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December 13, 2019

Mr. Rodney Chatman, AICP
Forward Pinellas
310 Court Street
Clearwater, FL 33756

Subject: City of St. Petersburg's Applications for Forward Pinellas Planning and Place-Making (PPM) Grant Pilot Program

Dear Mr. Chatman,

The City of St Petersburg is pleased to submit the attached application for the Demonstration and Pilot Project Policy and Guide for consideration with the Forward Pinellas Planning and Place-Making (PPM) Grant Pilot Program. The intent of the Demonstration and Pilot Project Guide is to provide a streamlined process and guidance to citizens, community groups and advocacy organizations seeking an active role in improving the streetscape in their neighborhood. Demonstration projects allow citizens the opportunity to reimagine how streets, the largest public space in our city and county, are designed and used. Pilot projects will be City-initiated quick-build or temporary projects.

Thank you for the opportunity to apply for funding that will allow the City of St. Petersburg to better meet the transportation safety needs of our city's residents. We look forward to the support of Forward Pinellas for this much-desired project to further citizen involvement and safety as we work to develop a people-first transportation system that compliments Forward Pinellas's Vision Zero effort.

Sincerely,

Evan Mory

Evan Mory, Director
Transportation & Parking Management

City of St. Petersburg
Transportation and Parking Management
P.O. Box 2842
St. Petersburg, FL 33731-2842
O: 727-892-5341

Planning & Place-Making (PPM) Grant Pilot Program

A copy of the Planning & Place-Making (PPM) Grant Pilot Program application may be downloaded from the Forward Pinellas website at www.forwardpinellas.org. This application must be completed and submitted to Forward Pinellas via email to rschatman@forwardpinellas.org by 5:00 p.m. on December 13, 2019 in order for the project to be considered for funding.

Instructions: Provide the information requested below.

PART ONE: PROJECT SUMMARY	
Project Title:	Demonstration and Pilot Project Policy and Guide
Project Description: Briefly describe the project, location, scope of work, and activities to be funded by the PPM grant.	The intent of the Demonstration and Pilot Project Guide is to provide a streamlined process and guidance to citizens, community groups and advocacy organizations seeking an active role in improving the streetscape in their neighborhood. Demonstration projects, which can have a life span from one day to five years, allow citizens the opportunity to reimagine how streets, the largest public space in our city and county, are designed and used. Pilot projects will be City-initiated quick-build or temporary projects. Demonstration and pilot projects can include but are not limited to parklets, curb extensions, painted intersections, bicycle facilities, chicanes, and traffic circles. The grant will be used to hire a consultant to develop two Demonstration and Pilot Project guides. The first guide will include processes and standards specific to the City of St. Petersburg, developing a streamlined and clear process for Demonstration and Pilot Projects that align with City Engineering Design Standards and City Code requirements. The second guide will contain typical processes and best-practices, specific to the local context, which will facilitate adoption and adaptation by other local governments within Pinellas County.
PPM Funds Requested:	$100,000
Local Matching Funds (if any):	$0
Total Project Cost: (PPM Funds + Local Matching Funds)	$100,000
Local Government:	City of St. Petersburg
Project Manager:	Kyle Simpson
Title:	Planner I
Street Address:	P.O. Box 2842
City, State, and ZIP Code:	St. Petersburg, FL 33731
Phone:	(727) 893-7151
Email:	Kyle.simpson@stpete.org
Partner Agency (if any):	Forward Pinellas

Project Manager:	TBD
Title:	TBD

PART TWO: PROJECT ELIGIBILITY AND EVALUATION CRITERIA

The following information is required to evaluate your application based on the criteria and standards outlined in the PPM Grant Pilot Program Guidelines.

I. PROJECT ELIGIBILITY SCREENING CRITERIA

A. Application Authorization

Attach a copy of the resolution or letter signed by the Mayor or Chairperson of the elected body authorizing submittal of the application, directing the city manager/county administrator/chief administrative officer to assign staff resources to the project, and committing any matching funds to the project. See Exhibit 4 of the PPM Grant Pilot Program Guidelines for a copy of a sample resolution.

B. Funding Eligibility

Pinellas County local governments are the only eligible recipients of these funds. Non-profit and community-based organizations may be partners with local governments but cannot directly apply for funding. Grant recipients will be required to execute a grant agreement with Forward Pinellas in order to receive reimbursement of eligible expenses. Contact Rodney Chatman, AICP at 727-464-8250 or rschatman@forwardpinellas.org if you have questions.

II. PROJECT EVALUATION CRITERIA

A. Project Description - Provide a detailed description of the project, the land use and/or transportation challenges that it is intended to address, how it will address those challenges, and how the project relates to the Planning & Urban Design Principles of the Countywide Plan. This section should also discuss the project's history, including a description of any previously completed components, as well as any relationship to improving resiliency and/or sustainability within the community. The applicant may use this section to place the project in a broader context of other initiatives being pursued by the local government.

The St. Petersburg City Council adopted the Complete Streets Implementation Plan in May 2019 to create a comprehensive, integrated, and connected network where Complete Streets are designed and operated to promote safety and accessibility for all users of all modes, ages, and physical and economic abilities. To reach the Plans' stated goal of "High Quality of Life and Community Places" the Plan calls for development of a formal process for demonstration and pilot projects to encourage more community placemaking within the public realm of the city's streets. Demonstration projects are initiated by the community, whereas pilot projects are initiated by the City. Demonstration and pilot projects often include temporary or short-term changes to the public realm to test new configurations and concepts before full scale investment or physical construction. They allow for making temporary changes to the street to test alternatives and are opportunities to hear from the community on certain applications. Demonstration or pilot projects can include road diets, intersection narrowing, crossing improvements, painted intersections, parklets, and bio-swales.

Demonstration and pilot projects use short-term projects to study the potential for long-term changes to neighborhood streets. These projects provide a tool to deepen understanding of local user's needs at the neighborhood, block or building scale. They also support numerous plans, policies, and projects being pursued by St. Petersburg including the Innovation District Plan Streetscape and Connectivity Concept Plan, the Complete Streets Implementation Plan, Central Avenue Revitalization Plan, Union Central District Plan, Warehouse Arts District Deuces Live Joint Action Plan, and the Central Avenue Bus Rapid Transit project. Demonstration and pilot projects also support Forward Pinellas initiatives including 20-minute neighborhoods and Vision Zero. They support numerous planning and urban design principles in the Countywide Plan, including:

- 4Bii - Provide "Placemaking" Opportunities to Encourage Economic Development
- Ciii - i. Pedestrian and Related Buffers – A physical buffer with vegetation or shade trees should be placed between travel lanes and pedestrians to make the public realm a more comfortable space that people choose to be in.
- Cv – Providing public space consistently within designated Activity Centers, Multimodal Corridors or Planned Redevelopment Districts will enhance the pedestrian environment required of premium transit by creating focal points for everyday social life.
- 5Bi - Create Active and Safe Environment for Pedestrians –...people will choose to spend time in a place that is full of activity.
- Bii - Create a Mixed-Use Commercial Market-Base for Pedestrians – Active public spaces along corridors will provide a market-base for mixed-use, commercial, and neighborhood uses. This will help transform roadway corridors from an auto-oriented market to a more pedestrian-oriented market.
- Biii - Prohibit Pedestrian Dead-Zones – To create an active and safe public realm along a corridor, pedestrian dead-zones, or places lacking activity, should be minimized.

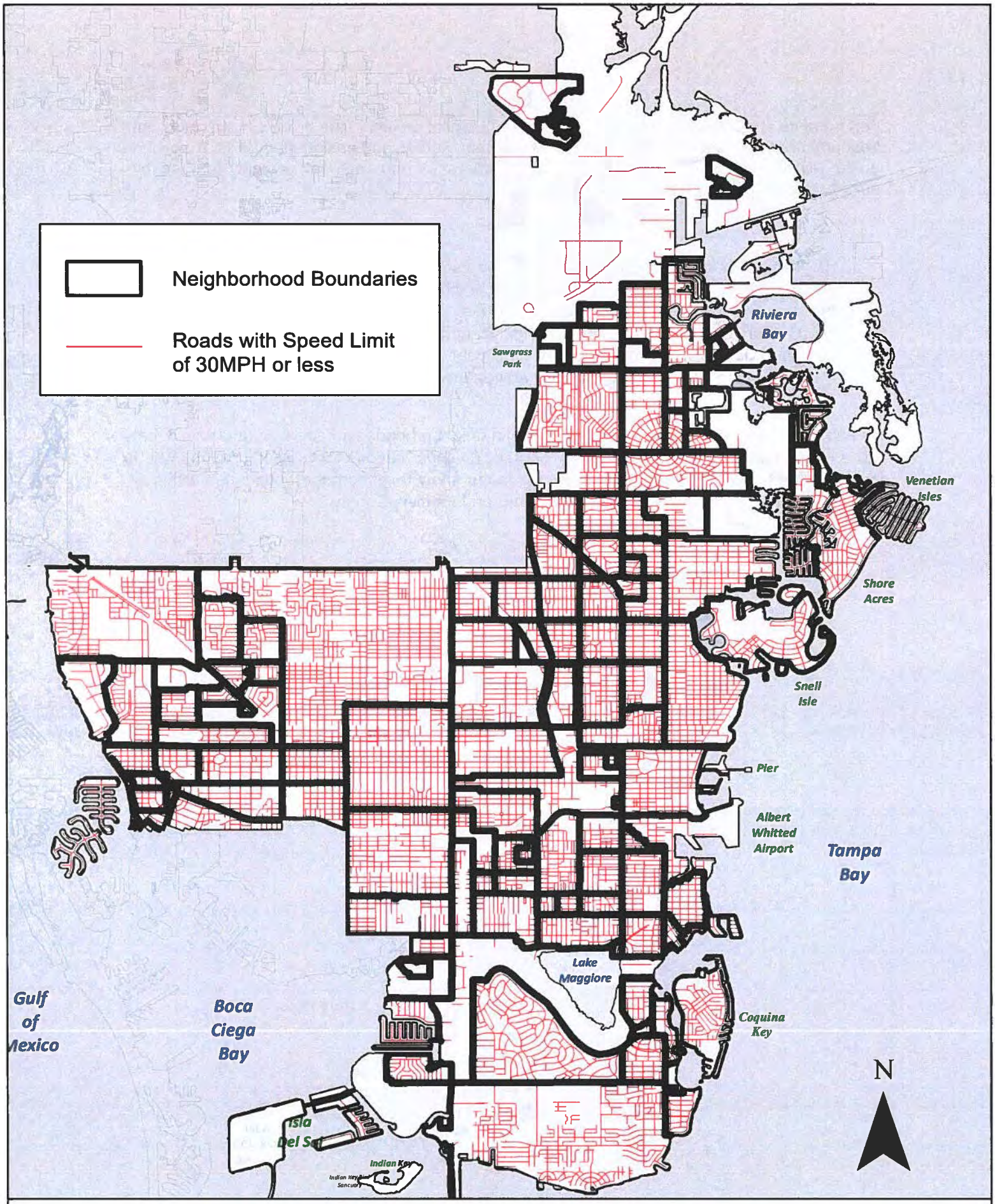
While demonstration and pilot projects are not new to the City of St. Petersburg, there is not an existing standard operating procedure for pilot projects or a clear path forward for residents wishing to complete a demonstration project. Existing pilot projects include the painted bulbouts at 5th Street and 2nd Avenue North and the neighborhood mini-circle at 31st Street and 7th Avenue North. Open Streets St. Pete and the painted intersection at 5th Street and Central Avenue are examples of demonstration projects.

The PPM funding will allow for an assessment of existing process for demonstration and pilot projects in the City of St. Petersburg. The funding will facilitate the development of a streamlined, clear, and timely process for community-led demonstration projects and set

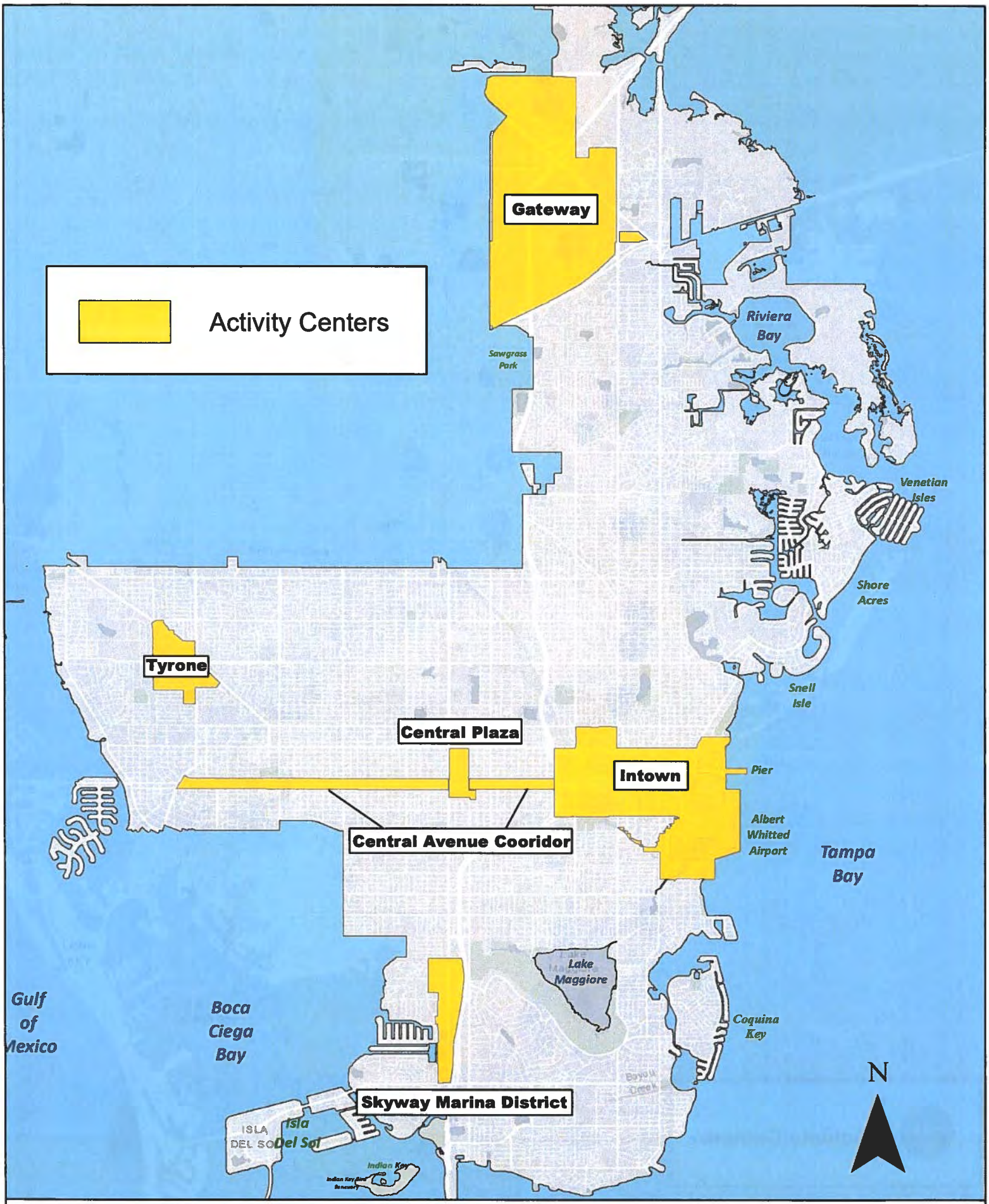
performance and evaluation metrics for City-initiated pilot projects. The guide will also highlight best practices for data collection, public involvement, safety, and design standards. A second guide will include typical processes and standards for the regional context, for use by neighboring and regional partners and agencies.

B. **Project Location** - Provide a map or map series of the project area that identifies the geographic location where the work will be performed. The map or map series should also include any relevant information (i.e., location of existing or planned Activity Centers or Multimodal Corridors, significant destinations in the area, existing or future land development projects or significant transit, roadway, and/or bicycle and pedestrian facilities) that will have an impact on the project.

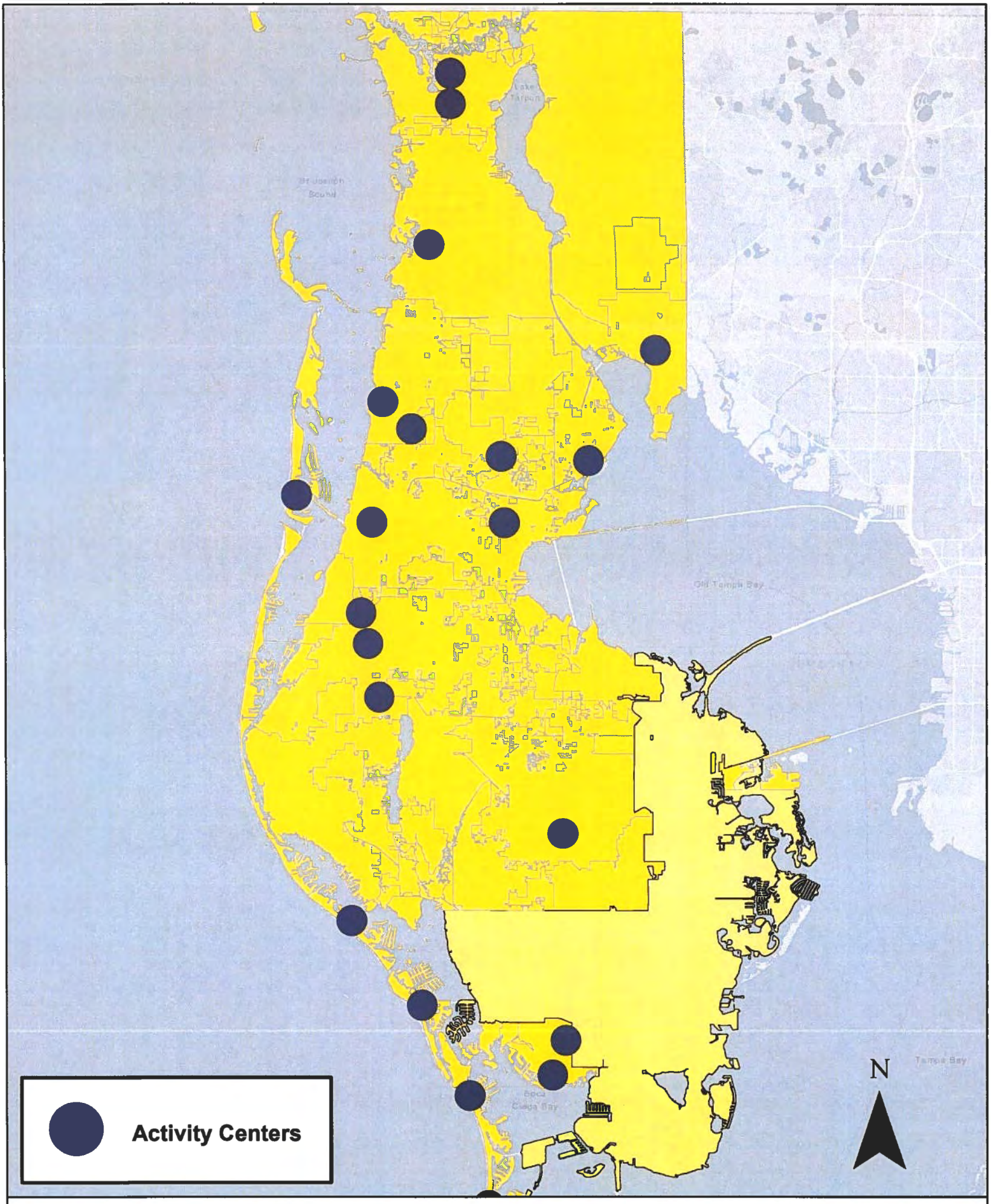
It is anticipated that projects will be initiated within neighborhoods and activity centers on streets with a speed limit of 30MPH or lower. While specific specifications for project locations will be developed as part of the Guide, the following maps show neighborhood boundaries within St. Petersburg and Activity Centers in St. Petersburg and Pinellas County.



Neighborhood Boundaries and Roads with Speed Limit of 30MPH or Less



St. Petersburg Activity Centers



Pinellas County Acvity Center Locations

C. **Project Partners** - Provide a description of any partner agencies or organizations that will be part of the project team. Include an overview of the agency or organization and what role they will play in the completion of the project.

Project Partners:
Successful creation of a Demonstration and Pilot Project Guide will include numerous project partners. Forward Pinellas's Vision Zero work will directly complement development of the Guide, and the Guide can serve as a resource for their work moving forward. Multiple City of St. Petersburg Departments will be involved including: Transportation and Parking Management; Community Services; Engineering and Capital Improvements; Planning and Development Services; Police; Fire Rescue; Stormwater, Pavement and Traffic Operations; Arts and Cultural Affairs; and Parks and Recreation. Community and non-profit partners will include the Council of Neighborhood Associations (CONA), St. Pete Bike Co-op and Bike/Walk Tampa Bay, and potentially others as identified through the project development. University and research partners may include the University of South Florida and the Center for Urban Transportation Research (CUTR).

D. **Project Schedule & Budget** - Include a brief narrative of the project schedule in the space below including an overall timeline that identifies all major project milestones. The narrative should also include a description of any matching funds and a brief explanation of all budgetary expenditures.

Development of St. Petersburg Demonstration and Pilot Project Guide - $50,000
Funds will be used to hire a consultant to develop a process, guidelines, and evaluation criteria for demonstration and pilot projects within St. Petersburg. Within three months of receiving funds from Forward Pinellas the City will issue an RFP for the Guide, which will have a year-long development process. Assuming receipt of funds in spring 2020, the Guide would be complete by summer 2021.

Development of a general Demonstration and Pilot Project Guide - $20,000
Funds will be used to create a "typical" Demonstration and Pilot Project Guide for use by other jurisdictions in Pinellas County in conjunction with development of the St. Petersburg Demonstration and Pilot Project Guide. This will harness work already being conducted for creation of the St. Petersburg guide and allow other governments to use the guide and potentially tailor to their specific needs and circumstances. Development of the guide will follow the same timeline as the St. Petersburg Guide.

Pilot Project Implementation and Guide Evaluation - $30,000
This funding will allow for implementation of at least one pilot and one demonstration project using the process as outlined in the new Guide, including evaluation. This will allow the City to test the efficacy of the Guide and develop any minor modifications needed to ensure the Guide is a useful tool to the City and its practitioners.

III. REQUIRED & SUPPORTING MATERIALS

The following is a checklist of required and supporting materials for the Planning & Place-Making (PPM) Grant Pilot Program application:

__ Completed application form
__ Resolution or letter authorizing the application
__ Documentation of the commitment of other matching funding
__ Map or map series showing the project location and any other relevant information
__ Letter(s) of support from any community groups, agencies or organizations is recommended but not required (optional)
__ Aerial photographs or other photographs depicting existing conditions (optional)

Please ensure all graphic materials are legible.

OFFICE OF THE MAYOR

CITY OF ST. PETERSBURG

RICK KRISEMAN, MAYOR

December 13, 2019

Ms. Chelsea Favero, AICP
Forward Pinellas
310 Court Street
Clearwater, FL 33756

Subject: City of St. Petersburg's Applications for Forward Pinellas grant programs

Dear Ms. Favero,

The City of St. Petersburg is pleased to submit several grant applications to Forward Pinellas for funding consideration. Each of these candidate projects have my support and have been included within prior planning efforts adopted by City Council. Specifically, these candidate projects and associated grant program include:

- Central Avenue Complete Street for Transportation Alternatives program funding
- 22nd Street Complete Street for Transportation Alternatives program funding
- 28th Street Complete Street for Transportation Alternatives program funding
- 6th Street Complete Street for Complete Streets Concept Planning funding
- 28th Street North Trail for Complete Streets Construction funding
- Demonstration and Pilot Project Policy and Guide for Planning & Placemaking funding

Attached is Resolution 2014-162 which provides authorization from the St. Petersburg City Council acknowledging support to submit these grant applications and pursue funding to assist the City in implementing these projects in a timely manner.

Thank you for the opportunity to submit these applications for projects that will allow the City to meet the multimodal transportation safety needs of our St. Petersburg's residents and visitors. We look forward to the support of Forward Pinellas and are excited at the opportunity to continue our successful collaboration in bringing forth more Complete Streets.

Sincerely,

Rick Kriseman
Mayor
City of St. Petersburg

NO. 2014 -162

A RESOLUTION AUTHORIZING THE MAYOR OR HIS DESIGNEE TO SUBMIT GRANT APPLICATIONS WHICH REQUIRE PRIOR APPROVAL BY CITY COUNCIL FOR SUBMISSION; TO REPRESENT TO THE GRANTOR THAT CITY COUNCIL HAS APPROVED THE SUBMISSION OF THE GRANT APPLICATIONS; AND TO EXECUTE ALL DOCUMENTS NECESSARY TO SUBMIT SUCH GRANT APPLICATIONS; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, some applications for grants require approval of the application by City Council as a condition for submission of applications; and

WHEREAS, this requirement sometimes creates a shortage of time for preparing and presenting an item for City Council approval in time to meet the grant application deadline; and

WHEREAS, the purpose of this resolution is to provide the Administration with blanket authority to apply for grants to enable the City to meet deadlines for submission of grant applications; and

WHEREAS, acceptance of all grants awarded must be approved by City Council.

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of St. Petersburg, Florida, that the Mayor or his designee is authorized to submit grant applications which require prior approval by City Council for submission; to represent to the grantor that City Council has approved the submission of the grant application; and to execute all documents necessary to submit such grant applications.

This resolution shall become effective immediately upon its adoption.

Adopted at a regular session of the City Council held on the 17th day of April, 2014.

William H. Dudley, Chair-Councilmember
Presiding Officer of the City Council

ATTEST: Eva Andujar
Eva Andujar, City Clerk

CITY OF ST. PETERSBURG, FLORIDA
INCORPORATED A.D. 1903

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MEMORANDUM

To: Forward Pinellas Board Members

From: Cheryl N. Stacks, P.E., PTOE, AICP CNS
St. Petersburg Complete Streets Committee Chairperson

Date: November 20, 2019

Subject: Support for the project applications submitted on behalf of the City of St. Petersburg to Forward Pinellas for consideration within the Forward Pinellas Complete Streets Program, Planning and Placemaking Grant, and Transportation Alternatives Program

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At its meeting on November 19, 2019, the City of St. Petersburg's Complete Streets Committee voted to indicate support for the City of St. Petersburg's applications for funding within the Forward Pinellas various grant programs, including the Complete Streets Program, Planning and Placemaking Grant, and Transportation Alternatives Program; our committee member that represents the Forward Pinellas staff recused himself from the vote.

The Committee is excited by the opportunities presented in these candidate projects that were all included in the City's Complete Streets Implementation Plan which was adopted in May 2019. Specifically, these candidate projects and associated grant program include:

- 6th Street Complete Street for Complete Streets Concept Planning funding
- 28th Street North Trail for Complete Streets Construction funding
- Demonstration and Pilot Project Policy and Guide for Planning & Placemaking funding
- Central Avenue Complete Street for Transportation Alternatives program funding
- 22nd Street Complete Street for Transportation Alternatives program funding
- 28th Street Complete Street for Transportation Alternatives program funding

As the Complete Streets Committee noted during its consideration of the project application, the City believes these candidate projects will be catalysts for redevelopment, provide better placemaking that integrates land use and transportation, and provide safer streets for all roadway users. We look forward to the support of Forward Pinellas and are excited at the opportunity to continue our successful collaboration in bringing forth more Complete Streets.

Appendix I

City of Burlington, VT Community-led Demonstration project Policy + Guide

COMMUNITY-LED DEMONSTRATION PROJECT POLICY + GUIDE

City of Burlington, VT | January 2018

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Acknowledgments

This Policy and Guide was produced through a collaborative effort among city agencies and local advocates.

Prepared for:

» The City of Burlington Department of Public Works
» Local Motion
» Residents and Advocates of Burlington, VT

With review and technical support from:

» Burlington Fire Department
» Burlington Police Department
» Burlington City Attorney's Office

Prepared by:

The Street Plans Collaborative

Work on this Policy and Guide was funded by the City of Burlington and Local Motion.

tactical urbanism:

a city and/or citizen-led approach to neighborhood building using short-term, low-cost and scalable interventions to catalyze long-term change.

Table of Contents

Using Short-term Projects for Long-term Change

Open Streets Events. Parklets. Pilot Street Design Projects. Whether on the streets of Burlington or elsewhere, you've likely seen it for yourself: cities around the world are using temporary and short-term projects to advance long-term goals related to street safety, neighborhood public space, and more.

Examples include highly-visible, city-led efforts, such as New York's Pavement to Plazas program, or San Francisco's Parklet program, both of which have been replicated in dozens of cities across North America. In Vermont, similar efforts include the Rialto Bridge Parklet in Montpelier, or the Dewey Park public space on Burlington's Spring Street.

Non-profit organizations and grassroots groups around the country are also undertaking small-scale Tactical Urbanism "demonstration projects" (typically lasting 1 or 2 days) to experiment with and spark conversation about street design changes. Demonstration projects are typically heavy on volunteers and collaboration and light on budget.

Why Use This Approach?

Depending on the form the project takes, municipal authorities, organizations, and everyday citizens use short-term projects as a tool to:

- Deepen their understanding of local user's needs at the neighborhood, block or building scale;
- Draw attention to perceived shortcomings in policy and physical design;
- Widen public engagement;
- Test aspects of a project or plan before making large political or financial investments;
- Expedite project implementation;
- Gather data from the real-world use of streets and other public spaces; and/or
- Encourage people to work together in new ways, strengthening relationships between residents, non-profits, local businesses, and government agencies.

From New York City (top), to Montpelier (middle), to Burlington (bottom) cities and citizens are finding ways to integrate Tactical Urbanism into the project delivery process.

Case Study

2-day Demonstration Informs 6-month Pilot Project in Morgan Hill, CA

In response to requests for a quieter, safer, and more bike- and pedestrian-friendly downtown, the City of Morgan Hill initiated a Complete Streets project to study new design options for Monterey Road, the City's primary commercial corridor.

Monterey Road features four lanes of vehicle traffic, two in each direction, with left turn lanes at each intersection. Through a year-long planning process Morgan Hill arrived at two potential design alternatives for the community to consider. Both alternatives involved a "road diet" that would re-appropriate one travel lane in each direction for alternative modes of transportation. The first alternative would transform one travel lane on each side into expanded sidewalk space. The second alternative would re-stripe travel lanes to create one buffered bicycle lane in each direction. Because both options involved significant transformations on the roadway, the City wanted to begin with a short-term, low-risk trial.

As a first step, the Morgan Hill Downtown Association worked with local businesses and volunteers to spearhead a weekend-long demonstration project that illustrated the two options - one on each side of the street. The goal of the demonstration project was to increase public understanding of the two options, and to gather feedback from downtown stakeholders.

Build out of the demonstration involved dozens of volunteers who helped transform the street. The Downtown Association used temporary, low-cost, and borrowed materials. Once the demonstration project was installed, a series of public engagement activities over the weekend were conducted to gather feedback.

Based on results from the two-day demonstration project, the Morgan Hill City Council authorized a more formalized six-month pilot project to further vet the buffered bicycle lane option. The pilot allowed the City to measure impacts to traffic and retail sales, educate people further, work out design flaws, and solicit ongoing input from the general public to decide if it was appropriate to commit to long-term change.

Demonstration Project:

A short-term street design project that lasts less than 7 days and can be community-led. Evaluated and permitted by city agencies through the structure designed in this guide.

Pilot Project:

A temporary parking or transportation project created by the Department of Public Works. Pilot projects are created to help evaluate the merits of a project based on data and public input.

Tactical Urbanism in Burlington

The Tactical Urbanism approach is not completely new to Burlington:

- The City already provides permits for special events in parks through the Parks and Recreation Department, and in other locations through the Police Department.
- The City's existing Pilot Project Ordinance authorizes the Department of Public Works (DPW) to implement temporary traffic and parking projects for up to 30 days on public streets (Article 1 Chapter 20 Section 3). The ordinance creates an official pathway for DPW to initiate short-term or **"pilot projects"** to evaluate the merits and impacts of proposed street design projects. DPW may also lead pilot projects that last longer than 30 days with Public Works Commission approval.
- And, as noted previously, Burlington has already used low-cost materials to transform a section of Spring Street in the Old North End into the Dewey Park Annex recreation space. This project is an example of how interim improvements can provide a public benefit in the short-term, while the City prepares to make more substantial capital upgrades to the park.
- The City has also led two successful Open Streets projects. Open Streets initiatives temporarily close streets to vehicle traffic so that people may use them for walking, biking, dancing, playing, and socializing.

This guide and policy builds off of these successful precedents and the existing pilot project ordinance. It breaks the pilot project process into smaller segments, making it easier for everyday residents, advocacy organizations, and community groups to spearhead short-term **"demonstration projects"** alongside DPW and other agencies.

The next page provides a glossary of terms, followed by an overview of the Permit Process for the Demonstration Project Program.

> This policy aims to make it easier for everyday residents, advocacy organizations, and community groups to spearhead short-term demonstration projects alongside DPW and other agencies.

We want to create a short-term demonstration project to improve pedestrian safety at a dangerous intersection in our neighborhood.

- How can we get city approval? This type of work does not fall within existing permitting structures.
- What is the best way to design the temporary facility?
- What are the best materials for our project and budget?

We like the idea and the spirit. But...

- What materials are safe to approve?
- What level of design is needed, and what are the standards?
- What are the protocols for safe installation and removal?
- What are our evaluation metrics?

Glossary of Terms

BFD: Burlington Fire Department

BPD: Burlington Police Department

Community Partner: In the context of this document, a Community Partner is defined as a person, organization, or business that leads a short-term Demonstration Project.

Demonstration Project: Short-term street design project that lasts less than 7 days and can be community-led. Evaluated and permitted by city agencies through the structure designed in this guide.

DPW: Burlington Public Works Department

GMT: Green Mountain Transit - public bus service

MUTCD: Manual on Uniform Traffic Control Devices, the document that provides uniform standard for signs, signals, and pavement markings in the United States

Pilot Project: A temporary parking or transportation project created by DPW. Pilot projects are created to help evaluate the merits of a project based on data and public input.

TCP: Traffic Control Plan

THE PERMIT PROCESS

PHASE 1: PROJECT DEVELOPMENT

2-5 months before event

Community Partner hosts visioning meeting and submits Phase 1 Application

DPW reviews proposal w/n 2 weeks to assess Traffic Control requirements, confirm compliance with applicable laws/regulations, and provide advice on Phase 2 Permit Application development.

Major Proposal Revisions Required*

Minor Proposal Revisions Required

PHASE 2: PERMITTING & REVIEW

Min. 45 days before event

Community Partner submits complete permit application and $120 deposit 45-60 days before target event date.

DPW reviews application for completeness and works with community partner to revise if needed. If complete, DPW distributes to agency partners within 1 week, and a min. 30 days before event.

All Good!

Problems!*

Return to start of Phase 2 to revise application. Event date may need to be adjusted.

PHASE 3: NOTIFICATION & IMPLEMENTATION

Min. 2 weeks before event

DPW sends approved permit package to Public Works Commission, BPD, BFD, and GMT for information only (min. 1 week before event)

Community Partner notifies all impacted residents and businesses with an informational letter or flyer (1-2 weeks before event)

PHASE 4: THANK YOUS & RECAP

Within 1 week of event

DPW and Partner obtain feedback from GMT BFD, BPD, Public Works Commission.

Partner compiles any feedback obtained from residents, businesses, and others. (See optional feedback form on page 48.)

CONTINUE TO PHASE 2...

Community Partner revises materials and completes Phase 2 Permit Application. Application includes Traffic Control Plan created with Engineering Partner. For more information on Traffic Control Planning, see page 22.

CONTINUE TO PHASE 3...

DPW sends permit app. to GMT, BFD, BPD a min. of 30 days before target event date. Within 30 days of DPW's distribution, GMT, BFD, BPD report problems to DPW.**

All Good!

Problems!*

CONTINUE TO PHASE 4...

Community Partner places required project sign, within 1 week of event, for duration of event (see page 44 for details) and collects feedback during project using optional feedback form on page 48.

PROJECT HAPPENS!

Partner shares metrics/ evaluation summary using the Recap Worksheet within 2 weeks of event (page 45). DPW returns $120 deposit back to partner.

PROJECT COMPLETE

Process Diagram Notes:

Number of days listed refer to *calendar* days.

* See page 12-14 for more information about how to avoid having your project kicked back for revisions.

* Depending on the amount of revisions required, the target event date may need to be adjusted. You're encouraged to submit your application well in advance.

**A 30-day review cycle is a reasonable estimate for typical work flow for emergency services departments. However, in situations where extreme emergencies of abnormal scale occur, emergency services departments may be delayed in meeting this deadline.

GETTING STARTED

The 2 biggest factors impacting the success of a demonstration project:

#1 is the time, energy, and willingness of the people who are planning the project (residents, community partners, business owners etc.). Do you have a unified spirit and a clear vision? Do you have a strong desire to make a change and a willingness to put the time in to make it happen? If yes, read on!

#2 is the project location. Context is everything - more guidance on picking a high-potential site below.

Who?

Assembling your planning team

You'll need a team to make this happen. Look for opportunities to include: local businesses, property owners, residents, neighborhood organizations, arts or educational institutions, people with professional experience in urban planning/architecture/design, members of the press, artists, student groups, activists, designers, DIY-ers... and really, anyone who is motivated and excited to help! Just keep in mind that in order to ensure safety, some projects may require a minimum age for volunteers, i.e. 16 and up.

You may be required to submit a Traffic Control Plan (TCP) as part of your permit application. The TCP must be completed by a licensed Engineer, so if you can find an Engineer or Engineering company to support your team early, you'll be ahead of the game! If you do not have an Engineering Partner, don't worry. This permit process is designed to help you work with DPW to meet this requirement.

No matter the exact makeup of your team, having people who can fill the below roles will help you implement your project:

- **Mouthpieces:** To assist with communications and social media
- **Coordinators:** To help organize programming, logistics, budget, permit applications etc.
- **Gatherers:** To help track down borrowed/donated/low-cost materials. (This should be someone comfortable with asking for donations and signatures.)
- **Makers:** To assist with design and building.
- **Shepherds:** To recruit and manage volunteers.

What?

Picking the right project type

This policy document outlines 7 pre-approved project types that improve street safety for people walking, bicycling, driving. You don't have to pick one of these projects, but doing so will help you navigate the permit process quickly. Additional project types will be considered on a case by case basis, and may be included in future versions of this Guide.

The best projects are typically closely aligned with a clear understanding of needs and/or challenges at a specific location. If you have a site and goal in mind but aren't sure what project type is best, consider conducting an observational site visit to learn more about existing conditions and behaviors. You may also wish to research data relevant to your project goals. For example, you may find publicly available data about crime statistics, crashes involving cars, cyclists and pedestrians, or transit ridership will help you refine your project idea. Observational site visits and background data may also help you refine what you want to measure when your project is in place.

Qualitative information can also help inform your project idea. You might, for example, want to conduct interviews to deepen your understanding of the issues at play. For example, if you're creating curb extensions near a school, you may want to interview the crossing guard to get their input. Make a list of people you'd like to interview, and record their thoughts so that, with their permission, you can share their perspectives on the impact of your demonstration project once it is installed.

Where?

What makes a good project site?

Look for a project site that has:

- Support and excitement from nearby property owners (residents, business owners, etc.). You'll need to demonstration community support for your project, and it is helpful to have some excitement and momentum from the start.
- Activity. For maximum impact, look for a site that will have high volumes of foot/bike traffic during your demonstration. (Don't forget that piggy-backing on an existing event can help you achieve this.)
- "Iconic" identity. Look for a street or intersection that represents something important to a key user group in Burlington. For example, what is that one intersection that people in a particular neighborhood feel unsafe crossing?

At a more detailed level, the optimal location will depend on your project type. Consult the *Location Considerations* in the project descriptions on the pages ahead to get a sense of where each project type is appropriate, and where it will be easiest to permit and implement. No matter the project type, permitting and implementation will be easier if your site features:

- Ample shoulder or greenbelt area that can be used to stage supplies or work on the project. Curbside parking is almost always a desirable trait in a project site, as parking can be temporarily restricted in a few spaces during the event.
- Existing walk/bike infrastructure that can be upgraded. For example, you can make a big impact by adding protective/barrier elements to an existing, conventional bike lane.
- Limited curb cuts for driveways / driveway access
- Minimal conflict with transit, waste collection, or emergency vehicle response routes.
- Absence of construction projects in the immediate vicinity during the time period you're targeting for the demonstration.
- Free of physical features that significantly limit visibility (curves, hills, etc.)
- Manageable traffic volumes/speeds. Look for streets that can *either* be closed for a short period without major traffic disruptions (such as a neighborhood street) *or* that has enough space to allow traffic flow to continue while you install or clean-up the project. (See page 22 for more info on traffic control.) While not impossible, demonstration projects will be more difficult to permit on main arterial streets such as Pearl Street, Main Street, and Colchester Avenue, due to traffic control and safety considerations. Note that projects cannot be located on VT Route 127. Proposals for Routes 2, 7 or Alternate Route 7 are approved on a case by case basis and may require additional review.

The Design and Location Criteria chart on the following page provides a checklist of items which will help you select a site that will be quick and easy to approve.

Once you have a potential project location in mind, visit your site to observe and document existing conditions. If it is safe to do so, enter the road with caution, and measure widths of existing lanes, sidewalks, greenspace, etc. Take photographs to illustrate the "before" conditions - you'll want to compare these to your work "after" the demonstration is installed. The data you collect during the site visit will help you refine your ideas and create the Phase 1 initial proposal to the city.

DESIGN AND LOCATION CRITERIA

Does your project meet the below requirements for quick and easy approval? Projects that do not meet the criteria listed here are not impossible, but they will require special consideration and longer approval times. Such projects are subject to approval by the Public Works Director on a case-by-case basis. For additional details about requirements related to clearance, access, and community support, please see the policy document in the Appendices of this Guide.

	YES	NO
Does your site avoid State Highways (VT 127 and Routes 2, 7, and Alt. Route 7)? Demonstration projects cannot be located on VT Route 127. Proposals for Routes 2, 7 or Alt. Route 7 are approved on a case by case basis and may require additional review.		
Does your site avoid streets classified as "arterial" by the City of Burlington? (North Avenue, Colchester Avenue, Shelburne Road or Main Street)		
Is your site a public right of way, with a speed limit that is 25 MPH or less?		
Will your project avoid interference with normal operation for delivery trucks, public transit routes/stops, or trash/recycling pick-up? If project will impact these services, alternate access must be provided and negotiated with the impacted parties.		
Does your project design preserve access to public utilities, utility covers, valves, building standpipes, etc.?		
Does your project design preserve vehicle access within 25 ft. of any fire hydrants at your location?		
Does your project preserve normal access to driveways? Projects should not block or limit driveway access, unless the driveway owner specifically permits use of their driveway for the demonstration (demonstrated by letter of support - attach if relevant).		
Does your project design preserve full access for emergency vehicles? (Project design must provide at least 14 feet of horizontal roadway clearance.)		
Does your project design preserve normal street/sidewalk access for individuals with disabilities?		
Is your project located on the same block as any ongoing construction projects?		
Are all street closures needed for your project expected to last less than 24 hours? Streets or public rights-of-way cannot be blocked for more than 24-hours unless special permission is obtained from DPW, BPD, BFD, and GMT.		

PROJECT TYPES

The following pages outline recommended project types. If you have something in mind that is not listed here, draw up a proposal describing it. Additional project types will be considered on a case by case basis, and may be included in future versions of this Guide. Details about sourcing and estimated costs for materials is provided on page 19. For more details and images of how to design these projects, visit: www.nacto.org

Wayfinding Signs

Definition: Wayfinding signs help people know where they are, where desired destinations are, and how to get there from a specific location.

Location Considerations: Wayfinding information should be placed at key decision points, where the direction will be easily seen by pedestrians, bicyclists, and/or drivers. (This means sidewalk chalk messages are an option if you're trying to reach people walking.) Sign-based demonstrations will be easiest if you affix signs to existing posts using zip ties or other easily removable material.

Design Considerations: Signs or stencils should include clear, easy to read typography. The best wayfinding signs include information about the time and distance needed to travel to specific destinations.

Components and Materials:

- Coroplast signs, with fasteners such as zip ties;
- For sidewalk wayfinding, use spray chalk and stencils

Photo top left: Walk [Your city] Project, by Matt Tomasulo. For more info visit: walkyourcity.org

Photo top right: Burlington South End Demonstration Projects, September 2015. Photo by Street Plans.

Curb Extensions

Definition: Curb extensions (sometimes called bulb-outs) expand sidewalk space into the parking lane to narrow the street and provide additional space for people walking. They increase pedestrian visibility, shorten crossing distances, slow turning vehicles, and visually narrow the street. They can also integrate green infrastructure elements (such as rain gardens).

Location Considerations: May be used at intersections or mid-block, on commercial or residential streets. Often used in areas with high pedestrian volumes. Demonstrations will be easiest on streets that have curbside parking, and at intersections that already have a crosswalk in place.

Design Considerations: The length of a curb extension should at least be equal to the width of the existing crosswalk. The curb extension should generally be 1–2 feet narrower than the parking lane. Include barrier elements (see below) to demarcate the curb extension from the existing street.

Components and Materials:

- Barrier elements - planters, bollards or cones
- Washable paint - at minimum, stripe in a solid line to define the curb extension.

Parklets

Definition: A parklet is a sidewalk extension that provides more public space and amenities for people using the street.

Location Considerations: Parklets are typically installed within 1-3 on-street parking spaces. They work best in areas with unmet demand for public space, usually on thriving neighborhood retail streets or within downtown commercial areas. Avoid blocking bus stops or any active driveways, and look for areas that are free from obstruction of news racks, signs or other street furniture.

Design Considerations: Most parklets feature unique design elements that incorporate seating, landscaping, and/or bike racks. Very short-term demonstration projects (1-2 days) may make use of reclaimed and/or borrowed materials (see below) in order to demonstrate the viability of semi-permanent/seasonal parklet installations using more durable materials.

Components and Materials:

- Wood pallets
- Plywood
- Planters/landscaping
- Astroturf
- Movable seating
- Paint
- Barrier elements, such as bollards or cones

Photo by Street Plans. Pop-up parklet in Atlanta, GA, June 2014.

Bike Corrals

Definition: Bicycle Corrals provide on-street bicycle parking, accommodating up to 16 bicycles in the same area as a single vehicle parking space.

Location Considerations: Bike corrals are usually placed where sidewalks are too narrow to accommodate bicycle racks and in areas with both high levels of people bicycling and demand for bicycle parking. When placed near street corners, a Corral also increases visibility and creates an additional buffer between people walking and people driving. Demonstrations should be planned to re-appropriate 1-2 curbside parking spaces, without blocking bus stops or active driveways. Look for areas that are free from obstruction of news racks, signs or other street furniture.

Design Considerations: Corrals should be at least 8' in width (the width of a typical parking spot). Corral should orient bikes perpendicular to the curb and be designed to allow 10-16 bikes to be parked and secured to a fixed, heavy object.

Components and Materials:

- Bike rack element. Can be created from wood pallets (can be used to park bikes in the slats of the pallet), collapsible A-Frame Bike Racks, or any other rack design that allows bikes to be safety secured.
- Barrier elements - planters, bollards or cones

Photo by Los Angeles DOT.

Median Refuge Island

Definition: A curb- or barrier-protected area between travel lanes that provides people crossing the street on foot or on bike with a safe place to wait mid-way through the crossing.

