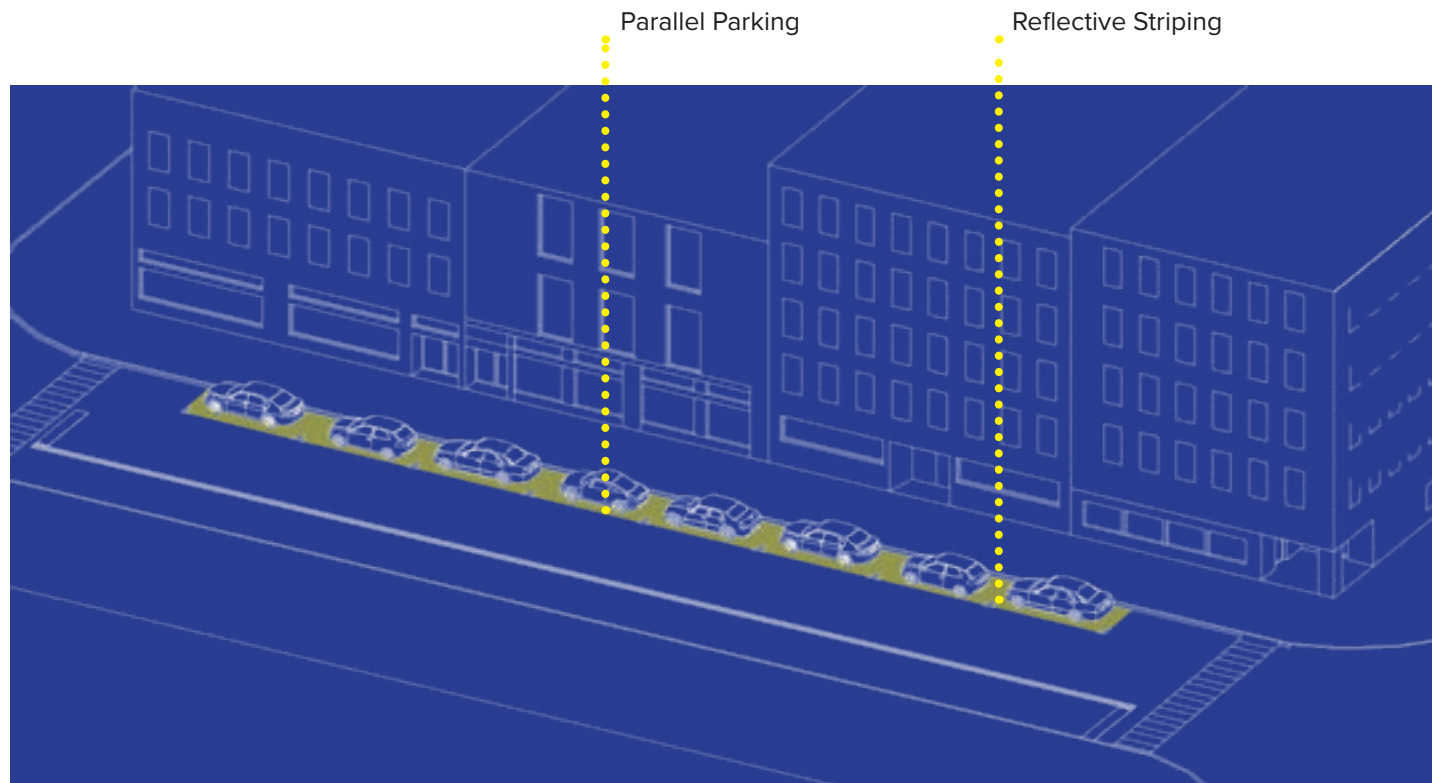
General Suggestions and Requirements

Movable traffic delineators must guide traffic around the closed lane. If the interior of the lane is occupied a solid barrier such as sturdy planters or traffic barriers should be used. 4" reflective striping outlines the closed lane and bulb-out radius. Barriers should not interfere with crosswalk clearance.



Typical Design and Placement

A	Street Block Length Typical
B	Max width = Lane width -1'
C	3' Min. Distance from Crosswalk.
D	Maintain Existing Lane Width.



Traffic Control During Install
Credit: Tim Fitzwater



Slip Lane Closure
Credit: LA DOT

D1. Right Of Way: Single Lane | Alternative

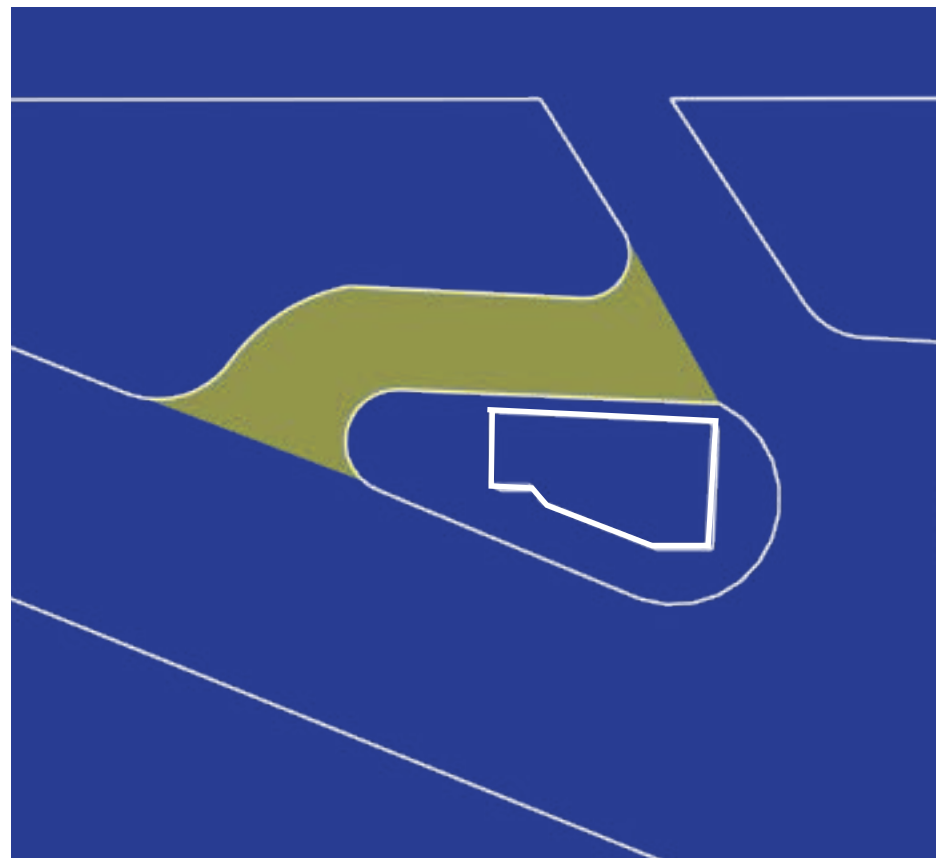
There are other locations of lane closures that can benefit the public streetscape. Rarely used or redundant turning lanes can be closed to create furnished public plazas or enhanced with artwork and movable landscaping. Redundant slip lanes can be closed off to fulfill similar purposes. Alternative lane closures require the same traffic control measures as single lane closures.

General Requirements

Speed Limit	Permitted on Streets at or below 35 mph.
Size	Dependent on lane/street. Plazas must occupy min. 1000 Sq Ft.
Emergency Access	Alternate access provided for emergency vehicles. Must not block access to fire hydrants.
Loading	Alternate access is provided for maintenance and sanitation vehicles.
Clearance	Provide driveway and pedestrian clearance.
Traffic Flow	Existing traffic pattern to be accommodated elsewhere. Must not interfere with existing public-transit routes.

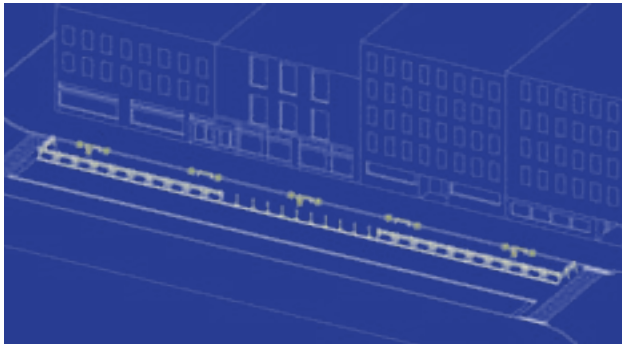


Turn Lane Closure

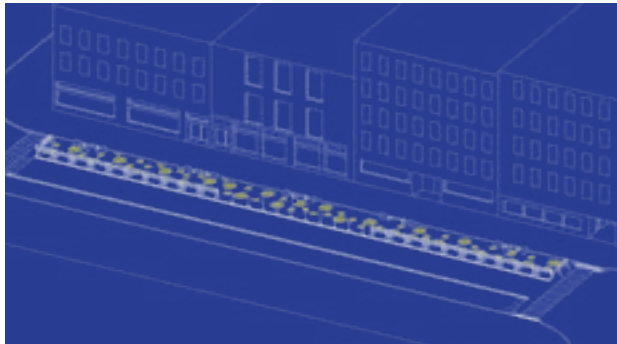


Slip Lane Closure

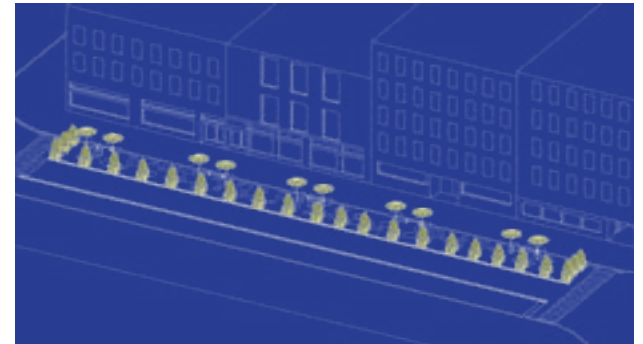
D1. Right Of Way: Single Lane | Duration



Pop-Up
This duration is ideal for testing results and getting feedback from lane closure. The lane must be closed at the beginning of the block by a traffic barrier. The lane must be delineated by movable flex posts or cones and striped off with two lines of 4" reflective tape or washable paint.



Short-Term
Short-term lane closure includes the same traffic control and safety features as pop-up but must be sturdier and semi-permanent in case of intense weather conditions or minor traffic incidents. If safe conditions are provided temporary furnishings can be added to the interior space.



Long-Term
Fixed traffic delineators and semi-permanent striping should be used to block lanes and bulb-out radius. Heavy-duty barriers that require maintenance such as tree or shrub planters can block vehicles from the closed lane. Long-term lane closure is the safest and most protected option for pedestrians.



Credit: Street Lab



Credit: StreetPlans



Credit: Street Plans

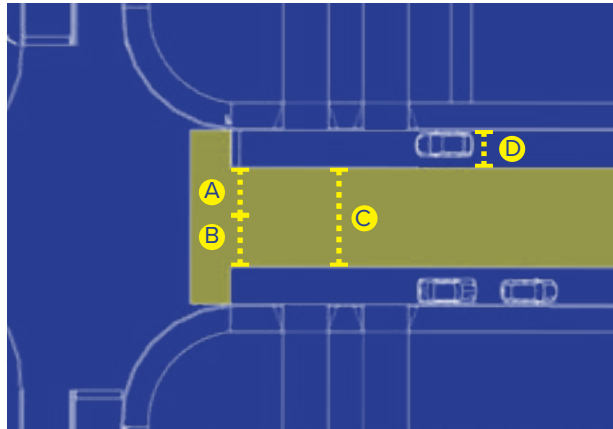
D2. Right Of Way: Slow Street

When to Use

Slow streets are a method to make low traffic residential roads safer and friendlier to local foot traffic. Streets are typically blocked off on one side allowing local traffic to flow through. Slow streets can function as bike routes or other functions such as event space for neighborhood get-togethers and block parties.

General Suggestions and Requirements

Slow streets are fairly minimal in what they require to activate a pedestrian friendly space. Streets should be closed off partially on all entrances to a block. Signage should be placed to explain that only local traffic and delivery trucks are permitted access.



Typical Design and Placement

A	Exit Lane Blocked Off
B	Entry Lane Open to Local Traffic.
C	Entire Street Open to Pedestrians.
D	Street Parking Open to Local Traffic.

Movable Traffic Barriers and Slow Street Signs

Street Open to Local Traffic



Slow Street Sign

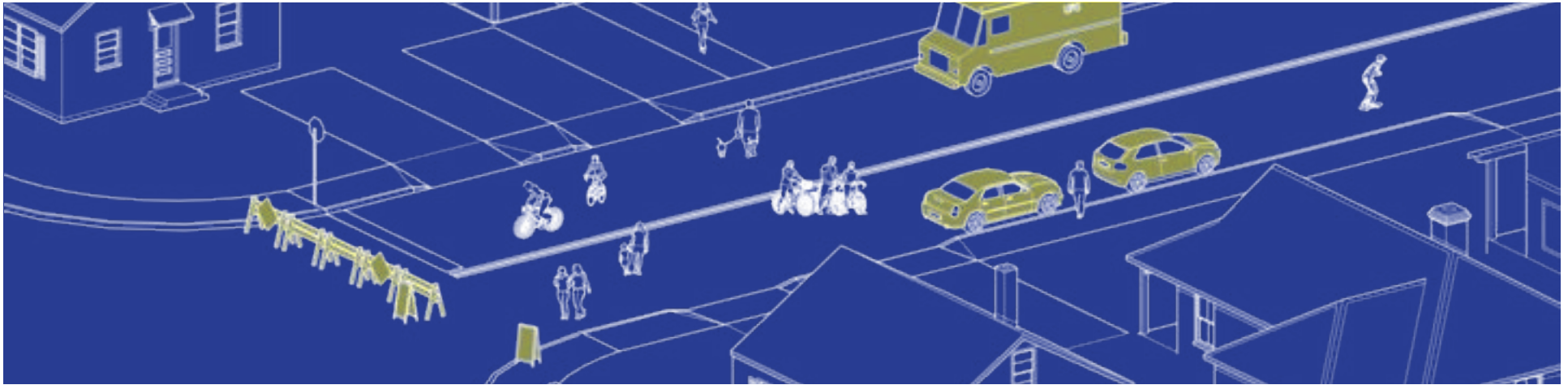
Credit: San Francisco Municipal Transportation Agency



Permanent Slow Street Device

Credit: Seth Sokol

D2. Right Of Way: Slow Street | Duration



Pop-Up

Materials to block off a slow street include high visibility traffic barricades and delineators such as cones, flex posts and wooden barricades. Signs should be posted that announce 'Road Closed to Thru Traffic' and explain the purpose and goals of implementing the slow street.

Short-Term

To further buffer the slow street from traffic for a longer period semi-permanent barricades and signage can be installed. These barricades and traffic delineators will require professional design and installation.

Long-Term

Examples of long-term slow streets often incorporate more beautification elements such as planting and artwork. Surface treatment like art or bike symbols on the street can clarify that the street is intended for local traffic, pedestrians, and bikers.



Credit: New York Times



Credit: City News



Credit: NATCO

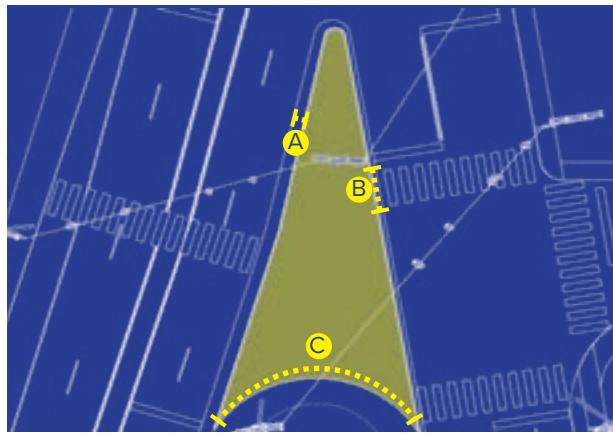
D3. Right Of Way: Plaza

When to Use

Tactical Plazas are excellent tools for activating under-used right-of-way for pedestrian use. If safe conditions are provided many activities and amenities can be included within the plaza.

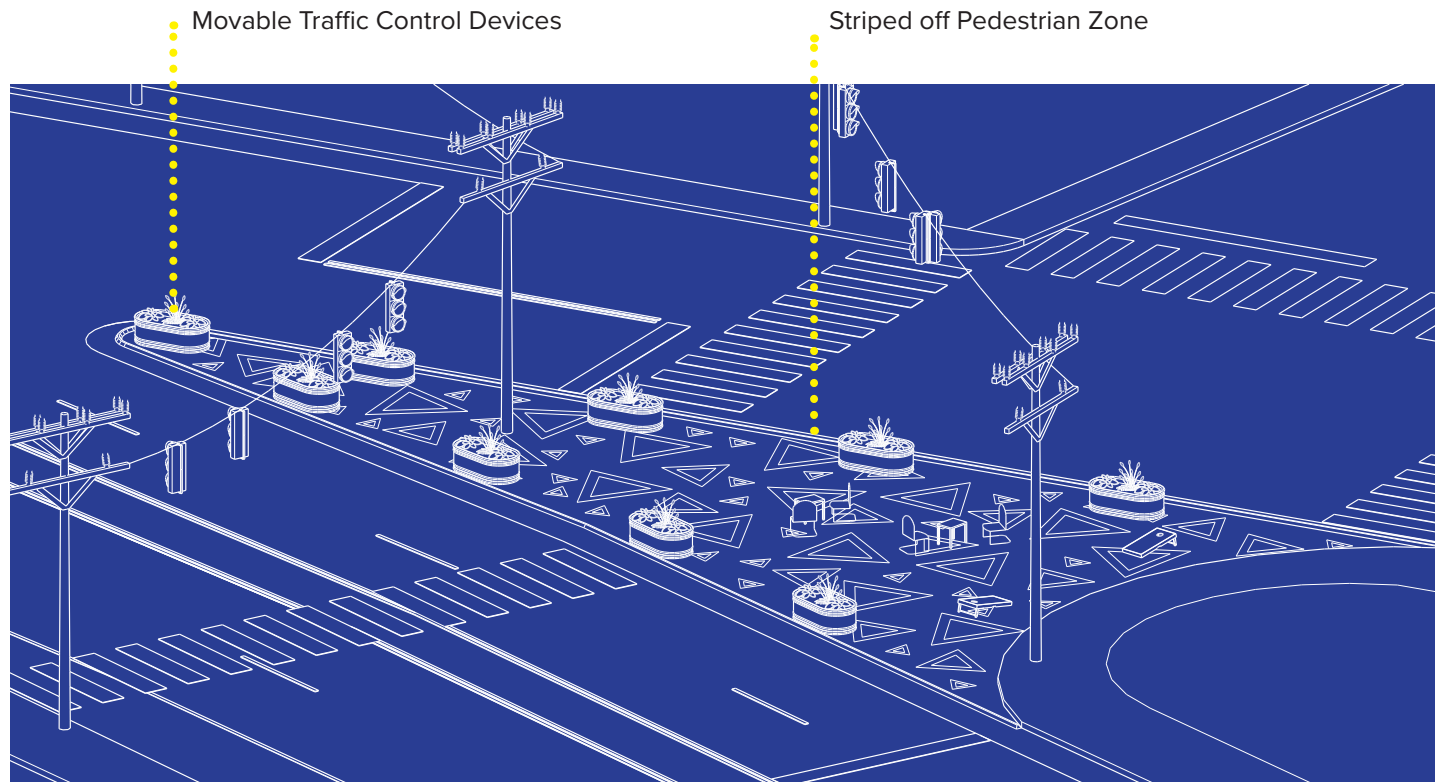
General Suggestions and Requirements

Like Bulb-outs and Lane Closures, plazas should be blocked from traffic by movable traffic delineators and reflective striping. Beautification of the space can include surface murals, plants, and other artwork. Outdoor furniture, games, and other public amenities can be included.



Typical Design and Placement

A	1.5' Min. Shoulder.
B	4' Min. Clearance for Crosswalk
C	Plaza can Square Off Under-Used Radius.

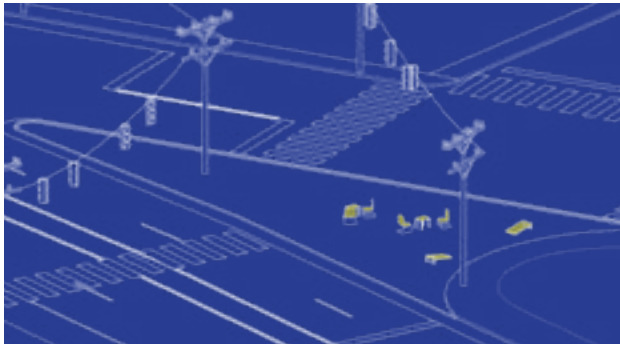


Painting Plaza Mural
Credit: Civic Design Center



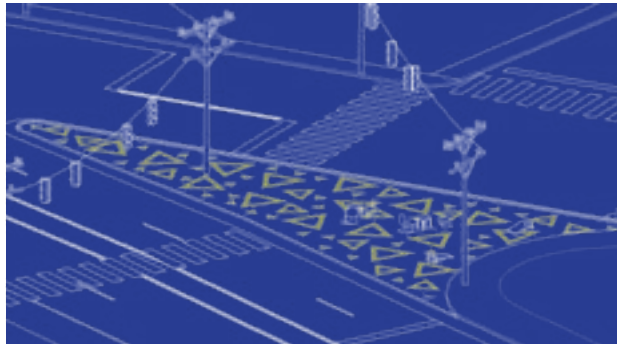
DIY Street Barricades
Credit: Institute for Quality Communities

D3. Right Of Way: Plaza | Duration



Pop-Up

If there is no existing curb or separation from the street, there must be 4" reflective striping around the plaza and high visibility traffic delineators. These barriers can be flex-posts, cones, planters, or sturdy homemade barriers. Simple furniture and amenities can be added to activate the space.



Short-Term

Washable surface paint can be added to enhance the plaza area. Murals also highlight the plaza to drivers. Traffic delineators should be semi-permanent, fixed or difficult to move if vehicles bump into them. Amenities included should be more intricate and invite visitors to the space.