Location Considerations: Refuge islands are most useful on streets with high vehicle volumes and speeds, combined with high volumes of pedestrian and bicycle traffic. They can be used at signalized or unsignalized intersections along streets where people walking or biking would benefit from a safe place to rest part way through the crossing. Note that installation and removal of this project type can be particularly tricky, because the medians are located within a center of an active street. Traffic control and safety planning may be more complicated

Design Considerations: Ideal medians are at least 10ft wide, with 6ft as an absolute minimum. When applied on a two-way street, the median refuge should be placed along the centerline of the roadway between the opposing directions of travel.

Components and Materials:

- Barrier elements, such as planters, bollards or cones. Straw bales also work well for median refuge island barriers.
- Temporary "curb" can be created with straw wattle
- Washable paint

Photo by Street Plans. Median demonstration project in Ponderay, ID, Fall 2015.

Pedestrian Plaza

Definition: Public space created from an underutilized street right-of-way space into an area reserved exclusively for non-motorized public use. Pedestrian plazas enhance local economic and social vitality, pedestrian mobility, access to public transit, and safety for all street users.

Location Considerations: Plazas work best on underutilized or "stub" street segments with low vehicle traffic volumes. Look for a space where additional public space would be an amenity, or where high volumes of pedestrian traffic merit enhancing space available for walking, sitting, etc.

Design Considerations: Create a clear, strong edge to define the plaza space using a combination of barrier elements, paint, and/or planters (more below). Keep your plaza compact so that activity is not spread too thin.

Components and Materials:

- Landscaping elements, such as planters, etc.
- Washable paint
- Barrier elements, such as bollards or cones
- Seating: movable chairs and tables are preferable. Create seats from straw bales, milk crates, cinder blocks/wood planks, etc.
- Consider including shade elements if sunny

Photo by Street Plans. Dewey Park Annex Pedestrian Plaza in Burlington, VT.

Protected or Conventional Bike Lane

Definition: A bike lane is a designated space for people to ride bikes on the street right-of way. A protected bike lane features a physical barrier separating people bicycling from car traffic. Protected bike lanes come in a number of configurations but always use a vertical element to differentiate cycling space from driving space.

Design Considerations: Ideal dimensions for a bike lane are 5-7ft, with a buffer/protective space of at least 3ft. A vehicle travel lane of 10-11ft should be preserved (minimum of 10.5ft required in most cases). See the NACTO Urban Bikeway Design Guide for more information and diagrams: www. nacto.org

Location Considerations:
Like the median refuge island, bike lane demonstrations can be tricky to install and typically require more detailed traffic control planning. Location elements to consider:

- The easiest way to create a protected bike lane is to simply add a protective element to an existing, conventional bike lane (see photos at right).
- Streets with curbside parking can work well, as parking can be prohibited for one day to create space for the lane (see more info on parking prohibitions on page 21)
- Installation can be challenging on streets with high vehicle volumes and speeds, frequent curb cuts for driveways / driveway access, or where the demonstration would conflict with waste collection schedules.

Components and Materials:

- White striping - created with traffic tape, duct tape, spray chalk or similar material
- Surface treatments such as green paint and a bike lane marking (created with stencil)
- For a protected lane, add barrier elements, such as planters, bollards, cones

Photo by Nic Anderson

Photo by Julie Campoli

IDEAS FOR MATERIALS

Item	Details	Potential Source	Cost
Astroturf or Felt (cut-able)	Can be used to create a green/grass effect in a parklet or to simulate a grassy median	Can be purchased online, or from a local garden store. Typically $25-35 for 4' x 6' of Astroturf.	Medium
Bike Lane Stencil	Stencil should conform to official MUTCD standards if possible	Can borrow official DPW stencil with advance notice through loan system	$0 (if not damaged)
Bollards	Aim for movable, reflective, waist-high bollards - they are ideal for creating a visual barrier and channelizing traffic	Approx. 30 movable bollard posts are available for loan from Local Motion	$0-$XX
Duct Tape	Cheapest tape option for striping, easy to source and work with. Not appropriate for overnight use because it is not reflective!	Can purchase online.	Low
Paint - Corn Starch	Very washable, non-toxic. Requires minimum of 30 min. to dry.	Easy to make from equal parts corn starch and water + food coloring. The more corn starch, the thicker the paint.	Low
Paint - Tempera	Powdered tempera can be used in place of or to enhance corn-starch paint	Can purchase online. (Ex: Sargent Art Time Powder Tempera)	Low
Planter Boxes	Simple wooden boxes will suffice	Can be borrowed from Local Motion	$0-$XX
Plants	Add beauty to project, but also require careful transport, watering, etc.	Try to borrow from local nursery or garden store where possible. Be prepared to pay for any plants that are damaged during the demonstration.	Medium
Seating	Comfortable, movable seating can be created using benches, milk crates, hay bales, and more.	Consider borrowing chairs or benches from nearby businesses or residents. Or, create simple benches from raw materials like cinder blocks and planks of wood. (Many items may be available from the ReSOURCE and ReBUILD stores or loan programs).	Varies
Spray Chalk	Eco-friendly spay-able chalk. May require a power washer to remove.	Can be purchased online. Price typically ranges from $5-$15 per 15 oz. can	Medium
Straw Wattle	Creates a curb-level barrier - easy to install and morph into the shape needed	Available at landscape/garden stores.	~$150 per 25' x 9"
Traffic Cones	Movable, reflective - can be used to create a visual barrier and/or channelize traffic	Can be borrowed from DPW with advance notice through a loan system	$0 (if not damaged)
Traffic Tape	Higher durability tape, reflective. Purchase 4" wide if possible.	Can purchase online.	High
Wayfinding Signs	Can purchase complete kit from Walk [YourCity], or make your own!	DIY, or try walkyourcity.org/ (Complete kit for 16-sign campaign = approximately $375)	Varies
Wood Pallets	Use pallets to make chairs, benches, tables, planters, a stage, parklets, a bike rack, and more.	Often available as an in-kind donation from local businesses. Use pallets with "HT" stamp not "MB" (the later means the pallet was treated with toxic methyl bromide)	

Host a Visioning Meeting

Ok, you've got a basic idea of what you want to do, and when/where you want to do it. Now it is time to bring people together to think through the details and create your initial proposal (Phase 1 of the permit process - detailed on page 36). Convene your team (see page 12 for details on who this might include) for a visioning meeting. This might be a pot-luck or happy hour - make it fun and social, but stay focused! See the sample agenda to the right.

Committee Roles

During your initial visioning meeting you'll want to identify the strengths and interests of people on their team, and create committees/work plans around those areas. Typical committees typically mirror the roles described on page 12 (under "Who?").

Tips for Event Timing

Depending on your goals, you may want to avoid timing your demonstration project with conflicting events in the community, or you may want to piggy back on them to maximize visibility/impact. In either scenario, set a target date as early in your planning process as possible - this will help hold everyone accountable!

VISIONING MEETING AGENDA

- **Introductions.** Assign a note taker!
- **Brainstorming:** Collect and share ideas about how you can make the project happen, and what it will look like. Agree on a project goal.
- **Location:** Discuss potential opportunities and challenges at your project location. Shrink the scale and narrow the scope of your project wherever possible. If you attempt to cover too large an area, you run the risk of being spread too thin and "diluting" your project's visual and physical impact.
- **Skills/Resources Inventory:** What skills do you have represented in your group? What materials do you have access to through donation/borrowing? Note what you're missing so you can try to fill in the gaps.
- **Evaluation:** How will you know if your project was a success? What will you document and measure to tell that story? What baseline data do you need to document to show change?
- **Roles and Next Steps:** Identify roles and outline next steps to start the project planning process. Break the project into measurable tasks and assign those tasks to people (or committees). Discuss what date/time is best for regular meetings, and set your next meeting date. Regular meetings are critical!

SAMPLE PLANNING MEETING AGENDA

- Introductions
- Stakeholder Outreach (Mouthpieces)
- Media and PR (Mouthpieces)
- Site Plan/Permitting (Coordinators)
- Budget (Coordinators)
- Supply and Materials Procurement (Gatherers)
- Sponsorship/Fundraising (Gatherers)
- Build-Day Planning/Logistics (Builders/Coordinators)
- Volunteer Recruitment (Shepherds)
- Next Steps/Action Items & Next Mtg Date

Phase 1: Creating Your Initial Proposal

The diagram on page 10-11 provides an overview of the permit process. The first step is creating an initial proposal describing your project. An application form for the initial proposal is provided on page 36. You should plan to hand this proposal in to DPW 2-5 months ahead of your target event date. The proposal must include a detailed description of your project idea, along with photos of your proposed location and a site plan (sketches, or drawings depicting your vision for the completed project). If you've got someone on your team with graphics/ urban design skills and access to design programs, awesome! If not, other tools include:

- **Old-fashioned drawing -** trace paper over a printout of an aerial image can be enough to get your idea across
- **Case study images from similar projects**
- **Streetmix** - an online tool that lets you experiment with the design of your street by mixing/matching street components. See: http://streetmix.net
- **Google Maps** - add shapes and lines onto a Google aerial image right in your browser
- **PowerPoint** - if you don't have access to fancy design software, use PowerPoint to add shapes and lines onto a map or aerial image

When ready, attach the description and site plan to the Phase 1 application form on page 36, and send your proposal packet to DPW as directed. DPW will review your initial proposal within 2 weeks to assess Traffic Control requirements, confirm compliance with applicable laws/regulations, and provide advice on Phase 2 Permit Application development. Based on this assessment, you may be asked to revise your idea before beginning the next phase of your application.

Vehicle Parking

In the Phase 1 application, you will be asked to describe parking conditions at your project site. The type of parking present will impact your permit requirements for Phase 2. Visit your site to check:

- Is metered parking present? If so, is it a single or double meter? Meter bag placement cannot impact ADA accessible spaces or block fire hydrants or bus stops.
- Remember that no matter the parking conditions, you may not place any obstructions between a transit stop and the travel lane.

If metered parking is present you'll need to:

- Complete the "Application for Possession and Use of Meter Hoods" available from the DPW Traffic Division. (During Phase 2.)

  » DPW Director approval is required for multiple bags or bags that have a duration greater than 3 days.

  » With advance notice, DPW may be able to waive per-day meter fees. The $10 deposit and fees for lost, stolen or damaged equipment cannot be waived.
- Visit the DPW office after 12:00pm the day before the spot is needed to hand in your application and obtain a meter bag. Cover your meter between 5:00 - 6:00pm the day before the spots are needed.
- Call or email the Police Department with the location of your meter bag 24-36 hours before the ban is needed. If someone does park in your bagged space on the day of your event, call the non-emergency line for BPD at: (802) 658-2704

If curbside parking is allowed, but no meters are present, you'll follow these steps:

- 36 hours before event, notify BPD and CarShare VT (if event impacts their vehicles/ parking).
- 24 hours before the event, post "No Parking"signs (provided by DPW) with the date and time of parking restrictions.

  » If wooden stakes will be used, call Dig Safe at 811 to verify clearance 48 hours prior to event.

  » If 1/2 to 1 full block of parking will be restricted, flyer all cars parked on the street 24 hours before event.

Traffic Control & Safety

A major goal of this guide is to allow people to experiment with and experience new street design conditions. So, with the exception of the Plaza project type, it is likely that the street will be open to vehicle traffic once the demonstration is installed. Depending on the project type, the street may also be open during installation and clean-up.

Safety is an essential consideration - for volunteers working on the project, and for people driving, walking or biking through the space. Project leaders must think through traffic control and safety for all aspects of the project: build-out/installation; project duration; removal/clean-up.

When you hand in your initial proposal in Phase 1, DPW will help you assess the traffic control requirements for your project and give you feedback on next steps for creating a complete permit application (Phase 2). In most cases, the TCP must be completed by a professional engineer, in accordance with guidelines set out in the Manual on Uniform Traffic Control Devices (MUTCD). The person or organization who creates your traffic control plan is your Engineering Partner. If you don't have an engineer on your team, don't despair!

- Some projects may be simple enough that they do not require a TCP.
- DPW will assist with up to 4 TCPs for demonstration projects each year. If you need help creating a traffic control plan, check the appropriate box in your Initial Proposal to indicate this need to DPW. We will work with you to identify an appropriate minimum age for volunteers.
- If DPW is unable to assist with the creation of your TCP, local engineering firms may be willing to assist you in creating a plan on a volunteer basis. (See page 50 for ideas.)
- Once your TCP has been approved and your Phase 2 Demonstration Project Permit is awarded, you can work with DPW to use official city signs to execute the plan. Depending on the complexity of the TCP, DPW may be actively involved in implementing the plan.

Photo by Julie Campoli.

Safety First!

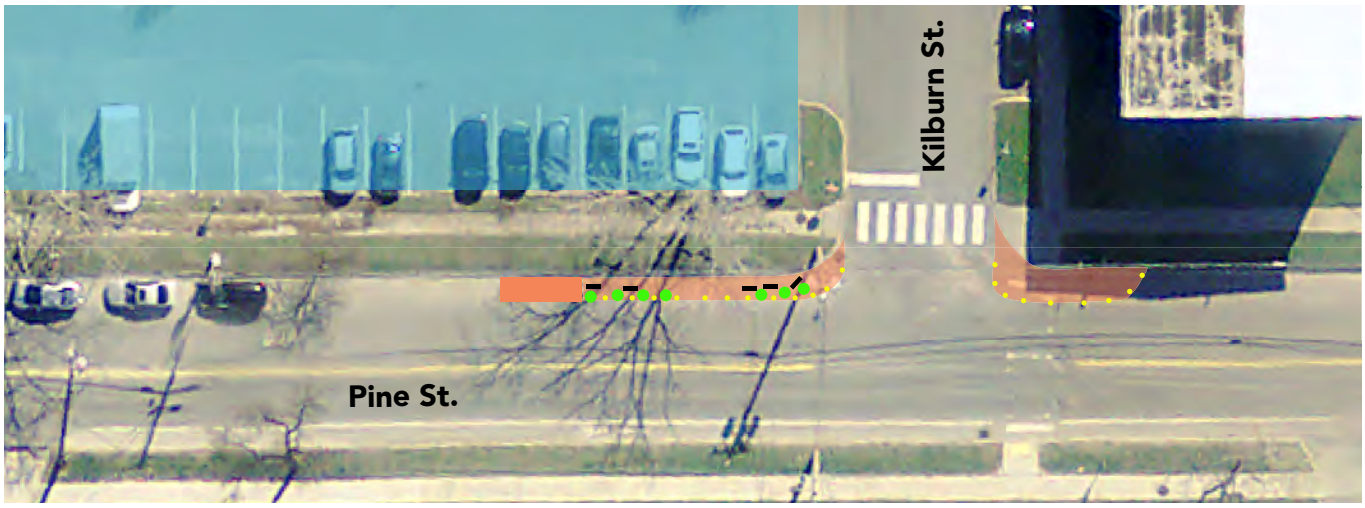
When the big event day arrives, the project leader will be responsible for making sure that everyone who assists with the temporary Demonstration Project reads the Safety Guidelines, and completes a Release of Liability Waiver.

Participants must follow safety rules, laws, and procedures to ensure that their work environment is safe. This including making sure volunteers remain in the coned-off, safe work zone at all time. It might also include obtaining and wearing safety equipment, such as gloves, face protection, hearing protection, and clothing and footwear appropriate for the job to be performed (such as closed toed shoes or safety vests - which may be borrowed from Local Motion or DPW).

See the 2-part packet of required materials in the appendices for more information and required material.

Remember: in case of emergency, always call 911 first.

Example: Easy Project



Curb Extension & Parklet in the South End

This project involved creating a temporary parklet and a curb extension. It was easy to plan/install because:

- The greenbelt next to the sidewalk provided space to gather for discussions and store supplies
- All work was taking place in the parking lane area, out of the way of the vehicle travel lane.

Traffic control for installation involved:

- Creating a simple Traffic Control Plan using standard plan types from the Manual on Uniform Traffic Control Devices (MUTCD) - the guiding document for traffic control and signage planning.
- Working with DPW to have signs posted prohibiting parking in a few curbside parking spaces in advance of the build day.
- Putting DPW's traffic control signs in place to warn oncoming cars of "shoulder work" - just as you'd see for an official construction project in the shoulder of a road. Placement of signs was guided by the traffic control plan.
- Placing traffic cones to create a barrier to protect volunteers working in the shoulder.
- Making sure all volunteers wore safety vests for visibility and stayed within the coned-off area.

Example: Complicated Project

Parking Protected Bike Lane on N. Winooski Ave.

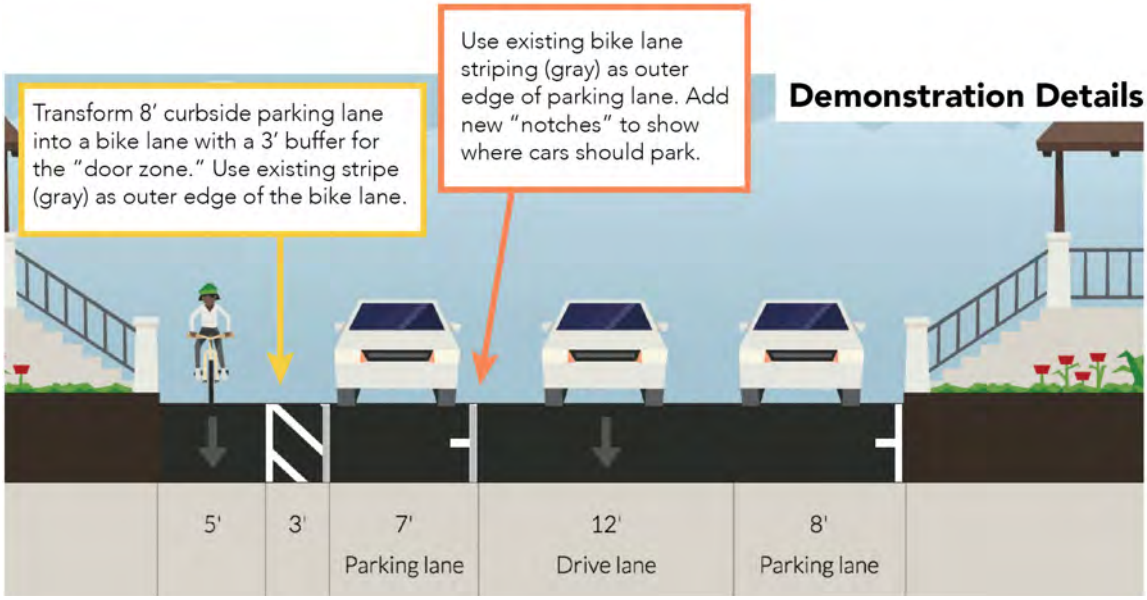
The sketch below is an example of a site plan diagram for a more complicated bike lane project - a parking-protected bike lane along one block of N. Winooski Ave. This project was complicated to plan/ install because:

- Installation occurred in the middle of the road for an entire block, requiring a temporary street closure for about 6 hours on a Saturday morning.
- A GMT bus route had to be adjusted while the street was closed for project installation.
- The project design required a major shift in normal parking patterns. BPD assistance was needed to create and enforce a parking ban on the morning of project installation. When installation was complete, the design required drivers to park in an configuration that was totally new to Burlington. BPD assistance was needed to restore parking to the normal configuration.

Traffic control for installation involved:

- Creating a more customized Traffic Control Plan in line with MUTCD standards.
- Working with DPW to have signs posted prohibiting parking in advance of the build day.
- Putting DPW's traffic control signs in place on the build day.
- Notifying neighbors of the temporary street closure.

The high degree of effort required for this demonstration was merited, because the demonstration was planned to take place in conjunction with the large Open Streets BTV event, as well as a citywide planning process for Burlington's first walk/bike master plan.



Execute Your Work Plan + Complete Your Phase 2 Application

DPW will provide you with feedback on your initial proposal within 2 weeks. Revise your proposal in response to that feedback, and start planning! Work in this phase consists of preparing your Phase 2 permit application (see page 39) and assembling all of the materials you need to create your project. Use the sample planning meeting agenda on page 20 as a resource as you work through the final preparations for the project.

Tips for Marketing/Outreach

Project branding is important - establishing a creative project title and eye-catching poster will help build excitement about your project. Work to disseminate your promotional materials within existing communications channels as much as possible. Create a "promo kit" with sample email text and Facebook posts to make it easy for supporters and partners to share your project information with their networks. At the same time, be sure to honor your responsibilities for outreach to neighbors and business owners around your project. More information about this is provided in the diagram on page 10, and in the Phase 2 Application form.

Tips for Supply Procurement

Look for borrowed, donated or recycled materials whenever possible. Many items may be available from the ReSOURCE and ReBUILD stores or loan programs. Project partners can be a huge help in sourcing materials - local businesses that donate materials should be recognized with signage, etc. as "in-kind" sponsors.

Tips for Volunteer Recruitment

Try to leverage collaborations with existing organizations such as schools, churches, service groups, neighborhood associations and advocacy groups. You may need volunteers to help with pre-event outreach. You'll definitely need them to help with installation, staffing, and clean-up. Be sure to schedule multiple shifts so everyone has fun and avoids burn-out (aim for shifts of no more than 3 hours). And, remember that all volunteers should have a "Safety First" approach to working in the roadway - see the Safety Guidelines on page 41 for more info.

Funding + Donations

Though the City of Burlington may provide limited in-kind support, community partners are responsible for funding the installation, maintenance, and removal of the demonstration project. But, you don't need a large grant to undertake a demonstration project. Look for options to borrow, reclaim, or have materials donated before you think about buying them. Often, all you need to get started is the courage to ask and thank-you notes to send later.

You'll find a wide variety of resources that can be leveraged to support your work.

- **Crowdfunding:** Options include Kickstarter, Indiegogo, and a favorite fundraising tool for community-led projects: ioby. Ioby is a non-profit, crowd-resourcing platform that helps neighborhood projects come to life block by block.
- **In-kind donations from local businesses:** Often helpful in sourcing or borrowing supplies like paint, pallets, plants, benches, tires, cinder blocks, wood, etc.
- **Borrowed supplies from the Local Motion pop-up trailer.** For more information visit: localmotion.org/pop_ups.
- **Small financial grants from local businesses or chains:** With enough advanced notice, small financial grants may be available for neighborhood events or projects.

Baseline Data Collection

The project goal you define at your first Visioning Meeting will help define what metrics you will use to evaluate what worked well about your project, and what could be improved. The following pages outline details of quantitative and qualitative data points that might be appropriate for evaluating your demonstration project. It is important to collect baseline data before your project is installed so that you can make a comparison. Try to collect baseline data under conditions that are relevant to the goals of your project. For example, if you're interested in making it safer for people to bike to work along a certain street, you should count baseline volumes of bike commuters on a normal weekday, avoiding rainy days or holidays.

Build-Day Planning and Logistics

Creating the TCP discussed on page 22 will help you begin to flesh out the details of build-day planning. In addition to the TCP, you should create a detailed timeline for project installation and removal. Elements to consider include: supply transport and arrival, when traffic control begins/ends, set-up of various project elements, and timing for site inspection by DPW, programming, evaluation activities, and volunteer shifts.

Ok - Now Build the Project!

You've obtained your permit, and the big day is finally here. Warning: things will not always go exactly as planned. Expect and plan for the unknown, and welcome and learn from the mistakes - there will be some! It is important to remain flexible even as you roll out your project so you can adjust elements of your plan as needed.

Be sure to refer back to your build-day timeline to be sure you accomplish your various evaluation/ documentation activities as planned. (Details on the following page.) You must also be sure to comply with all permit and notification requirements defined in through the Phase 2 application process, and:

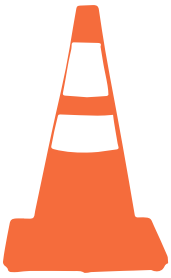
- Complete the 3-part packet of required materials associated with the Safety Guidelines
- Post the Phase 3 info sign at your project site within 1 week of event

Students at Bates College create a temporary two-way buffered bicycle lane in Lewiston, ME.

Project Clean-up

Project leaders are responsible for removing the demonstration project according to the timeline stipulated in their permit application. If the Community Partner fails to remove the project as required, the City will be forced to do so at the expense of the partner.

All demonstration project permits are revocable by the Director of Public Works if the permitted project no longer meets the intent of a city plan or policy. To see the fine print, flip to the policy text on page 39.



Project Evaluation

QUALITATIVE TOOLS

Qualitative metrics refer to data that is observed rather than measured. This might include quotes or descriptions. Qualitative data is especially helpful in telling the story of your project, and the goal should be to do so in a genuine and human way. Consider using the following tools:

- **Intercept Surveys** - Develop a very short (1-3 question) survey to ask people who pass through your project area.
- **General Surveys** - Use paper or electronic surveys (via laptop or tablet) to gather more in-depth information on site, or as a follow-up to your project. Platforms such as Surveymonkey can be very useful for this purpose. We recommend keeping surveys to under 5-minutes in length. You may wish to create different surveys for different stakeholder groups (ex: residents, local businesses, etc.).
- **Idea Boards** - This tool is similar to an intercept survey, but it allows people to quickly see what others have said in addition to sharing their own ideas. Create a large chalkboard or use blank paper as a canvas for people to share their ideas, and ask a simple question. For example, you may create two columns with the prompts "I like this because..." and "I don't like this because...". Or, you may ask a more general question that applies to the goal of your project. Provide markers, sticky notes, chalk, or other tools so people can easily share their thoughts on the idea wall. If possible, staff the idea wall with a volunteer facilitator at all times to orient and engage people.
- **Key Person Interviews & Testimonials**- Your project goals may make input from specific stakeholders particularly valuable. For example, if you're creating temporary bulb-outs near a school crossing, you may want to interview the crossing guard who works there every day to get their input. Make a list of key people you'd like to interview, and record their thoughts so that, with their permission, you can share them as testimonials in the future. See the feedback form on page X for more.

QUANTITATIVE TOOLS

Quantitative metrics deal with numbers and data that can be measured, such as pedestrian or bicycle volume counts. Go back to your project goals and think about what numbers will help you know if your project was a success. You will also want to select quantitative metrics that help you understand how it may have impacted key user groups, for better or for worse. Potential data points to consider include:

- **Volume counts for vehicles, pedestrians and/ or cyclists.** To measure cyclist volumes, consider using WayCount - an affordable hardware and web platform for crowdsourcing automobile and bicycle traffic count data. Smart phone counter applications (such as CounterPoint) are also available, and can help you collect volumes across multiple transportation modes. To conduct a manual count, start by creating a schedule that accounts for uniform counting time periods (ex: the first 10 minutes of every hour, beginning on the hour). Set a time to collect baseline data for comparison at the time periods before your project is in place. (See Additional Resource section for a sample worksheet.)
- **Stationary Activity Counts**. Beyond counting who is passing through your project area, you may want to record who is staying, and what they are doing. This can be accomplished through regular stationary activity counts, which are conducted in regular intervals just like volume counts. For these counts, you will want to record information about what people are doing, how they are interacting, their age, gender, how long they are staying, etc.
- **Sales figures.** Work with nearby businesses to see if they will share information about their sales figures in relation to your project. You might, for example compare their sales figures on your project weekend to those of an average weekend in the same season from the previous year, and again to a representative weekend after your project is complete. Aim to keep time of year and dates consistent, so you can make an accurate comparison. If you're unable to get sales figures, consider counting/comparing the number of people who visit businesses near your project site.

- **Vehicle Speeds.** In many cases, your goal may be to slow cars down to a safer speed. You can easily count speed with a radar gun. (Contact Burlington Police Department to see if you might be able to borrow one!) If you cannot get access to one, simply mark out a 100-ft stretch on the roadway near your project and use a stopwatch tool on your phone to record the time it takes a driver to cover this distance.
- **Yielding Rates for Pedestrians in Crosswalk.** Observe and record how many drivers yield to pedestrians in the crosswalk before, during, and after your project.
- **Red light stop times** can be valuable measurements if there is concern about back ups at traffic lights as the result of your project. Have a friend or fellow volunteer use a stopwatch to time how long it takes them to get through the relevant intersection before and after your project is in place. Another option is an informal queue count- just count the number of cars waiting at the red light.
- **Emergency and transit vehicle access** is an incredibly important consideration. Invite the Fire Department and GMT to come out to your demonstration site to test how well their vehicles can maneuver around the demonstration, and record the results.
- **Noise levels** impact quality of life, and measuring decibels can be useful. Many smart phones support apps which will allow you to take decibel readings directly from the phone.
- **Resources Leveraged**. Don't forget to track volunteer involvement, in-kind donations, financial donations, etc. These metrics demonstrate support for your project in an impactful way.
- **Online Conversations**. Create a project hash tag, and display it prominently near your project. Use it to share project imagery, and check in regularly to see how many people are talking about your project online, and what they are saying.

DOCUMENTATION TOOLS

Collecting visuals to tell the story of your project is a must. Potential tools include:

- Video recordings of people interacting with the project or sharing their thoughts about it
- Time-lapse video applications allow you to use your smart phone to create a dynamic video illustrating how your project transforms public space and functions while installed.
- Before and After photographs can be a striking visual. Be sure to consider options for capturing aerial images (from a nearby window or balcony, for example), and establish a uniform shot angle for clear comparison.
- Event Photos documenting the various aspects of your project through all stages of its life, from installation to tear-down.

A simple idea board in Morgan Hill, CA.


Using a WayCount counter in Atlanta, GA.

#BTVdemoproject

When uploading your photos to social media, use the Burlington Demonstration Project hashtag: #BTVdemoproject. Doing so will help us track photos as inspiration to other demonstration project organizers!

An impromptu discussion about the pros and cons of a parking protected-bike lane occurred between a passing bicyclist, a demonstration project team member, and the local mailman.

EDUCATION AND PUBLIC DISCUSSION

One of the most exciting things about Tactical Urbanism is that it takes the urban design discussion out of the office or public meeting and puts it right into the street. With the proper set-up, your demonstration project can spark meaningful dialogue about public space design, safety, and your project goals. In addition to collecting input through the Qualitative Tools mentioned on page 27, consider how you want to inform people about the context and purpose of your project. Tools include:

- Talking points insure that all volunteer and project participants are on the same page about messaging and communications
- One-pagers or postcards allow people to take home key info about your project, and can be used to direct them to a website or online survey for follow-up

FOLLOW UP

Great Work! Now What?

Thank Yous

Follow-up immediately after your event thanking everyone who was involved: volunteers, donors, city staff, local businesses, etc. Share photos and include evaluation surveys where appropriate (more on that below). Don't forget public shout-outs thanking sponsors and donors via social media, email newsletters, and any other public recaps of the event.

Debriefing

Gather your core planning team as soon as you can following the event to debrief. Aim to meet within 1 week so the event is still fresh in everyone's mind.

You may want to create a short questionnaire to gather input from key stakeholder groups such as residents, local businesses, and volunteers. Find out what they think about the impact of the demonstration, what worked about the process, and what didn't. A link to the questionnaire might be included right in your thank you communications. You may also simply compile feedback forms completed on site - see the template on page 48.

Publish a recap of your project. Include any data you collected, relevant observations from stakeholder surveys, along with any media coverage, photos, and/or videos. Share this recap with the general public, media outlets, elected officials, and sponsors/donors.

Building Capacity Moving Forward

Ideally, your demonstration project brought a diverse group of people to work together on a project that impacts your neighborhood. Don't lose momentum! Some of the findings from your demonstration project might result in recommendations for next steps or long term actions. Record these findings and share them with the City using the Recap Worksheet (Phase 4) so you can continue to work in partnership towards improving your neighborhood.

If you've learned lessons you feel will benefit future groups leading demonstration projects, share these with the City as well. You might want to share recipes for paint, sources for supplies or funding, or any other tips that will help others plan and execute a successful demonstration.

THE POLICY

Burlington, VT
Demonstration Project Policy

AUTHORITY TO ENABLE COMMUNITY-LED DEMONSTRATION PROJECTS WITHIN PUBLIC RIGHTS-OF-WAY

With the conditions set forth in this policy, the City of Burlington Public Works Department, Police Department, and Fire Department shall enable non-municipal groups and organizations, hereby known as Community Partners, to undertake short-term demonstration projects in public rights-of-way. Demonstration Projects shall be defined as those lasting one (1) to seven (7) days and will be subject to the City of Burlington's Demonstration Project Permit Ordinance (Appendix C Section 28). Projects that exceed this in duration will be subject to the City of Burlington's Pilot Project Ordinance (Article 1 Chapter 20 Section 3).

COMMUNITY PARTNERS

(1) Eligible Community Partners include, but shall not be limited to the following entities:

- Business Improvement District or merchant group
- Neighborhood Planning Assembly
- Residents
- Chamber of Commerce
- Business owner
- Commercial property owner
- Not-for-profit organizations
- Community-based organizations and civic groups
- University or other academic clubs, organizations, classes
- Other eligible Community Partners may be considered on a case-by-case basis.

SITE REQUIREMENTS, CLEARANCE AND ACCESS

(2) State Highways and Arterial Roads: Demonstration projects cannot be located on VT Route 127. Proposals for Routes 2, 7 or Alt. Route 7 are approved on a case by case basis and may require additional review. Projects located on streets classified as "arterial" by the City of Burlington are possible, but are likely to require more robust review and traffic control (North Ave., Colchester Ave., Shelburne Rd. or Main St.).

(3) Speed Limit: Project should be located on a street in the public right of way, with a speed limit that is 25 MPH or less.

(4) Services: Project design and location should avoid interference with normal operation for delivery trucks, public transit routes/stops, or trash/recycling pick-up. If a demonstration project will impact these services, alternate access must be provided and negotiated with the impacted parties.

(5) Public Utilities: Projects should not restrict access in any way to public utilities, utility covers, valves, building standpipes, etc.

(6) Fire Hydrants: Projects must preserve vehicle access within 25 ft. of fire hydrants.

(7) Driveways: Projects should not block or limit driveway access, unless the driveway owner specifically permits use of their driveway for the demonstration. Such permission must be illustrated by letter of support.

(8) Emergency Vehicles: Project design must preserve full access for emergency vehicles, providing at least 14 feet of horizontal roadway clearance.

(9) Demonstration Projects shall maintain accessibility to individuals with disabilities per the Americans with Disabilities Act Accessibility Guidelines (ADAAG).

(10) Demonstration projects should not be located on the same block as ongoing construction projects.

(11) No street or public right-of-way shall be blocked for project installation for more than 24-hours unless specifically allowed by the Burlington Department of Public Works, Police Department, Fire Department, and Green Mountain Transit (GMT).

Demonstration Projects that do not meet these criteria will require special consideration and longer approval times. Such projects are subject to approval by the Public Works Director on a case-by-case basis.

FUNDING

(12) The Community Partner should expect to purchase, install, maintain, and remove various project materials and elements at no cost to the City. In some scenarios, the City of Burlington may provide funding or in-kind support to benefit the project, but financial support from the City is not guaranteed or required.

COMMUNITY SUPPORT

(13) The Community Partner is encouraged to provide letter(s) of support from any tenants/business entities on the block adjacent to the project site, but it is not required.

PERMITTING + NOTIFICATION

For a diagram of the process, please see page 10.

(14) Phase 1: Project Development: Community partner shall submit initial proposal via the Phase 1 Application, with draft site plan sketch a minimum of 2 months from the desired event date (though a longer time frame is recommended). The Burlington Public Works Department will review the proposal within 2 weeks to assess Traffic Control requirements, confirm compliance with applicable laws/regulations, and provide advice on Phase 2 Permit Application development. DPW will also ensure that Demonstration Project will not interfere with emergency access to utilities such as fire hydrants, public utilities access panels, building standpipes, etc. at this stage. The Community Partner must revise materials in response to DPW feedback and create a complete a Phase 2 permit application.

(15) Phase 2: Permit Application: Community partner shall submit a complete Phase 2 permit application, along with a refundable $120 deposit to DPW a minimum of 45 days before target event date. DPW shall be the primary point of contact between the Community Partner and the other agencies whose approval is required: BPD, BFD, GMT, and the Public Works Commission (referred to as agency partners). Permitting process will follow the diagram on page 10. If application is complete, DPW will distribute it to agency partners within 1 week, and a minimum of 30 days before the target event date. Agency partners report any concerns to DPW within 30 days of DPW's distribution.

(16) If agnecy partners have concerns about the Phase 2 permit application, the application is rejected and and applicant returns to start of phase 2 process (see list of permit rejections in Ordinance).

(17) If agency partners do not have any concerns with the Phase 2 permit application, the community partner will receive the approved permit package from DPW. The Department of Public Works must send the approved permit package to Public Works Commission, BPD, BFD, and GMT for informational purposes a minimum of 1 week before event.

(18) The Community Partner shall notify all households and businesses (including CarShare providers if impacted) within two (2) city blocks of the proposed project at least seven (7) days before the installation date, via an informational flyer or a letter.

(19) Any temporary changes to parking will be subject to existing protocols for placement of notification signs

and meter bags. If metered parking is present, applicants shall complete the "Application for Possession and Use of Meter Hoods" available from the DPW Traffic Division. If curbside parking is allowed, but no meters are present, applicant must: (1) notify BPD and CarShare VT 36 hours prior to event; (2) post "No Parking"signs (provided by DPW) with the date and time of parking restrictions 24 hours prior to event. See page 21 of the Guide for more details.

(20) The Community Partner shall post the mandatory project information sign at the project site within 1 week of project start date. The sign must remain posted for the duration of the project. (Sign template provided in the Required Items section of this Guide.)

STEWARDSHIP

(21) The Community Partner shall not be exempt from complying with all applicable traffic laws, including laws regarding bicyclists and pedestrians, or other relevant city ordinances unless otherwise approved by the Public Works Director. DPW will identify any concerns related to compliance when reviewing the Community Partner's initial proposal (Phase 1 of application process).

(22) The Community Partner is responsible for designating a primary contact person who can be reached by the City for the duration of the project in case of emergencies or unexpected issues/concerns. This person must be available for a site inspection once the project has been installed, and must be willing and able to troubleshoot should adjustments be necessary. It is the community partner's responsibility that all participants read the Safety Guidelines, sign the Liability Waiver and wear safety vests. A DPW staff member will inspect the site after installation for safety, adherence to plans, and that volunteers have signed the Waiver.

(23) Community Partner is responsible for any damage to private property or public property within the right-of-way that occurs as a direct result of the demonstration project.

(24) The Community Partner is responsible for removing all elements/features of the Demonstration Project and restoring the project site to its original conditions by the end of the permit period. If the Community Partner fails to remove the project and its various elements within the agreed time frame, the Community Partner forfeits their $120 deposit and the Community Partner will not be allowed to reapply for a new Community Demonstration Project for 2 years. If an emergency situation requires the City to remove or damage parts of the project before the end of the permit period, the City will not be held liable for damages to the project elements.

(25) The Community Partner shall work with affected neighbors to listen to any concerns that may arise during the project's duration. The community partner will attempt to resolve any concerns, assuming such actions do not undermine the goals of the demonstration project. If concerns cannot be addressed, the Community Partner should record the concern for submittal to DPW in the Recap Worksheet provided.

(26) The Community Partner shall notify the Police and Public Works Department of any traffic crashes, or other incidents resulting in injury to persons or property occurring at the Demonstration Project site. Community Partner shall notify DPW within 24 hours of a crash. Contact Burlington Police Department at 658-2704, and Burlington Public Works at 863-9094.

(27) The Demonstration Project shall be revocable by the Public Works Director if the project no longer meets the intent of the approved Demonstration Project proposal. If the DPW needs to terminate a project during the project's duration, the community partner forfeits their $120 deposit. The Community Partner will not be allowed to reapply for a new Community Demonstration Project for 2 years.

(28) The Community Partner is responsible for understanding and following all of the requirements in the Safety Guidelines (page 41) and Release of Liability (page 42).

(29) Community Partner shall submit the Recap Worksheet to DPW within 2 weeks of project completion.

PERMIT AND REQUIRED ITEMS

City of Burlington, Department of Public Works
645 Pine Street, Suite A | Post Office Box 849| Burlington, VT 05402-0849
802.863.9094 VOX | 802.863.0466 FAX | 802.863.0450 TTY

Demonstration Project Permit Application (Phase 1 Proposal)

Please refer to Burlington City Ordinance Appendix C, Section 28: Demonstration Projects while completing this form

Applicant Contact Information: *(List main project contact person)*	
Full Name:	
Organization Name: (optional)	Title: (optional)
Address:	Email Address: Phone #:

Is this the first time you have participated in the Demonstration Project Program?

☐ Yes ☐ No (if no, please list past project/s below)

Organization/Applicant Type: (check all that apply)

- ☐ Business Improvement District or merchant group
- ☐ Neighborhood Planning Assembly
- ☐ Resident
- ☐ Chamber of Commerce
- ☐ Business owner
- ☐ Commercial property owner
- ☐ Not-for-profit organization
- ☐ Community-based organization or civic group
- ☐ University or other academic institution

Project Proposal Information:
Proposed project location: (Please refer to and complete the site eligibility checklist on the next page)
List City Ward and Councilor(s) representing area where the project is located:

Target Project Timeline: (list date, day of week, and approximate hours for each phase. Note: projects may last 1-7 days.)

Installation:	Duration:
Removal:	

Parking Information:
What type of parking is present in your project site? Describe any restricted zones, accessible spaces, and whether curbside parking is regulated by parking meters.(See page 21 in Guide for more information.)

DESIGN AND LOCATION CRITERIA

Does your project meet the below requirements for quick and easy approval? Projects that do not meet the criteria listed here are not impossible, but they will require special consideration and longer approval times. Such projects are subject to approval by the Public Works Director on a case-by-case basis. For additional details about requirements related to clearance, access, and community support, please see the policy document in the Policy section of this Guide.

	YES	NO
Does your site avoid State Highways (VT 127 and Routes 2, 7, and Alt. Route 7)? Demonstration projects cannot be located on VT Route 127. Proposals for Routes 2, 7 or Alt. Route 7 are approved on a case by case basis and may require additional review.		
Does your site avoid streets classified as "arterial" by the City of Burlington? (North Avenue, Colchester Avenue, Shelburne Road or Main Street)		
Is your site a public right of way, with a speed limit that is 25 MPH or less?		
Will your project avoid interference with normal operation for delivery trucks, public transit routes/stops, or trash/recycling pick-up? If project will impact these services, alternate access must be provided and negotiated with the impacted parties.		
Does your project design preserve access to public utilities, utility covers, valves, building standpipes, etc.?		
Does your project design preserve vehicle access within 25 ft. of any fire hydrants at your location?		
Does your project preserve normal access to driveways? Projects should not block or limit driveway access, unless the driveway owner specifically permits use of their driveway for the demonstration (demonstrated by letter of support - attach if relevant).		
Does your project design preserve full access for emergency vehicles? (Projects may require further review if they do not provide at least 14 feet of horizontal roadway clearance.)		
Does your project design preserve normal street/sidewalk access for individuals with disabilities?		
Is your project located on the same block as any ongoing construction projects?		
Are all street closures needed for your project expected to last less than 24 hours? Streets or public rights-of-way cannot be blocked for more than 24-hours unless special permission is obtained from DPW, BPD, BFD, and GMT.		

PROJECT PLAN INFORMATION

Please attach the following materials to further describe your project idea:

- ☐ A short description of your project idea, including information about the goal/intent of the project.
- ☐ 3-5 photographs of your proposed project location, and any measurement information you were able to collect. (Measurement information *not* required - do not enter the street if it is not safe to do so!)
- ☐ A site plan (sketches, or drawings depicting your vision for the completed project)
- ☐ A brief description of the quantitative and qualitative metrics you intend to use to evaluate and gather public input on your project.

Do you have an Engineering Partner identified to help you create a Traffic Control Plan in the event that one is required? (Note that a Traffic Control Plan may not be needed for all project types. DPW will advise you of Traffic Control requirements when reviewing your Phase 1 proposal.)

- ☐ No
- ☐ Yes (List name and contact information below)

Do you have any residents or business owners from the surrounding area (on the block adjacent to your project site) on your planning team, or indicating advance support of the project?

- ☐ No
- ☐ Yes (If yes, list below. Attach additional materials as needed.)

Submittal Date*:

** We recommend submitting your initial proposal 2-5 months before your target event date. First time applicants should aim to submit materials as early as possible.*

Please send your initial proposal to: Elizabeth Gohringer, Associate Planner - egohringer@burlingtonvt.gov

Please be aware that if your application is approved, you will be required to provide a refundable deposit of $120 when you submit the Phase 2 application.

Following receipt of the Phase 2 application, upon DPW's review and approval, based on project meeting all applicable standards in the Code of Ordinances, a permit will be issued.

Permit must remain on site at all times and be readily accessible upon request.

City of Burlington, Department of Public Works
645 Pine Street, Suite A | Post Office Box 849| Burlington, VT 05402-0849
802.863.9094 VOX | 802.863.0466 FAX | 802.863.0450 TTY

Demonstration Project Permit Application (Phase 2 Application)

Note: This application form is intended only for those parties who have already submitted an Initial Proposal to DPW (Phase 1), and have revised their project materials in response to DPW feedback.

APPLICANT INFORMATION *(List main project contact person)*	
Full Name:	
Organization Name: (optional)	Title: (optional)
Address:	Email Address: Phone #:

Has the contact person changed since the Initial Application in Phase 1?

☐ Yes ☐ No

PHASE 2 PROJECT PROPOSAL
Proposed project location:
Proposed project type: ☐ Wayfinding Sign ☐ Curb Extension ☐ Parklet ☐ Bike Corral ☐ Median Refuge Island ☐ Pedestrian Plaza ☐ Protected or Conventional Bike Lane ☐ Other, specify _____
List City Ward and Councilor(s) representing area where the project is located:

Has the project location changed since the Initial Application in Phase 1?

☐ Yes ☐ No

Please attach the following materials to further describe your proposal. Clearly explain any notable changes that you have made in response to DPW feedback from Phase 1.

☐ A description of your project idea, including information about the goal/intent of the project. (1 pg. max)

☐ A site plan - sketches, or drawings depicting your vision for the completed project

☐ A copy of the informational flyer or letter which will be distributed to the affected area.

PROJECT IMPLEMENTATION

Did DPW indicate that a Traffic Control Plan was required as part of your Phase 2 Proposal?

☐ **No**

☐ **Yes.** If yes, attach the Traffic Control Plan created for your project. The Plan must be completed by a licensed engineer, according to MUTCD guidelines. Provide the contact information for the Engineering Partner who assisted you with preparation of the Traffic Control Plan below.

Name:	
Organization or Company:	
Email Address:	**Phone #:**

Installation: How do you plan to install and break-down the project in accordance with the Traffic Control Plan? Please share the details of your work plan, in the form of a timeline that shows when project elements will be installed/staffed/taken down, and by who (staff, volunteers, etc.). Be sure to indicate:

- Who will lead implementation of the traffic control plan. (Note that DPW may be able to assist with complex plans in some cases.)
- Your desired time for project inspection by DPW staff (must occur at end of installation, before project officially "opens" to the public)
- Who will be the volunteer coordinator/point person? (This person must insure all volunteers sign Wavier)
- Estimated time frames for each phase of work and planned activity (at minimum, indicate timing for installation, duration, tear-down)
- Timeline for posting any required parking impact notifications (see page 21 of the Guide for more information).
- Number of volunteers/staff who will be involved in each phase of the project

Evaluation/Outreach: Describe the quantitative and qualitative metrics you will use to evaluate and gather public input on your project (approx. 1 page). Please include details of when evaluation activities will occur, and how many volunteers/people will be involved in each of your planned evaluation activities. When uploading your photos to social media, please use the Burlington Demonstration Project hashtag: #BTVdemoproject. Doing so will help us track photos as inspiration to other demonstration project organizers.

I understand that I am required to comply with the items stipulated in the Demonstration Project Policy on pages 31-34. I also understand that I am responsible for providing all volunteers with a copy of the Safety Guidelines and ensuring all volunteers sign the Release of Liability.

Signature: _____

Print Name: _____ Date: _____

Please send your application to: Elizabeth Gohringer, Associate Planner - egohringer@burlingtonvt.gov

Safety Guidelines

ADOPTING A "SAFETY FIRST" MENTALITY FOR TEMPORARY DEMONSTRATION PROJECTS

OBJECTIVE

The first goal of a demonstration project in the public right-of-way is to provide safer neighborhoods and streets using an open, temporary design and construction approach. The Department of Public Works and its employees, partners and volunteers are all part of this strategic mission and vision. Adopting a "safety first" mentality can help insure that accidents are prevented. Safety should be the first consideration for all parties at all stages of the project - through preparation, pre-build, installation, and clean-up.

GENERAL SAFETY

The project leader is responsible for making sure that everyone who assists with a temporary Demonstration Project reads these Safety Guidelines, and completes a Release of Liability waver. Participants must follow safety rules, laws, and procedures to ensure that their work environment is safe. This might include obtaining and wearing safety equipment, such as gloves, face protection, hearing protection, and clothing and footwear appropriate for the job to be performed (such as closed toed shoes or safety vests).

Requirements for Accident and Incident Reporting

In the case of an emergency, the first step should always be to call 911.

The Community Partner shall notify the Police and Public Works Department of any traffic crashes or other incidents resulting in injury to persons or property occurring at the Demonstration Project site. Contact Burlington Police Department at 658-2704, and Burlington Public Works at 863-9094 within 24 hours of the crash or incident occurring.

Anyone who observes an unsafe condition, behavior or protocol at the project site should speak up immediately, so that the group may adjust accordingly.

TRAFFIC CONTROL

Traffic control will be executed in accordance with the Traffic Control Plan developed during the project permitting process (see page 22 for details). Approved traffic control devices, including cones, barrels, barricades, and delineator posts shall be used as described in the Traffic Control Plan.

FIELD SAFETY MEETINGS

Demonstration Project leaders should hold safety meetings/briefings at least every day during implementation and project removal to discuss potential hazards or other safety concerns with the job(s) being performed that day. During the meeting, the project leader should describe safety protocols relevant to the project:

- Rules around accident and incident reporting (required for all projects - see above)
- Details of any personal protective equipment that might be required for work on any specific tasks (ex: work gloves, safety vests, closed toed shoes)
- Overview of the Traffic Control Plan approved for the day's activities.

At the close of the meeting, participants should sign the Release of Liability Waiver on the following page.

Release of Liability

THIS FORM MUST BE COMPLETED BY ALL PERSONS INVOLVED IN INSTALLING AND REMOVING A DEMONSTRATION PROJECT THROUGH THE CITY OF BURLINGTON'S COMMUNITY DEMONSTRATION PROJECT PROGRAM.

ONE ENTRY OR FAMILY PER PAGE - PRINT AS MANY PAGES AS ARE NEEDED. ALL PARTICIPANTS ARE REQUIRED TO ABIDE BY THE THE SAFETY GUIDELINES PROVIDED (PART 1).

I _____ have read and understand the Release of Liability and willingly and voluntarily agree to participate in this project and abide by all the safety guidelines and other project requirements. I understand that this project may involve potentially dangerous activities and may involve risks including but not limited to: breathing or being around fumes from paint or other chemicals, being in the right-of-way with moving vehicular traffic, using hand tools, lifting or moving heavy objects. I understand that if the project requires the use of heavy machinery or electric power tools, this work is to be conducted by City employees only. I understand that I am responsible for my own health insurance coverage and am not covered by the City of Burlington's insurance. By signing, I agree that I am in sufficient physical health to engage in this activity and that I release and hold harmless the City of Burlington, its appointed or elected officials, employees, and volunteers from any and all claims, actions, and judgments, including all costs of defense and attorney's fees incurred in defending against and arising from and related to vendors, their employees or volunteers actions.

Participant's Full Name:_____ Age:_____

Address:_____ Phone:_____

Intending to be legally bound hereby, the undersigned acknowledges that they agree to the statements above and have read and will abide by the Safety Guidelines described in this Guide.

Participant's Signature:_____
Date:_____

Parent/Guardian's Signature:_____ Date:_____
If under 18 years old, Parent or Guardian must also sign. Minors must have their parent/guardian on site with them, or their parent/guardian must give written permission for them to participate with another trusted adult by initialing here:_____ Date:_____

If participating as an individual, you do not need to fill out the below information. If participating as a family, you must provide each participating family member's name below.

NAME	ADDRESS	PHONE #	SIGNATURE

Release of Liability

THIS FORM MUST BE COMPLETED BY ALL PERSONS INVOLVED IN INSTALLING AND REMOVING A DEMONSTRATION PROJECT THROUGH THE CITY OF BURLINGTON'S COMMUNITY DEMONSTRATION PROJECT PROGRAM.

ONE ENTRY OR FAMILY PER PAGE - PRINT AS MANY PAGES AS ARE NEEDED. ALL PARTICIPANTS ARE REQUIRED TO ABIDE BY THE THE SAFETY GUIDELINES PROVIDED (PART 1).

I _____ have read and understand the Release of Liability and willingly and voluntarily agree to participate in this project and abide by all the safety guidelines and other project requirements. I understand that this project may involve potentially dangerous activities and may involve risks including but not limited to: breathing or being around fumes from paint or other chemicals, being in the right-of-way with moving vehicular traffic, using hand tools, lifting or moving heavy objects. I understand that if the project requires the use of heavy machinery or electric power tools, this work is to be conducted by City employees only. I understand that I am responsible for my own health insurance coverage and am not covered by the City of Burlington's insurance. By signing, I agree that I am in sufficient physical health to engage in this activity and that I release and hold harmless the City of Burlington, its appointed or elected officials, employees, and volunteers from any and all claims, actions, and judgments, including all costs of defense and attorney's fees incurred in defending against and arising from and related to vendors, their employees or volunteers actions.

Participant's Full Name:_____ Age:_____

Address:_____ Phone:_____

Intending to be legally bound hereby, the undersigned acknowledges that they agree to the statements above and have read and will abide by the Safety Guidelines described in this Guide.

Participant's Signature:_____
Date:_____

Parent/Guardian's Signature:_____ Date:_____
If under 18 years old, Parent or Guardian must also sign. Minors must have their parent/guardian on site with them, or their parent/guardian must give written permission for them to participate with another trusted adult by initialing here:_____ Date:_____

If participating as an individual, you do not need to fill out the below information. If participating as a family, you must provide each participating family member's name below.

NAME	ADDRESS	PHONE #	SIGNATURE

COMMUNITY-LED DEMONSTRATION PROJECT

This pop-up project was created through the City of Burlington's Demonstration Project Program. The program creates a pathway for everyday residents, advocacy organizations, and community groups to spearhead short-term demonstration projects alongside the Department of Public Works and other agencies.

Project Name and Description:

Project Duration:

Lead Contact Person and/ or Organization:

BURLINGTON, VT PUBLIC WORKS

If lead contact person cannot be found, contact the Burlington Department of Public Works at 863-9094.

In case of emergencies, dial 911 for the Burlington Police Department.

City of Burlington, Department of Public Works
645 Pine Street, Suite A | Post Office Box 849| Burlington, VT 05402-0849
802.863.9094 VOX | 802.863.0466 FAX | 802.863.0450 TTY

Recap Worksheet: (Phase 4)

Project Leader Name: *(List main project contact person. Note - this person will be considered the primary contact person should an issue or emergency arise.)*

Project Date:

Project Location:

Organization Name: *(if appropriate)*

Project Leader Address:

Project Budget

Estimated Materials Budget (purchased items)	
Estimated Value of In-Kind Materials Donations:	
Cost of hired services, if any: (list service type)	
Additional Costs:	
TOTAL PROJECT COST:	

List any in-kind donors or sponsors

Name	Item/Service

What worked well? (Attach secondary sheet if needed)

What would you do differently? (Attach secondary sheet if needed)

What challenges arose when planning or implementing your project? How did you deal with them? (Attach secondary sheet if needed)

Please share any relevant findings/evaluation metrics for your project, as well as photographs or links to online information. When posting on social media, please use the Demonstration Project hashtag: #BTVdemoproject. Attach supporting materials as appropriate. (Attach secondary sheet if needed)

Do you have next steps for your group to continue to advance the goals associated with your project? (Attach secondary sheet if needed)

ADDITIONAL RESOURCES

City of Burlington, Department of Public Works
645 Pine Street, Suite A | Post Office Box 849| Burlington, VT 05402-0849
802.863.9094 VOX | 802.863.0466 FAX | 802.863.0450 TTY

(Optional)

Demonstration Project Feedback Form

Name: (optional)_____ Date: _____

Email/Phone Number: (optional)_____

Share your comments about the demonstration project here:

Project Location: _____

Date: _____

(Optional)

National Bicycle and Pedestrian Documentation Project Count Template

FOR DETAILED COUNTING INSTRUCTIONS AND ADDITIONAL RESOURCES, VISIT:
HTTP://BIKEPEDDOCUMENTATION.ORG/DOWNLOADS/

STANDARD SCREENLINE COUNT FORM

Name: _____ Location: _____

Date: _____ Start Time: _____ End Time: _____

Weather: _____

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold). Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count for two hours in 15 minute increments.
- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or rollerblades should be included in the "Other" category.

	Bicycles		Pedestrians		Others
	Female	Male	Female	Male	
00-:15					
15-:30					
30-:45					
45-1:00					
1:00-1:15					
1:15-1:30					
1:30-1:45					
1:45-2:00					
Total					

Who to call for Traffic Control?

Page 22 notes that you may be required to create a Traffic Control Plan (TCP) as part of your Phase 2 application.

In most cases, the TCP must be completed by a professional engineer, in accordance with guidelines set out in the Manual on Uniform Traffic Control Devices (MUTCD). The person or organization who creates your traffic control plan is your Engineering Partner. If you don't have an engineer on your team, don't despair!

- Some projects may be simple enough that they do not require a TCP.
- DPW will assist with up to 4 TCPs for demonstration projects each year. If you need help creating a traffic control plan, check the appropriate box in your Initial Proposal to indicate this need to DPW.
- If DPW is unable to assist with the creation of your TCP, local engineering firms may be willing to assist you in creating a plan on a volunteer basis. The box to the right contains a few ideas for local companies you could try. Note that you should consider any donated engineering services as a valuable form of in-kind sponsorship of your project. Plan to create a sign to publicly recognize your Engineering Partner as a key part of your project's success!

VERMONT-BASED ENGINEERING FIRMS:

Note that inclusion in this does NOT mean the company has agreed to offer free services. You'll have to make a proposal just as you would for any sponsorship or donation to your project.

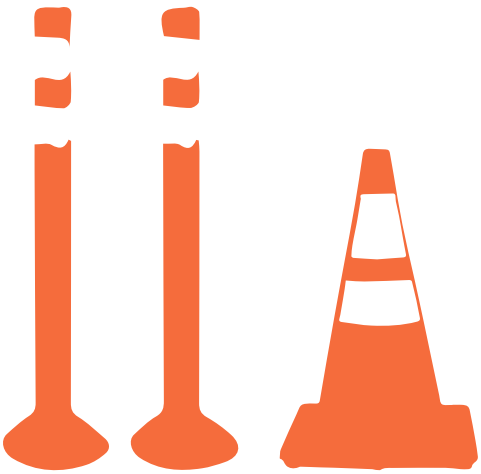
DuBois & King:
https://www.dubois-king.com/

Greenman-Pedersen, Inc. (GPI)
http://gpinet.com/

Resource Systems Group (RSG):
http://www.rsginc.com/

VHB:
https://www.vhb.com/

Vermont Traffic Control:
http://www.vermonttrafficcontrol.com/



Appendix II

City of Burlington, VT Quick Build Design + Materials Standards

BURLINGTON PUBLIC WORKS

QUICK BUILD DESIGN + MATERIALS STANDARDS

THANKS EVERYONE!

This guide is intended to help Burlington build safer streets for everyone - quickly. It is the result of a collaborative effort between:

City of Burlington Public Works

Chapin Spencer, Director

Norm Baldwin, City Engineer and Assistant Director
Nicole Losch, Senior Transportation Planner
Elizabeth Gohringer, Associate Planner
Anna Wyner and Griffin Gardener, Project Interns

Street Plans

Mike Lydon, Principal
Dana Wall, Project Manager
Sam Goater, Project Engineer

DuBois & King

Lucy Gibson, Project Engineer
Sophie Sauve, Landscape Planner

Local Motion

Jason Van Driesche, Deputy Director

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North Union Street protected bike lane.
Image: Courtesy of Julie Campoli

QUICK BUILD IS...

SAFER PLACES TO WALK
SAFER PLACE TO BIKE
SAFER PLACES TO DRIVE
SAFER STREETS FOR EVERYONE!

Introduction

The Burlington Quick-Build program is an initiative of the City of Burlington Department of Public Works. The goal is to make streets safer and more accessible for everyone. This Quick Build Design + Materials Standards Guide is one of the first projects to be realized from the planBTV Walk Bike Master Plan, and will help the City implement street safety and community placemaking projects quickly, with low-cost and flexible materials intended to last one to five years. The program will provide opportunities for residents, businesses, and the City of Burlington to experience and evaluate projects before committing to long-term capital projects. If a Quick Build project is successful using the materials and design standards set forth in this Guide, then it will have the opportunity to be refined and kept in place and maintained until made more permanent with long-lasting materials. If a project is not well-received or does not achieve intended safety and accessibility outcomes, then it may be removed or altered.

Quick-Build projects may be implemented citywide but are most appropriate for streets designated by the planBTV Walk Bike Master Plan as a slow-zone, neighbothood greenway, placemaking, bike and / or pedestrian priority corridor.

This Guide was prepared for the City of Burlington by Street Plans and DuBois & King, with review support from Local Motion.

HOW TO USE THIS GUIDE

This document provides design and materials guidance for the delivery of Quick Build street re-design projects.* It is to be used by Burlington Public Works and its many community, department, agency, and consulting project partners to build safer and more accessible streets.

The Quick Build Design + Materials Standards guide is organized into two sections – Design Standards and Materials Standards – that may be used to implement a wide range of project types outlined in the PlanBTV Walk Bike Master Plan.

DESIGN STANDARDS

The Design Standards section provides guidance for a range of project types that create safer conditions for walking, cycling, and driving, while also supporting public and community placemaking opportunities. Each project type contains design guidance – applications, design components, recommended dimensions, and implementation notes – using a palette of simple, flexible, low-cost materials (see below). In addition to this written guidance, each project type includes design and context details illustrating how the design and material standards are to be applied to Burlington's streets.

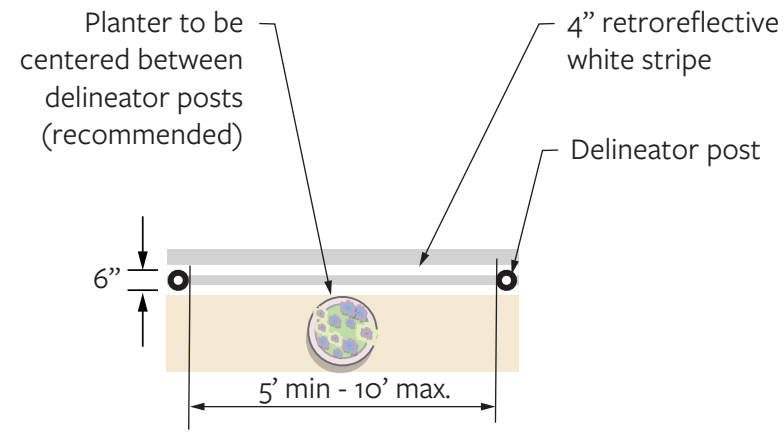
MATERIALS STANDARDS

The Materials Standards section provides a detailed palette of barrier elements as well as surface materials that are appropriate for a wide variety of project types found in the Design Standards section of this document.

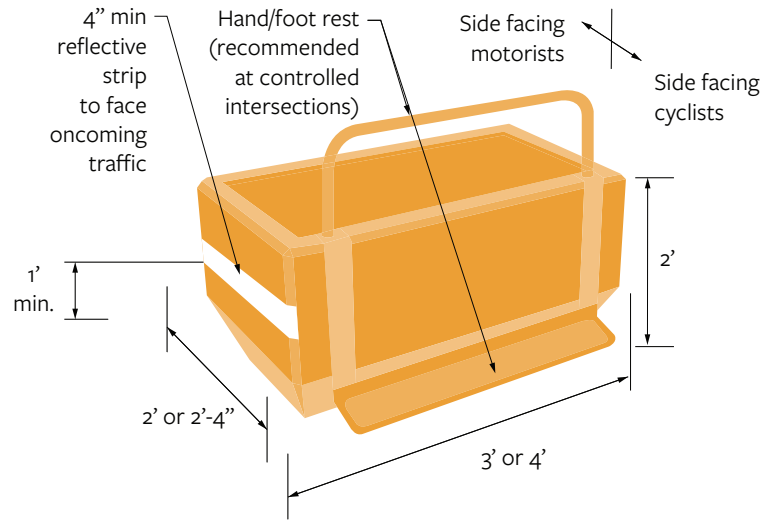
Together, the Design and Materials Standards will allow the City of Burlington to develop and deliver better streets in the short-term while ensuring long-term street redesigns optimize the impact and value of long-term capital budget investments.

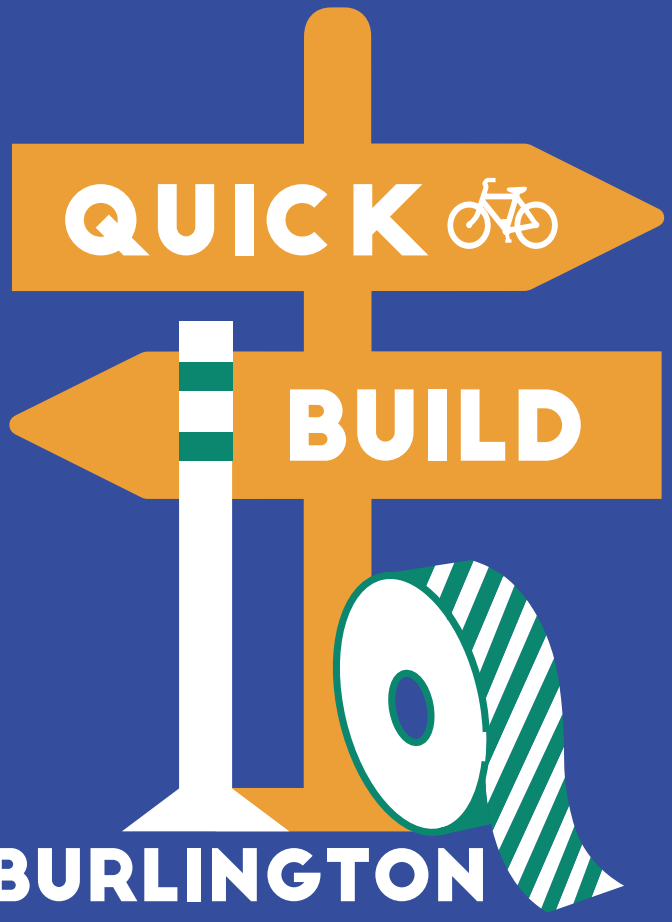
* Please note the design guidance contained herein is intended to supplement, not replace VTrans, NACTO, AASHTO, MUTCD and other relevant design guidance and standards, such as the Burlington Great Streets Design Guide

DESIGN



MATERIALS





DESIGN STANDARDS

I. SAFER PLACES TO WALK

I.A. CURB EXTENSIONS

Curb extensions shorten crossing distances, provide additional pedestrian waiting space, and calm traffic by physically narrowing the roadway. This reduces vehicular turning speeds and improves motorist sight lines at intersection and mid-block crossing locations. Curb extensions may serve as gateways for neighborhood greenways and neighborhood / downtown slow zones, offering an opportunity to create street surface murals where there is a desire for aesthetic enhancements. Quick Build curb extensions are also a form of public space that may become permanent, providing additional opportunities for environmental and placemaking enhancements, such as rain gardens, bicycle parking. and other public realm amenities.

Applications

Neighborhood / Corridor / Downtown Slow Zones | High-crash locations

Components

Required

- Retroreflective double 4" stripe shall demarcate curb extension area
- Primary mountable barrier elements shall be used to separate parked and moving vehicles from the curb extension area

Recommended

- Surface material should be used to more visibly designate curb extension area
- Secondary unmountable barrier element, such as a planter, may be used when a maintenance partner is identified

Optional

- Surface mural art may be used to add visual interest
- Secondary truncated dome pad may be used at curb extension edge
- Crosswalk may be extended through curb extension to the curb line
- Bicycle parking corrals may be used where need exists

Design Dimensions

Required

- Ingress and egress curb return shall be angled at 45 degrees to facilitate snow clearance (unless primary and secondary barrier elements are removed for winter)
- 20' minimum curb extension ingress length; 5' minimum egress length
- Primary mountable barrier element spacing shall not exceed 10' on center
- Overall width shall be at least 1' less than width of adjacent parking stalls (typically 8'); Minimum width shall be 2' where curbside parking is not present (see 1B. Mid-Block Crossing illustration)
- Crosswalk entrances shall be clear of vertical barrier elements

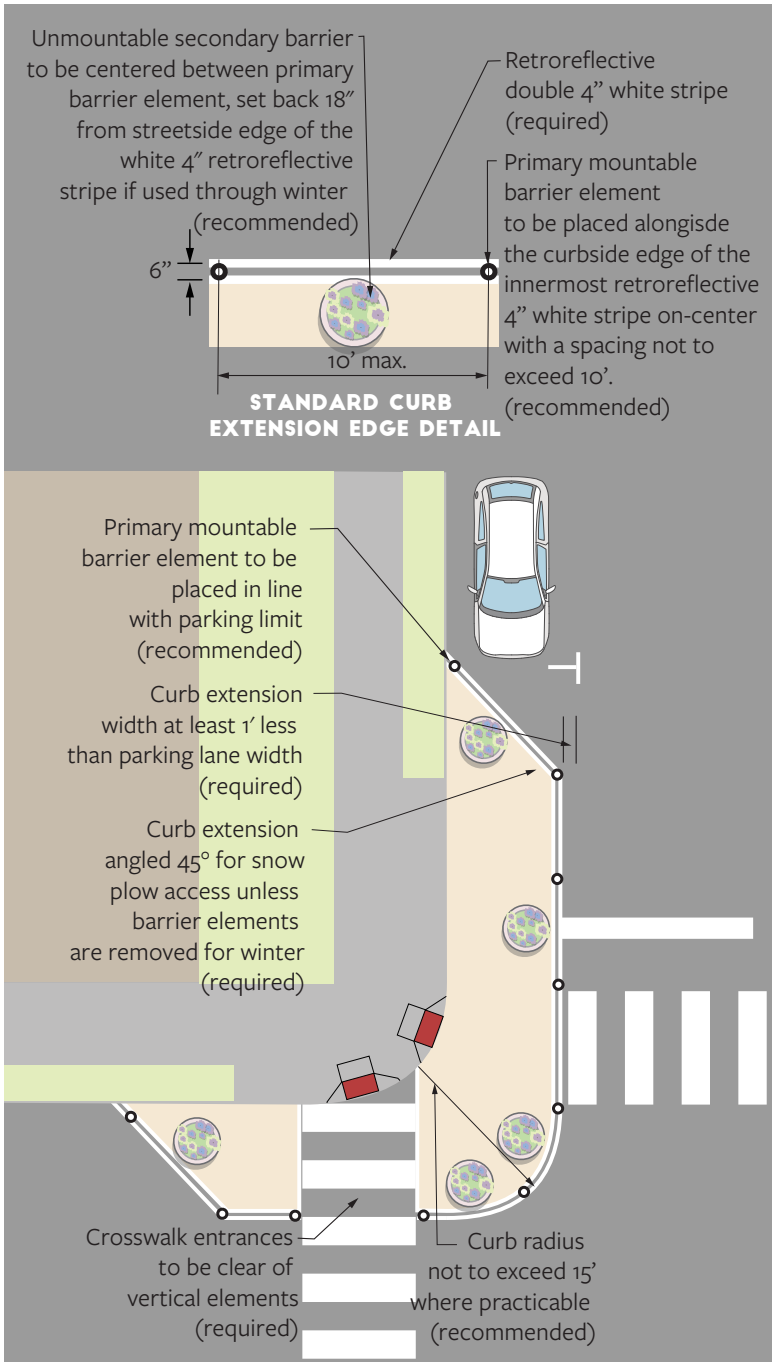
Recommended

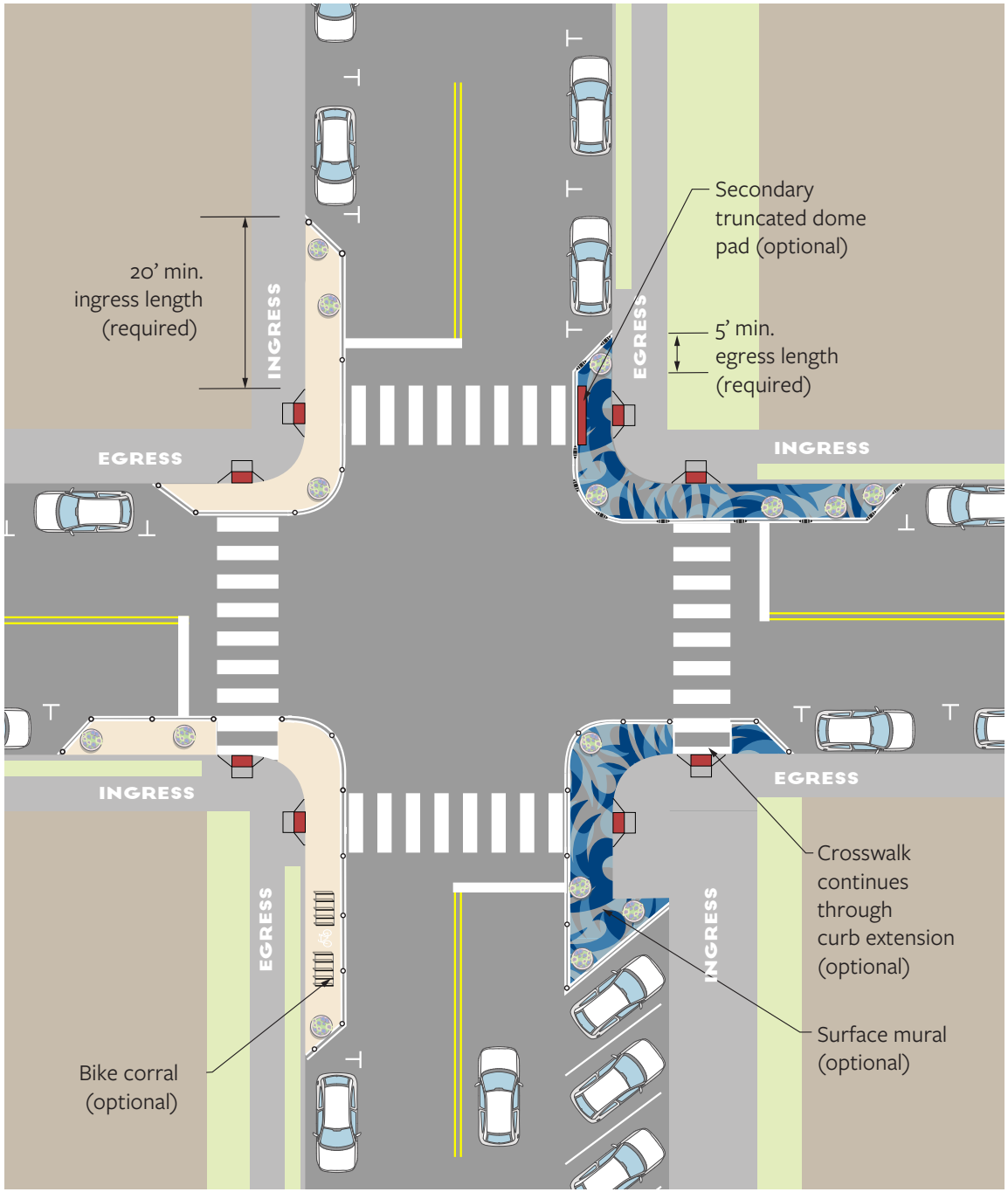
- Planters should be centered between primary barrier elements, abutting inner white 4" retroreflective stripe abutting if it will be seasonal, or set back 18" from the streetside edge of the white 4" retroreflective stripe if remaining through winter
- Curb radius should be determined by primary design vehicle but wherever possible should not exceed 15'
- Primary barrier elements should be placed along the curbside edge of the innermost retroreflective double 4" white stripe placed at curb extension edge

Design Notes

- Curb extensions may be used to reduce illegal parking at crosswalks and bus stops
- When applied to streets with bikeways, curb extensions must not infringe upon the designated cycling space
- Where certain bikeway types are present, curb extensions may be used to form a protected intersection configuration
- Barrier elements may be removed November 1st - April 1st so that curb extensions may be used for snow storage
- See NACTO's Urban Street Design Guide; ITE's Designing Walkable Urban Thoroughfares: A Context Sensitive Approach; or Burlington's Great Streets Design Guide for more street design guidance

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT





1.B. MID-BLOCK PEDESTRIAN CROSSINGS

Mid-block pedestrian crossings provide highly-visible and safe locations for people to cross streets along existing desire lines, especially between two common mid-block destinations not served by the existing pedestrian network. Such crossings should feature high-visibility crosswalks, curb extensions, barrier elements, and pedestrian refuge islands (where appropriate). Mid-block pedestrian crossings may also reduce speeds of vehicular traffic and offer opportunities for street beautification.

Applications

Downtown / Corridor / Neighborhood Slow Zones

Components

Required

- Retroreflective double 4" stripe shall demarcate curb extension and / or pedestrian refuge area
- Primary mountable barrier elements shall be used to separate parked and moving vehicles from the curb extension and/or pedestrian refuge area

Recommended

- Secondary barrier elements, such as planters, may be used when a maintenance partner is identified
- Surface material should be used to more visibly designate curb extension and/or pedestrian refuge area

Optional

- Surface mural art may be used to add visual interest
- Yield line markings may be placed on vehicular ingress side of mid-block crossing

Design Dimensions

Required

- See previous two pages (1A. Curb Extensions) for basic required and recommended dimension details
- Their use is optional but where utilized, yield line markings shall be placed at a minumum of 20' back from the ingress side of crosswalk
- Refuge islands shall be a minimum of 6' in width
- Where no on-street parking is present, curb extension shall be a minimum of 2' in width
- 9' min. clear between primary mountable barrier elements; 14' clear between secondary unmountable barriers

Optional

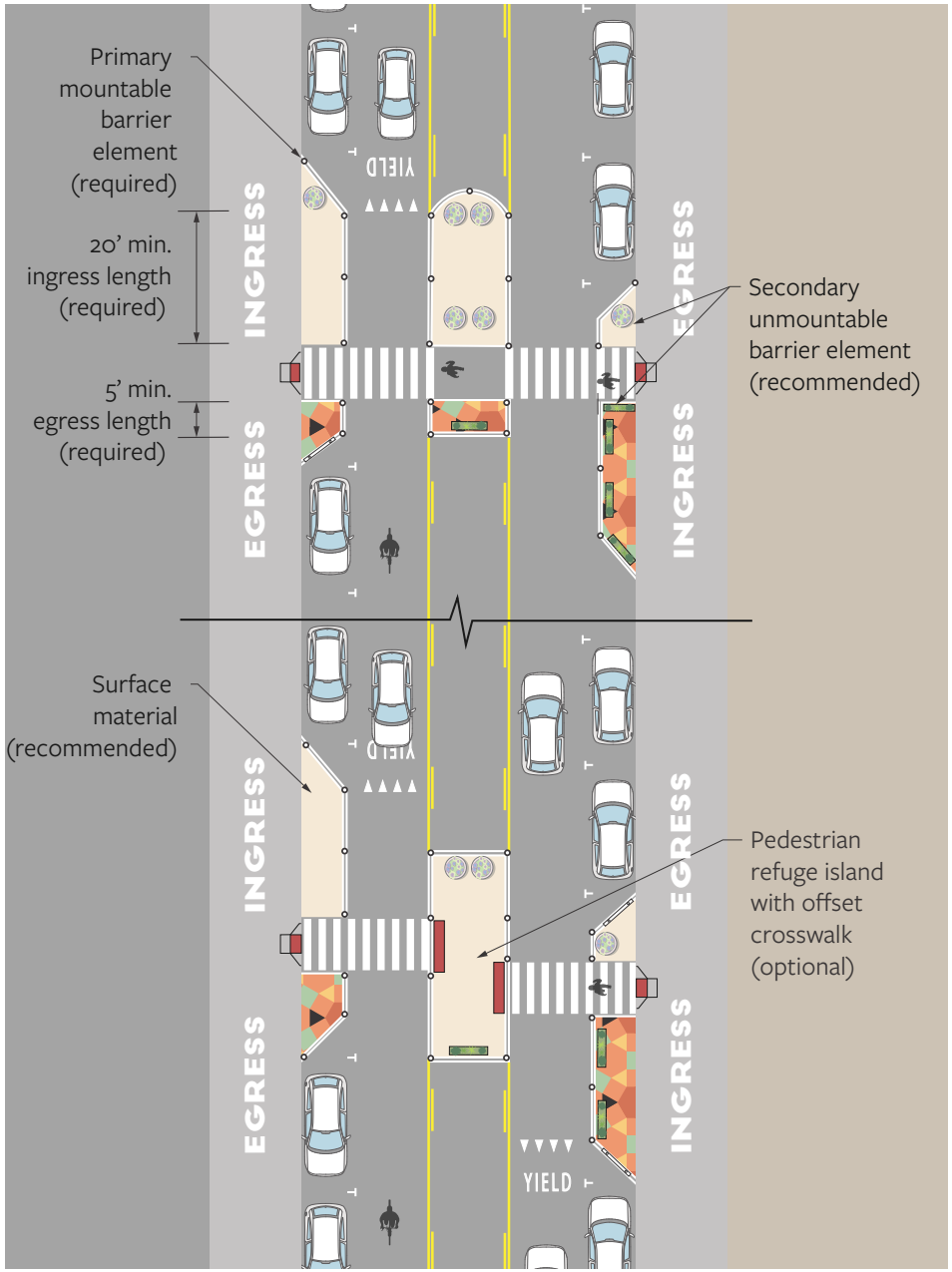
- Pedestrian refuge islands may feature offset crosswalk
- Yield lines

Design Notes

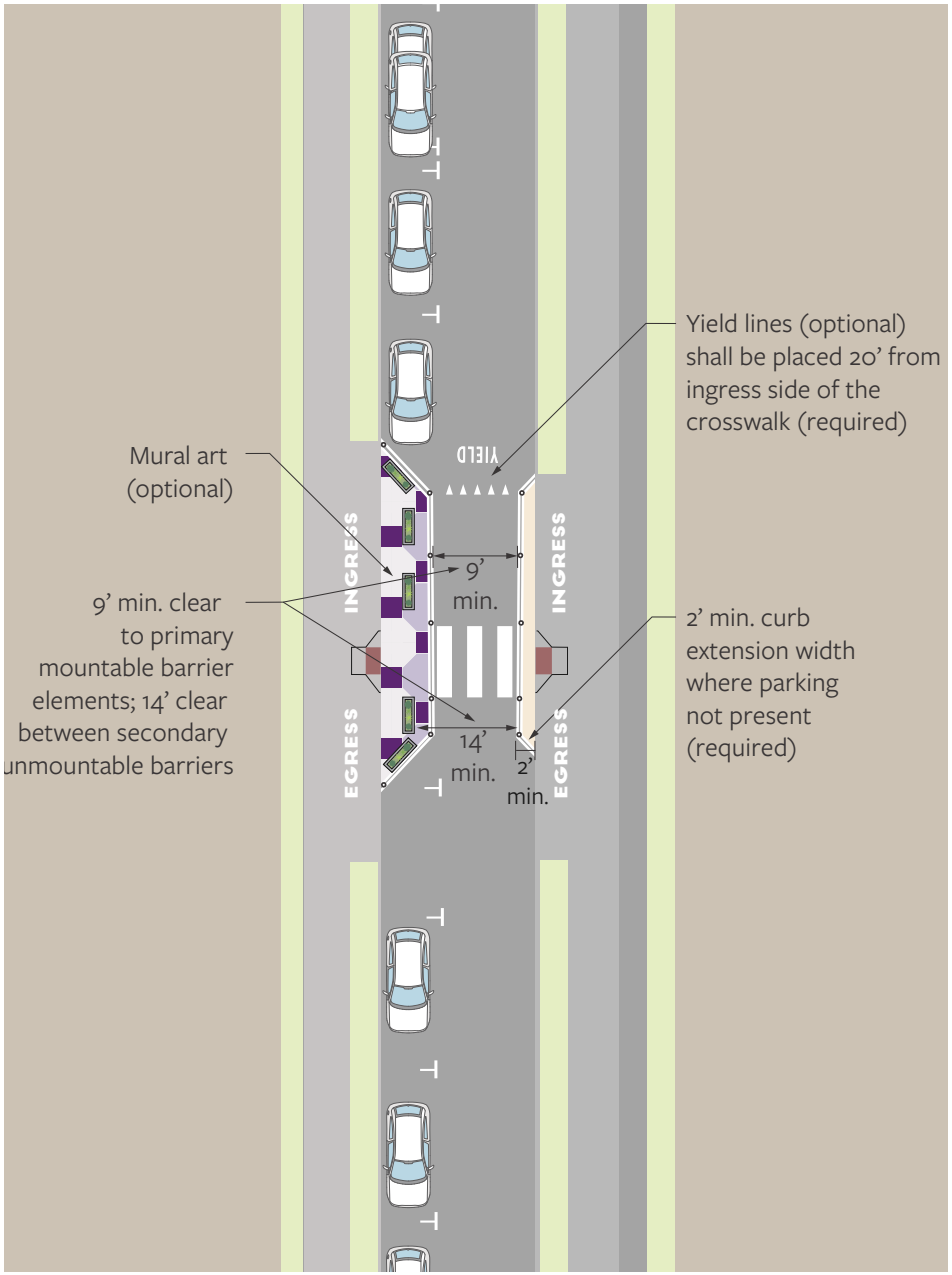
- See previous two pages (1A. Curb Extensions) for basic design notes
- Pedestrian refuge islands are appropriate where people walking must cross two wide lanes (or more) and may be implemented within a center turn lane to provide a protected 2-stage crossing for pedestrians
- Offsetting crosswalks helps orient pedestrian oncoming vehicular or cycling traffic
- See NACTO's Urban Street Design Guide; ITE's Designing Walkable Urban Thoroughfares: A Context Sensitive Approach; or Burlington's Great Streets Design Guide for more street design guidance

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT

MULTI-LANE STREET



ONE-WAY STREET



I.C. #PARKLETS

Parklets convert curbside parking spaces into usable public spaces. While parklets may be implemented on the street surface, they more commonly make use of a raised platform placed level with the curb/sidewalk. Public seating, landscaping, bicycle parking, and shade elements are a few of the amenities introduced into the streetscape, creating value for adjacent businesses and property owners along commercial corridors with moderate to heavy foot traffic. Many cities partner with local businesses, BIDs, or neighborhood associations to build and maintain these streetscape enhancements, especially along streets with relatively narrow sidewalks. However, unlike private "dining decks", parklets are fully accessible public spaces and do not require a retail purchase to be used. Parklets may be applied to low-speed residential streets if a stewardship partner is able to be identified.

Applications

Corridor / Downtown Slow Zones | Placemaking Priority Corridors

Components

Required for platform parklet

- Sub-structure
- Platform
- Seating
- Curb stop and / or other vertical barrier separating the parklet from adjacent parking stalls

Required for street surface parklet

- ADA-compliant ramp
- Retroreflective double white 4" lines to demarcate curb extension area
- Curb stop or other vertical barrier separating the parklet from adjacent parking stalls / bicycle and vehicular traffic

Recommended for street surface and platform parklets

- Tables, shade structures, lighting, planters and other landscape and design elements - get creative!
- Surface material treatment

Design Dimensions

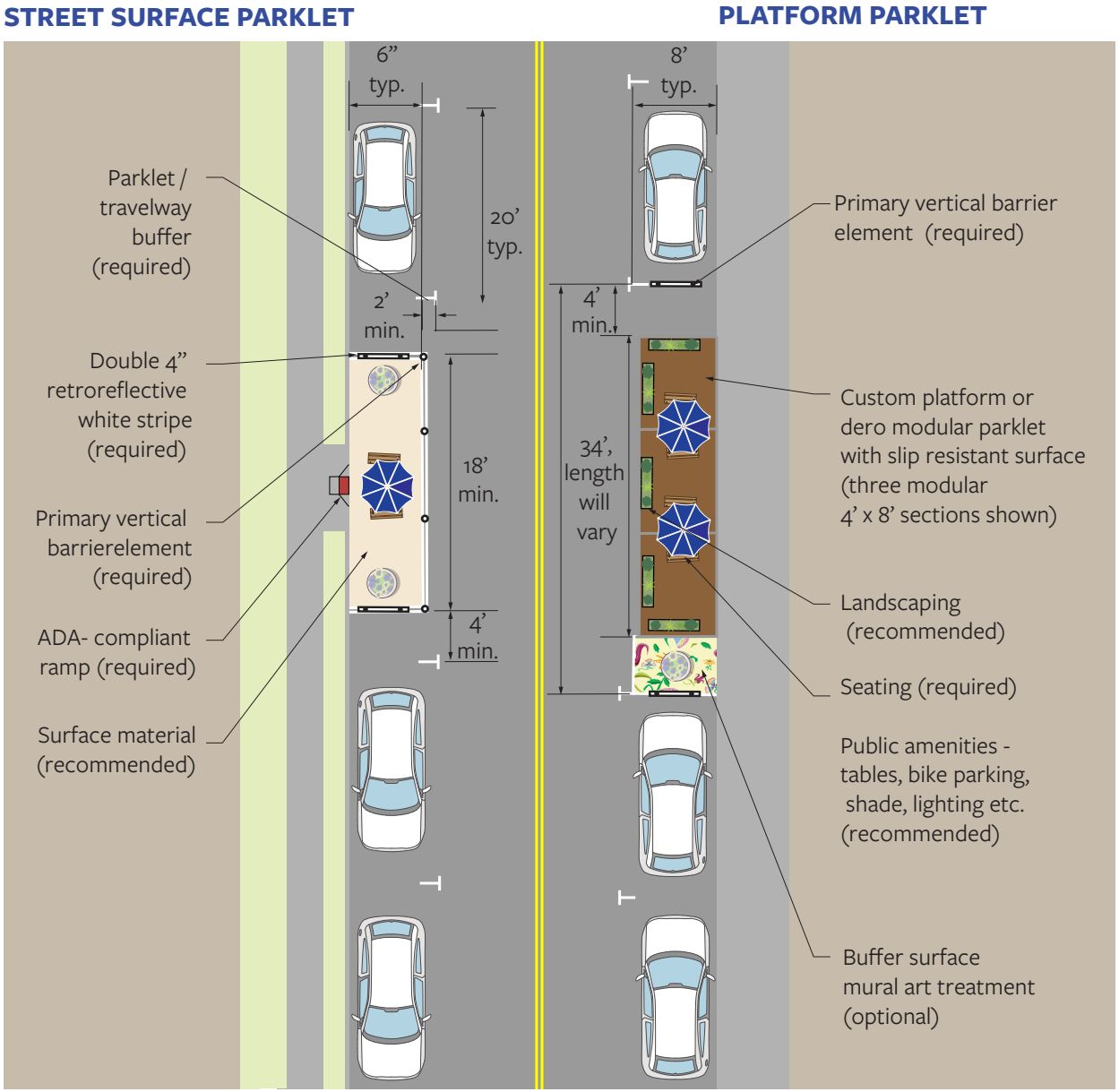
Required for all parklets

- Minimum length is one standard parking space (18' - 20' typ) for parklets in parallel parking lane; three standard spaces for angled parking (27' typ)
- 4' buffer between parklet platform edge and any adjacent parking stalls
- 6' minimum width
- 2' minimum buffer between travel way / parklet, as required by Burlington Great Streets Standards
- See Burlington Great Streets Standards for more detailed siting and dimensional requirements

Design Notes

- Given Burlington's climate, parklet removal November 1st - April 1st is recommended
- See the Burlington Great Streets Standards for additional parklet siting and construction guidance

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT



I.D. INTERSECTION MURALS

Intersection murals are a low-cost but high impact way for residents to add beauty and character to their neighborhood. Intersection murals are appropriate for low-traffic, low-speed streets. They may be developed in conjunction with other Quick Build traffic-calming projects to ensure vehicular speeds remain low. Intersection murals may also be paired with other safety or placemaking projects.

Applications

Neighborhood Slow Zones / Downtown Slow Zones | Placemaking Priority Corridors

Basic Components

Required

- Surface street mural, usually installed with acrylic traffic paint
- Murals should not encroach into crosswalk striping area

Recommended

- Pair with other streetscape / placemaking projects, such as high-visibility crosswalks, rain gardens, public seating, public art, bus stop enhancements, curb extensions, bicycle parking, site triangle conversions etc.