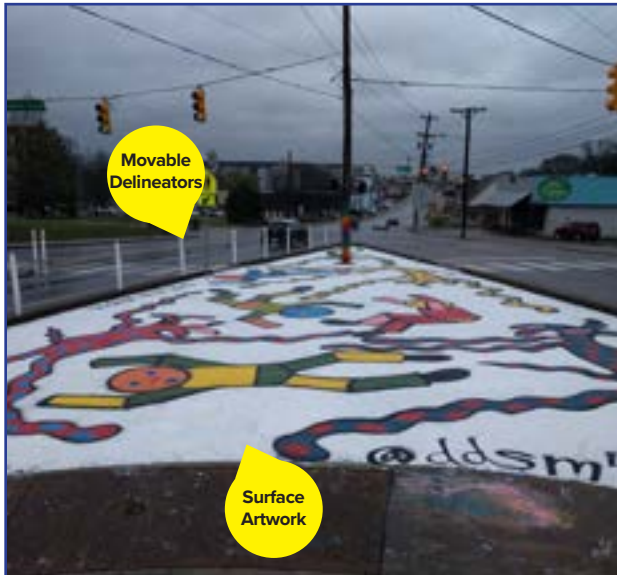


Long-Term

Must include heavy or fixed barriers to block traffic. A popular option are large planters. More maintenance should be incorporated to keep the space clean and beautiful for the entire expected duration. Multiple public events can occur to celebrate the space in addition to an array of amenity options.



Credit: Institute for Quality Communities



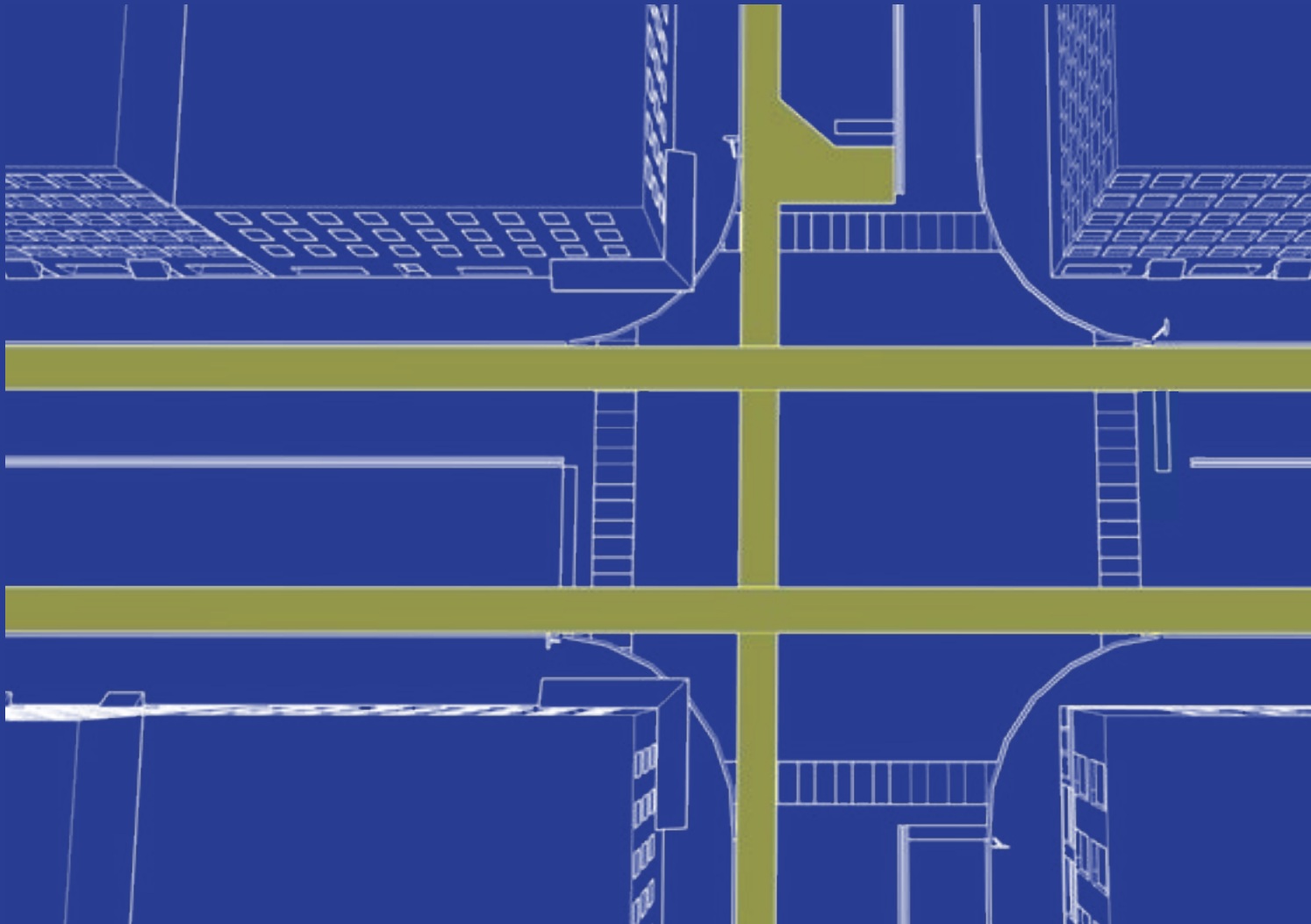
Credit: Civic Design Center



Credit: Cities Today

Project Category E: Active Transportation

Active Transportation infrastructure is still lacking in many parts of the city. Proposing a permanent bike lane or bus lane may be a long process and temporary installations could help inform final design and locations. Other projects may include parking areas and other amenities for active transportation.



● Items to consider:

- Clearances
- ADA Compliance
- Prohibited Materials
- Minimum Lane Dimensions
- Buffer Zones
- NATCO Turn Radius

E1. Active Transportation: Bike/Mobility Lanes

When to Use

Bike/Mobility lanes can be designed and installed on streets that are busy or dangerous but receive ample bike traffic. Typically, streets or lanes that are excessively wide and roads with shoulders that are 6 feet or wider can handle new bike lanes.

General Suggestions and Requirements

Temporary surface paint can be used to outline and fill the lane. Reflective striping (Paint, tape, or thermoplastic) is installed on edge, two 4" rows, 6" apart. Temporary fixed flex posts act as safety separation from drivers. Stencils are used to create bike lane symbols and striping across intersections. Utilize the [NACTO urban bikeway design guide](#) for reference.



* 11' Min. Lane Width, if a transit corridor.

Typical Design and Placement

A	4' Min. Distance from Crosswalk.
B	10' Min. Bike Box.
C	5' Min. Bike Lane Width
D	10' Min. Lane Width. *



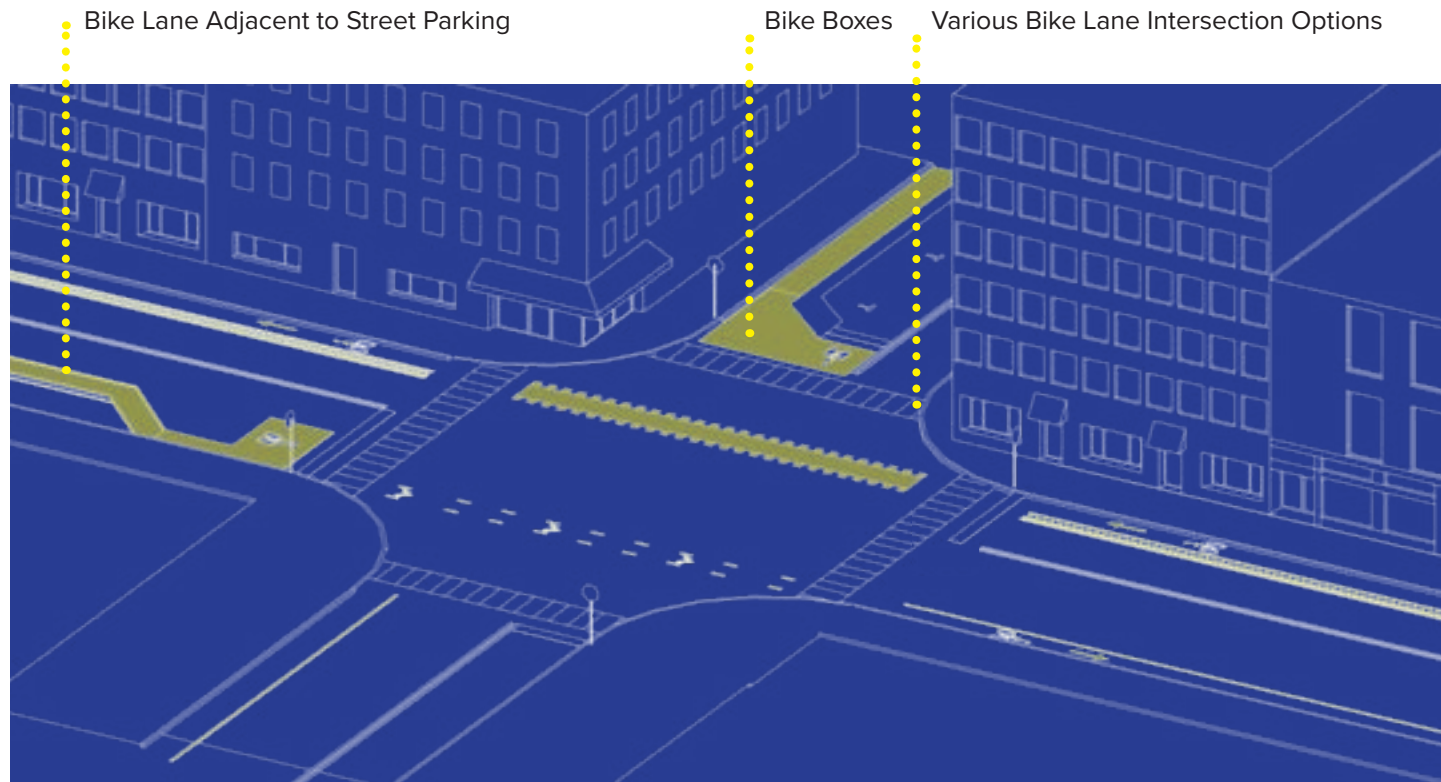
Traffic Delineators for Bike Lane

Credit: Civic Design Center

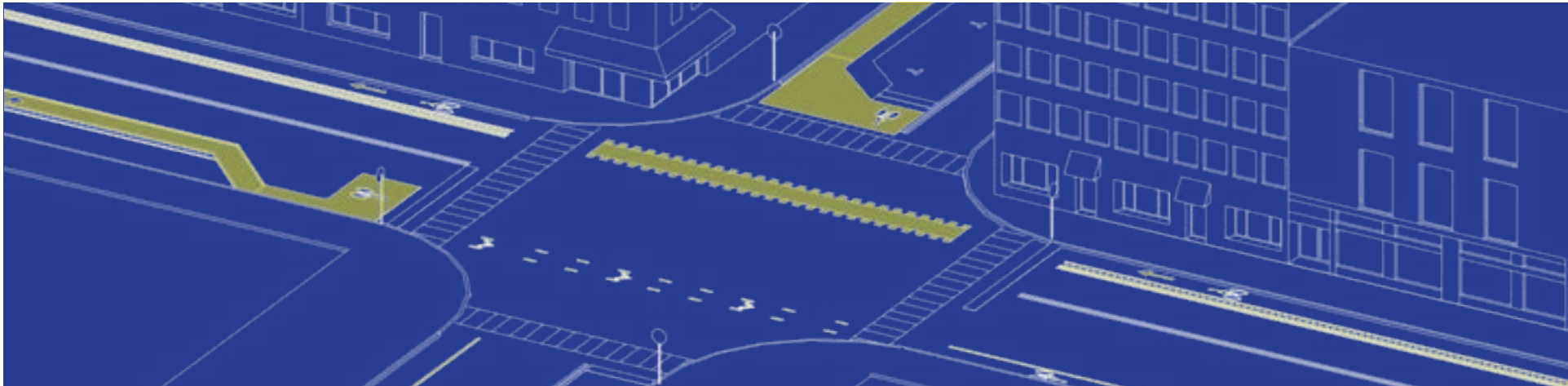


Bike Box

Credit: National Association of City Transportation Officials



E1. Active Transportation: Bike/Mobility Lanes | Duration



Pop-Up

This duration should include materials that are easily movable yet durable and hefty enough to provide adequate safety for bikers. Bike Lane striping and symbols must be washable. Traffic delineators can be self-constructed for a pop-up duration.