Optional

- Yield lines may be appropriate in some locations to facilitate a shared space environment

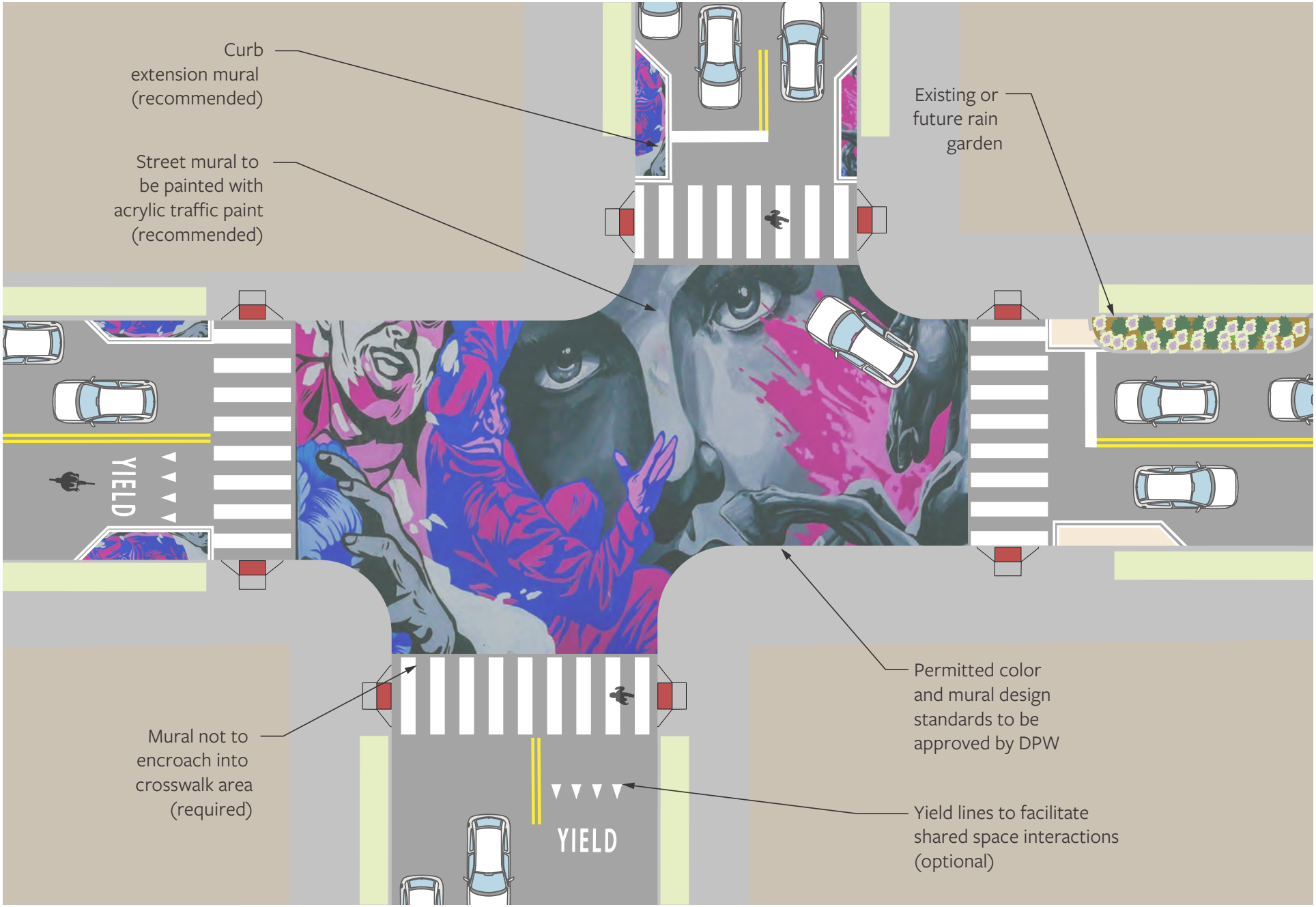
Design Dimensions

- Intersection mural dimensions will vary based on site conditions

Design Notes

- Intersection mural should not be considered as a traffic control or traffic-calming device, although they may have that result
- Most appropriate along low-volume streets in conjunction with other traffic-calming methods that optimize for speeds of 20mph or less. Mural themes must be supported by people who live within proximity of the project, exact process is to be further developed by DPW.
- Street surface should be thoroughly swept and power washed before surface design application
- For best results, install following a street resurfacing project
- Murals may last a few years and be restored as needed, removed, or repainted with a new design
- Involve local artists in mural design and implementation

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT



I.E. PEDESTRIAN PLAZAS

Pedestrian plazas increase street safety and foot traffic in commercial districts and residential areas, benefiting local businesses and supporting an environment in which community interaction can happen naturally. Plazas can be designed to normalize irregular and unsafe historic street geometries, increasing legibility and simplifying complex traffic patterns. Plazas can also create additional space for street furnishings, plantings, and other neighborhood amenities while providing the physical space for street murals where there is a strong community desire for aesthetic enhancements.

Applications

Neighborhood / Corridor / Downtown Slow Zones | Placemaking Priority Corridors

Components

Required

- Retroreflective double white striped line to demarcate plaza perimeter
- Vertical barrier elements, such as delineator posts and circular or rectangular planters, where curb is not present

Recommended

- Surface material treatment
- Seating, community programming, bicycle parking, and other streetscape amenities
- Enhance safety and accessibility by combining pedestrian plazas with other Quick Build project types

Optional

- Food truck dock or other designated mobile commercial vendor area where / when appropriate
- Shade structure(s) for summer months
- On-site equipment / street furniture storage

Design Dimensions

Pedestrian plaza dimensions will vary based on site conditions

Required

- 4” retroreflective double white perimeter stripe
- Primary barrier element spacing not to exceed 10’

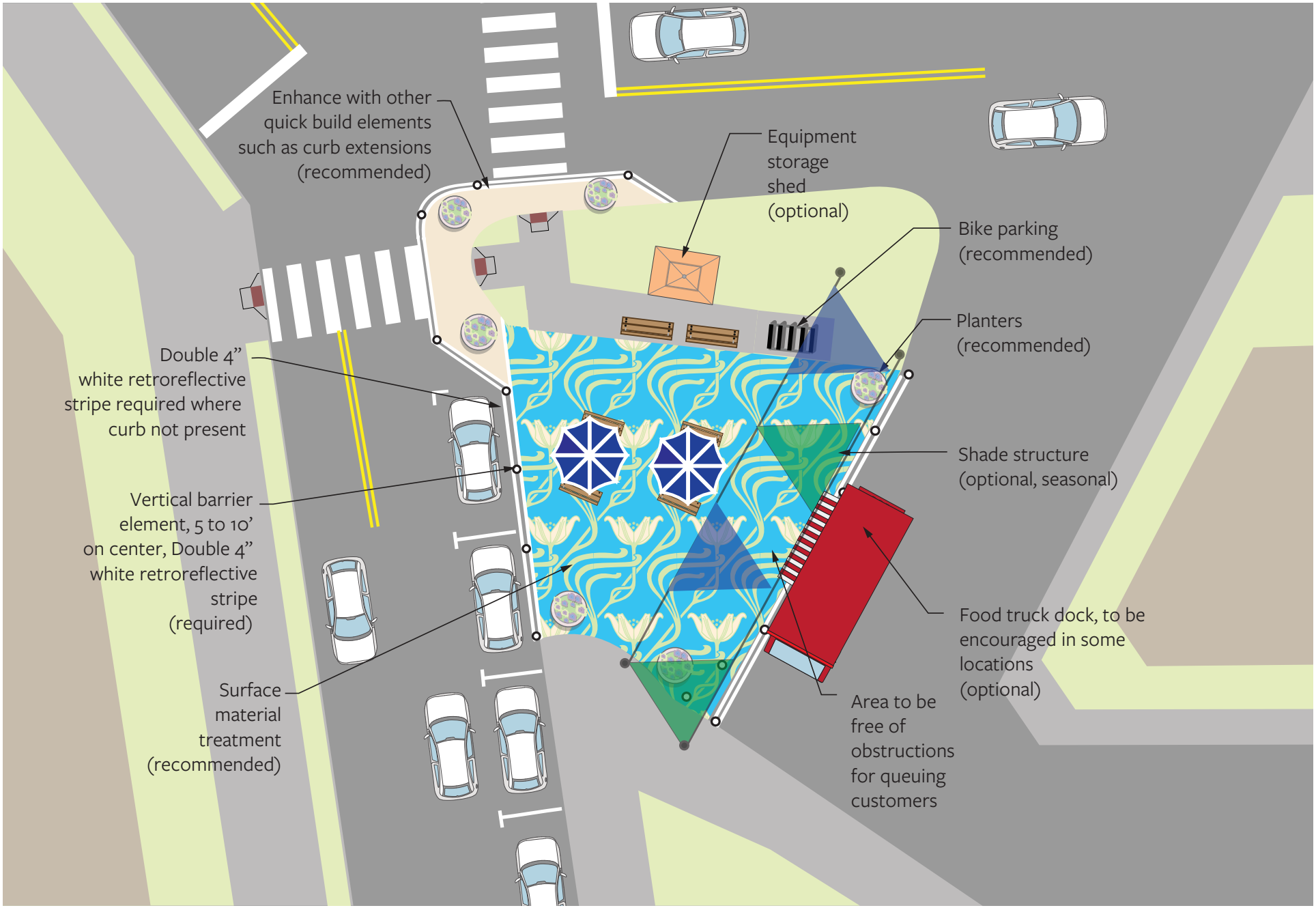
Recommended

- Primary barrier elements to be centered between double 4” white retroreflective stripe at edge of plaza
- Planters should be centered between primary barrier elements, abutting inner white 4” retroreflective stripe abutting if it will be seasonal, or set back 18” from the streetside edge of the white 4” retroreflective stripe if remaining through winter.

Design Notes

- Pedestrian plazas are well-suited for irregular intersections where one leg of the intersection or a slip lane may be redundant or is sparsely used; or where the plaza may be used to provide a more rectilinear intersection configuration
- Plaza locations should be prioritized near local businesses or in places that generate foot traffic and where existing open space is limited
- Bicycle parking - standard or custom - must meet city standards.
- Site conditions may dictate the need to provide bicycle access to / through the plaza in order to maintain continuity within the bikeway network. In these situations, low speed bicycle riding should be enforced through design, with physical dismounting required only in the rare instance where true space constraints exist.
- Identify a maintenance / stewardship partner who will be able to water and maintain landscaping/plant matter and assist with related programming, trash removal, and space management.
- Develop and maintain a clear process for community event programming.

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT

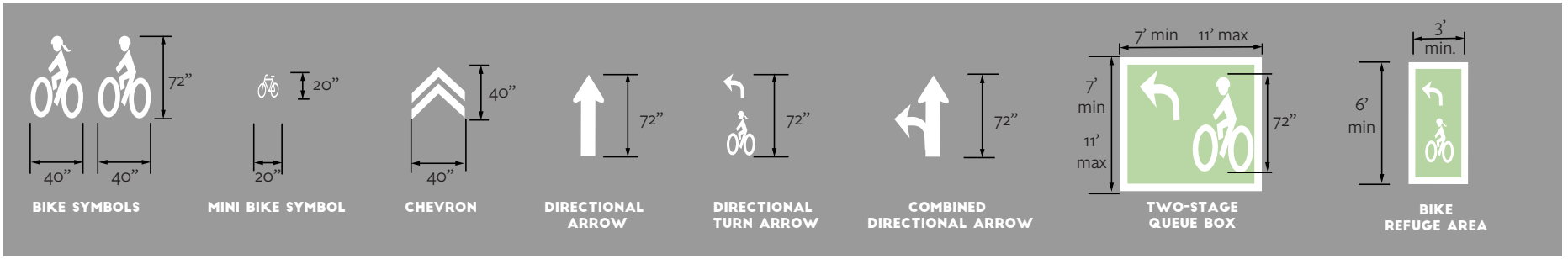


2. SAFER PLACES TO BIKE

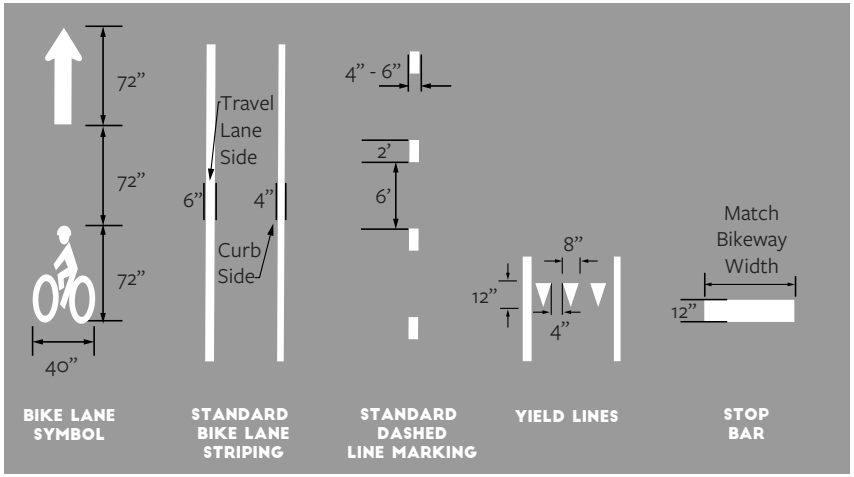
2.A BIKEWAY MARKING DETAILS

A range of bikeway markings will help make Burlington's bicycle network more legible and intuitive for cyclists, as well as all other roadway users. The following sections describe the applications and context of each of these markings.

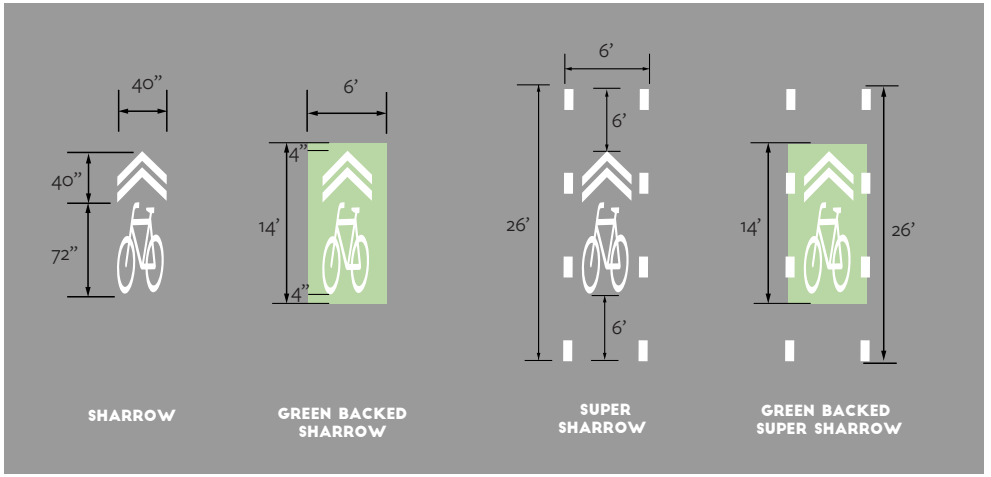
DIRECTIONAL MARKINGS



BIKEWAY MARKINGS

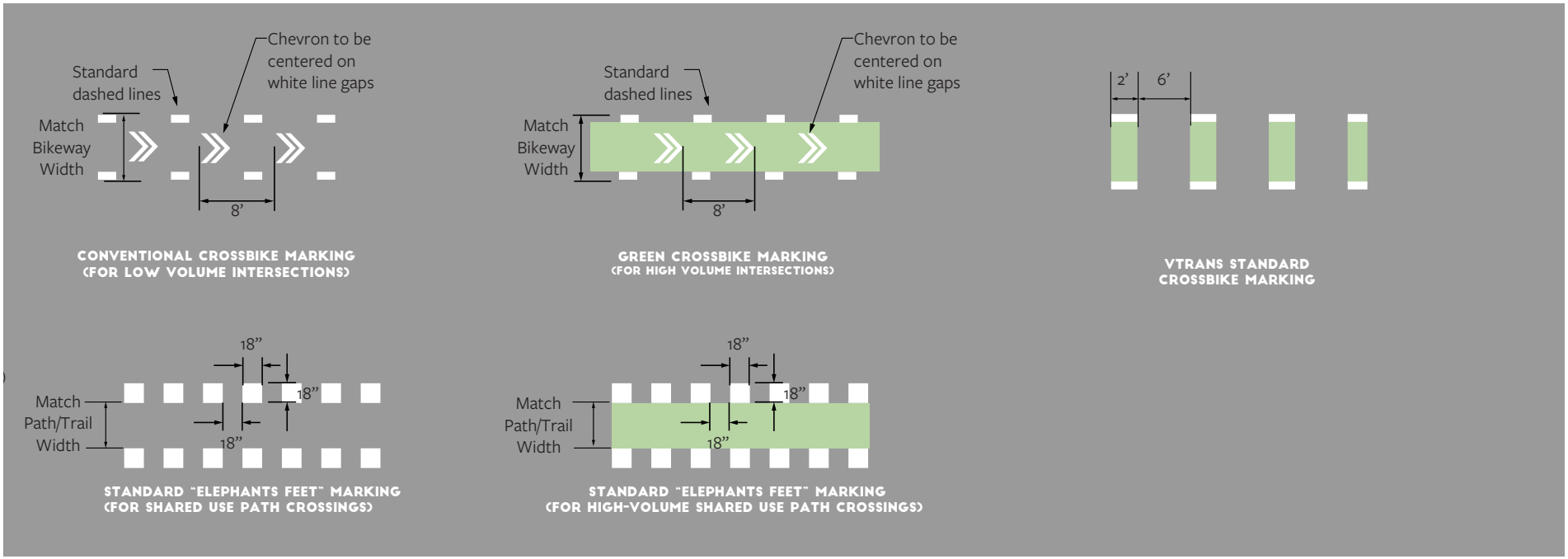


SHARED LANE MARKINGS



CROSSBIKE MARKINGS

(SEE PAGE 26 FOR APPLICATION GUIDANCE)



See separate spec sheet for potential other markings / opportunities to reference other documents (e.g. bike box)

2.B CONVENTIONAL BICYCLE LANES

Bicycle lanes designate portions of a thoroughfare for the preferential or exclusive use of people bicycling. Bicycle lanes come in a variety of designs and configurations, including advisory, conventional, buffered, protected, contra-flow and two-way. Each type ranges in level of user comfort, depending on traffic characteristics and the level of separation between cyclists and motor vehicles.

Applications

See planBTV Walk Bike Master Plan

Components

Required

- Standard MUTCD bikeway pavement marking
- Retroreflective dashed or solid striping demarcating the inside and outside stripe of the bicycle lane where parallel parking is present.

Recommended

- Crossbike markings (see page 19, 26)
- Stop bar
- Striped buffer between the bike lane and moving vehicles, parked vehicles, or both wherever conditions allow
- Bike box (where one bikeway intersect another, see page 24 - 25)
- Green paint

Optional

- Retroreflective dashed or solid striping demarcating the inside stripe of a curbside bicycle lane.
- Directional turn arrow
- Yield Line markings
- Left or right-turn pocket / queuing area
- Standard MUTCD bikeway pavement marking with ponytail

Design Dimensions

Required

- 5’ minimum bike lane width for all one-way bike lanes (4’ acceptable for curbside bike lanes on constrained, low-volume streets)
- 2’ minimum buffer width (where appropriate)
- See page 18 for striping and marking dimensions

Recommended

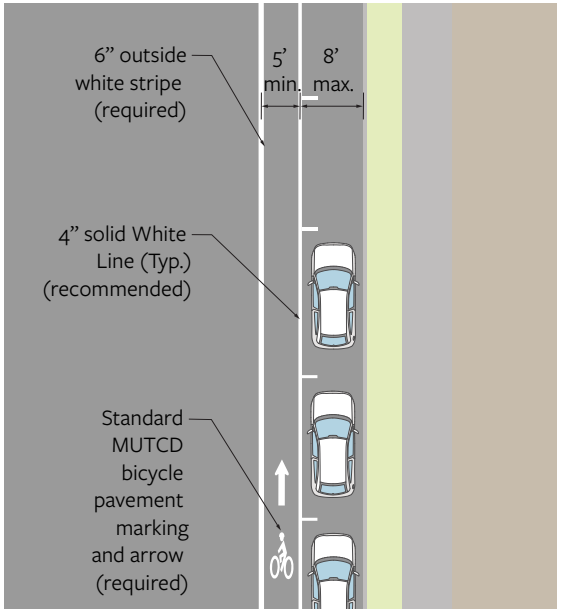
- 6” diagonal buffer stripes @ 37° with 20’ gaps (Ref. VTrans)
- 12” stop bar
- Crossbike markings (see page 19 for dimensions)
- Directional turn arrow (see page 18 for dimensions)

Design Notes

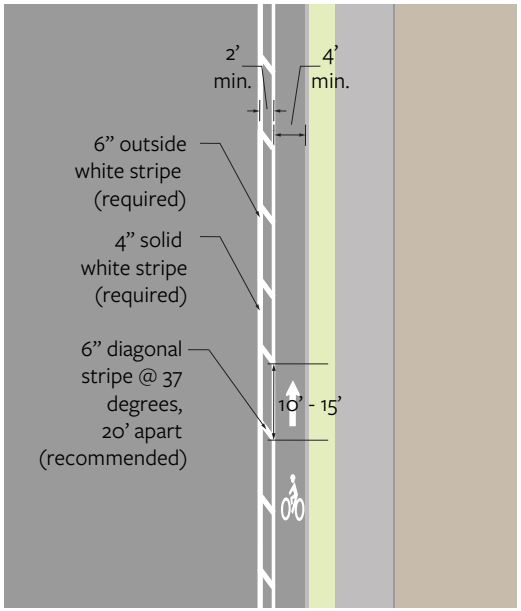
- Bicycle lanes of any type should be made wider than minimum widths wherever possible, however overly wide bicycle lane widths may encourage illegal parking or motor vehicle use of the bike lane
- Bicycle lanes are typically located on the right side of the street, between the adjacent travel lane and curb, road edge, or a parking lane. However, it is recommended that bicycle lanes be placed on the left side when installed along one-way streets to decrease ‘dooring’ potential, or on the opposite side of parking lane should parking only exist on one-side of the street
- Wherever possible, the parking lane width should be marked at the minimum width so that the bike lane width may be maximized.
- Contra-flow lanes should be marked with clear signing and shall include a double yellow line separating the bicycle lane from the motor vehicle travel lane
- Bicycle lane symbols and/or arrow markings should be placed outside of the motor vehicle tread path at intersections, driveways, and merging areas in order to minimize wear from the motor vehicle path; the curb radius will determine specific placement but typically 10’ - 15’ beyond the radius edge
- Where irregular intersections or jogs in the route exist, directional turn arrow markings may be used to help people navigate along a specific route or turn onto an intersecting bikeway.
- See NACTO’s Bikeway Design Guide for more design guidance

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT

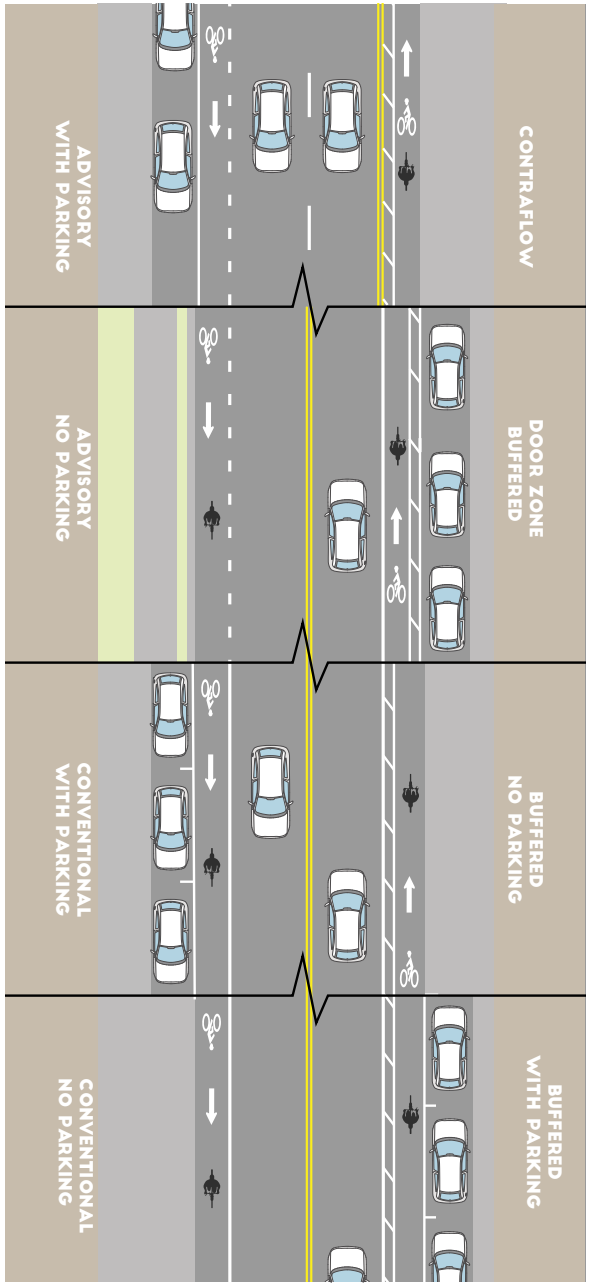
Conventional - Striped



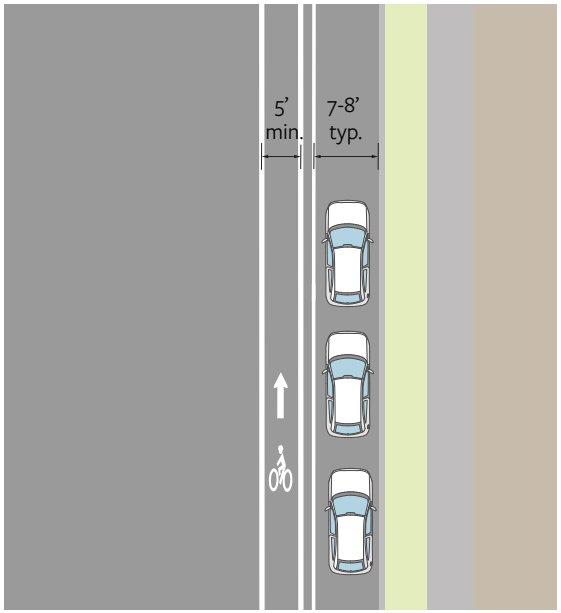
Conventional Curbside - Buffered



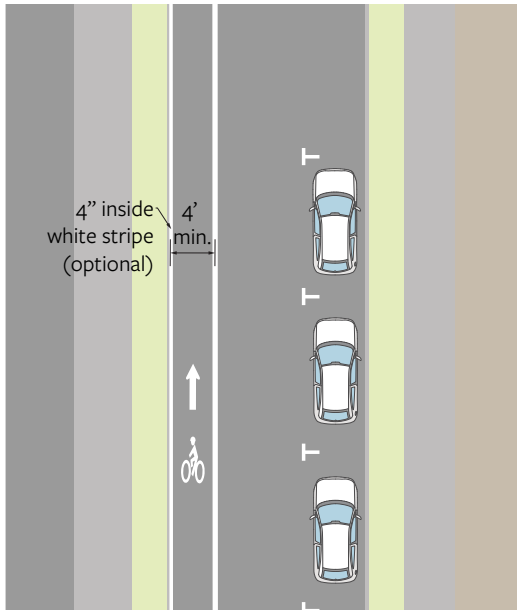
In Context



Conventional - With Door Zone Buffer



Left Curbside (One-Way Street)



2.C. PROTECTED BICYCLE LANES

Protected bicycle lanes provide vertical and horizontal separation between people bicycling and people driving. As such, they provide the most comfort and therefore appeal to the widest number of people. Protected bicycle lanes should be implemented wherever built context and physical conditions allow.

Applications

See planBTV Walk Bike Master Plan

Basic Components

Required

- Standard MUTCD bikeway pavement marking
- Retroreflective dashed or solid striping demarcating the inside and outside stripe of the protected bicycle lane
- Vertical barrier element (parked car, vertical delineators, planters etc.)

Recommended

- Striped buffer between the bike lane and moving and/or parked vehicles
- Bike box (see page 24 - 25)
- Crossbike markings (see page 26 - 27)
- Stop bar
- Green paint

Optional

- Directional turn arrows
- Yield Line markings (mid-block crossings)
- Left or right-turn pocket / queuing area
- Surface treatments / murals may be incorporated into some project elements, like bikeway buffers
- Standard MUTCD bikeway pavement marking with ponytail

Design Dimensions

Required

- 5’ minimum protected bike lane width, 6’ desired where possible
- 2’ minimum buffer width (If applied)
- 8’ min. width for two-way on-street protected bike lanes (not including 2’ buffer minimum)
- See page 18 - 19 for all required striping and marking dimensions
- See page 24 - 25 for bike box dimensions

Recommended

- 6” diagonal buffer stripes @ 45° with spacing of 10’ - 15’
- 1’ Stop bar

Optional

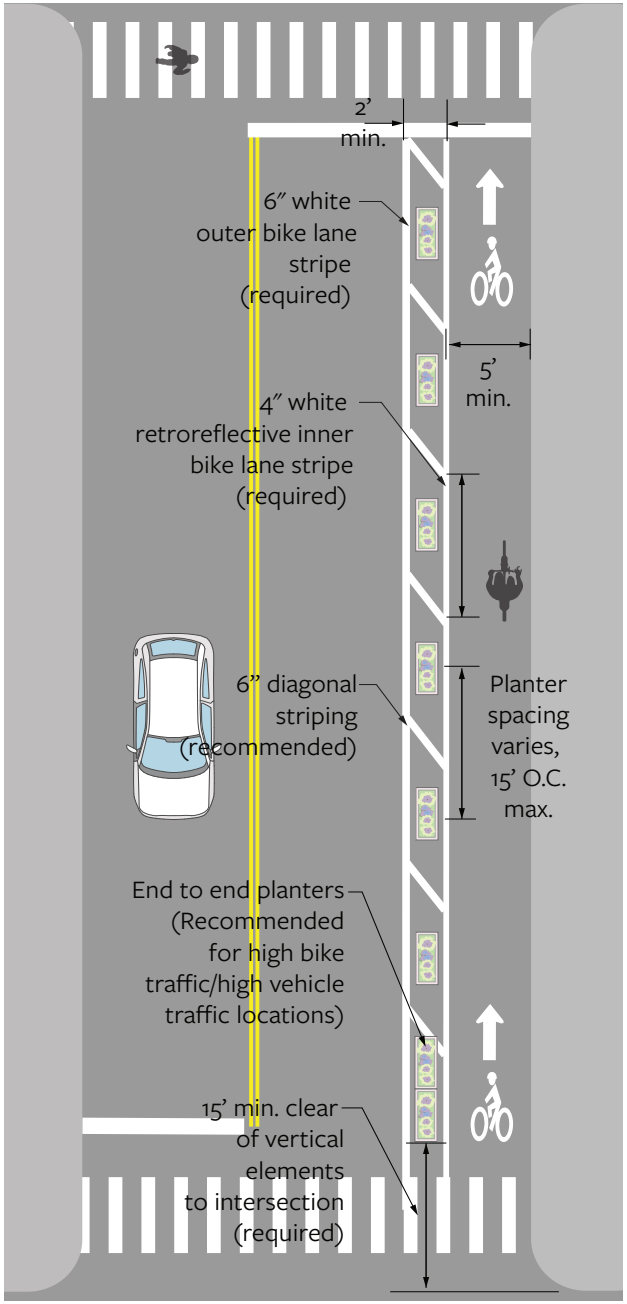
- See page 18 - 19 for all optional striping and marking dimensions

Design Notes

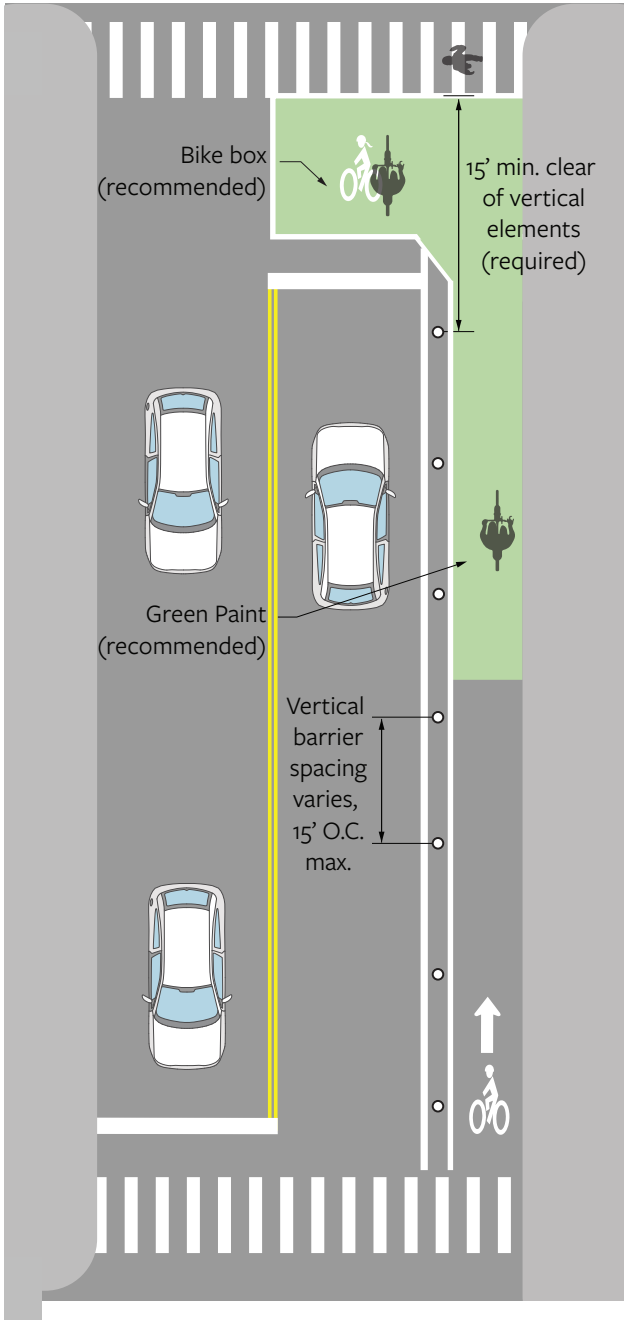
- No vertical barrier elements to be placed within 15’ of driveways.
- Except for the select use of planters, vertical barrier elements should be mountable by emergency response vehicles
- Where street width allows for only one protected lane, it is recommended that it be installed on the uphill direction.
- Where possible, contra-flow lanes should include vertical barrier elements.
- See NACTO’s Bikeway Design Guide or FHWA’s Separated Bike Lane Planning and Design Guide for more detailed design guidance

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT

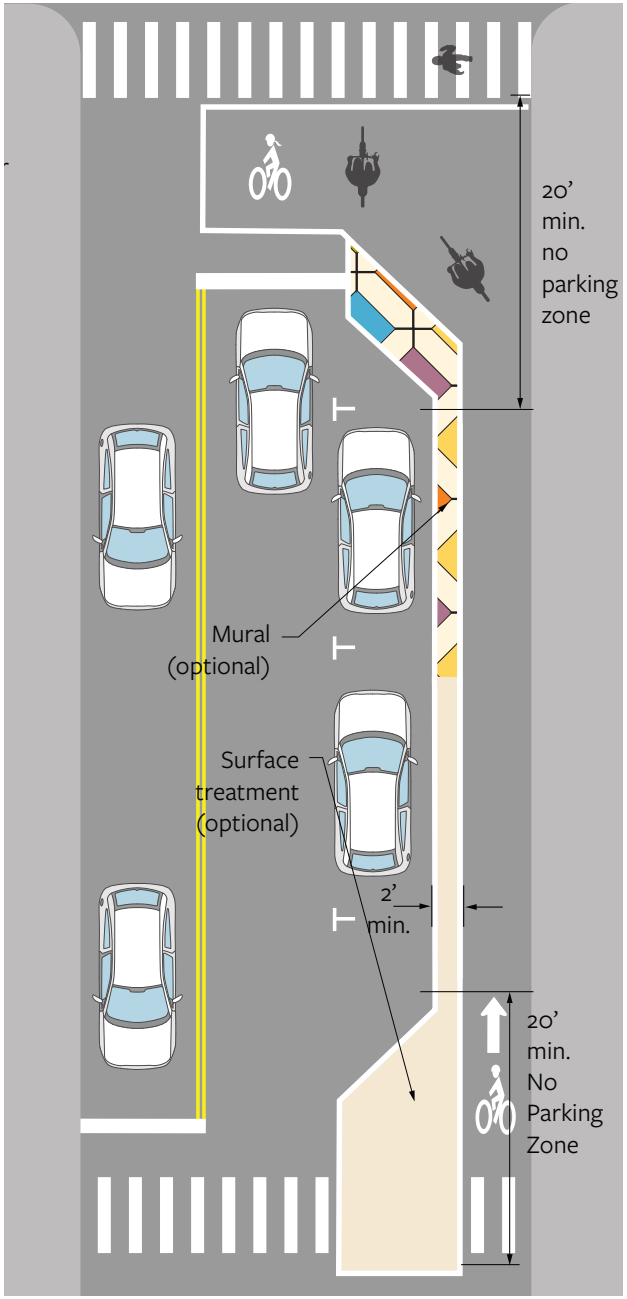
Rectangular Planter



Delineator Post



Parking Protected



2.D BIKE BOX

A bike box is a designated area at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of automobile traffic during the red signal phase. Also known as an advanced stop line, these simple and low-cost treatments increase bicyclist visibility, allow bicyclists better positioning for left-hand turns, prevent vehicles from encroaching into the crosswalk space, and help prevent right-turn conflicts between bicyclists and turning motorists.

Applications

Signalized intersections with designated bikeways with high volumes of bicycle travel and / or motor vehicles, especially those with frequent bicyclist left-turns and / or vehicular right-turns.

Basic Components

Required

- Standard MUTCD bike lane pavement marking
- Retroreflective 6" solid stripe along top, bottom and left side of bike box; 4" retroreflective outside stripe for bike lanes placed between the vehicular lane and parallel parking lane
- Signal detection to be adjusted to recognize new stop location (if applicable)

Recommended

- Green surface treatment (required in some scenarios, recommended in others (see below)
- 'Stop Here on Red' (R10-6) signs to be placed in line with relocated stop bar

Optional

- 4" retroreflective outer stripe for curbside bike lanes
- Standard MUTCD bikeway pavement marking with ponytail
- Curbside planter with footrest

Design Dimensions

Required

- Bike box width to equal travel lane width (and parking lane width where present), plus bike lane width
- 10' minimum length, 16' maximum length
- 5' minimum spacing between stop bar and bottom bike box stripe

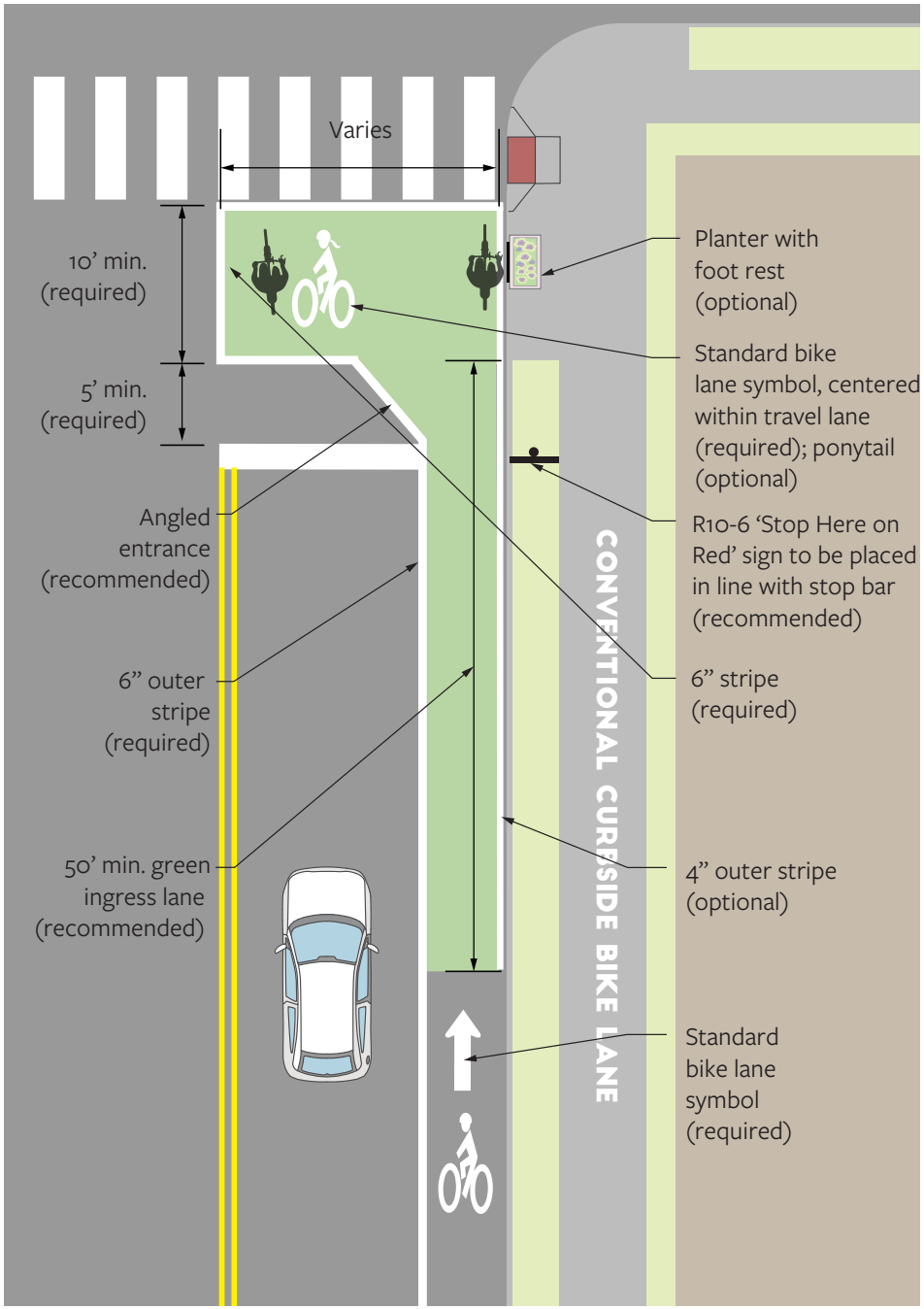
Recommended

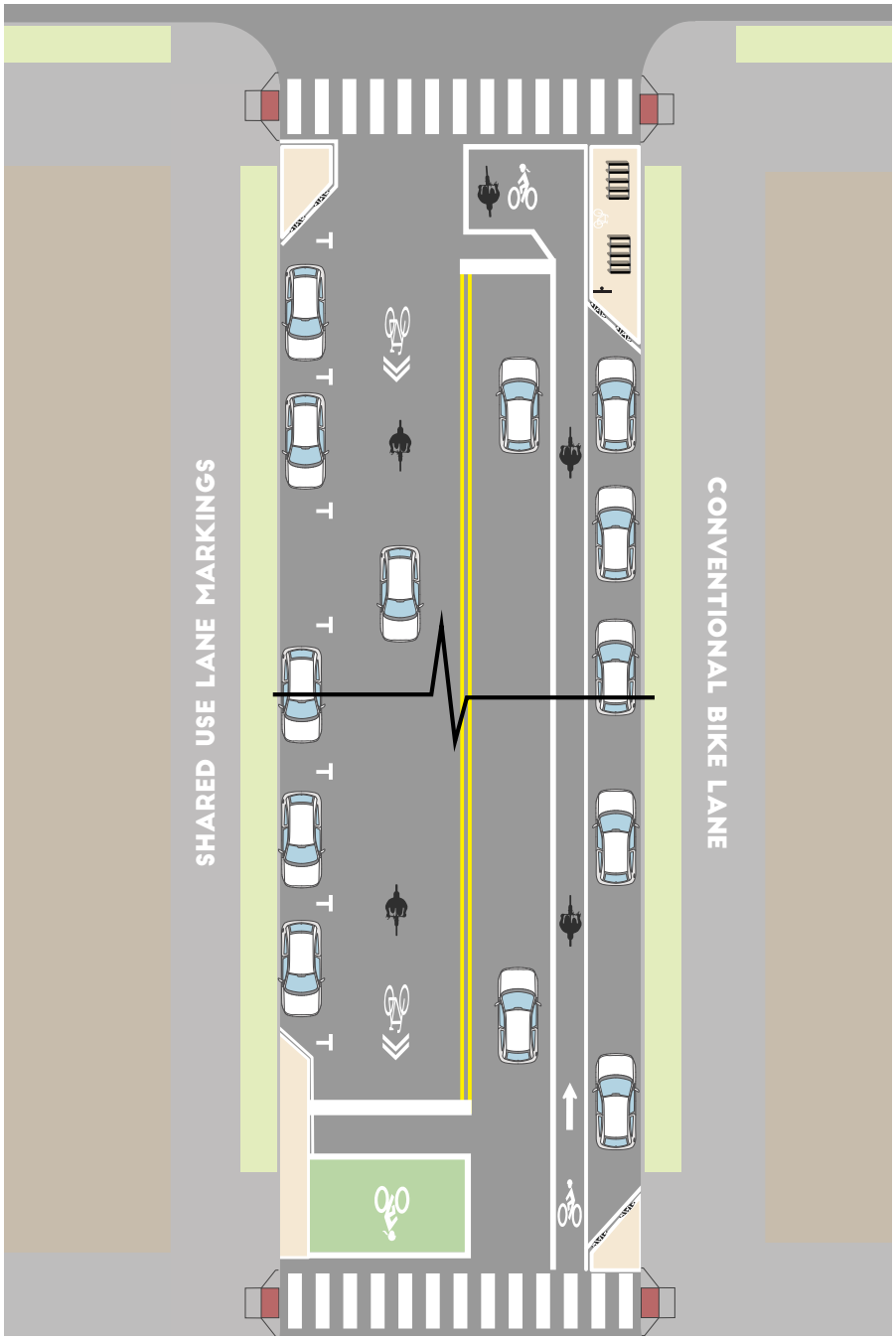
- Utilize 45 degree angled stripe to facilitate easy bike box access
- 50' minimum green painted ingress lane for curbside, protected, and conventional bike lanes with elevated bike and / or vehicular traffic volumes

Design Notes

- Stop bar / crosswalk realignment may be necessary to provide space for bike box
- To help facilitate right turns the bike box may also be used in conjunction with bicycle left-turn or median/center-running bicycle lanes
- Prohibit right-turn-on-red for safe operation
- See NACTO's Bikeway Design Guide for more details

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT





2.E CROSSBIKE MARKINGS

Crossbike markings designate the continuation of a bicycle facility across an intersection or any areas of potential conflict from cross-traffic such as driveways or bicycle thru lanes. Crossbike markings also help reinforce cyclists' and motorists' lateral placement through the intersection, effectively making cycling facilities visible where people bicycling are most vulnerable.

Applications

Intersections | Driveway crossings | Path crossings | Merge / conflict areas

Basic Components

Required

- White retroreflective traffic paint, thermoplastic, or traffic tape
- Green retroreflective traffic paint, Ruby Lake Glass, or methyl methacrylate to enhance the visibility of crossbike markings across intersection / conflict zones at high-volume locations

Recommended

- Chevrons may be used to reinforce direction of travel

Optional

- White retroreflective striping may be used to reinforce vehicular travel side of green crossbike markings

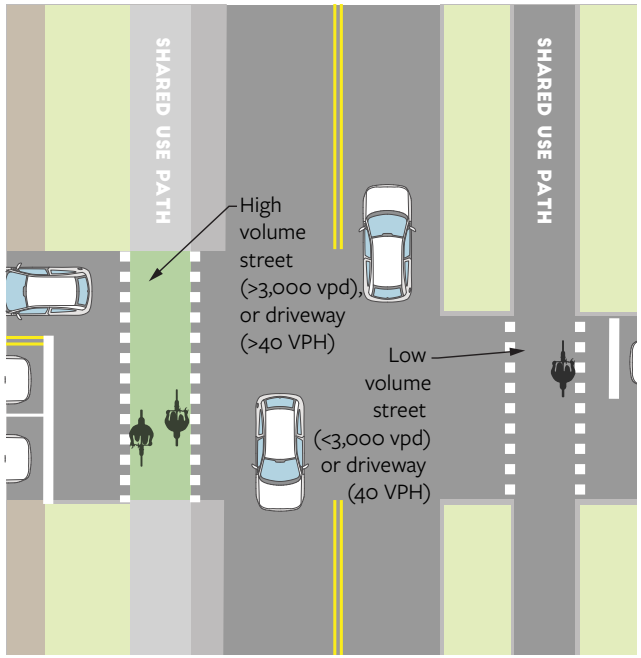
Design Dimensions

Required

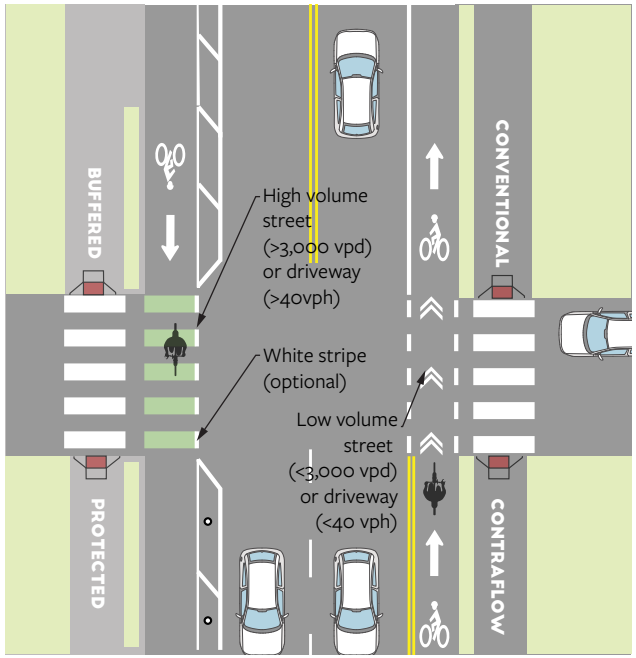
- See page 19 for various crossbike dimensions
- Crossbike width must match bikeway width, not including the width of any associated buffer zone
- Crossbike width must match bikeway width, not including the width of any associated buffer zone

Design Notes

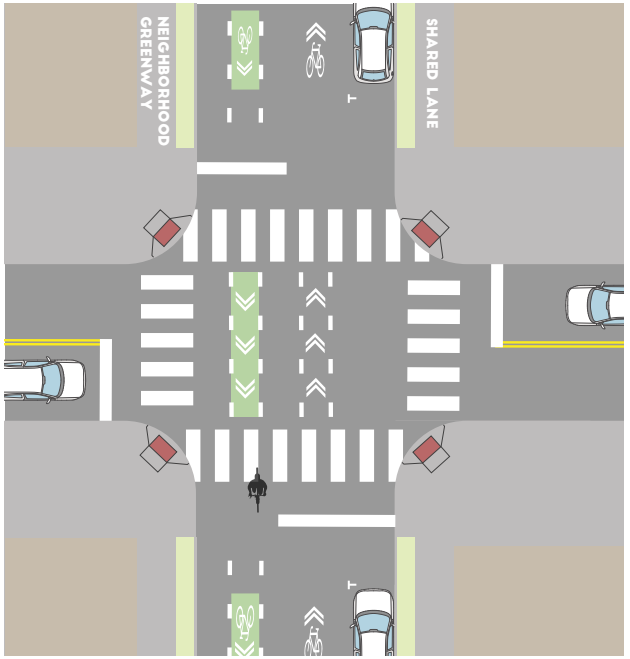
- Green elephant's feet crossbike markings should be paired with ingress bike / shared use paths that intersect with streets carrying more than 3,000 VPD and driveways with more than 40 VPH
- Conventional elephant's feet crossbike markings should be used with ingress bike / shared use paths that intersect with streets carrying less than 3,000 VPD and driveways with less than 40 VPH
- Green continental crossbike markings should be paired with ingress bike lane facilities that intersect with streets carrying 3,000 vehicles or more per day and driveways with more than 40 VPH, per VTRANS standards; and at merge/conflict zones where turn lanes / thru-bike or combo bike/turn lanes are introduced at the intersection approach
- Conventional crossbike markings (dashed stripes and chevrons) should be paired with ingress bike lane facilities that intersect with streets carrying less than 3,000 vehicles per day and driveways with less than 40 VPH
- Green crossbike markings with white dashed stripes and chevrons should be paired with ingress green-backed super sharrows along neighborhood greenway routes, and with super sharrows and shared lane markings that intersect streets carrying more than 3,000 vehicles per day and driveways with more than 40 VPH
- Crossbike treatments should be designed to align ingress / egress bikeways, especially at offset or irregular intersections, or where two different bikeway configurations meet.
- Conventional crossbike markings (dashed stripes and chevrons) should be paired with shared lane markings that intersect with streets carrying less than 3,000 vehicles per day and driveways with less than 40 VPH
- See NACTO's Urban Bikeway Design Guide for more details



Shared Use Path High and Low-Volume "Elephant's Feet" Crossbike Treatments



Bike Lane High and Low-Volume Continental Crossbike Treatments



Neighborhood Greenway and Shared Lane Crossbike Treatments

2.F BIKEWAY + BUS STOP LAYOVER / BUS LANE

In older cities like Burlington, right-of-way constraints often do not allow separate, high-comfort bicycle facilities and bus stops/ bus lanes to be provided within the same right-of-way. Utilizing shared bicycle and bus stop pavement markings may be used to provide increased space and visibility for users of both modes while improving safety and transit reliability.

Applications

Any / all bus stops located along the bikeway network

Basic Components

Required

- White retroreflective traffic paint, thermoplastic, or traffic tape striping
- Standard MUTCD shared use lane and / or bike lane pavement markings

Recommended

- Shared bus lane / bikeway pavement markings should include a "BIKE BUS ONLY" marking
- Shared use lane markings should be located within the bike-bus stop zone, placed on the left edge to facilitate confident cyclists overtaking a temporarily parked bus
- Green retroreflective crossbike markings should be striped with traffic paint, Ruby Lake Glass, or methyl methacrylate to enhance the visibility of crossbike markings through bus conflict zone
- Vertical barrier elements and surface treatments should be used to keep other motor vehicles from encroach upon the bike-bus space

Optional

- Rubber bus stop island
- Rubber bus stop island with intergrated bike lane ramp

Design Dimensions

Required

- Curbside bus stops and bus lanes shall be a maximum of 11' in width
- Offset bus stops or bus lanes shall be either 10' or 11' in width, not including any curb side bike lanes or painted or rubber bus islands, which shall not exceed 9' in total width, inclusive of any buffer zone
- Vehicular travel lanes shall be a maximum of 11' wide, with a minimum width of 9' adjacent to bus stop zones that integrate buffered bicycle lanes; shared bike-bus layover zones that include buffered bike lane shall be a minimum of 16' in width
- To accommodate 40' buses, bus layover zones shall be a minimum of 90' in length

Recommended

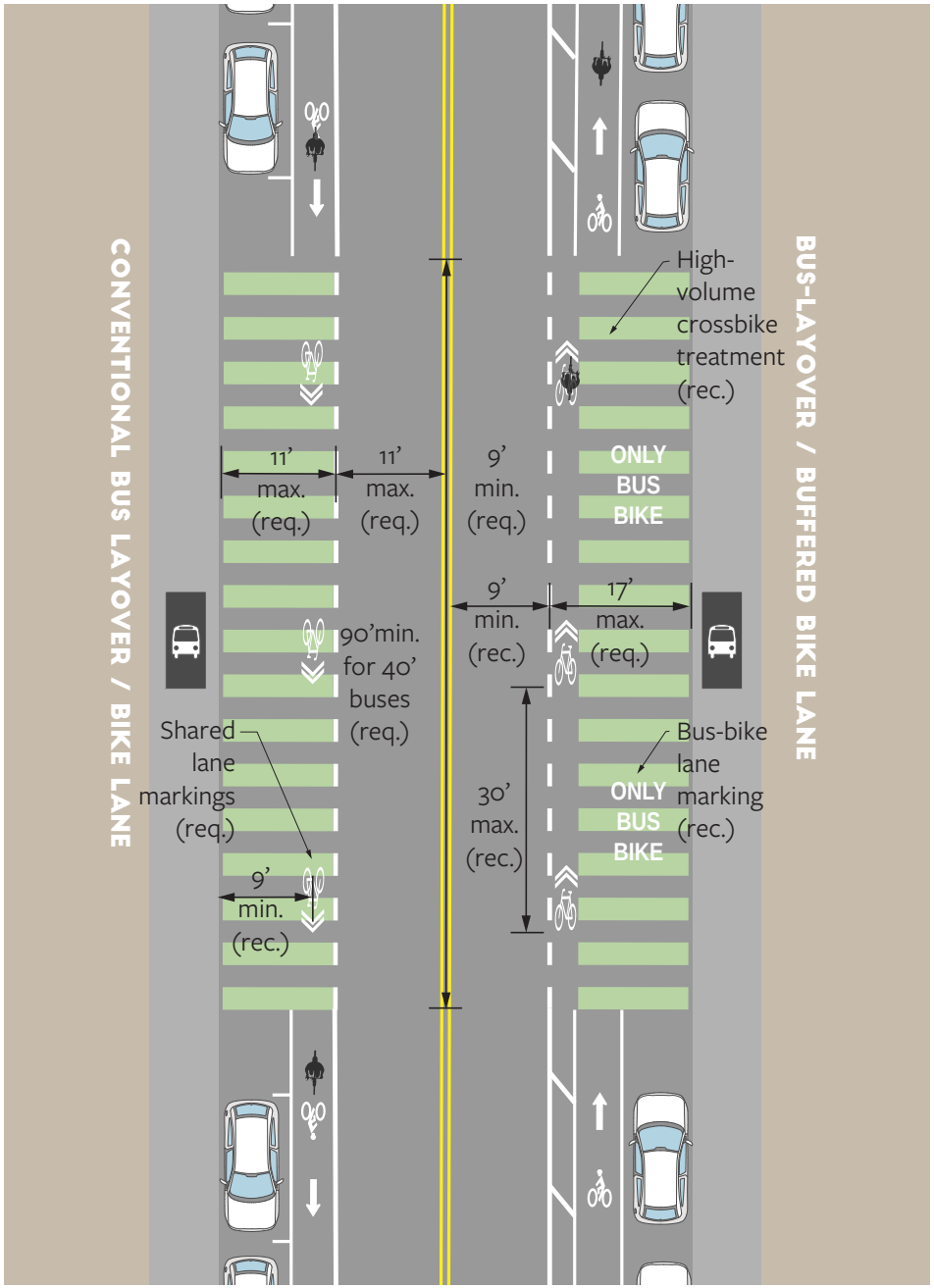
- Shared use lane markings should be spaced every 30' within a 90' bus layover zones
- Shared use lane pavement markings within bus stop zones should be placed 9' feet from the curb face to indicate to bicyclists where to pass the parked bus.

Design Notes

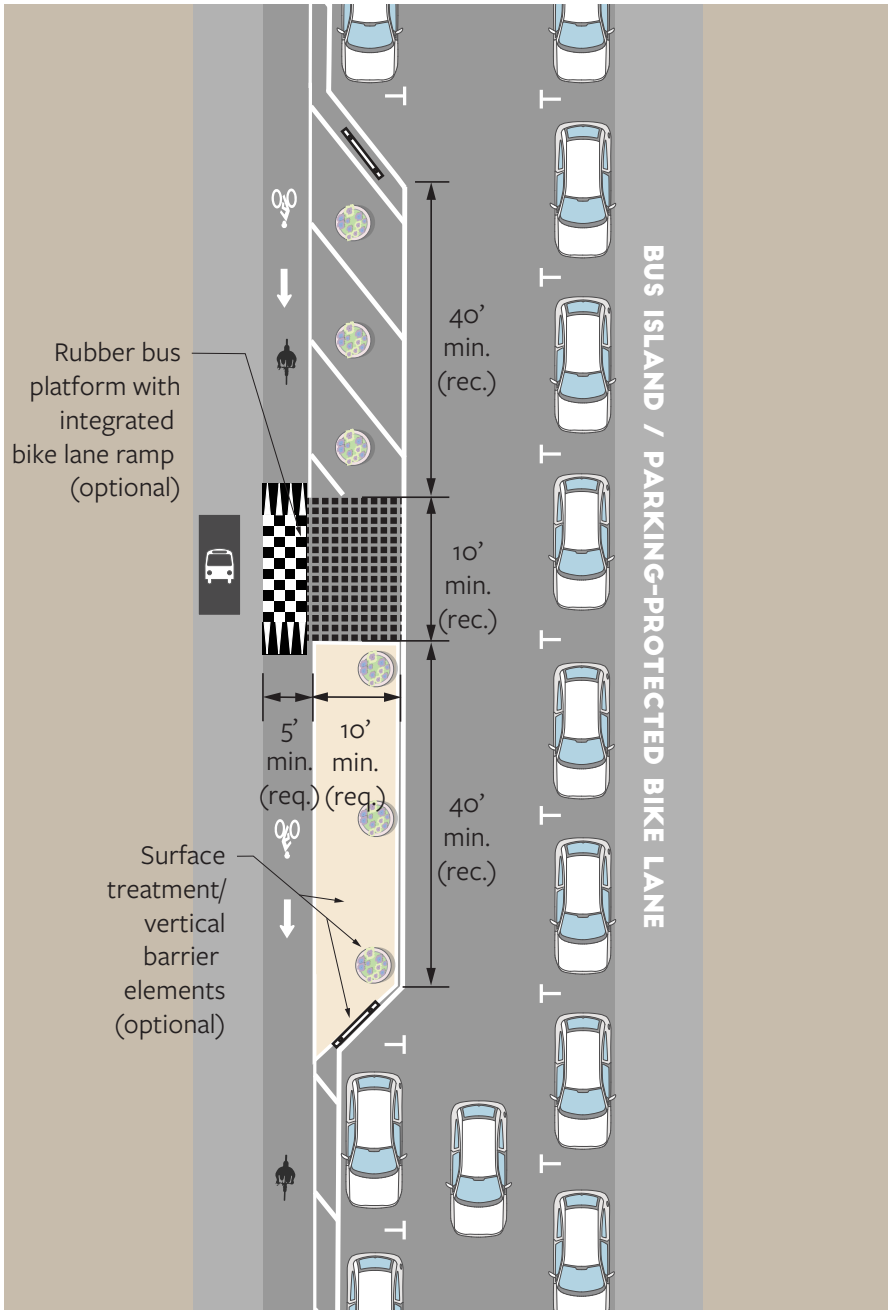
- Completely separate bus and bikeway facilities are always preferred over shared lanes or layover zones
- Bus-bicycle lanes and bus-bicycle stop zones should not be considered a substitute for dedicated bikeways, particularly at peak periods and on high-volume bus routes. If sharing creates consistent conflicts, parallel neighborhood greenways or the removal of on-street parking should be considered as two options for reducing conflicts
- To minimize conflict and resulting discomfort, bicycle / bus stop zones and bicycle / bus lanes should generally be limited to streets where operating speeds average 20 mph or less, and transit headways exceed five minutes
- In some situations adjacent travel lanes may be narrowed when approaching bus stops to create space for a bicyclist passing zone
- See NACTO's Urban Bikeway and Transit Street Design Guides for more details

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT

Curbside Bus Stop



Floating Bus Stop



2.G THRU BIKE LANES

Thru bike lanes allow bicyclists to safely position themselves between vehicular travel lanes to the left of dedicated right-turn lanes, or to the right of dedicated left-turn lanes. Thru lanes reduce conflicts between turning motorists and people bicycling to and through an intersection. They also provide bicyclists with clear visual guidance at the intersection approach, allowing for more predictable travel patterns, thus reducing the risk of 'right hook' crashes. Finally, combined bike-thru / turn lanes give bicyclists priority in the absence of a dedicated bicycle thru lane, encouraging motorists to yield to bicyclists when crossing into the right-turn lane.

Applications

Bicycle / motor vehicle intersection approach | Merge / conflict zones

Basic Components

Required

- White retroreflective solid and dashed traffic paint, thermoplastic, or traffic tape striping
- Green retroreflective traffic paint, Ruby Lake Glass, or methyl methacrylate continental crossbikes

Recommended

- Where appropriate, pair with other intersection design treatments, such as a bicycle boxes, curb extensions, vertical barrier elements etc.

Design Dimensions

Required

- See page 19 for various crossbike / merge area marking dimensions
- Combined / thru bike lane merge / conflict area markings should be a minimum of 50' in length but may vary given existing traffic volume, speed, and street geometry
- The preferred width of a thru bike lane markings is 6', with a minimum acceptable width of 5'
- The width of a combined thru bike / vehicular turn lane shall be 9' minimum, 13' maximum; the minimum width of a thru travel lane and combined thru bike lane / vehicular lane is 18'

Recommended

- Width of combined bike/turn lane should be 9' minimum, 13' maximum
- Green ingress and egress lanes should be a minimum of 30' in length
- Vertical delineator posts spaced at a maximum of 15' should be used to separate vehicular and bicycle movements
- Wherever possible protected intersections should be painted, marked, and provided with vertical barrier elements to reduce conflicts

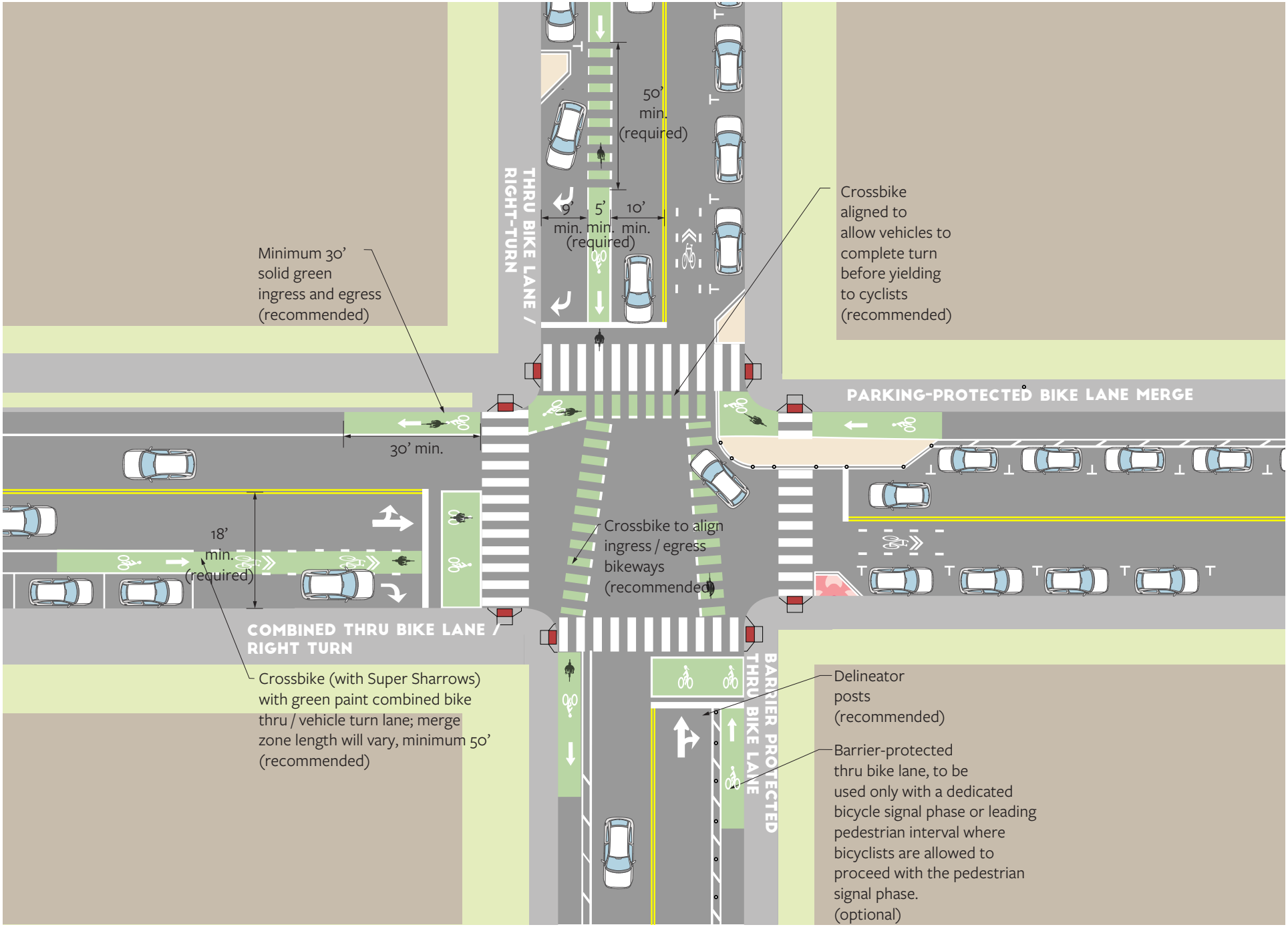
Optional

- Barrier-protected thru bike lane may be used only with a dedicated bicycle signal phase or leading pedestrian interval where bicyclists are allowed to proceed with the pedestrian signal phase

Design Notes

- Thru bike lanes may be used along thoroughfares that have the following lane configurations: Right-side bike lane and right-turn only lane(s); Left-side bike lanes and a left-turn only lane(s); Bike lanes and an auxiliary right-turn-only lane added in advance of the intersection; and bike lanes / parking lane that transition into a turn lane.
- Right-turn lane length should be minimized as much as possible to reduce motor vehicle speed and the time bicyclists are exposed to the merge condition
- Crossbike treatments should be designed to align ingress / egress bikeways, especially at offset or irregular intersections, or where two different bikeway configurations meet
- Wherever possible, bicycle detection technology should be used for cyclists within the thru bike lane
- Thru bike lanes may be combined with the travel lane that has the least movement (e.g. combined with the right turn lane when right turn movements are less than through traffic volumes)
- See NACTO's Urban Bikeway Design Guide for more details

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT



2.H SUPER SHARROWS

Super sharrows are a pavement marking used to indicate a shared lane for people bicycling and people driving. Like regular shared use lane markings ("sharrows"), super sharrows should not be considered a substitute for dedicated bike infrastructure, such as bicycle lanes or protected bikeways. However, the two parallel dashed line markings are intended to emphasize cyclist priority along designated neighborhood slow zone / neighborhood greenway streets.

Applications

Neighborhood Slow Zones and Neighborhood Greenways
(See planBTV Walk Bike Master Plan)

Basic Components

Required

- Standard MUTCD shared use lane pavement marking
- White retroreflective solid dashed traffic paint, thermoplastic, or traffic tape striping
- Green retroreflective traffic paint, Ruby Lake Glass, or methyl methacrylate continental crossbikes(for neighborhood greenways)

Recommended

- Mid-block center line removal should be considered for all designated slow zone / neigborhood greenway streets

Optional

- "Stop" markings may be placed in conjunction with stop bars

Design Dimensions

Required

- Super sharrows shall be marked using the dimensions detailed on page 18 of this guide

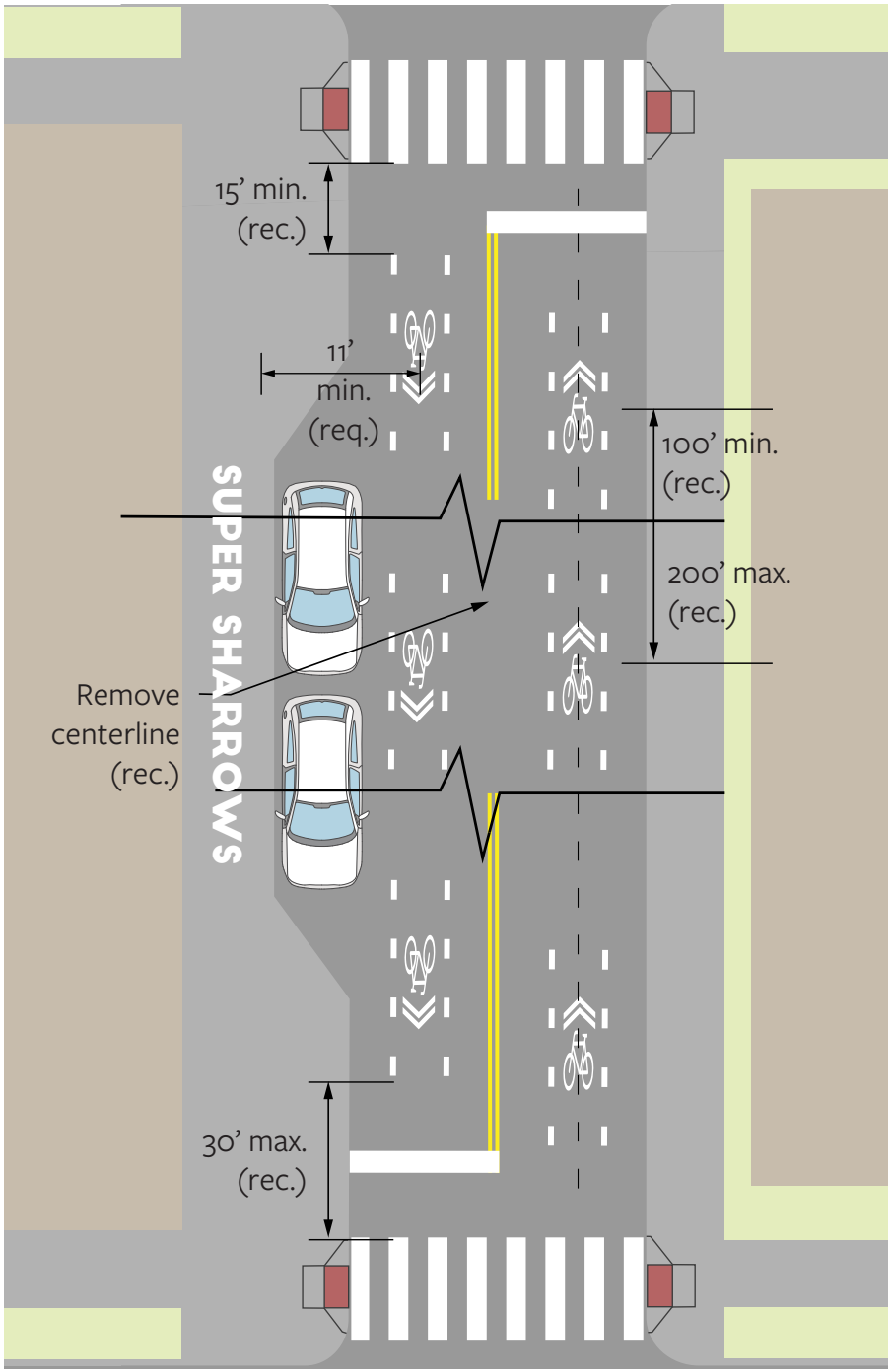
Recommended

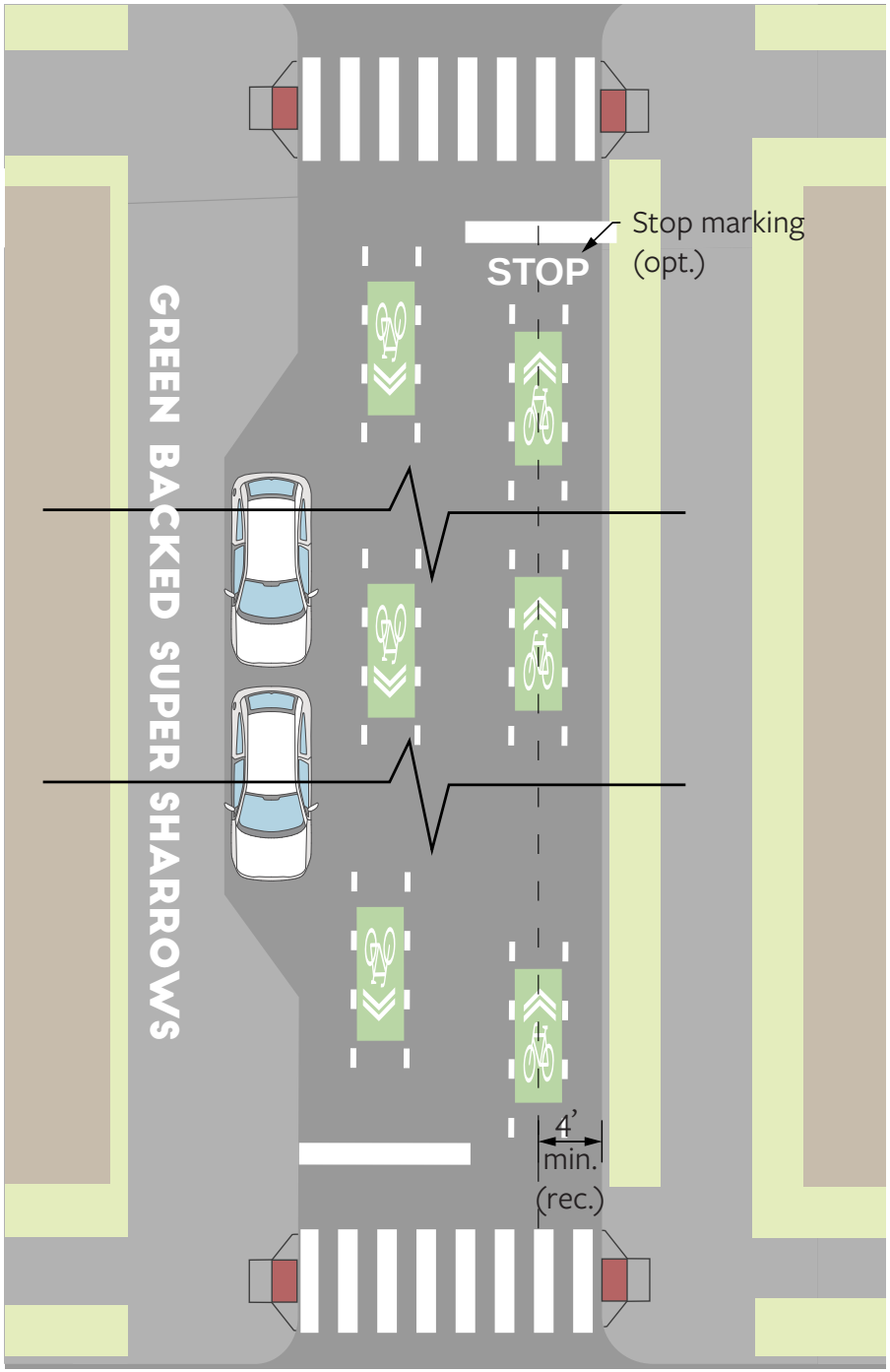
- Super sharrows should be spaced at maximum of 200' apart
- Markings should be placed no more than 30' from the stop bar (ingress) / 15' from the bottom of the crosswalk (egress)
- Super sharrows should be placed in the center of the travel lane when applied to all neighborhood zlow zone or neighborhood greenway streets
- The center of the super sharrow marking should be placed at a minimum of 4' from the curb face where on-street parking is not present; 11' from the curb face where parallel parking is present; or in the center of the travel lane where angled on-street parking exists
- Super sharrows should be spaced at minimum of 100' apart except on very short blocks where closer spacing may be appropriate

Design Notes

- Along short blocks with bi-directional travel lanes there should be a minimum of four markings, two per travel lane
- For one-way streets, at least one marking should be placed at either end of the block.
- For bi-directional streets, markings should be placed in pairs where possible. (Short blocks, offset block links, or driveways may make exact placement impractical)
- Where possible, super sharrow marking centerline should be placed within the center of the travel lane to prevent wheel tracking deterioration and to encourage people to bicycle outside of the door zone
- Where parking lanes are unmarked, super sharrow marking centerline should be a minimum of 12' from the curb face
- Directional arrows may be placed in conjunction with super sharrow markings to help direct people bicycling along the Neighborhood Greenway route where irregular intersections / jogs in the cycling network exist

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT





2.1 CURBSIDE BIKE CORRALS

Bike corrals typically repurpose one curbside vehicular parking space to accommodate 8 - 12 bicycle parking spaces. Corrals may also be installed within site visibility triangle zones. Bike corrals help reduce haphazard or oversubscribed sidewalk bike parking that often interferes with pedestrian access. Increased bike parking has been shown to have positive impacts on adjacent retail businesses, who benefit from increased activity and customer convenience.

Applications

All thoroughfares with on-street parking | Surface or structured parking

Basic Components

Required

- Standard city u-rack or custom bike rack
- 4" retroreflective double white perimeter stripe
- Vertical barrier element(s), such as circular or rectangular planters, parking stops, or vertical delineator posts

Recommended

- Surface treatment
- Mini-bike pavement marking

Optional

- Fix-it-station
- Adjacent bicycle lane yield line parallel with corral entry
- Site visibility triangle zone corrals may be paired with curb extensions to create a pedestrian refuge island
- Planter with built-in hand and footrest
- Green retroreflective corral ingress marking

Design Dimensions

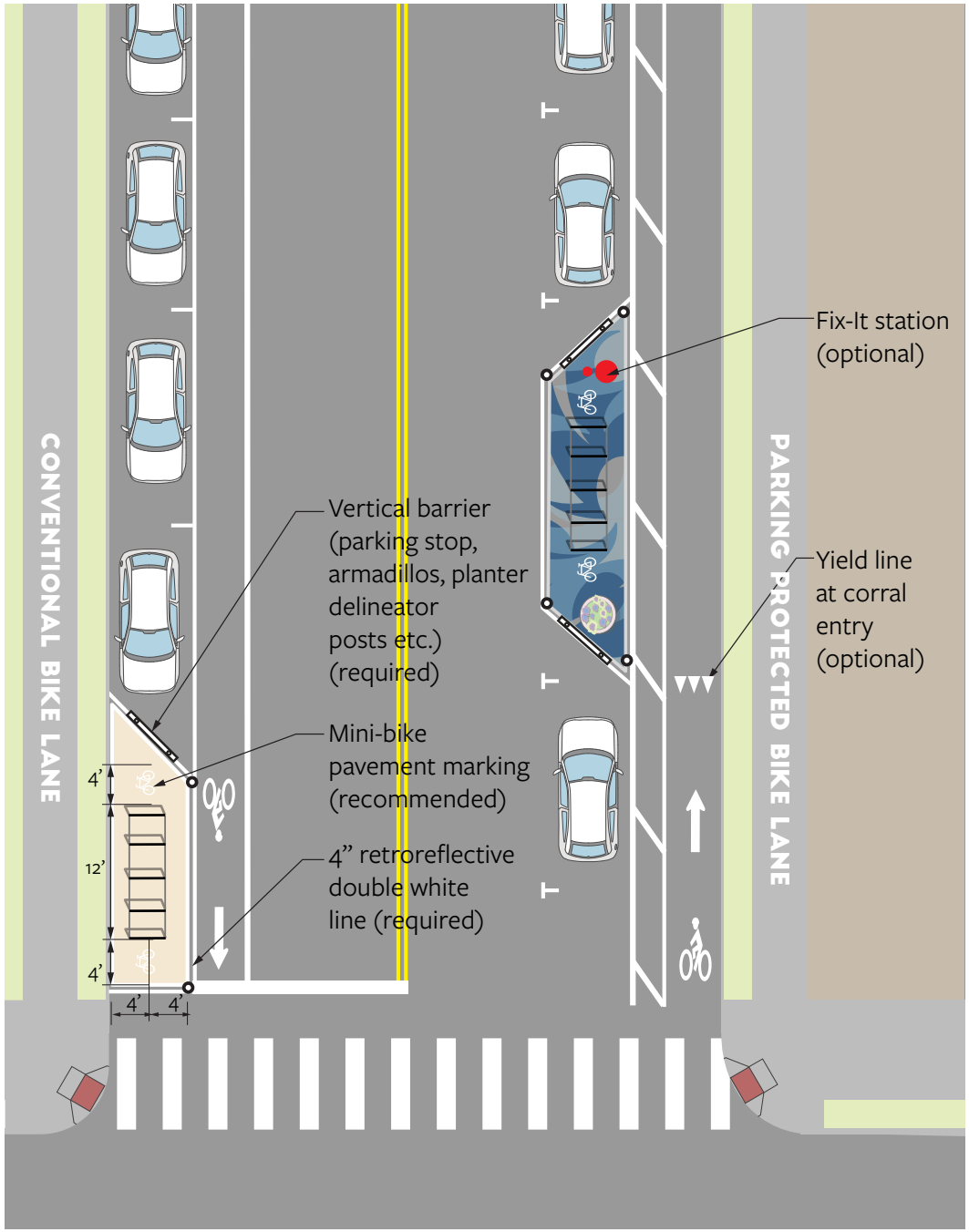
Required

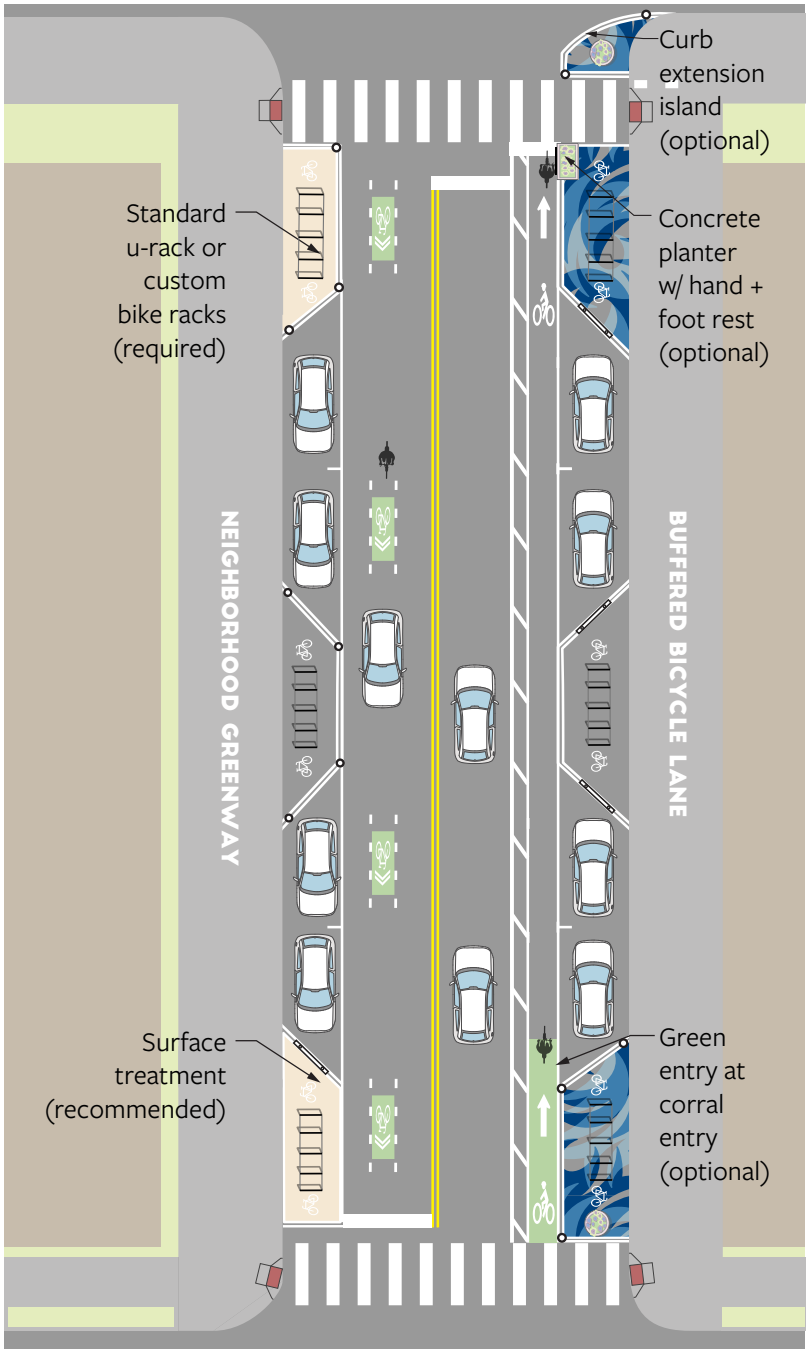
- Typical bicycle corrals shall be 20' x 8' per corral (typical Burlington parking stall dimension)
- A 4" double retroreflective stripe shall be used to demarcate the bicycle corral area
- A 4' clear zone shall be provided between on-street vehicular parking space(s) and rack element and between the crosswalk and rack element

Design Notes.

- Standard inverted-u racks (anchored in asphalt or on rails) or custom art racks may be used so long as the rack element is capable of supporting the bicycle frame with two points of contact.
- Site conditions, parking layout, demand, and various applications may dictate different corral size requirements
- All bicycle parking should be placed so correctly parked bikes do not encroach on the adjacent bicycle or vehicular travel lanes.
- Street murals may be used to add character, increase visibility and support neighborhood aesthetics, as desired.
- See APBP's Essentials of Bike Parking: Selecting and Installing Bike Parking that Works (2015) for more details.

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT





2.J TWO-STAGE LEFT-TURN QUEUE BOX

A two-stage left-turn queue box provides people cycling the visible option to make safe, comfortable left turns in two stages at multi-lane signalized intersections. This reduces the need for a demanding 'look over the left shoulder and turn' maneuver. Two-stage left-turn queue boxes can improve bicyclist's visibility, and create a formal queuing space for bicyclists, reducing conflicts between travel lanes, thru-bike lanes and crosswalks.

Applications

- Signalized intersections where bicyclists turn left from a right side bikeway, especially along protected bikeways; At "T" intersections with a high number of left-turning cyclists; Unsignalized intersections where the queue box can be used to simplify turns from one bikeway to another

Basic Components

Required

- Two-stage queue box
- Standard MUTCD bicycle pavement marking
- Left-turn arrow marking
- Crossbike link to receiving bikeway

Recommended

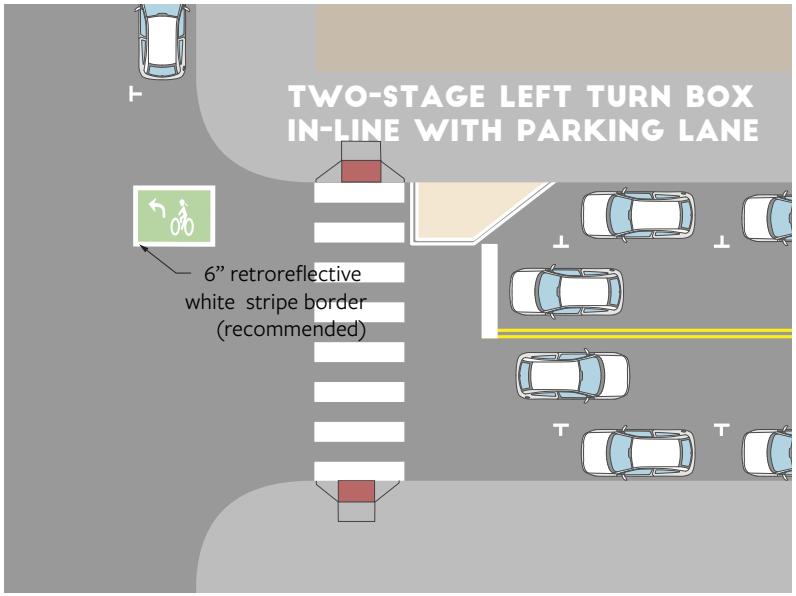
- Green retroreflective traffic paint, Ruby Lake Glass, or methyl methacrylate

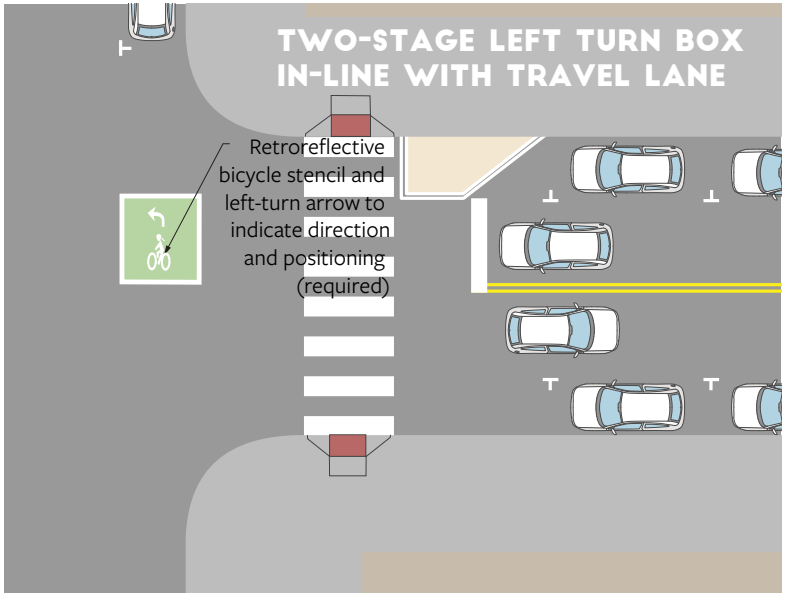
Design Dimensions

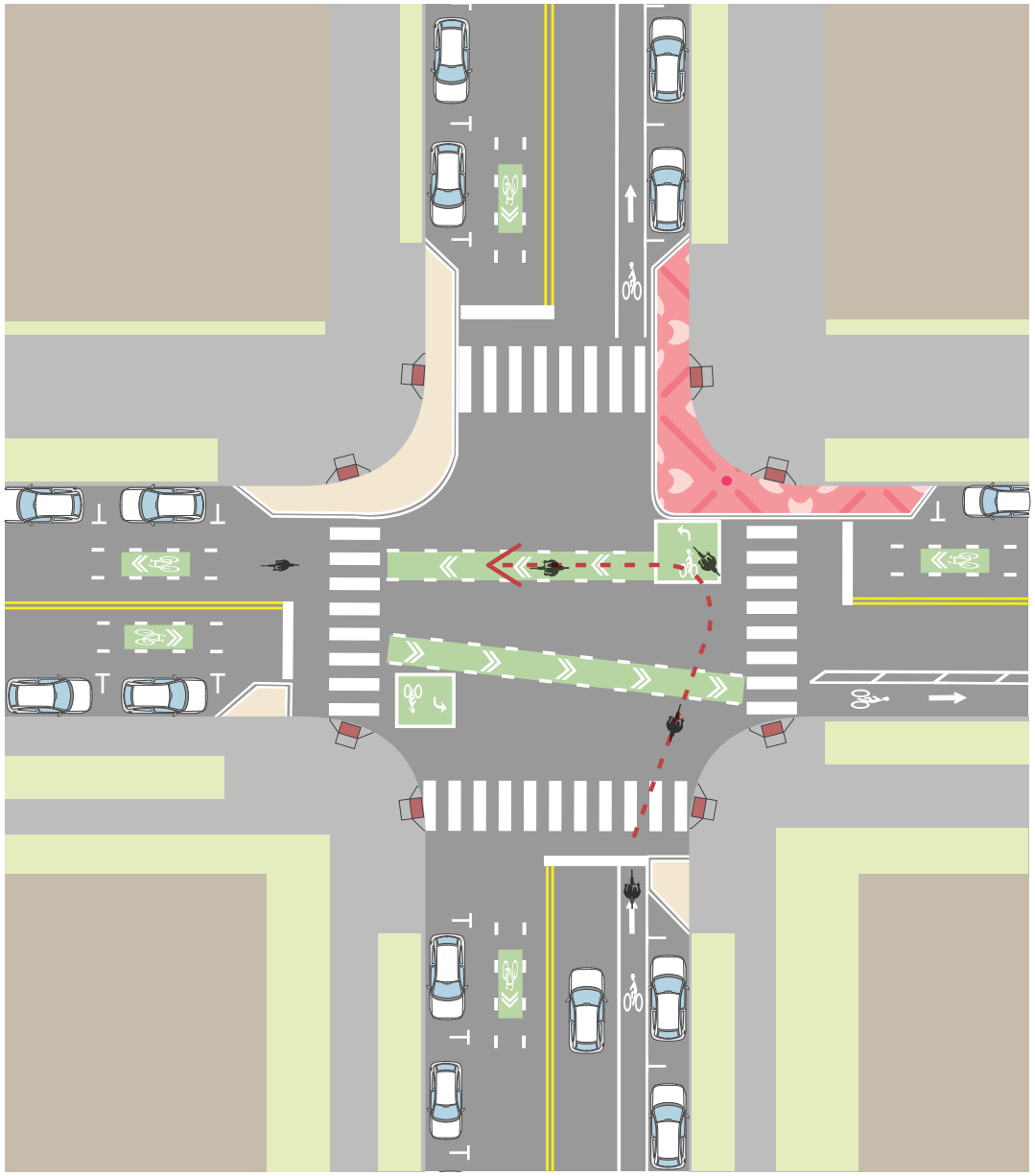
See page 18 for dimension details

Design Notes

- Wherever possible the two-stage queue box shall be placed in a "protected area," typically in line with an on-street parking lane and /or between crossbike markings and the crosswalk
- Two-stage left-turn boxes may be added to intersections with bike boxes, offering cyclists an alternate left-turn maneuver option.
- Multiple positions are possible for queuing boxes, depending on intersection configuration and signalization
- Bicycle stencil and a turn arrow should clearly indicate proper bicycle direction and positioning
- The specific crossbike marking used will depend upon the sending bikeway type and the volume of motor vehicles traveling through the intersection
- Stop bars and crosswalks may be adjusted or realigned to allow space for a queue box where existing roadway geometry is constrained
- "No Turn on Red" sign must be installed overhead to prevent vehicles from entering the queue box at a red signal phase
- Where mid-block turns are necessary, the left-turn queue box may be integrated into the sidewalk space (known as a "jug-handle") or take the form of a left-turn "pocket" if a bikeway buffer is present
- A bicycle signal, with leading bicycle interval phase, may be installed in conjunction with the two-stage turn queue box
- See NACTO's Bikeway Design Guide for more details


TWO-STAGE LEFT TURN BOX
IN-LINE WITH PARKING LANE
6" retroreflective
white stripe border
(recommended)


TWO-STAGE LEFT TURN BOX
IN-LINE WITH TRAVEL LANE
Retroreflective
bicycle stencil and
left-turn arrow to
indicate direction
and positioning
(required)



2.K BICYCLE REFUGE ISLAND

Bicycle refuge islands provide protected mid-crossing areas, in which cyclists can safely wait at the mid-point of a two-stage street crossing. Bicycle refuge islands decrease the crossing distance for less confident cyclists, and reduce the barrier effect created by wider roads.