Credit: Dave Campbell, Bike East Bay

Short-Term

Examples of short-term bike lanes must also use removable paint for striping and symbols. Traffic barriers and delineators should be fixed to the surface or heavy enough to withstand traffic and weather. If planters are used as barriers, they will require regular maintenance.



Credit: Croakey Health Media

Long-Term

Long-term duration bike lanes should be designed as if they will last forever. The exception being that traffic barriers should be removable once the installation has ended. Semi-permanent paint and striping should be used to treat surface of bike lanes.



Credit: BikeUtah

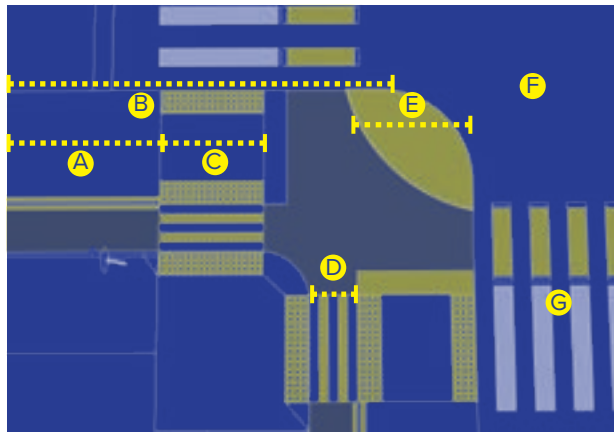
E2. Active Transportation: Protected Intersection

When to Use

This design can be used where bike infrastructure already exists but remains dangerous for drivers and cyclists. This intersection design separates bicycle and pedestrian traffic from vehicles. Safety is greatly improved, and the number of vehicle-bike conflicts is significantly reduced.

General Suggestions and Requirements

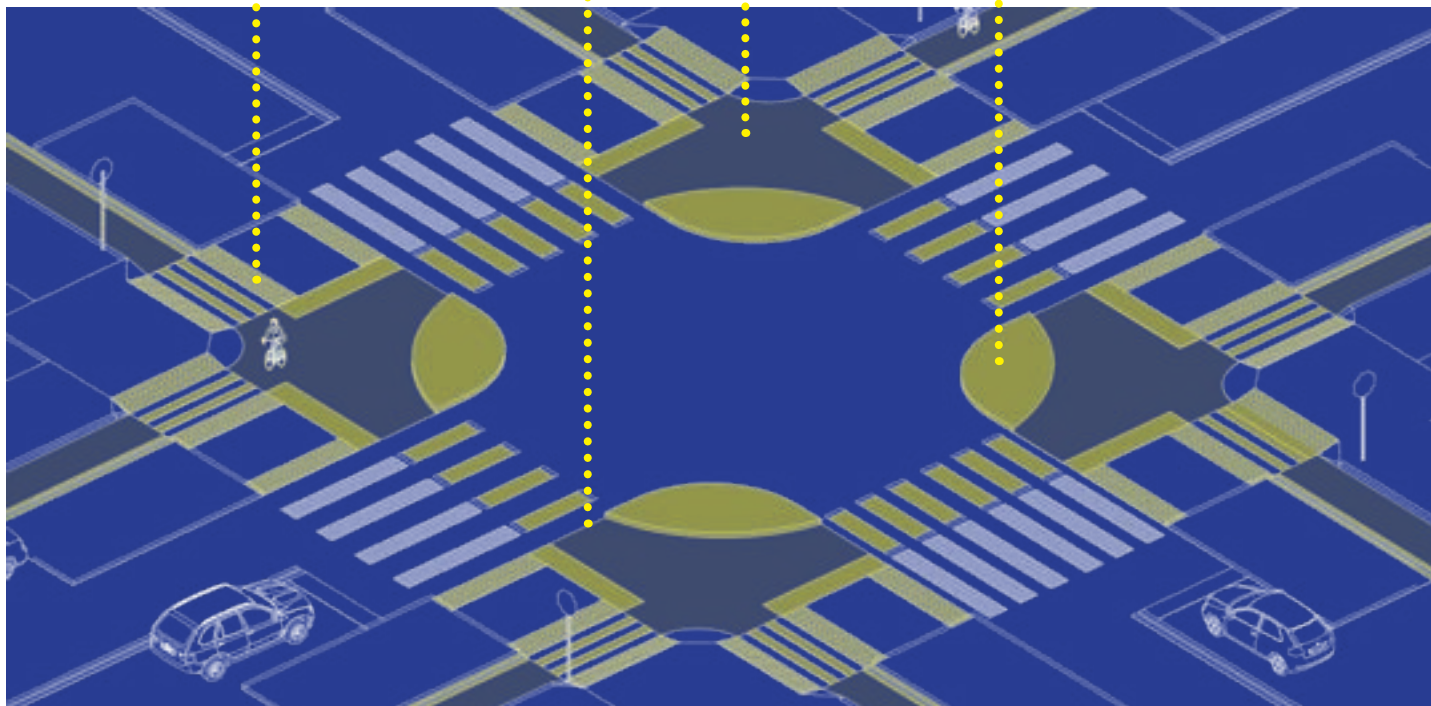
Crossings, bike lanes, and stop bars must be made with reflective tape, paint, or thermoplastic. Tactile warning pads must be temporarily fixed to crosswalk areas. The bike queue area can be outlined with reflective paint, tape or engineered rubber curb. Utilize the [NACTO urban bikeway design guide](#) for reference.



Typical Design and Placement

A	20' Min. No Stopping or Standing.
B	Clear Sight Distance.
C	6' Min. Pedestrian Island.
D	5' Min. Bike Lane.
E	10' Min. Bikeway Setback.
F	Motorist Waiting Zone.
G	Crossing Markings.

Tactile Warning Pads Dedicated Bike Lane Bike Queue Area Temporary Curb or Striping

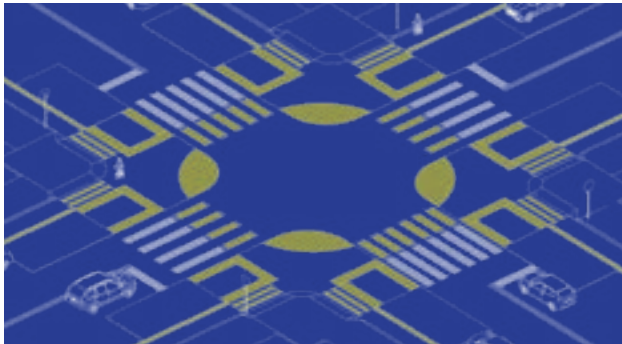


Engineered Rubber Curb
Credit: TerraBound Solutions Inc.



Permanent Protected Intersection
Credit: Momentum Mag

E2. Active Transportation: Protected Intersection | Duration

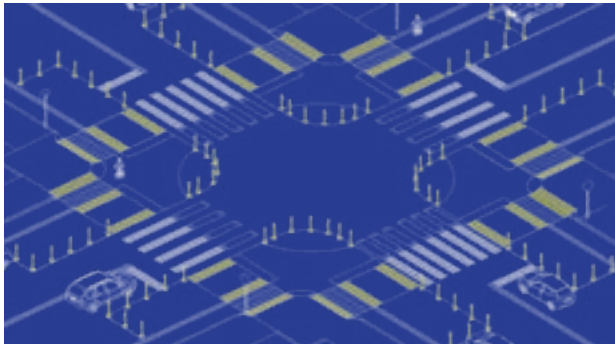


Pop-Up

Protected intersections require a highly detailed plan before installation. Pop-Up examples of protected intersections can test out the community's initial reaction to the changed intersection. Washable chalk paint should be used to create the lanes. Easily moved barriers separate bike and vehicle traffic.



Credit: City of Eugene

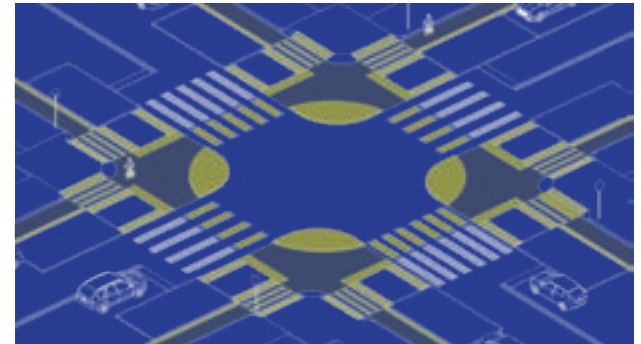


Short-Term

Washable paint or removable tape can be used to create crossings and lanes. Traffic barriers and delineators should be fixed to the surface or heavy enough to withstand traffic and weather. If planters are used as barriers, they will require regular maintenance.

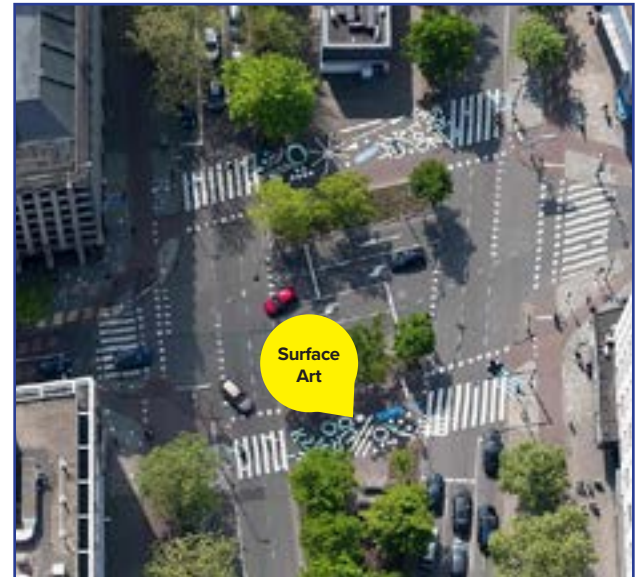


Credit: Victor Moriyama/WRI Brasil



Long-Term

Semi-permanent reflective paint should be used to stripe off bike lanes and crossings. Curbs that separate the bike queue area and parking lanes can be installed using engineered rubber curbs or mats which are very durable and can be fixed to the paving. Flex-posts should be temporarily anchored.



Credit: ossip van duivenbode

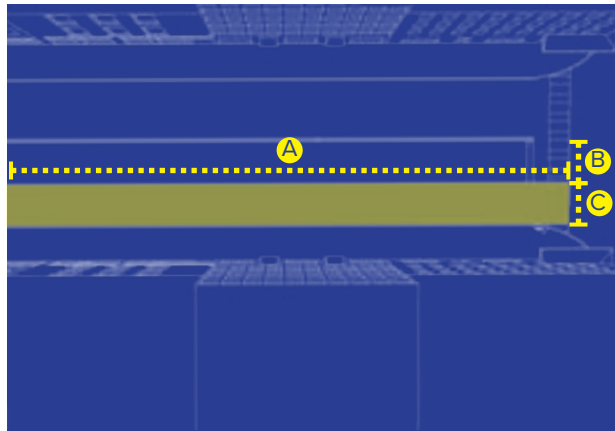
E3. Active Transportation: Bus Lanes

When to Use

This type of lane can accommodate bicycles and bus traffic which compete for the same curb space. However, it is not appropriate for high bus volume or for high-comfort bike routes. For low-speed, low volume roads a shared lane can be a great solution.

General Suggestions and Requirements

Permanent shared mobility lanes are typically shaded in red, which is less common in examples of temporary bus-bike lanes but can be done with washable paint. Movable traffic delineators and reflective removable striping should be used to close off the mobility lane to regular through traffic.



Typical Design and Placement

A	Length Dependent on Bus Route.
B	10' Min. Width.
C	11' Min. Width.

Mobility Lane Replaces Existing Street Parking.

Maintain existing lane width.



Temporary Bus Lane Road-Paint
Credit: WBUR



Pop-Up Bus Lane Install
Credit: PBS

E3. Active Transportation: Bus Lanes | Alternative

Public transportation can share sections of lanes as opposed to creating entire shared mobility lanes. Bus Queue Lanes give buses the ability to move in front of the vehicular queue and travel through an intersection without waiting. Layover bus stops provide a striped bus stop within the designated bike lane. Bus Side-boarding Islands can be constructed on the side of roads around bike lanes or in the middle of roads for safer onboarding. Bike parking and repair stations can be provided within striped parking spaces.

General Requirements

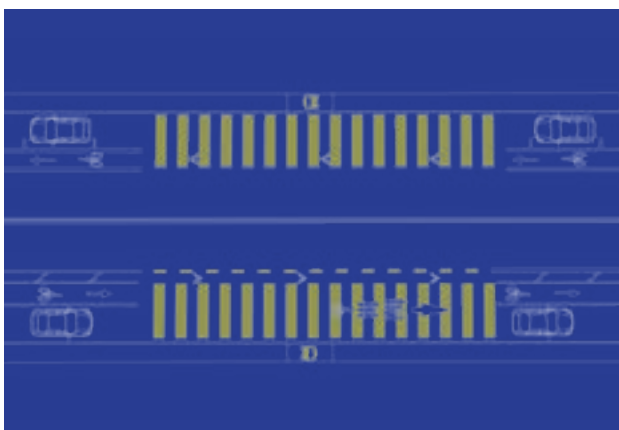
Speed Limit	Permitted on Streets/Lanes at or below 25 mph.
Size	10' Min. Lane Width. (11' Min. Lane Width, if a transit corridor)
Emergency Access	Barriers must allow access for emergency vehicles.
Loading	ADA access is provided for bus stops.
Clearance	Provide driveway and pedestrian clearance across shared lanes and spaces.
Traffic Flow	Existing traffic volume must be maintained. Must not interfere with existing public- transit routes.



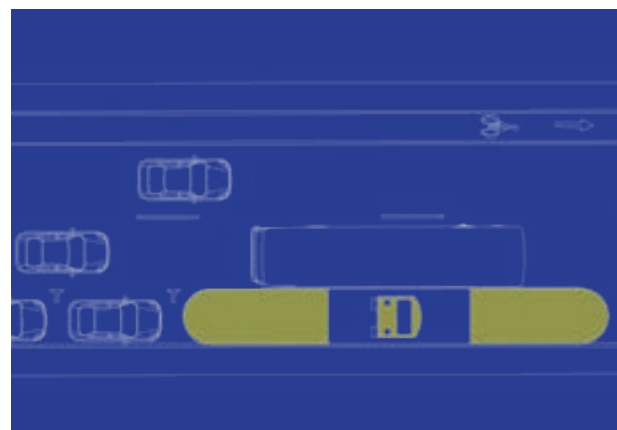
Bike Parking and Repair Station



Bus Queue Jump Lane

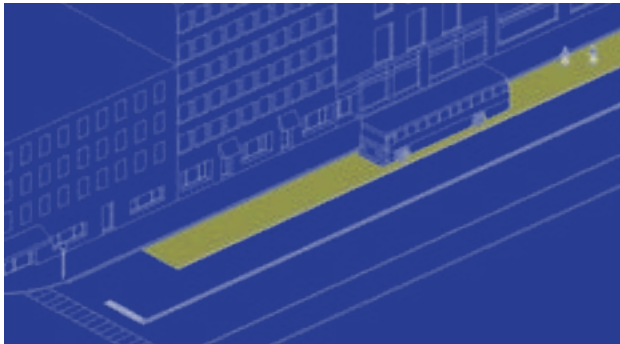


Layover Bus Stop



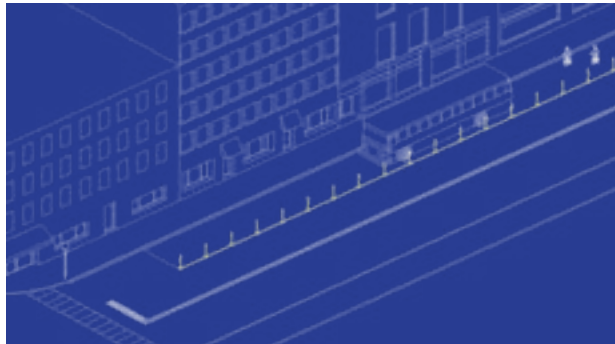
Bus Side-boarding Island

E3. Active Transportation: Bus Lanes | Duration



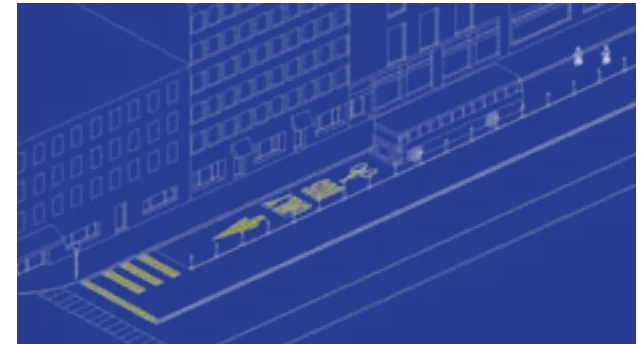
Pop-Up

This duration is minimal as far as materials. However, it requires intense cooperation with communication and planning. Movable barriers separate regular traffic from the shared lane. Removable striping can be installed along the edge of the proposed lane.



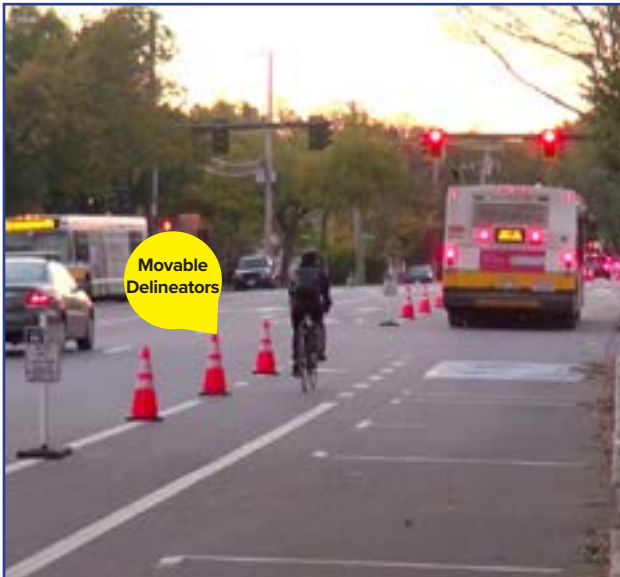
Short-Term

Similar movable traffic delineators and striping can be installed for this duration. A higher priority should be placed on communicating intent of the lane to drivers via signage, and stencil signage.



Long-Term

Vertical and surface stencil signage is required for long duration shared mobility lanes. Shading the lane in red is recommended to clearly communicate the intent of the lane to regular traffic. The shading becomes striped as it approaches the stop bar to allow vehicles to turn right in the shared lane.



Credit: Columbus Underground



Credit: Boston Globe



Credit: Broken Sidewalk

Data Collection

Data Collection Methods

Tactical Urbanism projects emphasize a ‘test before invest’ mentality. Gathering evidence before, during and after an installation can often support the case for proposing more permanent changes to the built environment. Applicants are encouraged to consider data collection as part of their project. NDOT staff will work with applicants on a data collection plan and can, in many cases, supplement applicant efforts with installation of equipment to support data collection and before/after analysis.



Pedestrian + Cyclists Counts



Pedestrian Surveys/Questionnaires



Vehicular Speeds + Volume

Installation Requirements

Site Preparation

Prior to installation it is important to properly prepare the site and the team of people that will be installing the project. Applying paint or other surface treatment will require cleaning trash, dirt, and debris from the right-of-way. For example, damage to existing surface cannot be modified or painted over so this should be noted in plans. Understand the knowledge/ experience level of the installation team and educate/train them prior to the installation date so that the installation can go as smoothly as possible. Understand what equipment and tools will be required to successfully install the project. Secure the necessary tools in advance so that your installation team is fully prepared the day of install.

Safety and Responsibility

All volunteers must sign liability release forms. Projects involving traffic calming or lane closure will require traffic control personnel and devices. Open worksites that could endanger pedestrians require signage to prevent accidents. Personal protective equipment (PPE) is required for most projects within the public R.O.W. For the safety of the installation team it is recommended that everyone is equipped with high-visual reflective vests or clothing, work gloves, and if hammering or power tools are in use safety glasses. Read and understand all chemicals in use such as adhesives, paint, and other surface treatments. Follow any PPE recommendations made by these products which may include filter masks and special clothing.