Applications

Neighborhood Greenways | Shared Use Path Crossings

Basic Components

Required

- 4" double yellow retroreflective traffic paint, thermoplastic, or traffic tape striping around refuge islands with vehicular traffic traveling in opposing directions
- Mountable vertical barrier element(s), such as parking stops or vertical delineator posts shall be used along the perimeter of the bicycle refuge
- Standard MUTCD bicycle pavement marking
- Crossbike link to receiving bikeway

Recommended

- Green retroreflective bicycle marking (traffic paint, Ruby Lake Glass, or methyl methacrylate)
- Bicycle refuge surface treatment (traffic paint, Ruby Lake Glass, or methyl methacrylate)
- Bicycle refuge marking stop bar
- Yellow retroreflective bicycle refuge island splitter lines

Optional

- Planters with built-in hand and footrest may be used to add comfort
- Circular / rectangular planter may be used as barrier elements
- Bike box may be used to help direct bicycle refuge crossing

Design Dimensions

Required

- Bicycle refuge island shall be a 6' minimum in width
- Travel lanes shall be a minimum of 9' in width between mountable vertical barrier elements; 14' between non-mountable barrier elements
- Bicycle refuge island marking shall be a minumu of 5' in width

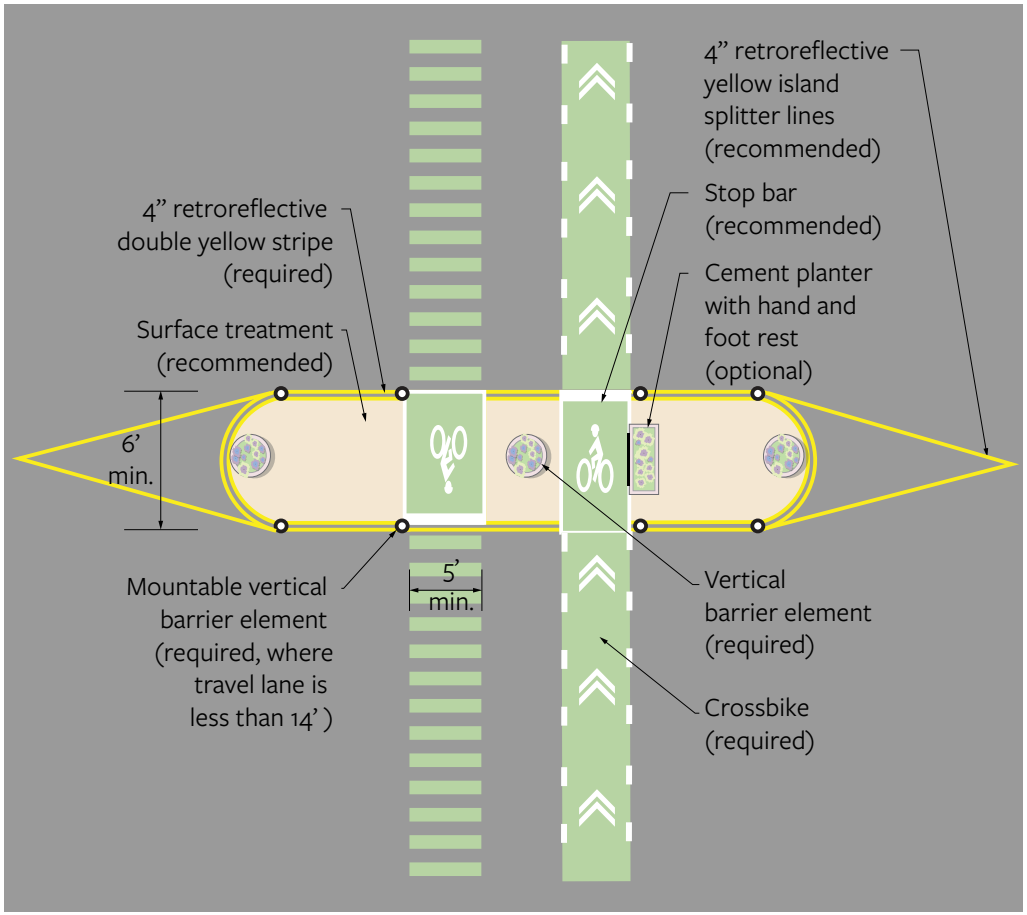
Recommended

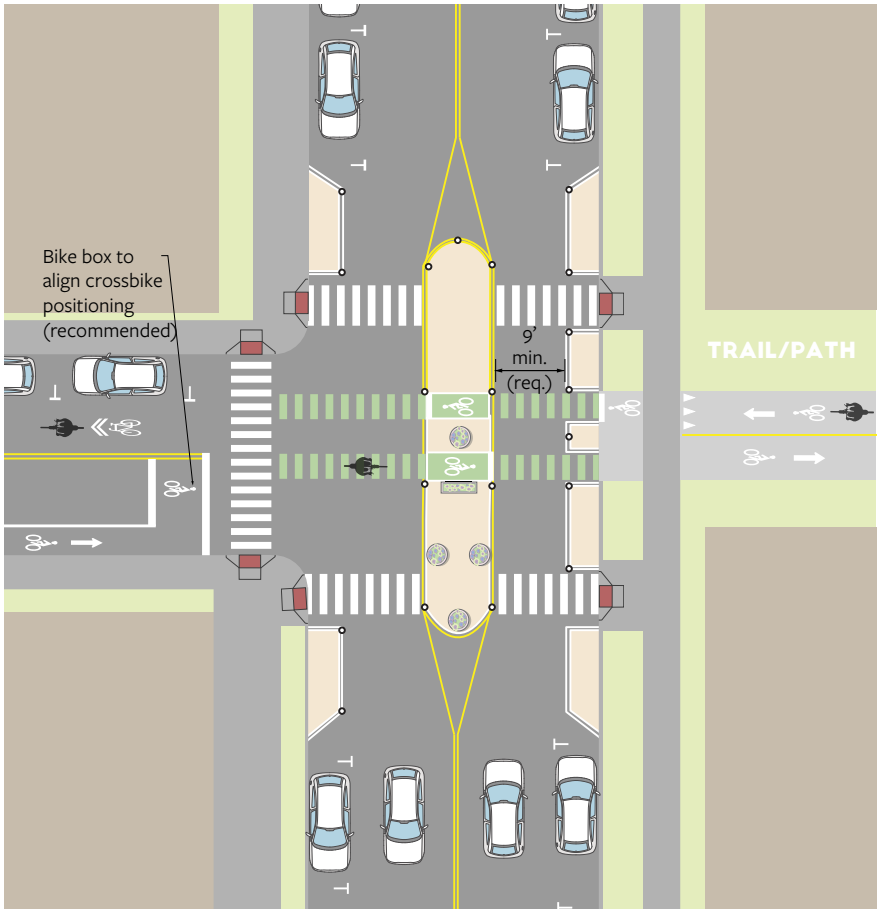
- Bicycle refuge stop bars should used and be 12" in width

Design Notes

- Vehicular left-turns shall be restricted wherever bicycle refuge islands are created
- Pedestrian crosswalk may be adjusted or realigned to enable a vehicular left-turns and provide vertical protection for queuing cyclists

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT





3 SAFER PLACES TO DRIVE

3.A MINI-ROUNDABOUT / NEIGHBORHOOD TRAFFIC CIRCLE

Mini-roundabouts and neighborhood traffic circles simplify vehicle turning movements and lower vehicle speeds at intersections. These traffic-calming facilities have been shown to improve safety, air quality, and reduce noise pollution. Roundabouts can be installed using road markings, and vertical quick-build elements. In the long-term, the implementation of permanent roundabouts or neighborhood traffic circles offer opportunities to beautify streets through greenery and/or artistic installations.

Applications

Neighborhood Slow Zones | Neighborhood Greenways

Basic Components

Required

- A center Island shall be used and demarcated by a 4" retroreflective yellow stripe (traffic paint, thermoplastic, or traffic tape)

Recommended

- Splitter Island should be demarcated by 4" single or double yellow perimeter stripe
- Circular planters should be used to increase vertical deflection and beauty, and should include 4 circular intersection W2-6 sign or similar
- Surface material should be used to more visibly designate the mini roundabout and splitter islands
- Yield line markings should be placed in advance of the intersection

Optional

- Splitter Islands may be used to calm and deflect vehicular traffic approaching the intersection
- Ceramic markers, rubber speed humps, armadillos, delineators and other barriers may be used to to define the perimeter of the roundabout or splitter islands
- A mini rubber or mounded asphalt roundabout island may be used as a more robust, but still inexpensive and removable island option
- Mural surface treatment may be used but shall not to be paired with full intersection murals
- Chevrons maybe used to reinforce the direction of travel

Dimensions

Required

- Mini roundabouts shall maintain 15' clear between any curb and vertical element used to define the roundabout island
- Travel lanes shall be a minimum of 9' between the curb and the nearest edge of the splitter island (if used), and a maximum of 11'

Recommended

- Mini roundabout island dimensions will vary, but 10' diameter is common

Design Notes

- Mini-roundabouts operate as yield controlled while neighborhood traffic circles operate as stop controlled
- Mid-point of center island should be positioned where diagonal curb to curb lines intersect
- Design must allow emergency and design vehicles to make turn in front of and/or over any mountable vertical barrier elements
- Epoxy recommended as an adhesive for the long-term installation of the mini rubber roundabout island and speed humps
- Partner with community organizations and/or city contractors to maintain planters and street murals
- See NACTO's Urban Street Design Guide for more details

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT

Center Island

CIRCULAR PLANTER

4" retroreflective yellow perimeter stripe (required)

Circular planter with 4 x circular intersection W2-6 sign or similar (recommended)

SURFACE TREATMENT

Surface treatment (recommended)

1' retroreflective white stripe (optional)

Armadillo / zebra (optional)

CERAMIC MARKERS

Ceramic marker (optional)

Mural art (optional)

MINI RUBBER ROUNDABOUT ISLAND

mini rubber roundabout island (optional)

10'

SPEED HUMP ARRAY

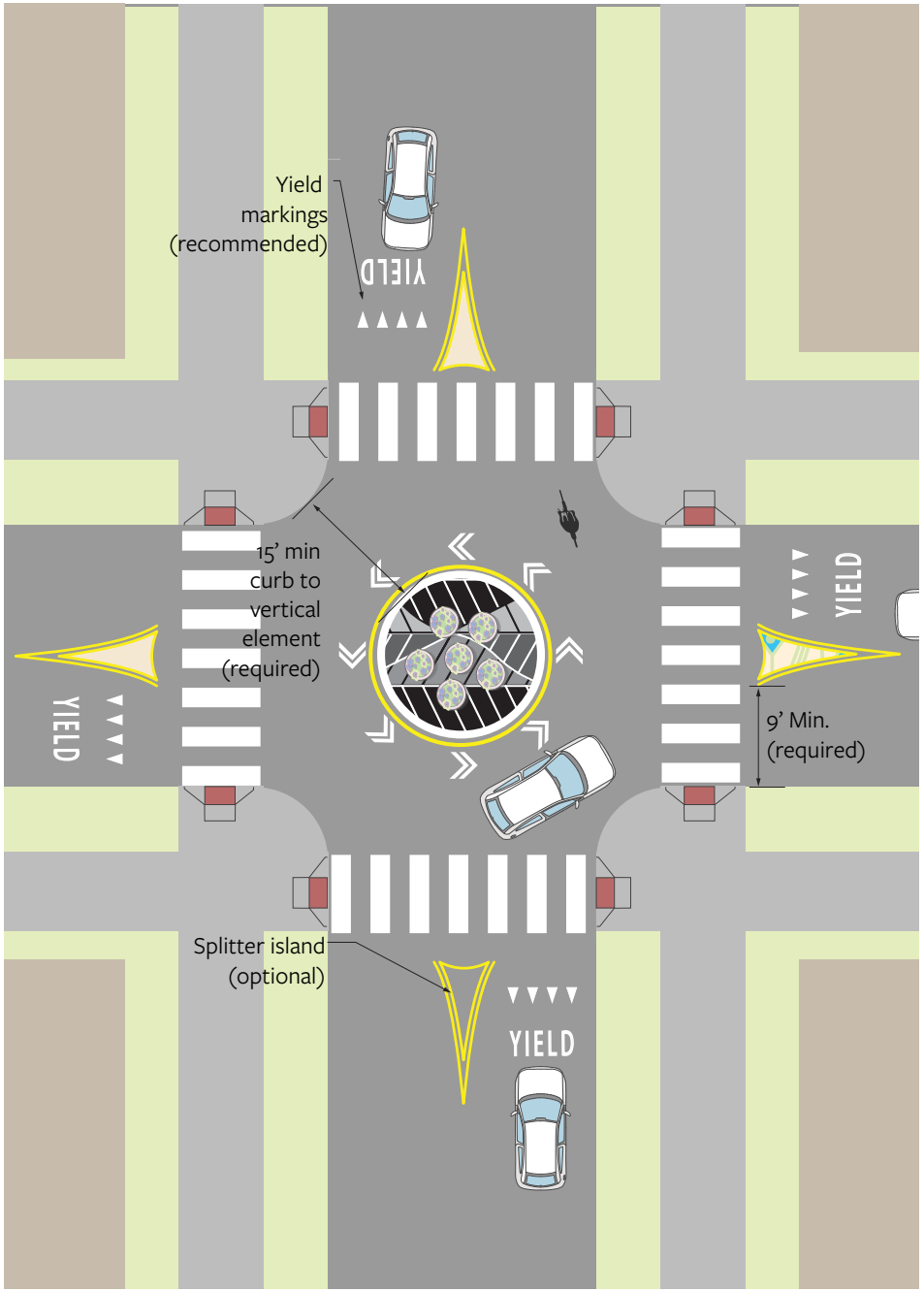
4' Recycled rubber or heavy-duty rubber speed bumps (optional)

MOUNDED ASPHALT

Sinusoidal mounded asphalt with 5" center height (optional)

Retroreflective chevrons to indicate travel direction (optional)

Splitter Island



3B CHICANES

Chicanes are offset curb lines that introduce lateral shifts to travel lanes, creating a 'slalom effect' that can reduce vehicular speeding along residential or downtown streets. Chicanes can also provide an opportunity to introduce public art or other street enhancements, like planters and on-street bicycle parking. Low-cost chicanes may be created along narrow streets with only one parking lane by alternating the location of the parking.

Applications

Neighborhood Greenways | Neighborhood / Downtown Slow Zones

Basic Components

Required

- A 4" retroreflective double white stripe shall be used to demarcate the chicane area (traffic paint, thermoplastic, or traffic tape)

Recommended

- Parking stops and other vertical barrier elements (ceramic markers delineator posts, armadillos etc.) may be placed between the parking lane and the chicane, as well as along the hypotenuse side of the chicane triangle to discourage vehicular encroachment
- A surface material (traffic paint, Ruby Lake Glass, or methyl methacrylate) should be used to more visibly designate the chicane area

Optional

- Circular or rectangular planters may be used to beautify chicane areas
- Murals may be used to beautify the chicane area

Dimensions

Required

- The minimum chicane ingress length shall be 15'
- The minimum chicane egress length shall be 5'
- Chicanes shall have a maximum width of 7'
- Chicane width shall be equal to one foot less than parking lane width
- Street wwith two-way travel lanes and chicanes shall be a minimum of 25 ' in width, with 18' dedicated to the travelway

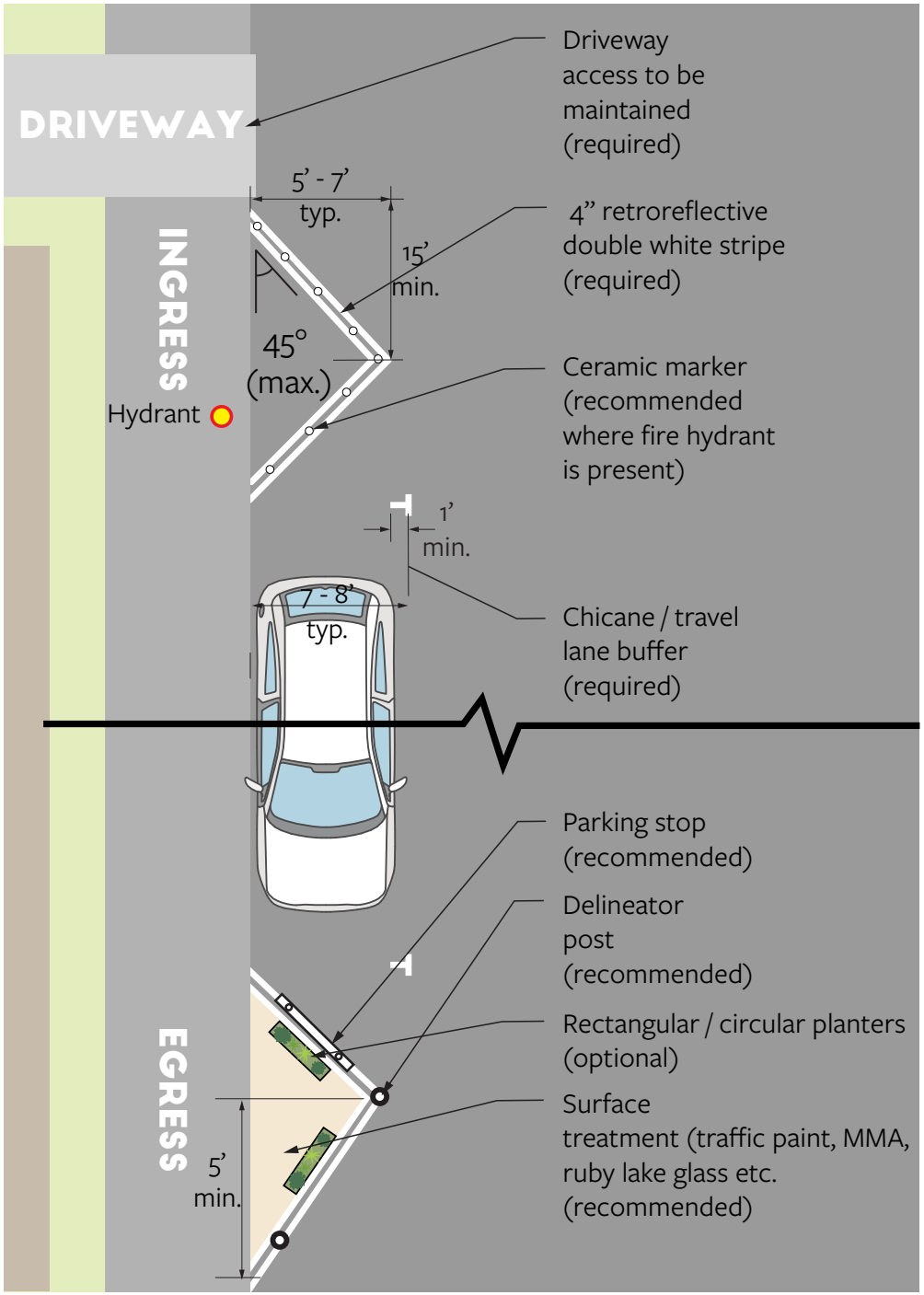
Recommended

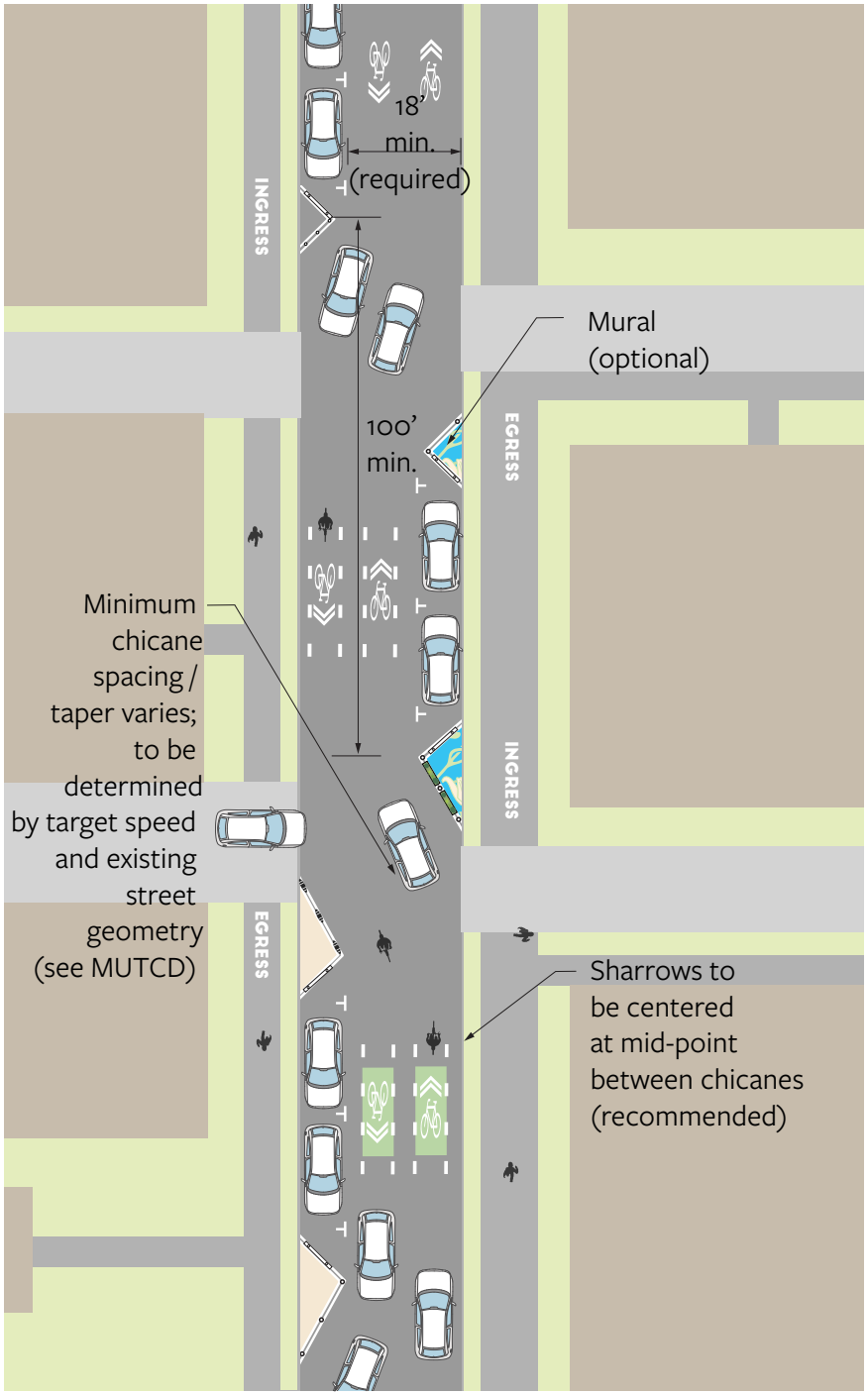
- Chicanes should utilize a 45° angle (or shallower), as measured from the curb to allow safe lane shift, facilitate snow plowing operations, and to maximize available on-street parking
- A minimum 1' buffer should be provided between the outside edge of the chicane and the outside edge of the parking lane
- Where used, shared use lane markings shall be centered between chicane locations

Design Notes

- Chicanes may be installed on low-speed (25 mph or lower) and low-volume (3,000 ADT or lower) streets such as neighborhood greenways and within neighborhood / downtown slow zones
- Parking chicanes should be placed on alternate sides of the street approximately every 100' as driveways and intersections allow
- Placement of chicanes should not impede access to / from existing driveways, unless part of an access management plan
- Except for intersection approaches, consider removing centerline from streets with chicanes
- Minimum chicane spacing / taper varies; to be determined by target speed and existing street geometry (see MUTCD for more guidance)
- Chicanes must maintain stormwater flow / drainage.
- Vertical barrier elements should be used to alert drivers and snow plow operators to presence of the chicane area, or removed for winter
- Ceramic markers are recommended as the vertical barrier element at chicanes adjacent to fire hydrants
- See NACTO's Urban Street Design Guide for more details

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT





3C FLUSH MEDIAN

A median is a continuous designated linear area in the middle of the thoroughfare that separates directionally opposing travel lanes. Medians are used to slow vehicular traffic by reducing travel lane width and providing shorter crossing distances and refuge for pedestrians. Medians can also beautify a street by creating space for greenery and artistic street mural installations.

Applications

Neighborhood Greenways | Neighborhood / Downtown Slow Zones

Basic Components

Required

- A 4" retroreflective double yellow line shall demarcate the flush median area (traffic paint, thermoplastic, or traffic tape striping)
- Mountable vertical barrier element(s), such as parking stops or delineator posts shall be used along the perimeter of the flush median

Recommended

- A surface material (traffic paint, Ruby Lake Glass, or methyl methacrylate) should be used to more visibly designate the flush median area

Optional

- Ceramic markers and armadillos may also be used as vertical, mountable barriers along the perimeter of flush medians.
- Murals may be used to delineate the flush median area
- Circular or rectangular planters may be used for beautification and to further delineate flush medians

Dimensions

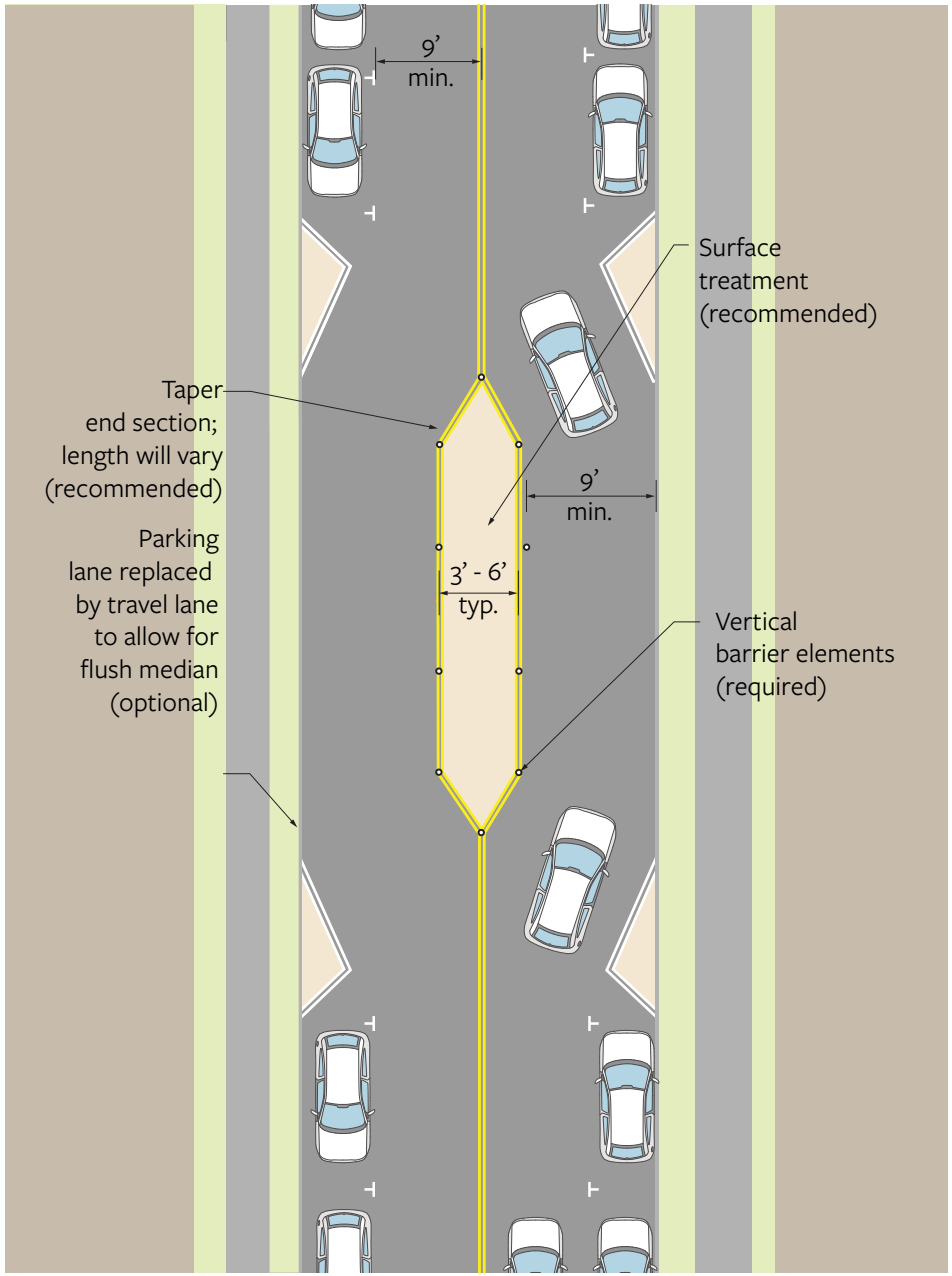
Required

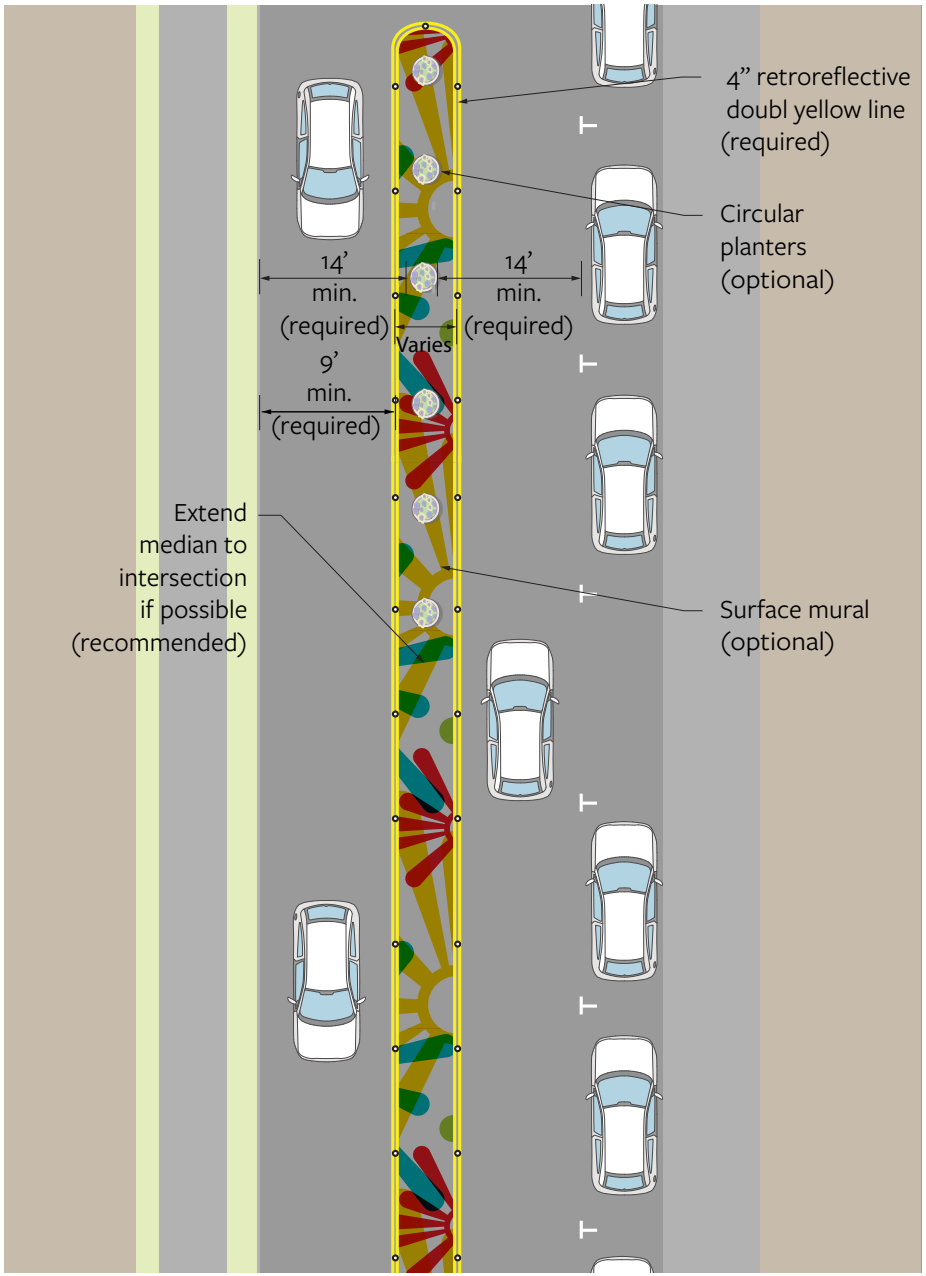
- Length and width will vary based on specific street dimensions; Minimum width shall be 3', or 6' if intended for use as a pedestrian or bicycle pedestrian refuge island
- Travel lanes should maintain a minimum 9' clear width between the curb and mountable vertical barriers to enable emergency vehicle access
- 14' clear width between non-mountable vertical barriers shall be maintained for emergency vehicle access / operation
- Median taper lengths will be determined by target speed and existing street geometry (see MUTCD for more guidance)

Design Notes

- Flush medians may be installed along thoroughfares with wide travel lanes that are not designated for a bikeway in the Plan BTV Walk/Bike Plan
- Flush medians should be centered along the thoroughfare's centerline, between the opposing directions of travel
- Mid-block parking lanes may be replaced by travel lanes where a mid-block crossing or traffic-calming is desired
- Flush medians may be used as snow storage areas; vertical barrier elements may need to be removed seasonally to allow snow plow operators to best utilize the median area
- Flush medians should be extended to intersections wherever possible
- Flush median islands do collect debris and will require occasional maintenance, especially if they incorporate a pedestrian or bicycle refuge

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT





3.D SIGHT TRIANGLE CONVERSIONS

Sight triangle visibility zones restrict the proximity of on-street parking near intersections. Often called "daylighting," this design technique allows people driving to negotiate tight turn movements while also increasing the visibility of other street users, such as bicyclists and pedestrians. Daylighting intersections also allows for the conversion of valuable street space into enhancements for people walking and cycling. Sight visibility triangle zone conversions are appropriate where larger curb extensions are not warranted or desired.

Applications

All city streets with on-street parking

Basic Components

Required

- A single or double 4" retroeflective white stripe (traffic paint, thermoplastic, or traffic tape) shall demarcate the sight triangle area

Recommended

- Barrier elements such as parking stop, armadillos, ceramic markers or delineator posts should be used to ensure motor vehicles do not encroach into the sight triangle area.
- A surface material (traffic paint, Ruby Lake Glass, or methyl methacrylate) should be used to more visibly designate the sight triangle zone

Optional

- Murals may be used to delineate the sight visibility triangle area
- Circular or rectangular planters may be used for beautification and to further prevent vehicular encroachment
- Bicycle parking corrals may be added to sight visibility triangle zones, provided there is a demonstrated need and adequate space to do so

Dimensions

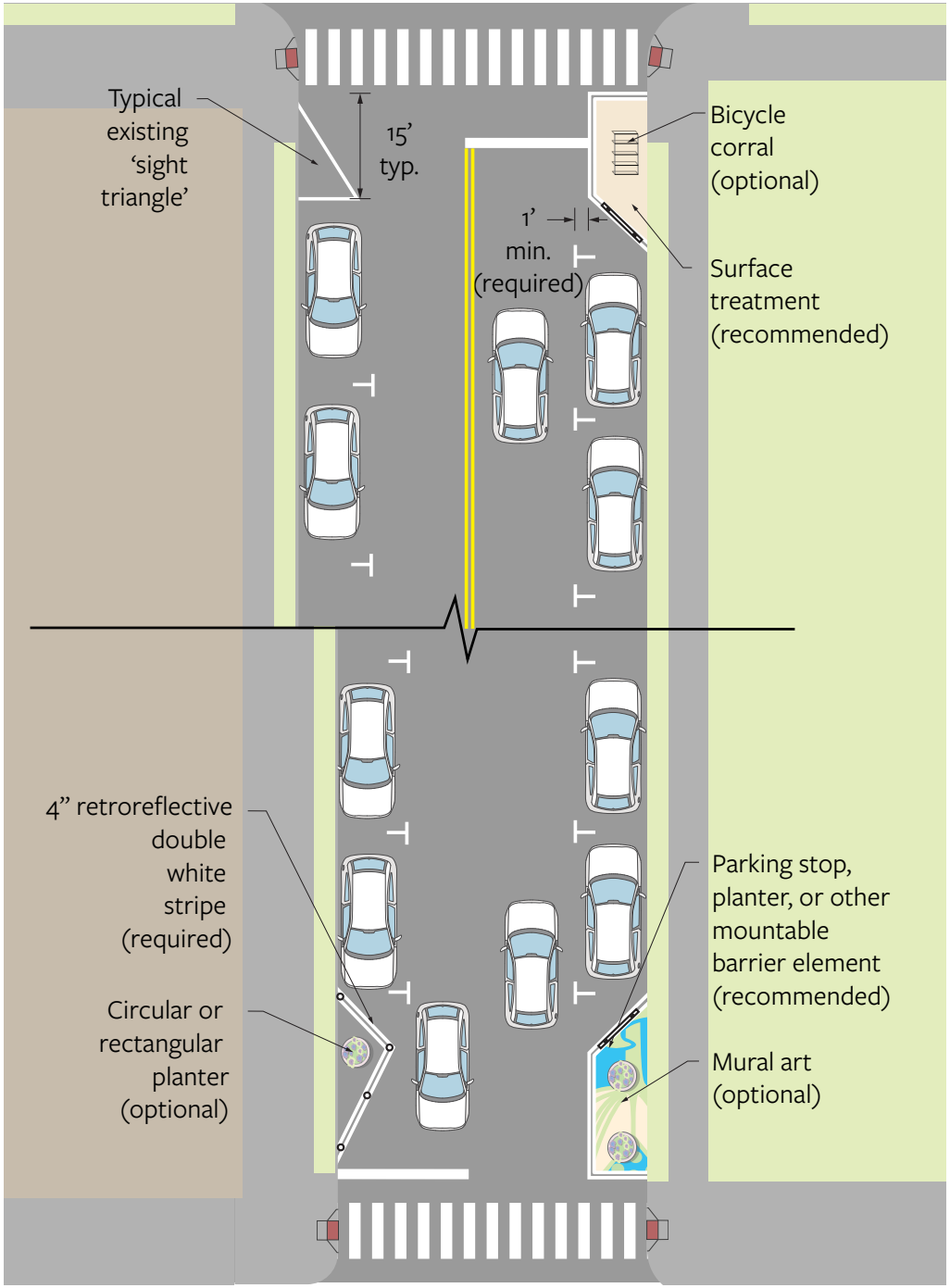
Required

- Sight triangle width shall be 1' less than parking lane width
- Sight triangle length will vary, depending on existing street dimensions and built context; 10' minimum length, 15 - 20' is typical

Design Notes

- When determining the sight distance triangle, use the thoroughfare's desired target speed, rather than the design speed
- Large corner radii with large sight triangles may enhance visibility, but may also encourage people driving to speed, effectively diminishing any peripheral visibility gains retained at a slower speed
- Because street corners and intersections frequently serve as gathering places for people, facilitate commerce, and accommodate bus stops, bicycle parking, and other amenities, street design should focus on creating eye contact between people driving and all other street users, rather than focus on the creation of clear vehicular sight-lines only.
- Traffic control devices must be unobstructed in the intersection and shall be free of tree cover or visual clutter
- Where present, site visibility triangle treatments may be used to further delineate 'no parking' zones for fire hydrant access
- Vertical elements placed in the sight triangle must still meet visibility requirements using engineering judgement
- Where site triangle visibility zones exist, consider the addition of bicycle parking, painted curb extensions, planters, mural art, and/other amenities that maintain site lines while providing a higher and better use of street space

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT



3.E VEHICULAR PINCH POINTS

Pinch Points, sometimes called "travel lane chokers" are mid-block curb extensions that may be applied to both sides of one- or two-way streets. Pinch points are similar to neckdowns, only they do not feature marked crosswalks. Pinch points help slow traffic speeds by forcing a yield condition between opposing directions of vehicular travel, or by narrowing the travelway along a one-way street. They also provide opportunities for placemaking enhancements such as public art, benches/planters, bus stop amenities, and other stormwater treatments (when built out with permanent materials).

Applications

Neighborhood Greenways | Neighborhood / Downtown Slow Zones

Basic Components

Required

- A 4" retroreflective double white stripe (traffic paint, thermoplastic, or traffic tape) shall demarcate the pinch point area
- Mountable vertical barrier elements such as parking stops, armadillos, ceramic markers, or delineator posts shall be used to ensure motor vehicles do not encroach into the pinch point area

Recommended

- A surface material (traffic paint, Ruby Lake Glass, or methyl methacrylate) should be used to more visibly designate the pinch point

Optional

- Yield markings may be used to reinforce desired vehicular movement
- Circular or rectangular planters may be used for beautification and to further prevent vehicular encroachment
- Murals may be used for beautification and to increase the visibility of the pinch points

Dimensions

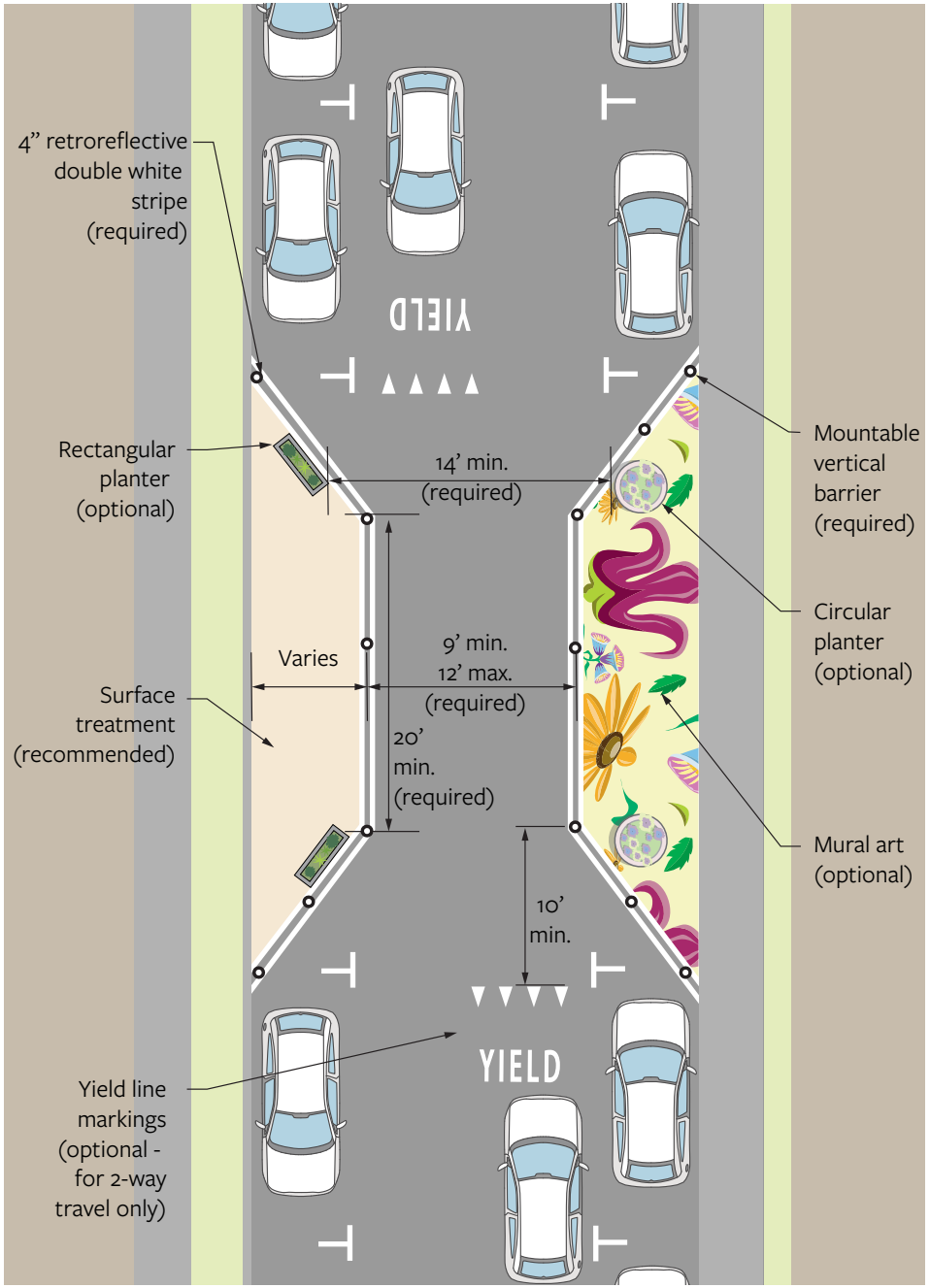
Required

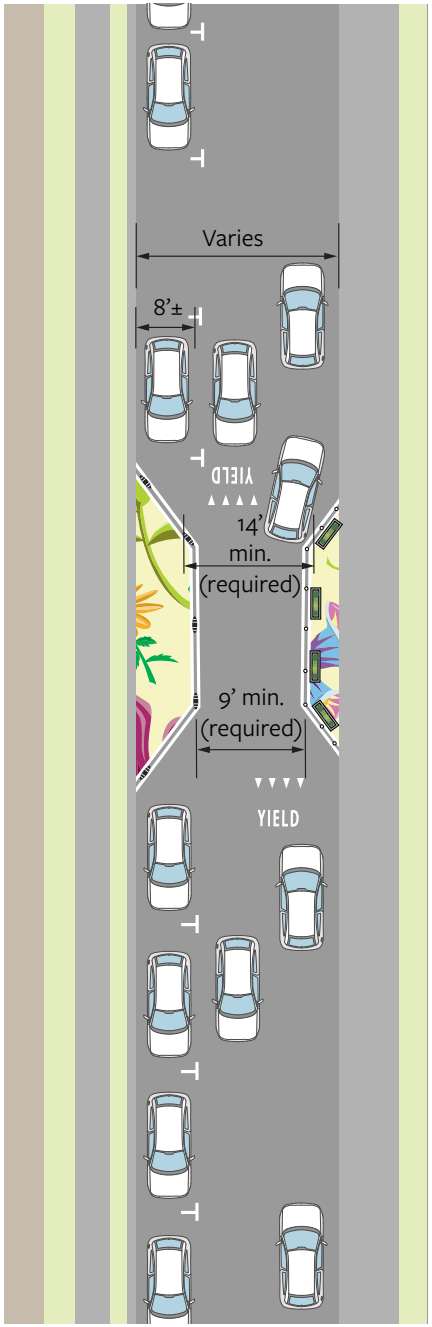
- The 'choke zone' length shall be a minimum of 20'
- The choke point width will vary based on street design /configuration, but shall be a minimum of 6' wide where parallel on-street parking is present
- If used, yield lines shall be located at least 10' from the beginning of the choke point
- Travel lanes should maintain a minimum 9' clear width between mountable vertical barriers to enable emergency vehicle access
- A 14' clear width between non-mountable vertical barriers shall be maintained for emergency vehicle access / operation

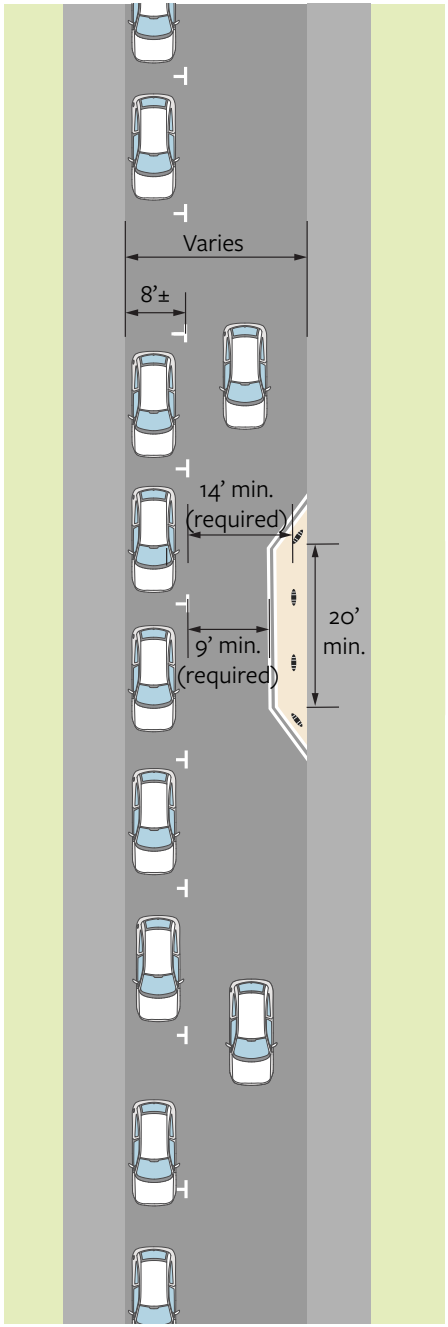
Design Notes

- Pinch points may be installed on low-speed (25 mph or lower), low-volume (3,000 ADT or lower) streets such as neighborhood greenways and within neighborhood/downtown slow zones
- Pinch point width is typically one foot less than the width of the parking lane, but the curb extension can also extend to the curbside edge of the bicycle lane when one is striped
- Placement of pinch points should not impede access to/from existing bicycle lane or bus stops, or driveways unless part of an access management plan
- Except for intersection approaches, consider removing the centerline from streets with pinch points
- In select locations, the area defined by a pinch-point may be used for other streetscape amenities, such as bicycle parking / fix-it stations, trash receptacles, benches, bus stops, etc. but must not impede pedestrian flow, obstruct clear path emergency vehicle operations, or limit sight lines
- Pinch point curb extensions must maintain stormwater flow / drainage
- Vertical barrier elements should be used to alert drivers and snow plow operators to presence of the pinch point area
- Pinch points may be designed in conjunction with a fire hydrant, however the length of the curb extension should be equal to / greater than the 'no parking' zone (typically 15 feet in either direction) and access to the hydrant must not be impeded by any non-mountable vertical barrier elements

COMPONENTS AND DESIGN DIMENSIONS IN CONTEXT



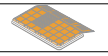




MATERIALS STANDARDS

4.0 BARRIER ELEMENTS

The Burlington Quick-Build Standards include 13 barrier elements that may be applied to one or more project types found in the table below. Note that this materials standards guide should be seen as a starting point as the Quick Build program continues to be established. The City of Burlington will need flexibility in its approach as it optimizes its material choices for safety, durability, aesthetics, and maintenance concerns. Thus, ongoing material experimentation and feedback is to be expected and is encouraged as the program continues to evolve.