Items to consider

- Personal Protective Equipment
- Traffic Control Personnel/ Devices
- Trash/Debris Removal
- Tools/ Equipment
- Volunteer Experience Level



Credit: Civic Design Center



Credit: Michael Ward, Fayetteville



Credit: Civic Design Center



Credit: Civic Design Center

Removal Requirements

Project Dismantlement

It is the responsibility of the applicant to maintain and clean up the project site. After installation all debris and trash should be properly disposed of. Once a project has run its course, the applicant is responsible for dismantling and disposing of the project materials. Construction materials are often difficult to recycle so consider repurposing or re-using the materials to avoid throwing everything into the landfill. The following resources are available for recycling:

[Turnip Green Creative ReUse](#)

Reasons for Removal

The applicant is responsible for removal. If road improvements are scheduled by NDOT the installation can be removed without notice during the demolition phase of the improvement project. Public safety emergencies may also necessitate immediate removal of projects. The application process requires a time period for how long the project will be implemented and a date for when the project will end and be removed. Removal can be self-initiated by the installer. If the project reaches its deadline or there is self-initiated removal the applicant is responsible for traffic control and safety management that was implemented during the installation.

Items to consider

- Personal Protective Equipment
- Traffic Control Personnel/ Devices
- Trash/Debris Removal
- Tools/ Equipment
- Volunteer Experience Level



Credit: Civic Design Center



Credit: Peter Weinberger



Credit: Kiro 7 News



Michael Cummo / Hearst Connecticut Media

Maintenance Requirements

Anticipate Repairs

Keep it Clean

For the entire duration of the project the applicant is responsible for maintenance and keeping the site clean. The site must be monitored regularly for cleanliness and functionality. Trash, broken objects, dead plant material, and other debris should be cleaned and properly disposed of. Any malfunctions or damage to the project should be fixed or replaced as soon as possible. This is particularly important where safety is concerned. Prior to project installation a maintenance agreement is to be signed by the project ambassador.

Project Ambassador

Each project shall include the contact information and agreement from a community member to periodically check on the state of the installation to ensure projects are well-maintained. If issues arise, the community member will address any issues that may arise during the installation period.

Items to consider

- Obstructions to R.O.W./ADA Compliance
- Graffiti Removal
- Trash/Debris Removal
- Damaged Installation Replacement/Repairs
- Paint Removal



Credit: Howard Amaral



Credit: City of Melbourne



Credit: Mike Lydon & Anthony Garcia



Credit: John Metcalfe/CityLab

Documentation Requirements

Letter(s) of Support

Prior to submitting an application, community and/or business support is required to include with the project proposal. The Letter of support should come from the impacted community or business near the installation.

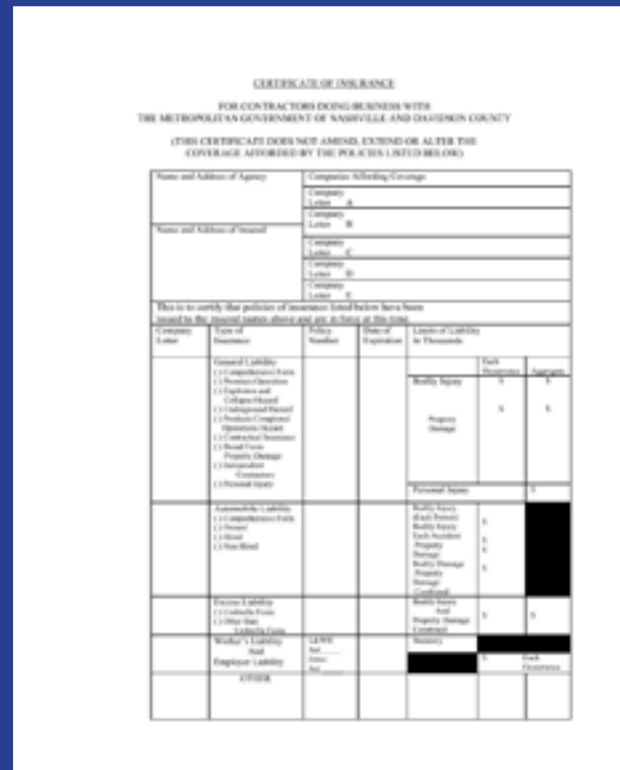
Sample Letter of Support



Insurance

The City of Nashville requires a minimal insurance and bonding for project installations in the public R.O.W. and all work performed with the approved permits.

Sample Certificate of Insurance

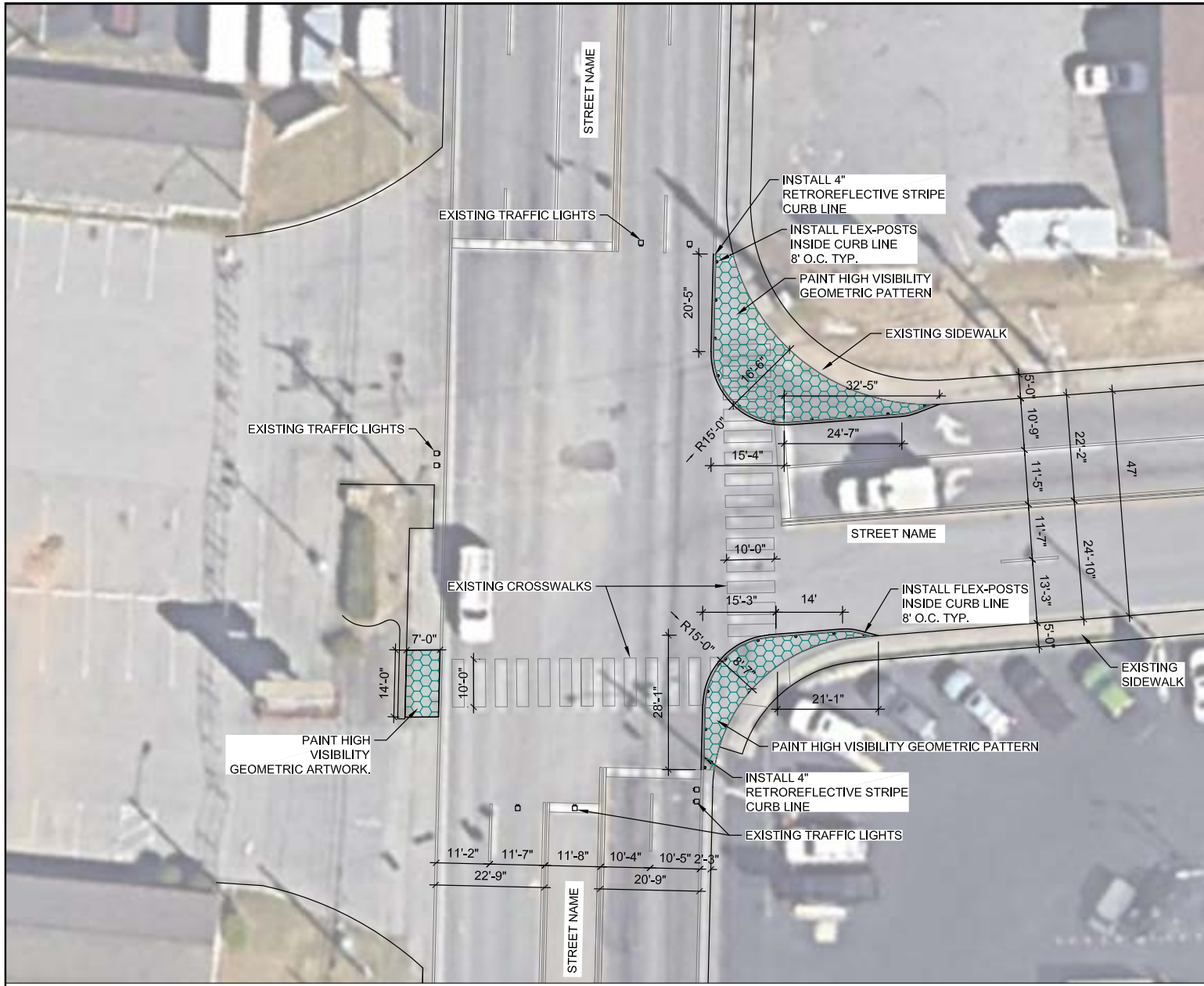


Design Plans

Each project submission shall require a design exhibit with dimensions, noted materials and any artistic components planned. The following exhibits are to be included with each application:

- Existing Site Plan (Label and dimensions of features)
- Intervention Design Plan (List project types included, labels and dimensions of proposed installation)
- Materials (Listed separately or on Design Plan)
- Duration/Phasing
- Maintenance Plan/ Itinerary
- Removal Plan/ Itinerary

Sample Site Plan (Computer Drafted)



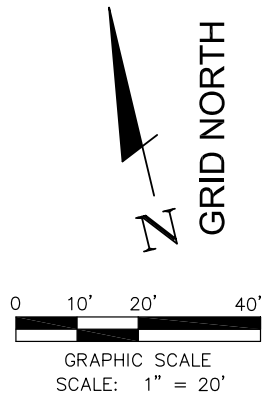
PROJECT TYPES:
BULB-OUT, CROSSWALK
ENHANCEMENT.

DRAWN BY/ DESIGNER NAME
 APPLICANT NAME
 APPLICATION #
 ASSOCIATED GROUP/ BUSINESS NAME
 ADDRESS
 PHONE NUMBER
 E-MAIL ADDRESS
 DATE

SITE PLAN
 PROJECT NAME
 PROJECT ADDRESS

SURVEY INFORMATION/ SOURCE

C1.01
 FILE NO. 3XXXXXX



Sample Site Plan (Hand Drawn)



Sample Removal Plan (Computer Drafted)



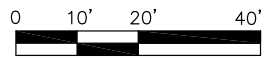
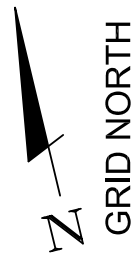
PROJECT TYPES:
BULB-OUT, CROSSWALK
ENHANCEMENT.

DRAWN BY/ DESIGNER NAME
 APPLICANT NAME
 APPLICATION #
 ASSOCIATED GROUP/ BUSINESS NAME
 ADDRESS
 PHONE NUMBER
 E-MAIL ADDRESS
 DATE

REMOVAL PLAN
 PROJECT NAME
 PROJECT ADDRESS

SURVEY INFORMATION/ SOURCE

C1.02
 FILE NO. 3XXXXXX



GRAPHIC SCALE
 SCALE: 1" = 20'



MATERIALS

WeHo Intersection Mural + Bulb-outs

Materials

Recommended materials vary based on the project's duration. To maintain safe and pleasant experiences for all users in the public realm, durability and ease of installation/removal must be taken into consideration for the entire length of installation. NDOT owns various materials that are available for use in Tactical Urbanism Projects. See the [Tactical Urbanism program website](#) for current list.

Iconography courtesy of Civic Design Center



Credit: Civic Design Center

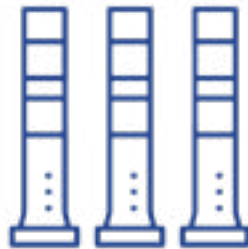


Credit: Civic Design Center



Credit: Civic Design Center

Materials: Barrier Elements



FLEX POST

- • •

Estimate Cost: \$

Overview:

Delineator posts, also known as flex posts, are low-cost products that provide a visual barrier delineating the roadway from spaces for people.



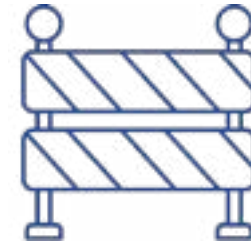
TRAFFIC BARREL

- • ○

Estimate Cost: \$

Overview:

Traffic barrels are low-cost products that provide a visual barrier delineating the roadway from non-motorized spaces for people.