	PROJECT TYPE								
BARRIER ELEMENT	PROTECTED BIKE LANE	BIKE CORRAL	BICYCLIST / PEDESTRIAN REFUGE ISLAND	CURB EXTENSION	PEDESTRIAN PLAZA	PARKLET	CHICANE/ PINCH POINT	MINI-ROUNDABOUT/ TRAFFIC CIRCLE	TRAFFIC CALMING OR OTHER
4.A Zicla Zebra System “Armadillo”									
4.B Ceramic Markers									
4.C Cycle Lane Delineator									
4.D Delineator Post									
4.E K-71 High-Impact Bollard									
4.F Parking Stop									
4.G Planter - Rectangular Concrete									
4.H Planter (Circular)									
4.L Planter (Rectangular)									
4.J Quick Curb + Delineator Post									
4.K Rubber Roundabout Island									
4.L Speed Hump									
4.M Zicla Bus Island									

4. BARRIER ELEMENT DETAILS

4.A. ARMADILLO (ZICLA ZEBRA SYSTEM)

Applications

Protected Bike Lane | Curb Extension | Bicyclist / Pedestrian Refuge Island | Pedestrian Plaza | Chicane / Pinch Point | Mini-Roundabout / Neighborhood Traffic Circle | Parklet / Bike Corral

Component

- Zicla Zebra System (13, 9 or 5 series)

General Design Guidance

Protected Bike Lanes (see page 22)

- Armadillos to be spaced no more than 8' apart, per manufacturer specifications (5' recommended, rotated 30° where buffer width allows)
- Where driveways exist, no armadillo should be placed closer than 15' to either side of the driveway or intersection.
- Use higher profile Armadillos on streets with higher potential vehicular speeds
- Alternate with delineator post where increased vertical visibility is required, or where vehicles are more likely to cross into or park in the bike lane

Curb Extensions | Bicyclist / Pedestrian Refuge Islands | Pedestrian Plazas | Chicanes / Pinch Points

- Place armadillo unit every 5 - 10' along perimeter, between 4" retroreflective double white stripe; ensure placement does not obstruct accessibility / ADA compliance or stormwater flow

Mini-Roundabout / Neighborhood Traffic Circles

- The Zicla Zebra system offers differing levels of mountability; Use lower profile armadillos where larger vehicles are expected to mount the center island more frequently
- Place end-to-end in a circular formation to create inner island, leaving small gaps to accommodate stormwater flow where necessary
- Accompany with appropriate MUTCD-compliant signs

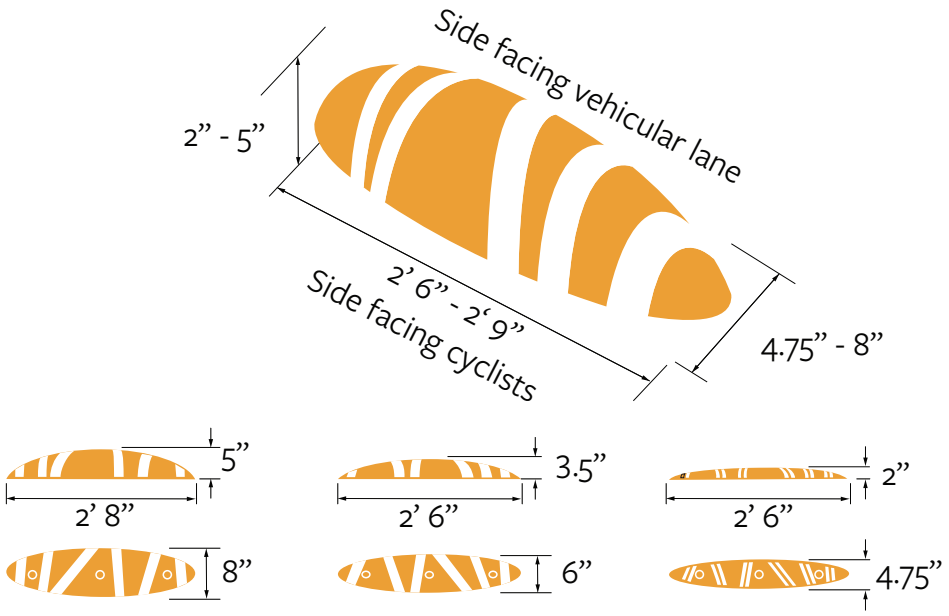
Parklet | Bike Corral

- Place at least two units at either end of the parklet or bike corral, perpendicular to the curb along perimenter of buffer stripe to discourage vehicular encroachment into the parklet or bike corral area

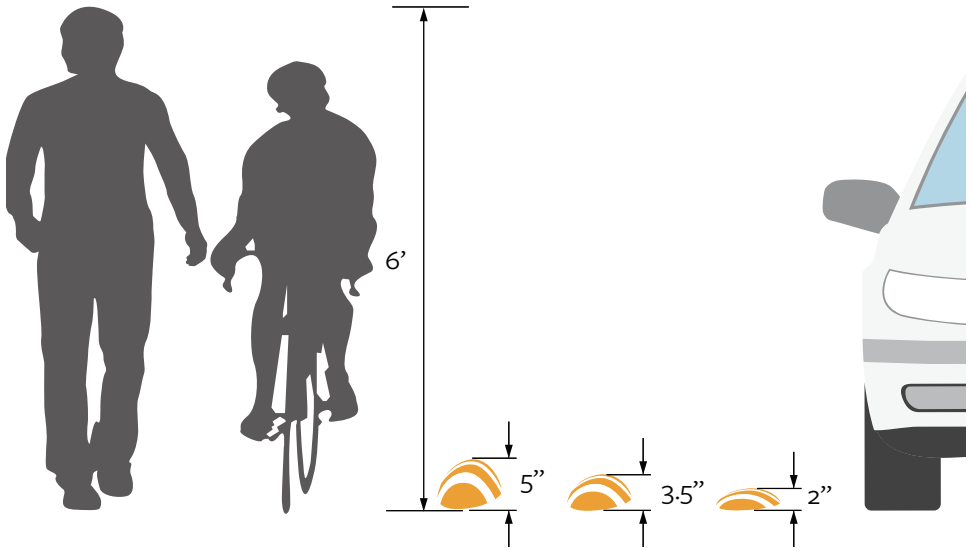
Design Notes

- Ensure placement does not obstruct accessibility
- Mountable profile ensures emergency and city service vehicle access, and minimal / no stormwater obstruction
- If necessary, remove for winter to facilitate snow plowing / removal; If intended for year-round use, pair with delineator posts to increase visibility for snowplow operators
- Where aesthetics are a concern, Armadillos offer are a less visually obtrusive option (compared to vertical delineator posts etc.)
- The Armadillo's low visual profile may lead to decreased safety perception for people walking or biking (compared to more vertical barrier elements like planters or delineator posts etc.)
- The reflective markings on each unit are asymmetrical; it is recommended that the side with the greater density of reflective bands face oncoming vehicular traffic

DETAIL



PROFILE



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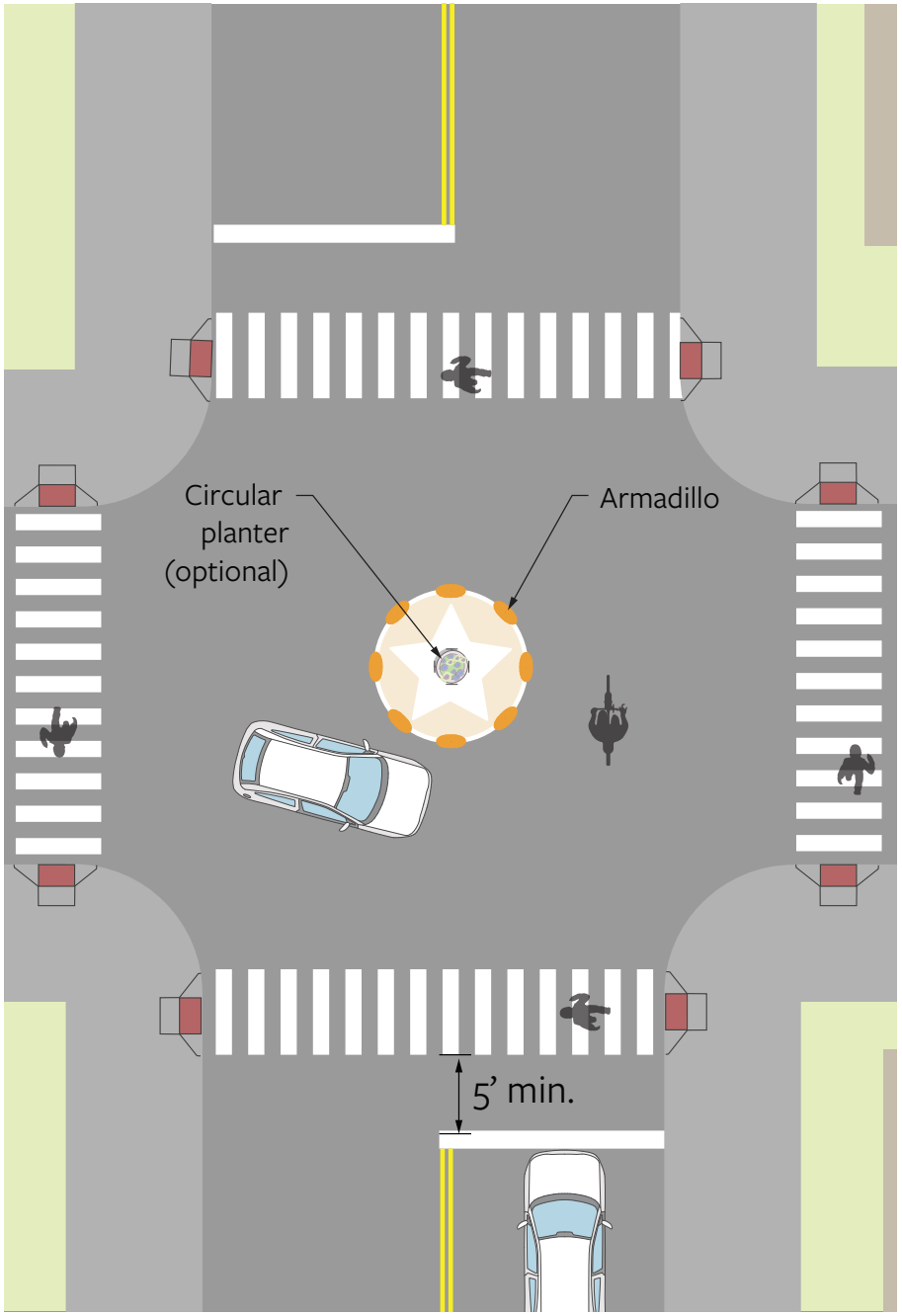


4.B. CERAMIC MARKERS

Applications

Curb Extension | Pedestrian Plaza | Chicane / Pinch Point | Mini-Roundabout / Neighborhood Traffic Circle | Bike Corral

Components

- 4", 6", or 8" circular or rectangular Ceramic Marker

General Design Guidance

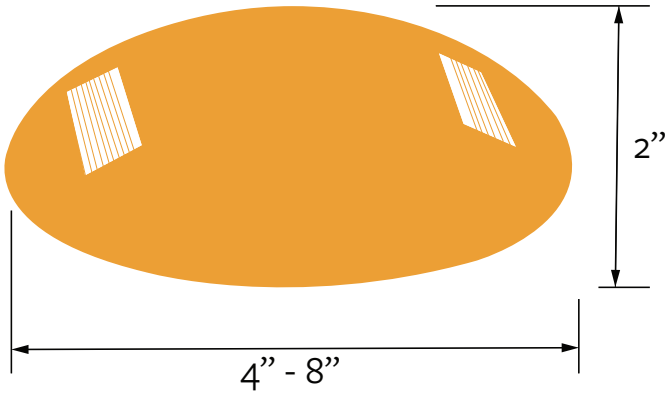
All Applications

- Affix to pavement per manufacturer's specifications (see Apex or Ennis-Flint products) no more than 5' apart to discourage vehicular encroachment
- Installation / adhesive set time will be impacted by weather and temperature
- Markers should be allowed to fully set before sustaining any impact
- Center or place ceramic markers along inside edge of retroreflective 4" double white stripe demarcating perimeter of the Quick Build project element (curb extension, pedestrian plaza etc.)

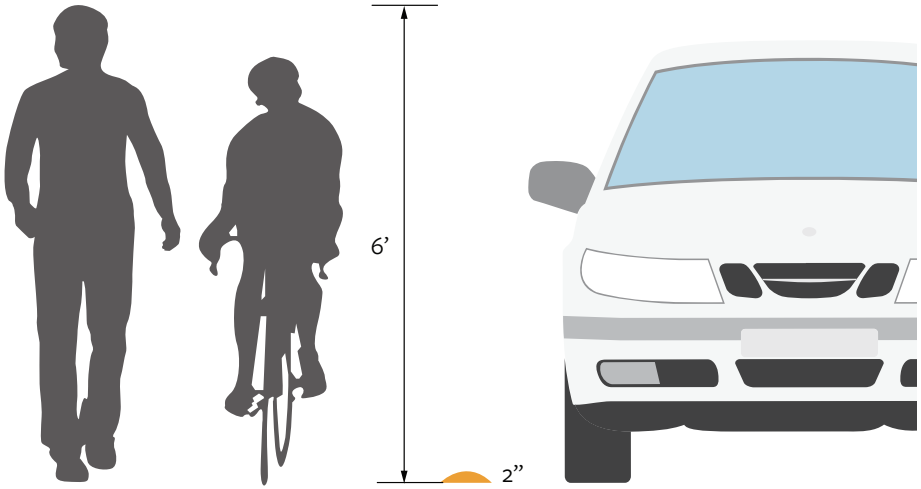
Design Notes

- Reflective and non-reflective ceramic markers are available; reflective ceramic markers are strongly encouraged
- Ceramic markers are fully mountable and may especially appropriate where emergency vehicle need access, such as along curb extensions or pinch point
- Ceramic markers should be used in conjunction with other vertical elements (such as circular or rectangular planters, delineator post, K-71 bollards etc.) where physical protection is required.
- For use only along low-volume streets only (3,000 ADT or less)

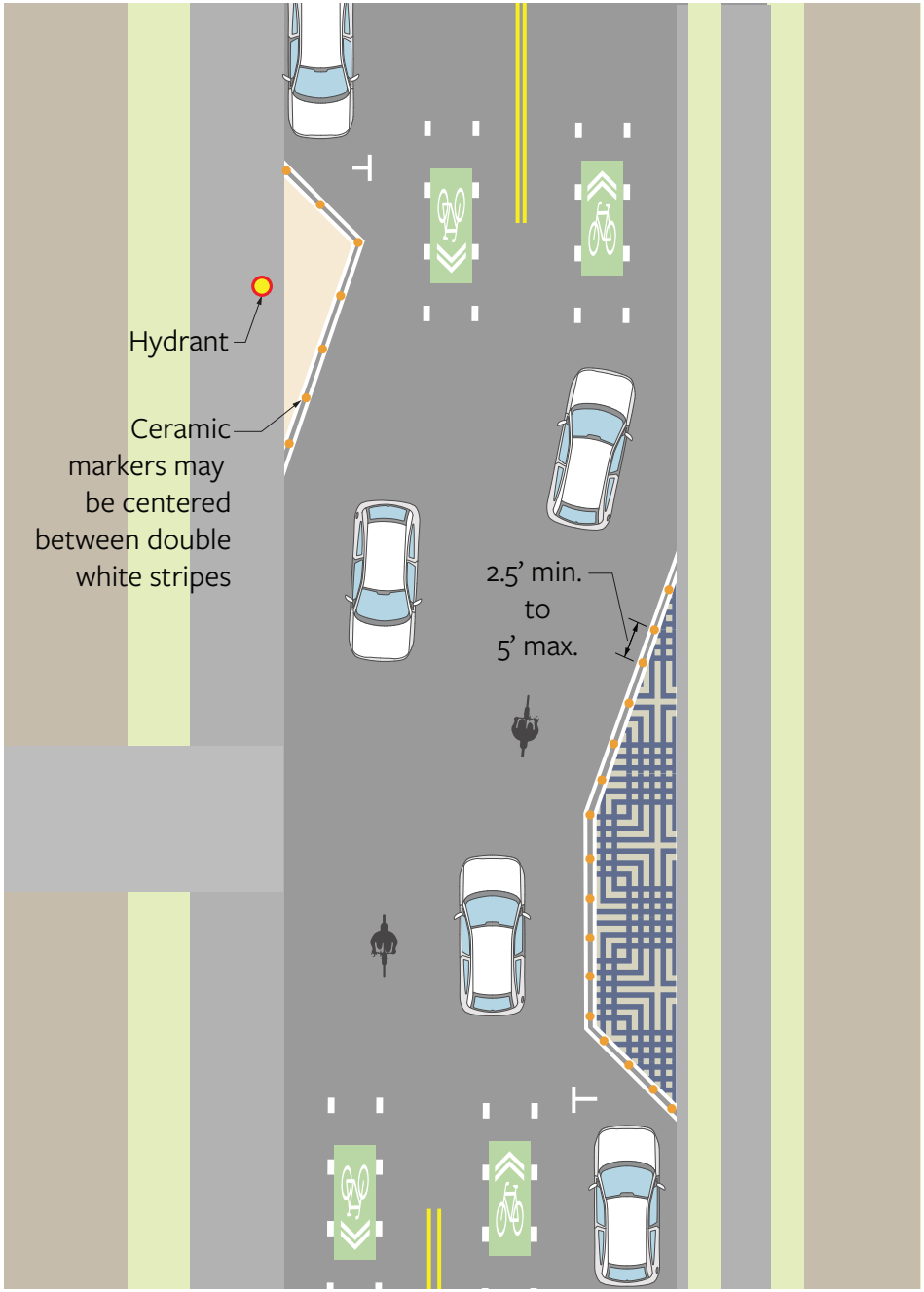
DETAIL



PROFILE



IN CONTEXT



4.C. CYCLE LANE DELINEATOR

Applications
Protected Bike Lanes

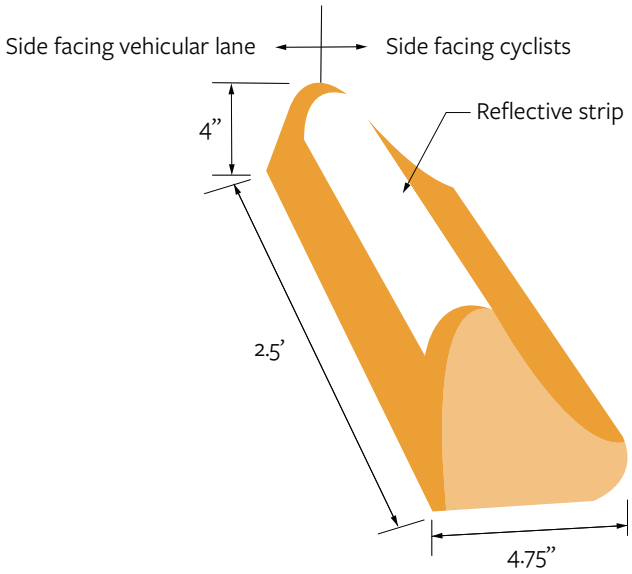
Components
Traffic Logix CycleLane or similar (Recycled rubber delineator unit with reflective white marking tape).

General Design Guidance
Protected Bike Lanes

- Place curved edge facing the bike lane
- Ensure placement does not obstruct accessibility / ADA access or flow of stormwater
- Ensure retroreflective strip is placed on the delineator for night-time visibility; Replace strips as necessary
- Center CycleLane delineators within bike lane buffer
- Use a 5' minimum to 15' maximum spacing to discourage motorists from using portions of the bike lane for movement or parking
- Allow a minimum of 2 ft. clear width for installation.
- Cycle lane delineators be placed end-to-end at intersection approaches
- Where driveways exist, no delineator shall be placed closer than 15' to either side of the driveway or intersection.

Design Notes
- Cycle lane delineators may be removed for road resurfacing, snow plows, or to simply test a few units at a specific location.
- Allow gaps for stormwater drainage, curbside pedestrian access, or for cyclists to cross through the barriers as necessary.

DETAIL



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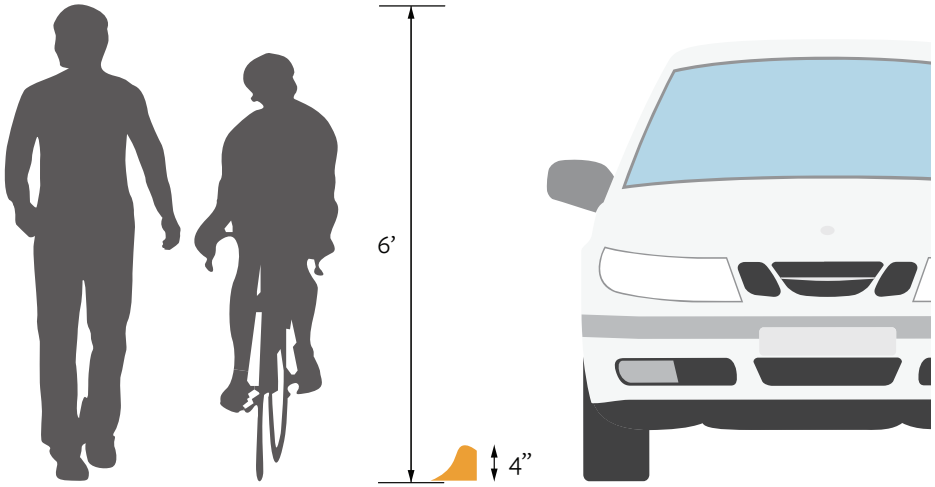
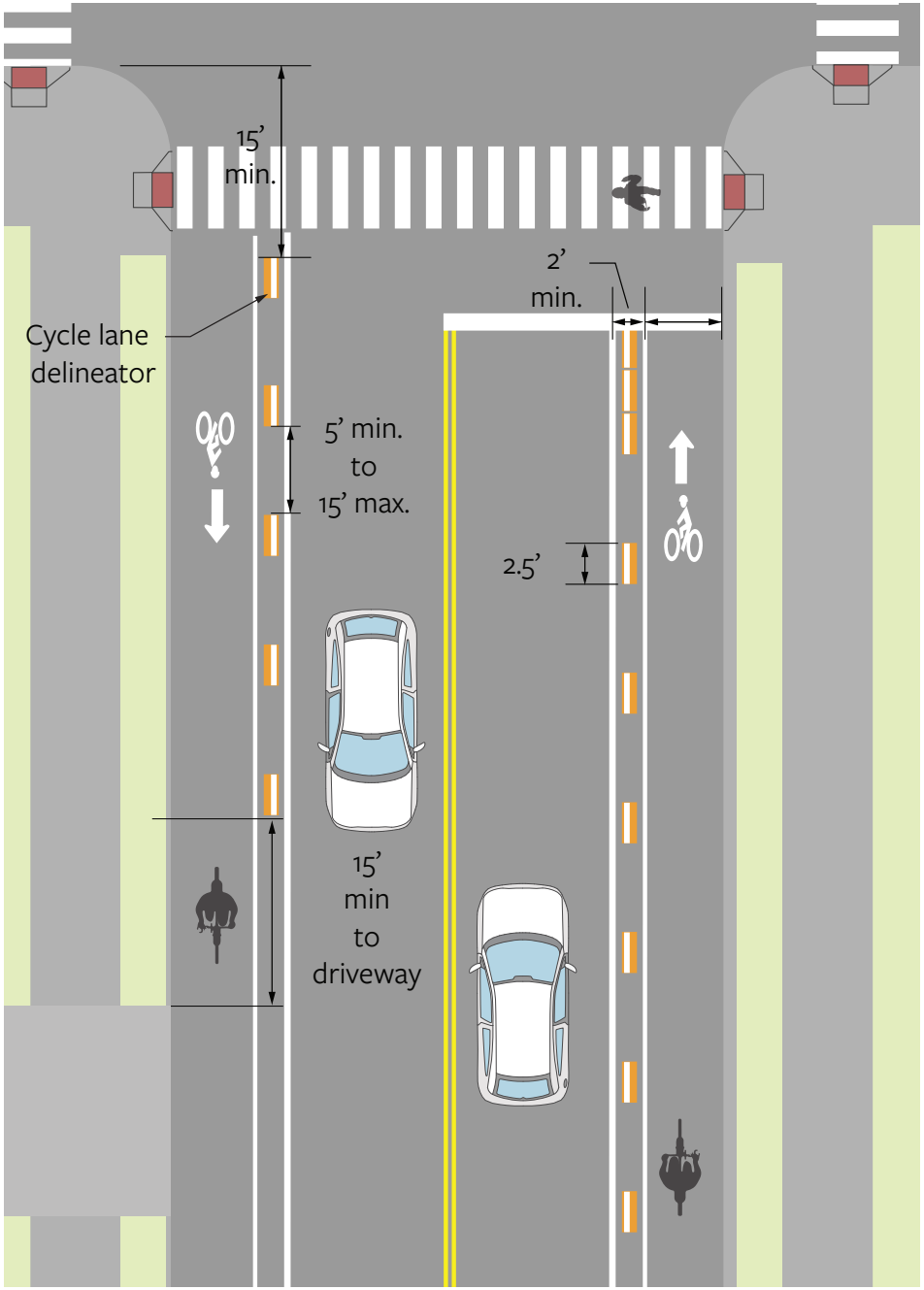




4.D. DELINEATOR POST

Applications

Protected Bike Lanes | Curb Extensions / Chicanes / Pinch Points | Pedestrian / Bicyclist Refuge Islands | Pedestrian Plazas | Parklets / Bike Corrals

Components

- Removable plastic delineator post with reflective strip
- Removable plastic base

General Design Guidance

Protected Bike Lanes

- Delineator posts to be centered between retroreflective 6" and 4" white stripes, with a minimum spacing of 5' and a maximum spacing of 15' to discourage motorists from using portions of the bike lane for movement or parking
- 27" delineator posts may be considered for bikeways and other applications where 3' delineator posts could interfere with bicycle handlebars (e.g. on two-way bikeways where bike lane width is less than 5')

Curb Extensions / Chicanes / Pinch Point

- Delineator posts to be placed between retroreflective 4" double white stripes, with a minimum spacing of 5' and a maximum spacing of 10'
- To increase visibility / detection, place delineator posts at the corners of the crosswalk and the curb extension; posts may be placed / spaced strategically in other locations to facilitate detection / accessibility

Pedestrian / Bicyclist Refuge Islands

- Delineator posts to be placed between retroreflective 4" double white stripes, with a minimum spacing of 5' and a maximum spacing of 10'
- Delineators posts shall be placed on the outside edges of the crosswalk and may be placed / spaced strategically in other locations to facilitate detection / accessibility
- Where bi-directional crossbikes are present, delineator posts should be placed on the outside edges of the two crossbike markings; where uni-directional crossbikes are used, delineator posts should be placed on the crossbike edge nearest to oncoming vehicular travel

Pedestrian Plazas

- Delineator posts to be centered between retroreflective 4" white stripes, with a minimum spacing of 5' and a maximum spacing of 10'.
- Delineators posts shall be placed on the outside edges of crosswalks (if present) and may be placed / spaced strategically in other locations to facilitate detection / user accessibility

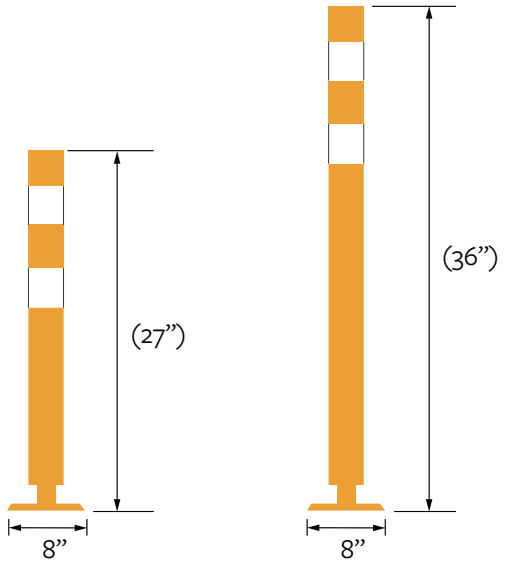
Parklet / Bike Corral

- Place at least two delineator posts at either end of the parklet or bike corral, along the perimeter of the buffer stripe perpendicular to the curb, to discourage vehicular encroachment into the parklet or bike corral area
- Delineators may be installed atop parking stops

Design Notes

- To improve aesthetics and help create a sense of enclosure, pair delineator posts with other vertical elements such as planters
- Delineator may be removed in winter to facilitate snow plowing/ removal
- Diminishing aesthetic quality / durability of delineator posts can present challenges for quick-build design projects in some contexts
- Monitor replacement rate and decide whether a more robust vertical barrier element is appropriate / cost effective for the context, especially if a capital funding has yet to be programmed
- Spacing between delineator posts may be greater if paired with more aesthetically please vertical barrier elements, such as planters
- Where driveways exist, no delineator post should be placed closer than 10' to either side of the driveway or intersection
- Delineator posts are available in a variety of colors

DETAIL



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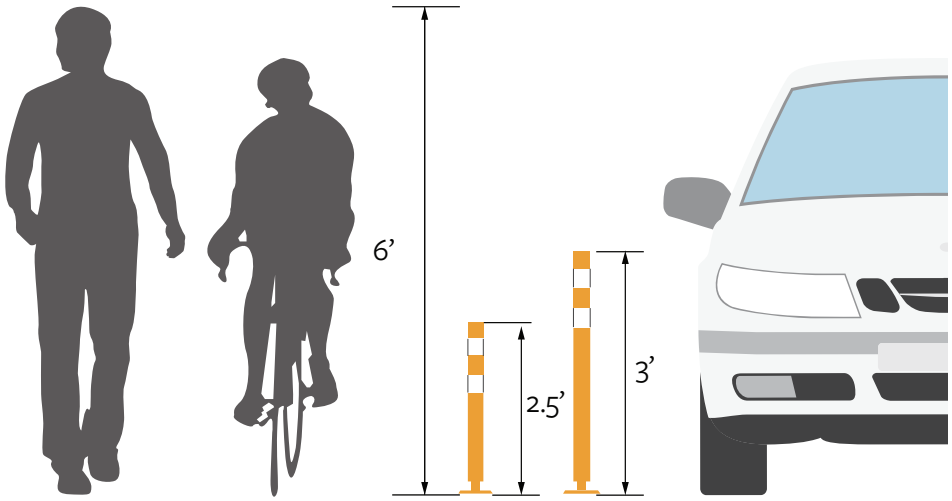
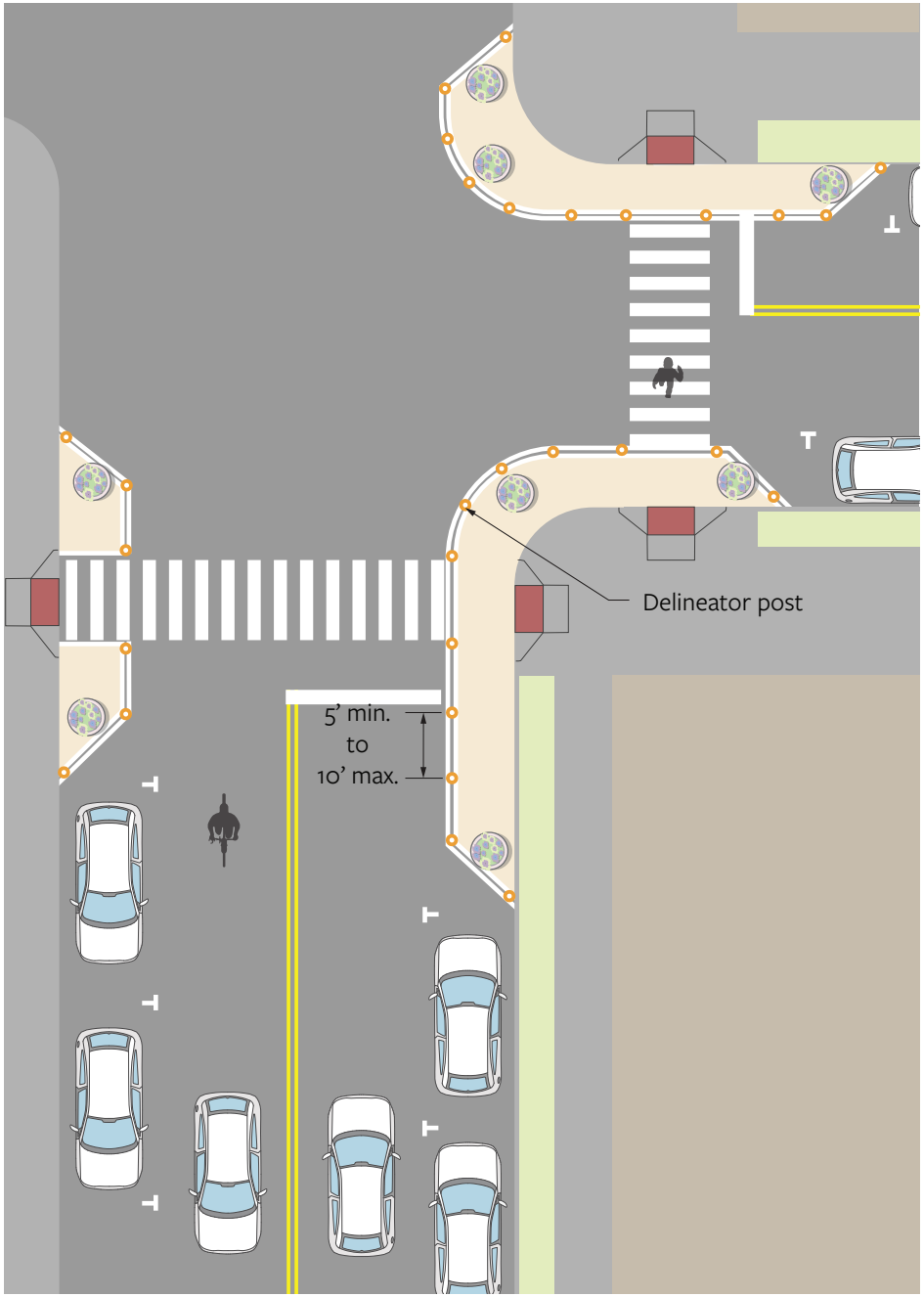




4.E. K-71 BOLLARD

Applications

Protected Bike Lanes | Bicyclist / Pedestrian Refuge Islands | Curb Extensions | Pedestrian Plazas

Component

- Plastic bollard with reflective collars and 'T-Bar' anchoring system

Specific Design Guidance

Protected Bike Lane

- Bollards to be centered between retroreflective 6" and 4" white bike lane buffer stripes, with a minimum spacing of 5' and a maximum spacing of 15' to discourage motorists from using portions of the bike lane for movement or parking

Bicyclist / Pedestrian Refuge Islands

- Bollards should be placed on the outside edges of the crosswalk and may be placed / spaced strategically in other locations to facilitate detection / accessibility
- Where bi-directional crossbikes are present, delineator posts should be placed on the outside edges of the two crossbike markings; where uni-directional crossbikes are used, delineator posts should be placed on the crossbike edge nearest to oncoming vehicular travel

Curb Extensions

- Bollards to be placed between retroreflective 4" double white stripes or along the edge of the inside line, with a minimum spacing of 5' and a maximum spacing of 10'
- To increase visibility / detection, place bollards at the corners of the crosswalk and the curb extension; posts may be placed / spaced strategically in other locations to facilitate detection / accessibility

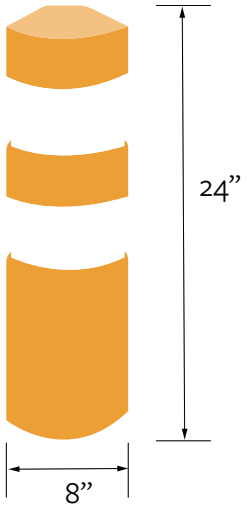
Pedestrian Plazas

- Bollards to be placed between retroreflective 4" white stripes or along the edge of the inside line, with a minimum spacing of 5' and a maximum spacing of 10'
- To increase visibility / detection, place bollards at the corners of the crosswalk and the pedestrian plaza; bollards may be placed / spaced strategically in other locations to facilitate detection / accessibility

Design Notes

- Collapsible profile ensures emergency and city service vehicle access, and minimal / no stormwater obstruction; may sustain impacts of 65 mph
- If necessary, bollards may be removed and holes plugged for reinstallation to facilitate snow plowing / removal
- Diminishing aesthetic quality / durability can present challenges for some quick build design projects; monitor replacement rate and decide whether a more robust vertical barrier element is appropriate / cost effective for the context
- 2' height is less obtrusive than delineator posts, which improves street aesthetics; larger diameter size may help reinforce design intent and enhance pedestrian / cyclist comfort
- The K-71 Bollard is available in a wide variety of colors

DETAIL



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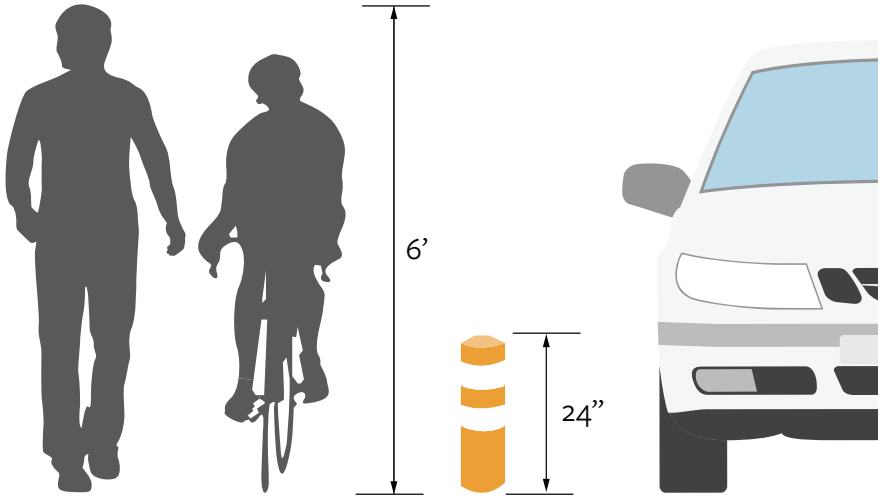
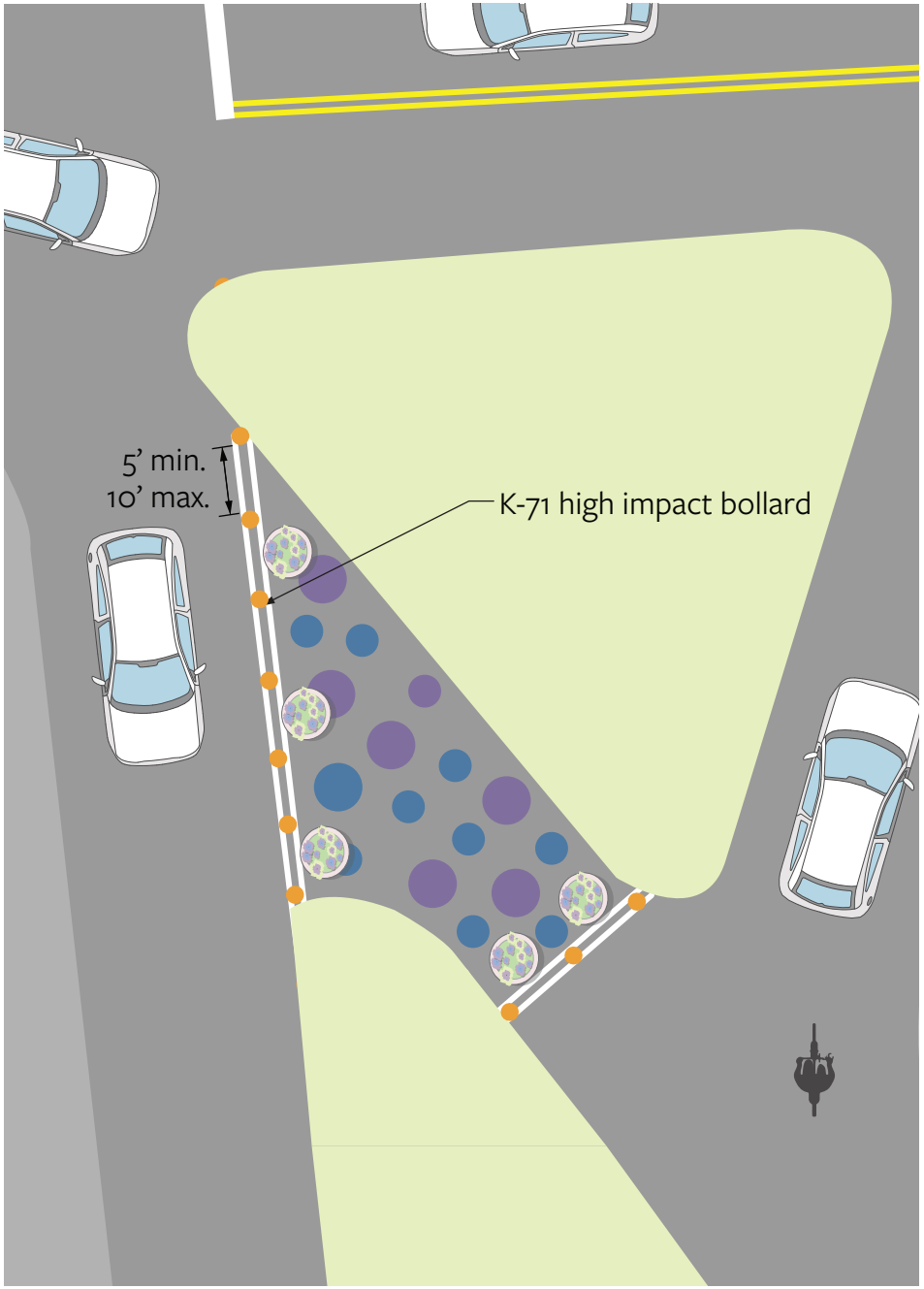




4.F. PLANTER (CIRCULAR)

Applications

Bike Corrals | Bicyclist / Pedestrian Refuge Islands | Curb Extensions / Pedestrian Plazas | Mini-Roundabouts / Neighborhood Traffic Circles

Components

- Plastic Planter - Sybertech 36 or 42 inch bowl planters or similar with reflective strip
- Soil and filler
- Plant matter

General Design Guidance

Bike Corrals

- Place a planter on either side of the corral, leaving 2' clear for bicycles to be parked on the outside edge of the rack
- Where the corral is adjacent to parallel parking, pair planter with curb stop placed between the planter and the adjacent parking space(s)

Bicyclist / Pedestrian Refuge Island

- Place a planter on either side of the bicyclist / pedestrian refuge area, providing a vertical element protecting the crosswalk / crossbike

Curb Extensions / Pedestrian Plazas

- Place planters 18" from edge of double white line for snow storage, with a minimum spacing of 8' and a maximum spacing of 10'
- Planters to be centered between other vertical barrier elements where used (delineator posts, K-71 bollards etc.)
- Planters should be placed on either side of crosswalks
- Planters may also be used as landscaping / greenery throughout the plaza area, including adjacent sidewalks with adequate width;

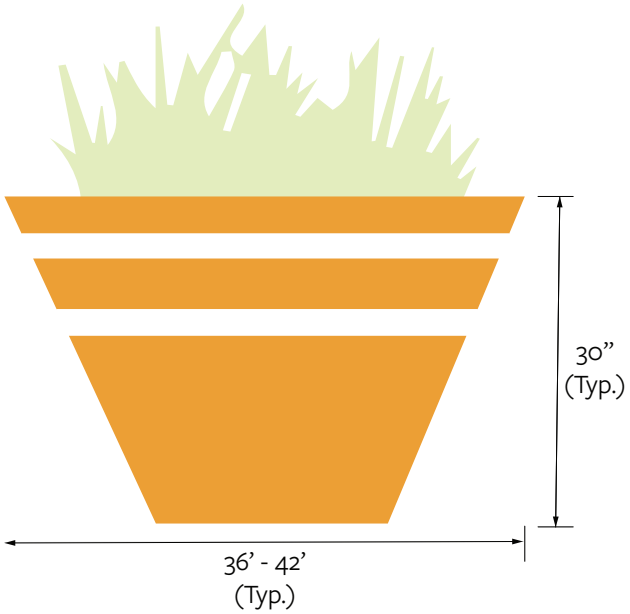
Mini-Roundabouts / Neighborhood Traffic Circles

- Place a single planter, or an array of planters if space allows, in the center of the island.

Design Notes

- Planters may be paired with other vertical barriers to enhance visibility / sense of enclosure as required
- Identify a maintenance / stewardship partner who will be able to water and maintain the plant matter
- Ensure placement does not obstruct accessibility / ADA compliance.
- In some instances retroreflective strip for night-time visibility may be warranted
- Planters may be removed during winter months, or set back a minimum of 18" to avoid plow blades

DETAIL



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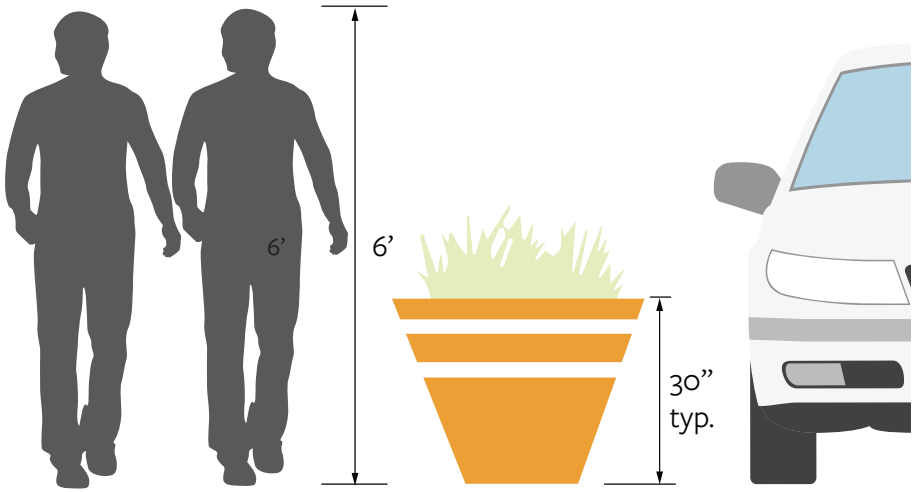
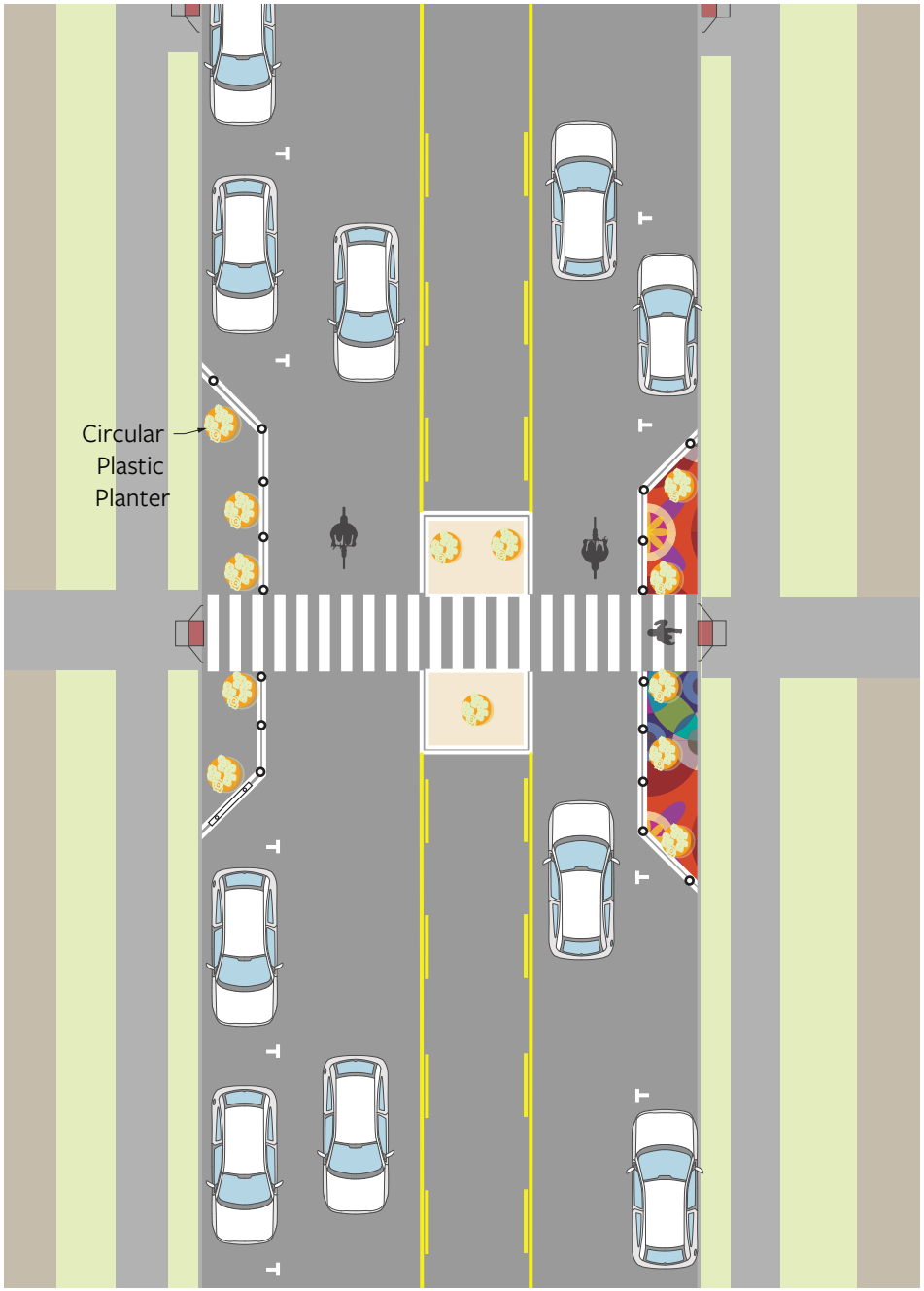




4.G. PLANTER (RECTANGULAR)

Applications

Protected Bike Lane | Curb Extension | Pedestrian / Bicyclist Refuge Island | Pedestrian Plaza

Components

- DezignLine Planter "A": 48"L x 28"W x 24"H or DezignLine Planter "B": 36"L x 24"W x 24"H
- Soil and filler
- Plant matter
- PEDISTILL Hand + Foot Rest (optional)
- Self-watering system (optional)

General Design Guidance

Protected Bike Lane

- Center planters between retroreflective 6" and 4" white bike lane buffer stripes, with a maximum spacing of 15' to discourage motorists from using portions of the bike lane for movement or parking
- Planters may be placed end-to-end at intesection ingress / egress locations
- In some locations, planters may be need to be spaced to maintain stormwater flow / or to facilitate mid-block exit / entrance for people cycling

Pedestrian / Bicyclist Refuge Island

- Place a planter(s) on either end of pedestrian / bicyclist refuge island, as well as along perimeter as conditions allow, providing a vertical element protecting the crosswalk / crossbike
- Planters may be placed on the outside edges of the crosswalk and may be placed / spaced strategically in other locations to facilitate detection / accessibility

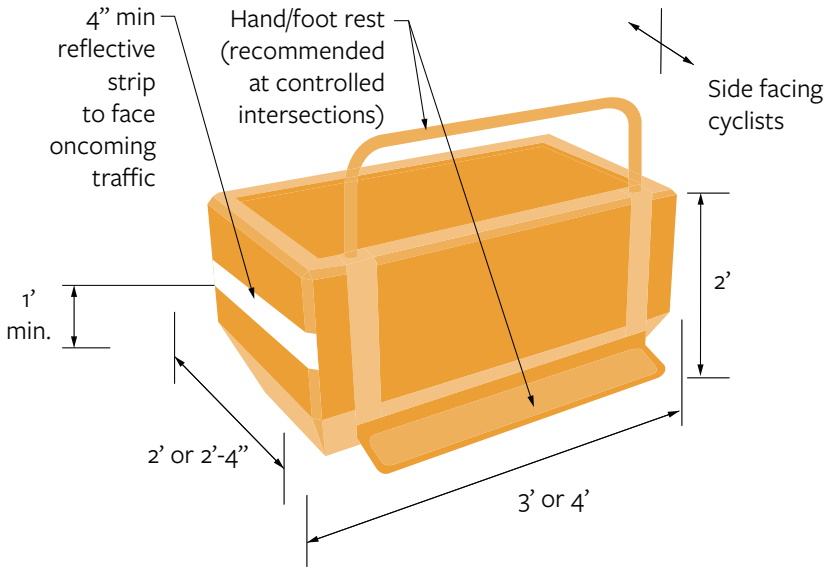
Curb Extension / Pedestrian Plaza

- Planters to be placed parallel along the inside edge of the retroreflective 4" double white stripe demarcating the perimeter of the curb extension or pedestrian plaza
- Planters should be placed every 5' - 10'
- In areas of high foot traffic ensure 4' gaps between planters for pedestrian permeability / accessibility

Design Notes

- Planters may be paired with other vertical barriers (e.g. delineators posts) to enhance visibility / sense of enclosure
- Identify a maintenance / stewardship partner who will be able to water and maintain the plant matter
- Ensure placement does not obstruct accessibility / ADA compliance or stormwater flow
- In some instances a retroreflective strip for night-time visibility may be warranted
- Planters may be removed during winter months, or set back a minimum of 18" to avoid plow blades

DETAIL



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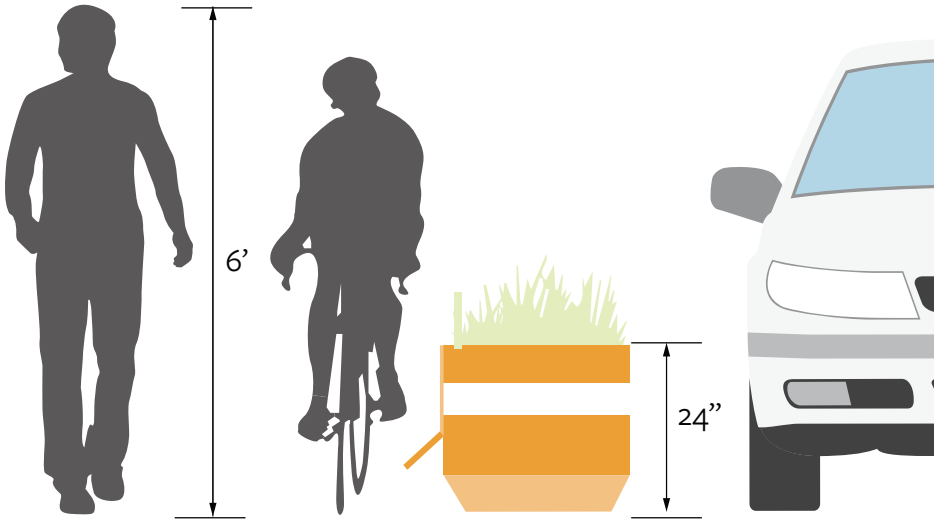
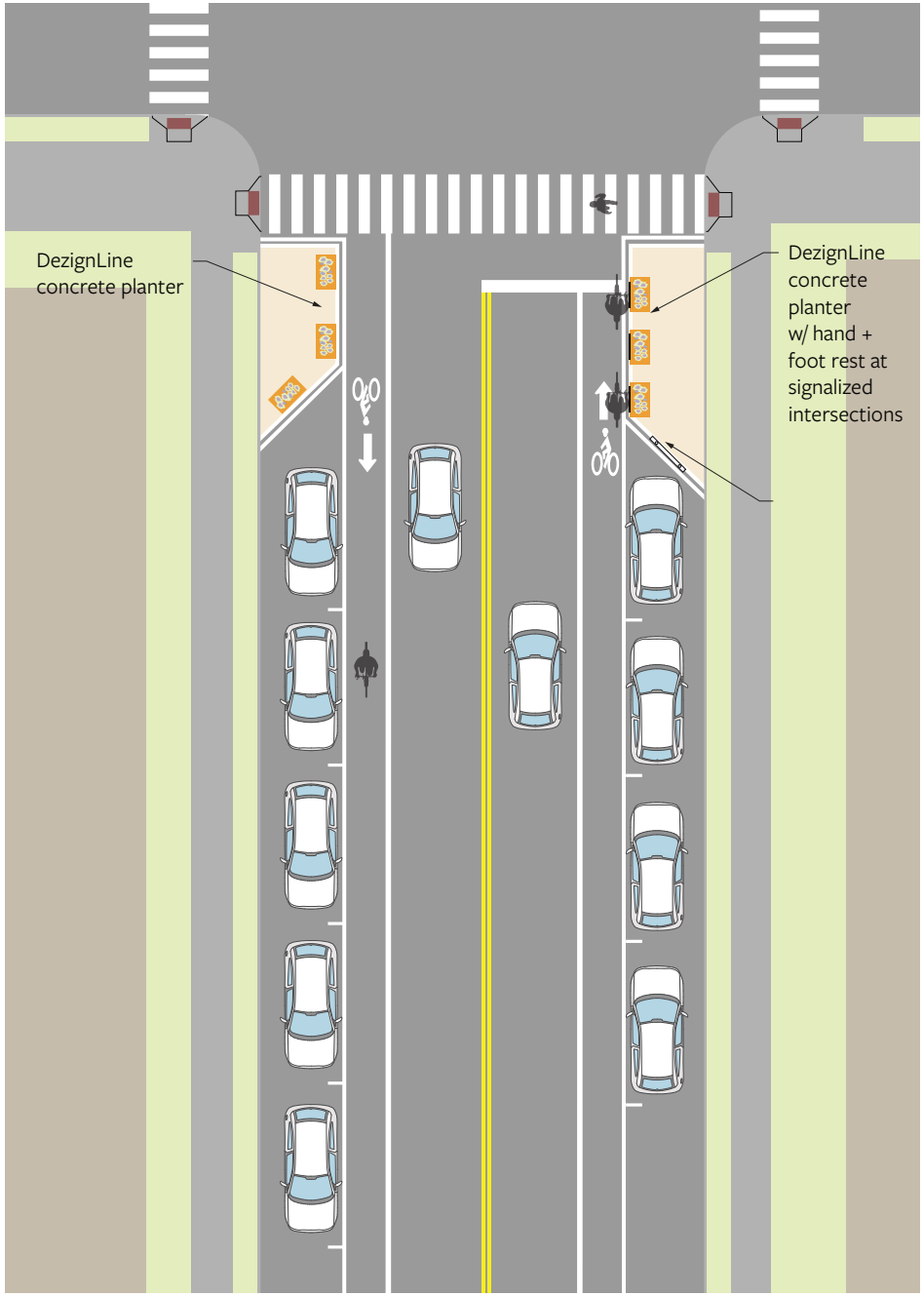




4.H. PARKING STOP

Applications

Protected Bike Lane | Bike Corral | Parklet | Chicane | Mini-Roundabout / Neighborhood Traffic Circle

Components

- Parking stop unit

General Design Guidance

Protected Bike Lane

- Parking stops to be centered between retroreflective 6" and 4" white stripes, with a minimum spacing of 5' and a maximum spacing of 15' to discourage motorists from using portions of the bike lane for movement or parking

Bike Corral

- For mid-block locations, place parking stop on either side of the bicycle rack(s), between the retroreflective 4" double white stripe at the edge of the adjacent parallel parking space
- For corner / site triangle conversion locations, a single parking stop may be used, placed between the retroreflective double 4" stripe at the edge of the adjacent parallel parking space

Parklet

- Place a parking stop on either side of the parklet, perpendicular to the curb and centered within the striped buffer and parallel parking space(s)

Chicane

- Place parking stops along chicane perimeter, centered between the retroreflective 4" double white stripe.

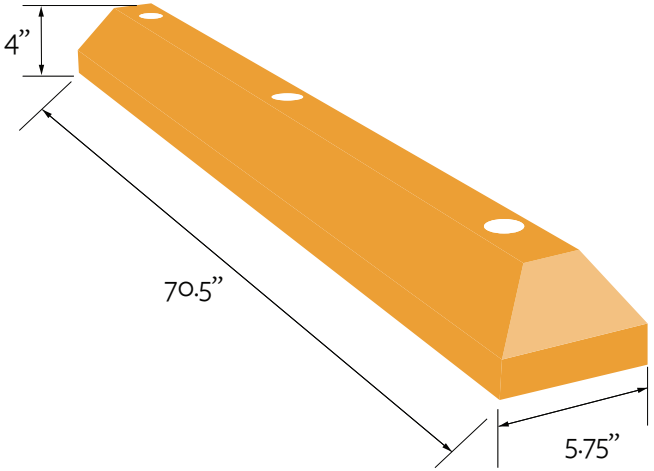
Mini-Roundabout / Neighborhood Traffic Circle

- Place parking stops with equal spacing in a circular fashion or create a star pattern to provide a mountable barrier demarcating the roundabout island

Design Notes

- Parking stops are available in various sizes; 70.5 or 72" "L x 5.75" W x 4" H is recommended for most applications; 6" height may be warranted in some instances
- Parking stops are available in a variety of materials: plastic, rubber, or concrete; Use plastic curb stops for demonstration projects only, rubber or concrete for Quick Build or interim design projects
- Ensure parking stop placement does not interfere with stormwater flow or accessibility
- Delineator posts may be placed atop parking stops for enhanced visibility
- Parking stops may be removed during winter months, or set back a minimum of 18" to avoid plow blades

DETAIL



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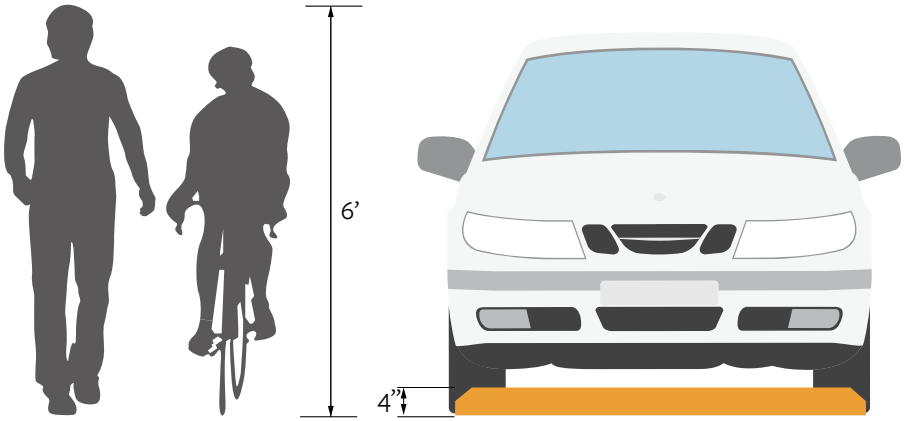
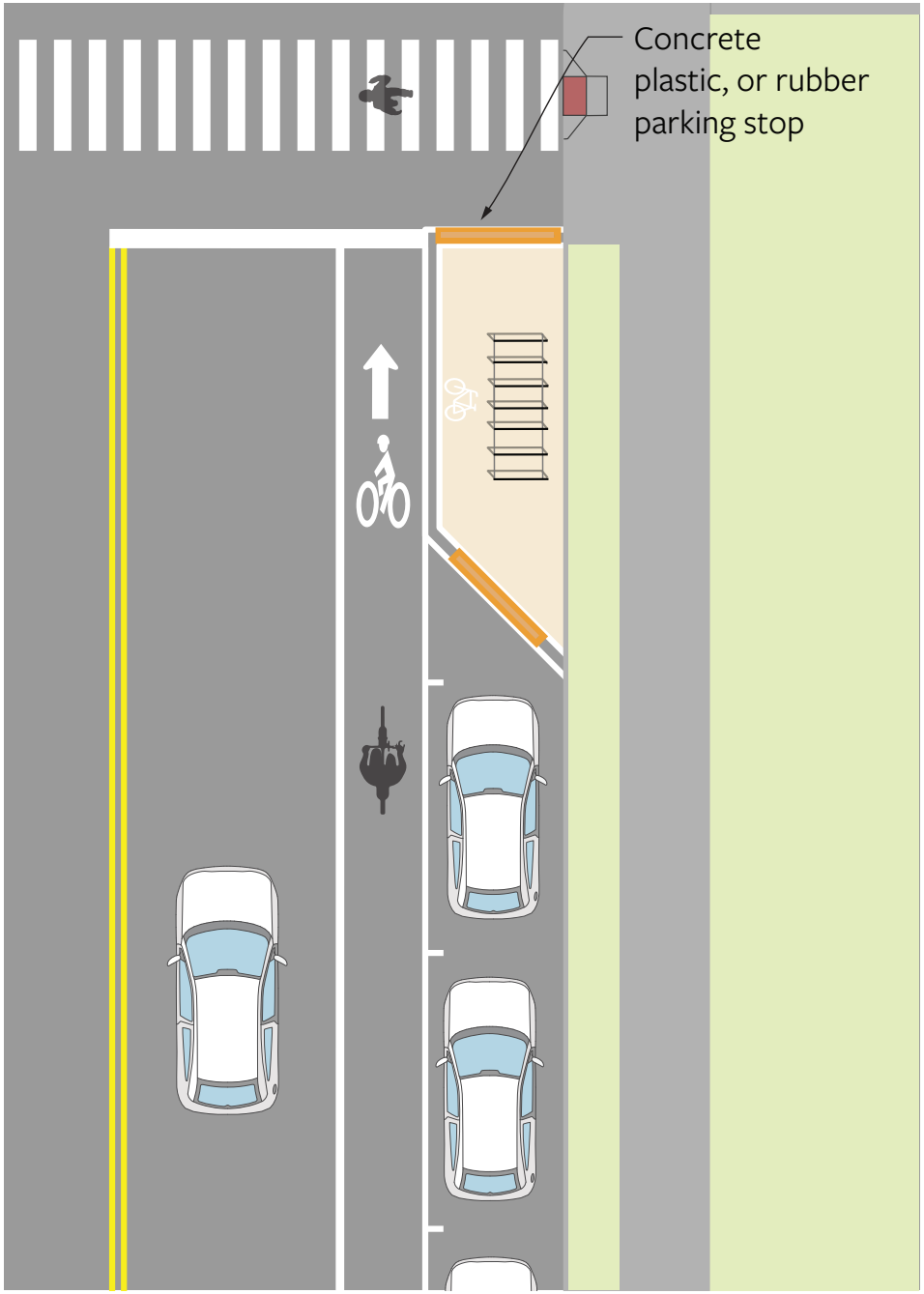




4.1. TUFF CURB XLP + DELINEATOR POST

Applications

Protected Bike Lane | Pedestrian / Bicyclist Refuge Island / Island | Mini-Roundabout / Neighborhood Traffic Circle

Components

- Modular base segment ("tuff curb")
- Delineator post with reflective strip

General Design Guidance

.Protected Bike Lane | Bicyclist Refuge Island

- Center tuff curb / bike lane delineator posts between retroreflective 6" and 4" white buffer stripes, with a minimum spacing of 3" and a maximum spacing of 15' to discourage motorists from encroaching into the bike lane for movement or parking
- May place tuff curb end-to-end at select locations (intersection ingress / egress); a 3" gap should be left between segments to maintain stormwater flow; larger gaps may be required to facilitate mid-block turn movements for cyclists

Pedestrian / Bicyclist Refuge Island

- Tuff curb / delineator posts should be placed between retroreflective 4" double white perimeter stripes, with a minimum spacing of 5' and a maximum spacing of 10'
- Tuff curb / delineators posts shall be placed on the outside edges of the crosswalk, parallel with the direction of vehicular travel, and may be placed / spaced strategically in other locations to facilitate detection / accessibility
- Where bi-directional crossbikes are present, tuff curb / delineator posts should be placed parallel to vehicular travel on the outside edges of the two crossbike markings; where uni-directional crossbikes are used, tuff curb / delineator posts should be placed on the crossbike edge nearest to oncoming vehicular travel

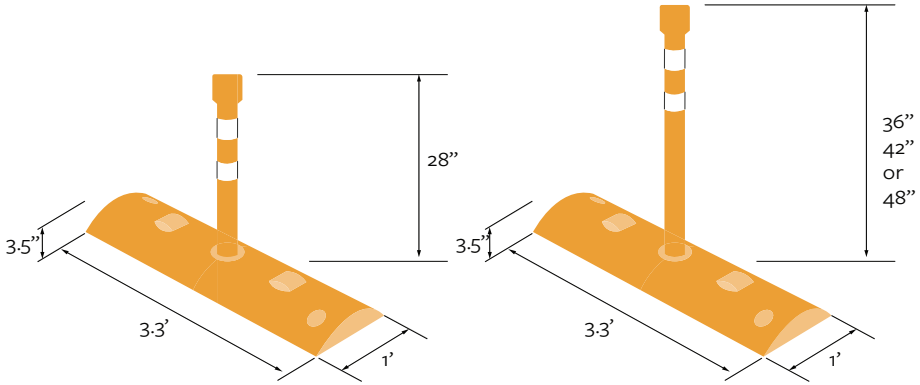
Mini-Roundabout / Neighborhood Traffic Circle

- Tuff curb / delineator posts should be placed end-to-end in a circular formation to create a roundabout / traffic circle island, leaving small gaps to accommodate stormwater flow where necessary

Design Notes

- Tuff curb / bike lane delineator posts are available in 28," 36," 42," and 48" heights
- Modular quick curb spacing may be customized for local conditions (driveways, short blocks etc.) and to maintain stormwater flow
- Tuff curb / delineator posts may need to be removed seasonally to facilitate snow storage / removal
- Diminishing aesthetic quality / durability can present challenges for some quick build design projects; monitor replacement rate and decide whether a more robust vertical barrier element is appropriate / cost effective for the context
- Use 28" delineator posts along protected bikeways or wherever application may conflict with bicycle handlebars
- Tuff curb / delineator posts may be paired with other vertical barriers, such as circular or rectangular planters

DETAIL



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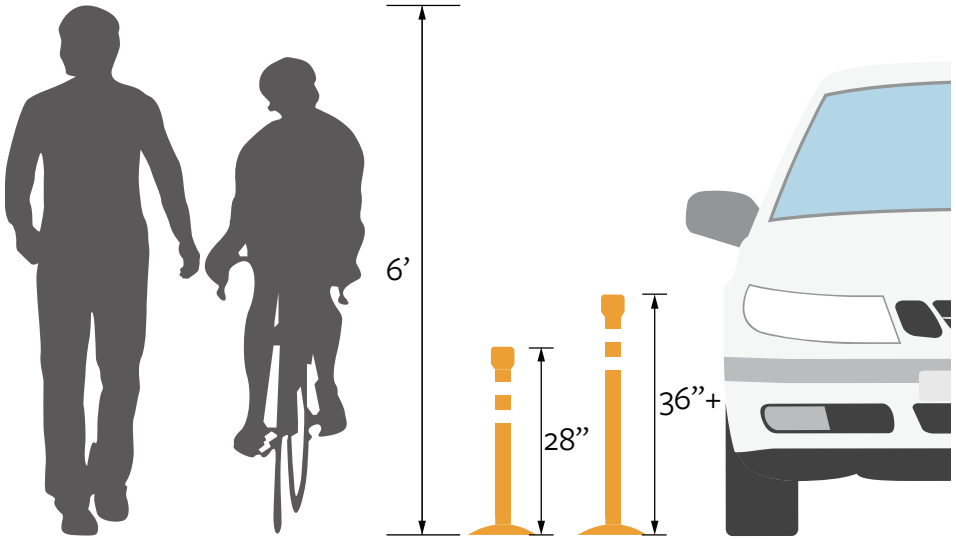
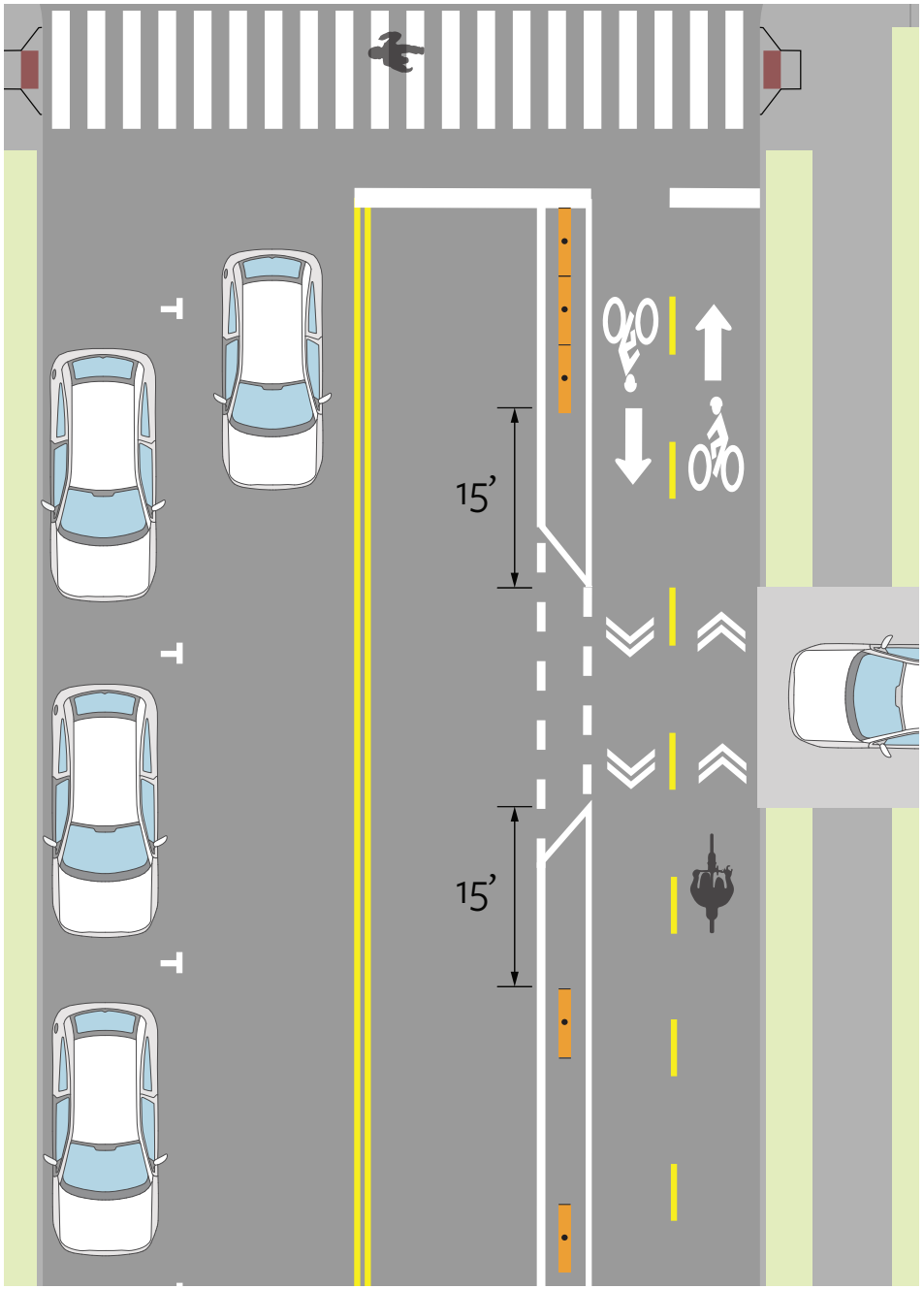




4.J. RUBBER ROUNDABOUT ISLAND

Applications

Mini-Roundabout / Neighborhood Traffic Circle

Component

- Gummitechnik Mini-Roundabout

General Design Guidance

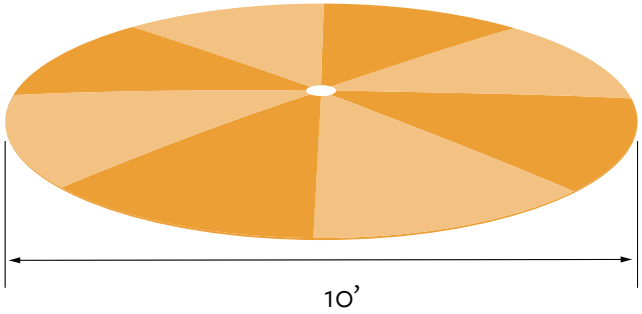
Mini-Roundabout / Neighborhood Traffic Circle

- Place roundabout Island in the middle of the intersection, leaving 15' clear between the outside edge of the Island and the vertex of the curb radii

Design Notes

- Mountable profile ensures emergency and city service vehicle access, and minimal / no stormwater obstruction
- If necessary, remove for winter to facilitate snow plowing / removal.
- May lead to decreased safety perception for people walking or cycling; pair with other traffic-calming to help control speed of motorists entering the intersection

DETAILS



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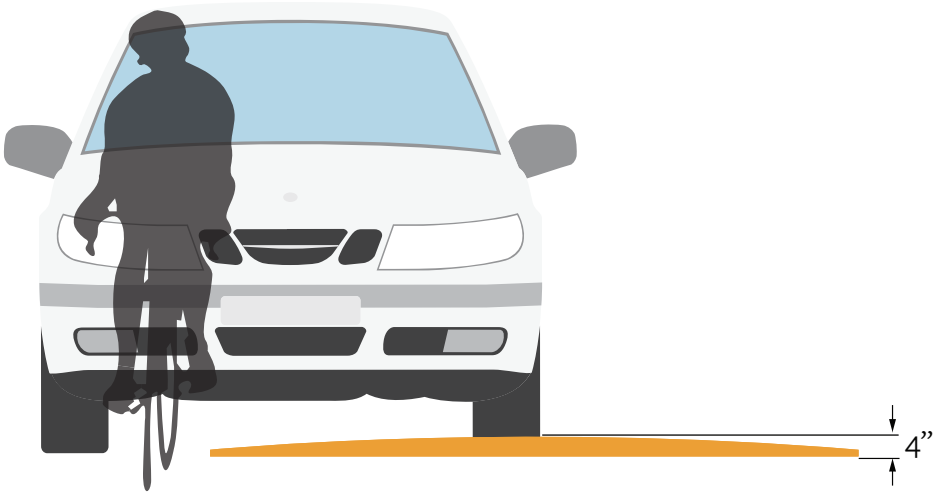
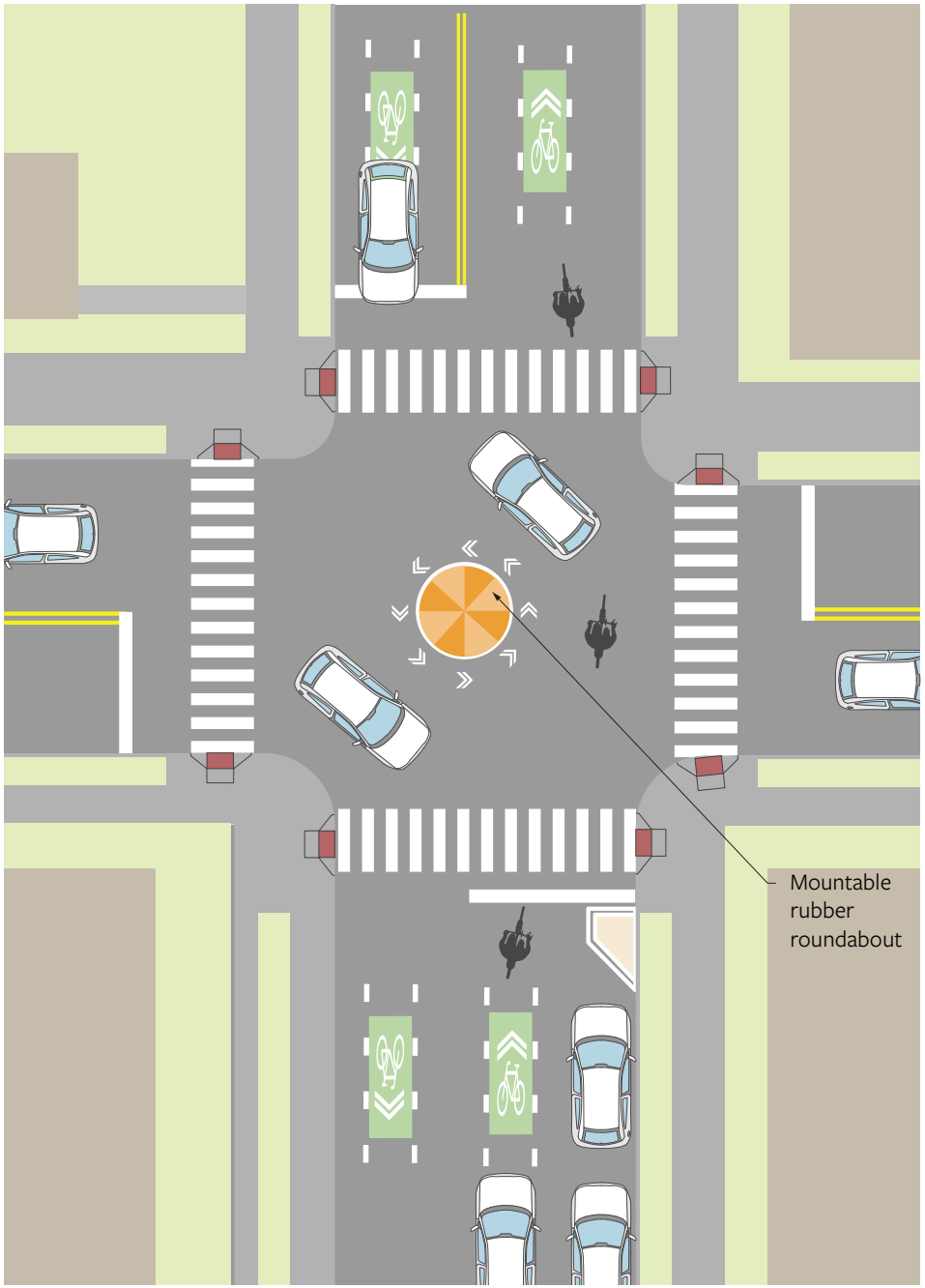




4.K. SPEED HUMP / SPEED CUSHION

Applications

Neighborhood Greenway | Neighborhood Slow Zone

Components

- Asphalt speed hump
- Vulcanized rubber speed cushion

General Design Guidance

Neighborhood Greenway | Neighborhood Slow Zone

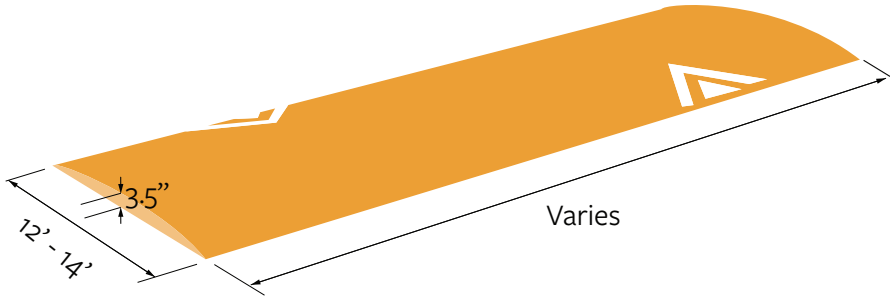
- Speed humps / cushions should be used almost exclusively on street designated as residential Slow Zones or Neighborhood Greenways
- The spacing for and height of speed humps / cushions should be determined based on the target speed of the roadway. Speed humps, and other traffic calming elements, should be spaced no more than a maximum of 200 ft. apart and be a height of 3" - 4" to achieve target speed of 15 - 20 mph
- Speed humps / cushions shall not be placed in front of driveways or other rights-of-way requiring a curb cut; Where frequent driveways make the application of a speed hump difficult, work with local residents to develop other traffic-calming solutions
- Where used on bus routes, major emergency access routes and / or commercial corridors, speed cushions designed to accommodate the wheelbase of such vehicles should be selected over speed humps
- Speed hump slopes should not exceed 1:10 or be less steep than 1:25. Side slopes on tapers should be no greater than 1:6. The vertical lip should be no more than a quarter-inch high
- Where curbside bicycle lanes exist, taper the speed hump width to allow a 2.5' clear 'cycling slot' smooth bicycle passage, which may also facilitate better stormwater drainage

Design Notes

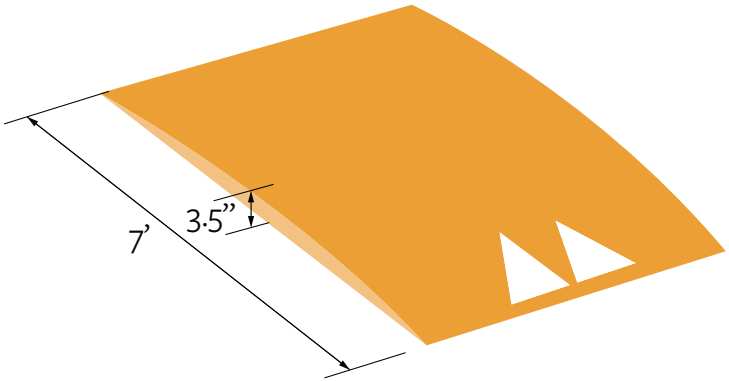
- Speed humps may be applied on 1-way or 2-way streets
- Vertical speed control elements (like speed humps) shall be accompanied by a sign warning drivers of the upcoming device
- Vulcanized rubber speed hump units may be removed for road resurfacing, snow plows, or to test the product at various locations

DETAILS

Speed hump



Speed Cushion



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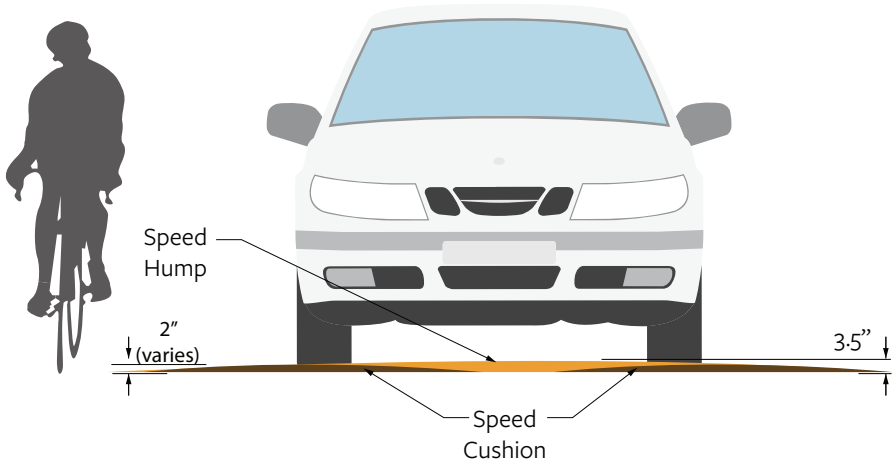
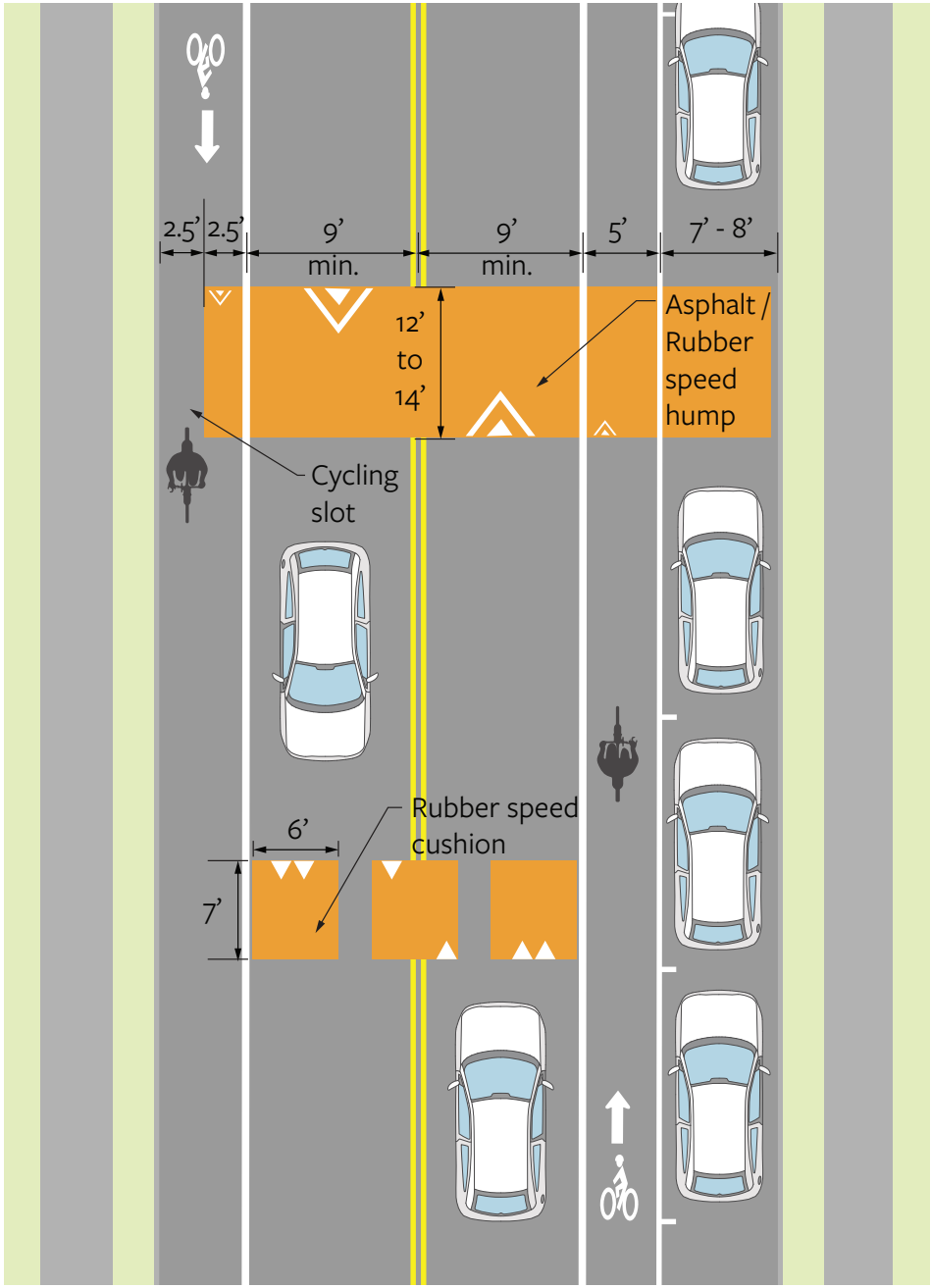




4.L. ZICLA BUS PLATFORM

Applications

Bus / Bike network overlap | Transit stops where vehicle conflicts reduce safety or increase transit delay

Components

- Bus Platform
- Curb sections
- Curb end sections
- Interlocking modules
- Access ramps
- Thru bike lane (optional)
- Traffic ramp (optional - bike lane)