TYPE III BARRICADE

- • •

Estimate Cost: \$\$

Overview:

Type III barricades are lightweight and include reflective panels; providing a visual barrier preventing vehicles from traveling on the roadway and providing space for people.



EMPTY OR SAND FILLED PLASTIC JERSEY BARRIER

- • ○

Estimate Cost: \$\$

Overview:

Using water-filled jersey barriers is a simple way to add heavy, substantial barriers that can be easily moved into place prior to being filled with water or sand.



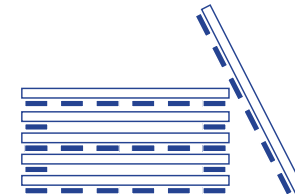
CONCRETE BARRIER

- ○ •

Estimate Cost: \$\$\$

Overview:

Concrete barriers are heavier than jersey barriers and add extra protection for projects on streets with higher speeds.



SHIPPING PALLETES

- • ○

Estimate Cost: \$\$

Overview:

Shipping pallets are wooden or plastic platforms that are relatively light, durable, and movable. These pallets can be used as street furniture. Such as: Benches, barriers, planters, bike parking, and more.

Estimate Cost

\$ - less than \$100

\$\$ - between \$100-500

\$\$\$ - more than \$500

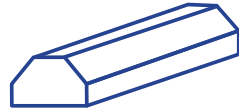
Duration

○ ○ ○ - temporary

○ • ○ - short term

○ ○ • - long term

Materials: Barrier Elements



WHEEL STOP

- ● ●

Estimate Cost: \$

Overview:

Easy to install, wheel stops can be used as low barriers and to demarcate tactical interventions. They should allow gaps for curbside pedestrian access or for cyclists to cross through.



TRAFFIC CONE

- ● ○

Estimate Cost: \$

Overview:

Traffic cones are an affordable and easily movable barrier with reflective bands



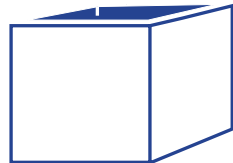
SPEED CUSHIONS

- ● ●

Estimate Cost: \$\$\$

Overview:

Speed cushions are effective at reducing speeds on residential roadways.



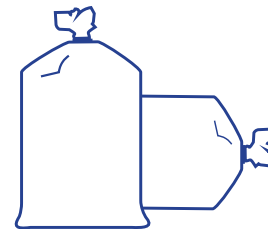
PLANTER

- ● ●

Estimate Cost: \$\$\$

Overview:

Planters are a vibrant way to create protective barriers between the roadway and spaces for people. This planter provides a self-watering reservoir for easier maintainability.



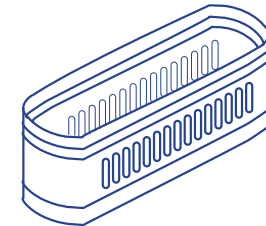
SAND BAGS

- ● ○

Estimate Cost: \$

Overview:

Sandbags can act as barriers or help direct water away from buildings.



ROUND END SHEEP STOCK TANK

- ● ●

Estimate Cost: \$\$

Overview:

These types of planters are used as median islands, curb extensions, planters in plazas, and as makeshift roundabouts.

Estimate Cost
\$ - less than \$100
\$\$ - between \$100-500
\$\$\$ - more than \$500

Duration
● ○ ○ - temporary
○ ● ○ - short term
○ ○ ● - long term

Materials: Signage



SLOW SHARED STREET PROJECT SIGNAGE

- • •

Estimate Cost: \$\$

Overview:

For all slow streets, signage will be required. TDOT will provide the template for fabrication.



PROJECT INFO SIGNAGE

- • •

Estimate Cost: \$\$

Overview:

Project site signage should be posted at the project site during installation and throughout the duration of the project.



STATE LAW CROSSING SIGN

- • •

Estimate Cost: \$

Overview:

State law crossing signs should be used when applicable on Streets up to 35 mph.



TEMPORARY TRAFFIC SIGNAGE

- ○ ○ ○

Estimate Cost: \$

Overview: Movable signage on rubber base.

Estimate Cost

\$ - less than \$100

\$\$ - between \$100-500

\$\$\$ - more than \$500

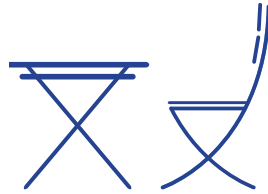
Duration

• ○ ○ - temporary

○ • ○ - short term

○ ○ • - long term

Materials: Furniture



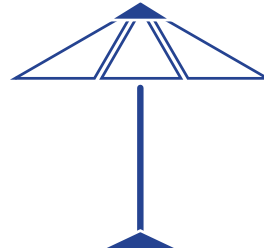
BISTRO SET

• • ○

Estimate Cost: \$\$

Overview:

Colorful tables and seating encourages the use of tactical interventions.



UMBRELLA

• ○ ○

Estimate Cost: \$\$\$

Overview:

Typically paired with seating, umbrellas also create inviting spaces by providing shade to users.



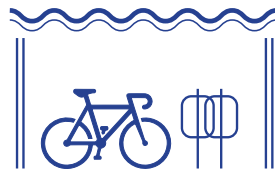
PARKLET KIT

○ ○ •

Estimate Cost: \$\$\$

Overview:

Parklet kits are supported by decks and platforms flushed with the curb. Supporting activities such as outdoor dining and other amenities for people.



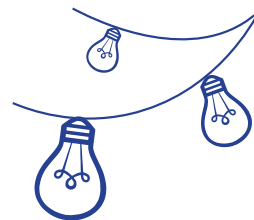
BIKE RACK

• • •

Estimate Cost: \$\$

Overview:

Bike racks provide parking for bikes. These racks encourage bike users to stop and interact with tactical interventions.



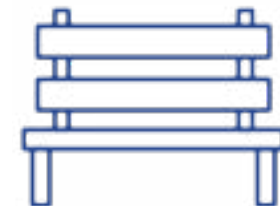
BISTRO LIGHTS

• • ○

Estimate Cost: \$

Overview:

Bright and vibrant bistro lights can enhance tactical interventions during the night.



BENCH

• • •

Estimate Cost: \$

Overview:

Create simple and affordable benches using cinder blocks and wood.

Estimate Cost
\$ - less than \$100
\$\$ - between \$100-500
\$\$\$ - more than \$500

Duration
○ ○ ○ - temporary
○ • ○ - short term
○ ○ • - long term

Materials: Surface Treatments



TEMPORARY SIDEWALK PAINT

• ○ ○

Estimate Cost: \$

Overview:

Cornstarch Paint (Equal parts cornstarch and water, with desired amount of food coloring) is used for temporary interventions to mark bike lanes and spaces, or create a road mural.



TRAFFIC PAINT (WHITE)

○ ○ •

Estimate Cost: \$

Overview:

White reflective striping is the official traffic control device that demarcates the boundaries of tactical interventions.



RESILIENCE EXTERIOR ACRYLIC LATEX

○ • ○

Estimate Cost: \$

Overview:

Paint specifications for each project type are outlined in their standards.



STRIPING AND MARKING PAINT

○ ○ •

Estimate Cost: \$

Overview:

Spray paint may be used to demarcate the extents of the bike lane including the solid striped edge and width of the buffer.



ARMORSEAL TRED-PLEX

• ○ •

Estimate Cost: \$

Overview:

Paint specifications for each project type are outlined in their standards.



TRAFFIC SYMBOL STENCIL

• • •

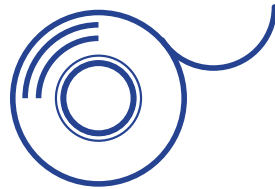
Estimate Cost: \$\$

Overview:

Painted bike and pedestrian symbols should be used at intersections and curb cuts to emphasize intersecting bike and walk lanes with vehicular traffic.

Estimate Cost
 \$ - less than \$100
 \$\$ - between \$100-500
 \$\$\$ - more than \$500

Duration
 • ○ ○ - temporary
 ○ • ○ - short term
 ○ ○ • - long term



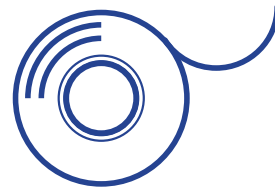
PAVEMENT MARKING TAPE

• • •

Estimate Cost: \$

Overview:

Traffic tape may be used to mark off the extents of bike lanes including the solid striped edge and width of the buffer, as well as other street demarcations.



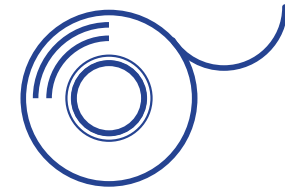
THERMOPLASTIC STRIPING

○ ○ •

Estimate Cost: \$

Overview:

White reflective striping is the official traffic control device that demarcates the boundaries of tactical interventions.



MARKING TAPE

○ • •

Estimate Cost: \$

Overview:

Standard foil-baked traffic tape is reflective, non-slip, and easy to apply. Available in standard white and yellow colors.



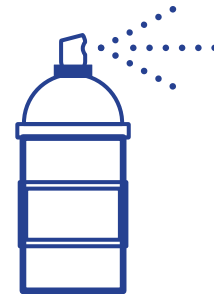
STRIPING CHALK

• ○ ○

Estimate Cost: \$

Overview:

Chalk spray paint may be used to demarcate the extents of the bike lane including the solid striped edge and width of the buffer.



SPRAY PAINT

○ • ○

Estimate Cost: \$

Overview:

Spray paint may be used to demarcate the extents of the bike lane including the solid striped edge and width of the buffer.



REFLECTIVE GLASS BEADS FOR TRAFFIC PAINT

○ ○ •

Estimate Cost: \$

Overview:

Reflective glass beads illuminate roadway striping at night.

Estimate Cost
 \$ - less than \$100
 \$\$ - between \$100-500
 \$\$\$ - more than \$500

Duration
 • ○ ○ - temporary
 ○ • ○ - short term
 ○ ○ • - long term

Materials: Planting Materials



SHRUB

•••

Estimate Cost: \$

Overview:

Plants can be borrowed or purchased and used as greening or barrier elements.



POTTED PLANTS

•••

Estimate Cost: \$

Overview:

Plants can be borrowed or purchased and used as greening or barrier elements.



ASTROTURF

••○

Estimate Cost: \$

Overview:

Used to create a temporary visual green surface for curb extensions, or as a soft surface for parklets and plaza events.



TREE

•••

Estimate Cost: \$

Overview:

Great option for short term beautification and shade protection.



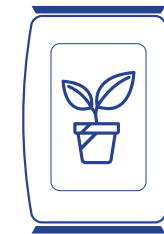
TIRE PLANTERS

••○

Estimate Cost: \$\$

Overview:

These type of planters are made of recycled tires, that are used as median islands, curb extensions, planters in plazas, and as make shift roundabouts.



POTTING MIX

••○

Estimate Cost: \$

Overview:

A substrate used to grow plants in containers. A combination of peat moss, bark, and perlite.

Estimate Cost

\$ - less than \$100

\$\$ - between \$100-500

\$\$\$ - more than \$500

Duration

○ ○ ○ - temporary

○ ● ○ - short term

○ ○ ● - long term

Materials: Miscellaneous



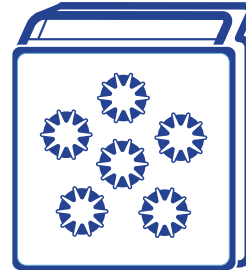
TEMPORARY SIDEWALK PAINT

- ○ ○

Estimate Cost: \$

Overview:

Cornstarch Paint (Equal parts cornstarch and water, with desired amount of food coloring) is used for temporary interventions to mark bike lanes and spaces, or create a road mural.



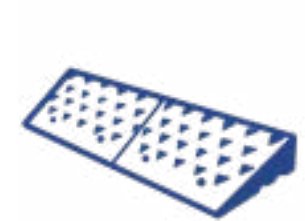
BATTERY POWERED STAGE LIGHTS

- • ○

Estimate Cost: \$\$

Overview:

Battery powered lighting is more energy efficient, last longer, and creates illuminating performances.



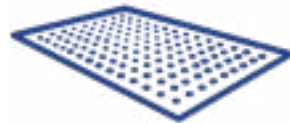
THRESHOLD RAMP

- • •

Estimate Cost: \$\$

Overview:

Tactical ramps provide access to curbs and parklets.



WARNING PAD

- • •

Estimate Cost: \$

Overview:

Located at entry points, warning pads are detection for the visually impaired to navigate entering and leaving pedestrian spaces.

Estimate Cost

\$ - less than \$100

\$\$ - between \$100-500

\$\$\$ - more than \$500

Duration

• ○ ○ - temporary

○ • ○ - short term

○ ○ • - long term

Materials: Color Palette

Colored Pavements:

If colored pavement is used within the traveled way, on flush or raised islands, or on shoulders to regulate, warn, or guide traffic or if retroreflective colored pavement is used, the colored pavement is considered to be a traffic control device and shall be limited to the following colors and applications:

- Yellow pavement color shall be used only for flush or raised median islands separating traffic flow in opposite directions or for left-hand shoulders of roadways of divided highways or one-way streets or ramps.
- White pavement color shall be used for flush or raised channelizing islands where traffic passes on both sides in the same general direction or for right-hand shoulders.

Colored pavements shall not be used as a traffic control device, unless the device is applicable at all times.

Colored pavements used as traffic control devices should be used only where they contrast significantly with adjoining paved areas.

Colored pavement located between crosswalk lines should not use colors or patterns that degrade the contrast of white crosswalk lines, or that might be mistaken by road users as a traffic control application.

More information regarding colored pavement can be found in the [MUTCD \(Manual of Uniform Traffic Control Devices\)](#).

Approved Colors

In general, most muted and earth-tone colors are appropriate for all R.O.W. installations. Elements that lie outside of vehicular interaction may include a wider variety of color options. It is recommended to avoid using similar colors to existing traffic control elements in the R.O.W. Colors must be non-reflective as to comply with the [Federal Highway Administration's 2013 Memo](#) on Colored Pavement. There is an example below from the [2022 City of Atlanta Tactical Urbanism Guide](#)



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Metro Arts










Long-Term projects incorporating art components must be approved by both NDOT and Metro Arts. A project approved through the Tactical Urbanism Program is not guaranteed to be approved by Metro Arts. For more information regarding installations and temporary art, go to [Temporary Art Guidelines](#).

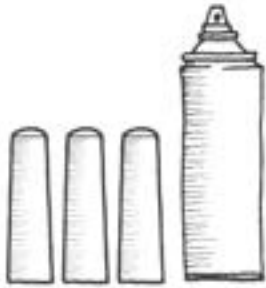
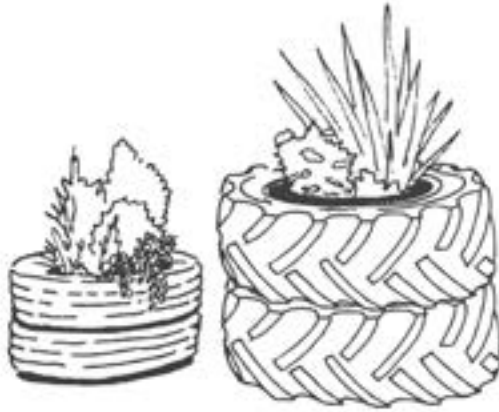
Materials: Color Palette

Prohibited Colors

The use of official MUTCD (Manual of Uniform Traffic Control Devices standard pavement marking and striping guidance) used for traffic information to provide safe movement for all users shall not be used for street art components. A list of prohibited colors can be seen below as well as on [MUTCD Color Specifications](#).

These colors are official indicators of important traffic information. The use of these colors are not permissible for asphalt art.

 Pantone 259	<ul style="list-style-type: none">SW 6831SW 6832SW 6839SW 6980SW 6981	 Pantone 382	<ul style="list-style-type: none">SW 6717SW 6920 - 6921GAF Shamrock Green	 Pantone 387	<ul style="list-style-type: none">SW 6601SW 6607 - 6608SW 6864 - 6871GAF Roadster Red
 Pantone 316	<ul style="list-style-type: none">SW 6903SW 6906 - 6907SW 6910-06911	 Pantone 342	<ul style="list-style-type: none">SW 6924SW 6926 - 6927SW 6755SW 6747 - 6748GAF Emerald Green	 Pantone 294	<ul style="list-style-type: none">SW 6811SW 6965 - 6967SW 6971GAF Safety Blue
 Pantone 152	<ul style="list-style-type: none">SW 6892 - 6894SW 6885 - 6887GAF Pumpkin Spice	 Pantone 469	<ul style="list-style-type: none">SW 6048SW 6062SW 6068SW 6090SW 6096 - 6097	 Pantone 790	<ul style="list-style-type: none">SW 6586SW 6858 - 6859SW 6860



RESOURCES



Resources + Links

Tactical Urbanism Resources

TURBO Nashville

The Civic Design Center's TURBO program has initiated tactical urbanism projects for over a decade. Educational material, reference projects and other resources can be found in their [TURBO catalogue](#) and [website](#).

Tactical Urbanism Vol. 1-6

The Streets Plans Collaborative has published several guides on tactical urbanism projects and includes a wide variety of project examples on their [website](#).

The Planner's Guide to Tactical Urbanism

[The Planner's Guide to Tactical Urbanism](#) was prepared as part of a larger supervised research project during Laura Pfeifer's degree at the McGill School of Urban Planning (2013). The full project can be accessed through www.reginaurbanecology.com

NOTE: PPE Safety Equipment should meet OSHA guidelines. For more information go to <https://www.osha.gov/personal-protective-equipment>.



Credit: Civic Design Center

Street Design Resources

NACTO

The National Association of City Transportation Officials provides a series of [Design Guides](#) to help cities make the best use of their streets.

Street Plans

In addition to their tactical urbanism work, Street Plans includes Planning and Design resources and project experience on their [website](#).

Better Block

Better block has developed an open source of tools and design library through their "[Wikiblock](#)" program. Design files can be downloaded for free.



Credit: Civic Design Center

Funding Resources

Community Challenge Grant

AARP releases annual [Community Challenge](#) grant opportunities that help fund projects that focus on livable communities for all ages.

Local Grants

Some project proposals may qualify for grants from the TN Dept. of Health focusing on [healthy built environments](#).

Metro Arts provides grants and other funding resources for temporary art and community placemaking projects. The [Thrive](#) grant program is specifically for community-based public art projects.

The "[Arts Build Communities](#)" program through the TN Arts Commission may align with the goals of some tactical urbanism applications.



Credit: Civic Design Center

Resources + Links

Resources

National Association of City Transportation Officials (NACTO)

<https://nacto.org/>

Manual on Uniform Traffic Control Devices (MUTCD)

<https://mutcd.fhwa.dot.gov/>

Tactical Urbanism Vol.1

https://issuu.com/streetplanscollaborative/docs/tactical_urbanism_vol.1

The Planner's Guide to Tactical Urbanism

<https://reginaurbanecology.files.wordpress.com/2013/10/tuguide1.pdf>

Metro Arts

<https://www.metroartsnashville.com/>

Temporary Art Guidelines

https://98d9df32-e9e5-49fb-b3f5-811942ccac16.filesusr.com/ugd/cc4e3f_f11cd3655c454aa18f95048d37911820.pdf

OSHA Personal Protective Equipment

<https://www.osha.gov/personal-protective-equipment>

Civic Design Center

<https://www.civicdesigncenter.org/>

GNRC

<https://www.gnrc.org/>

ABC Grants

<https://www.metroartsnashville.com/abc-grants>

Links

Neighborhood search

<https://www.nashville.gov/departments/planning/long-range-planning/neighborhoods/neighborhood-links>

NDOT Tactical Urbanism App

<https://www.nashville.gov/departments/transportation/plans-and-programs/tactical-urbanism-program>

Parcel Viewer

<https://maps.nashville.gov/ParcelViewer/>

Major + Collector Street Plan

<https://maps.nashville.gov/MCSP/>

Vision Zero

<https://www.nashville.gov/departments/transportation/plans-and-programs/vision-zero>

Vision Zero Action Plan

<https://www.nashville.gov/departments/transportation/plans-and-programs/vision-zero/action-plan>

High Injury Network

<https://experience.arcgis.com/experience/74363e0dbb3e43138bc7d451a90817ef/page/High-Injury-Network/?views=High-Injury-Network>

Parklet Program Application Process

<https://www.nashville.gov/departments/transportation/permits/parklet-program>

MUTCD color specs

<https://mutcd.fhwa.dot.gov/kno-colorspec.htm>

Federal Highway Administration's 2013 Memo

https://mutcd.fhwa.dot.gov/resources/interpretations/3_09_24.htm

Peer Review

City of Atlanta

Tactical Urbanism Guide 2020

<https://www.atlantaga.gov/home/>

New York City

Arterventions, Request for Proposals 2021-2022

<https://www.aaartsalliance.org/opportunities/arterventions-2021-2022>

City & County of San Francisco

Shared Spaces Manual 2021

<https://sf.gov/>

City of Boston

Tactical Public Realm Guidelines 2018

<https://www.boston.gov>

City of Minneapolis

PUBLIC ART PERMITS INSTRUCTIONS & GUIDELINES

<https://www2.minneapolismn.gov/>

City of Seattle

Seattle Right-Of-Way Improvements Manual

<https://streetsillustrated.seattle.gov>

TURBO

<https://turbo.civicdesigncenter.org/>

Resources + Links

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Street Plans (Pg. 18)
SDot Photos (Pg. 20)
Seattle Right-Of-Way Improvements Manual (Pg. 21, 23, 25)
BeyondDC (Pg. 21)
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DDOT (Pg. 23)
Congress For New Urbanism (Pg. 25, 28)
Nate Baranowski (Pg. 27)
Bogota District Mobility (Pg. 27)
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San Jose Tactical Urbanism (Pg. 30)
Big Car dot org (Pg. 33)
Melendrez (Pg. 32, 33)
New York City DOT (Pg. 33)
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Atlanta Tactical Urbanism Guide (Pg. 77, 78)
Tactical Urbanist's Guide to Materials and Design (Pg. 79)

Acknowledgments

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Tennessee Department of Transportation, Multimodal Division

Vision Zero Advisory Committee

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Barge Design Solutions

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This report was prepared by:

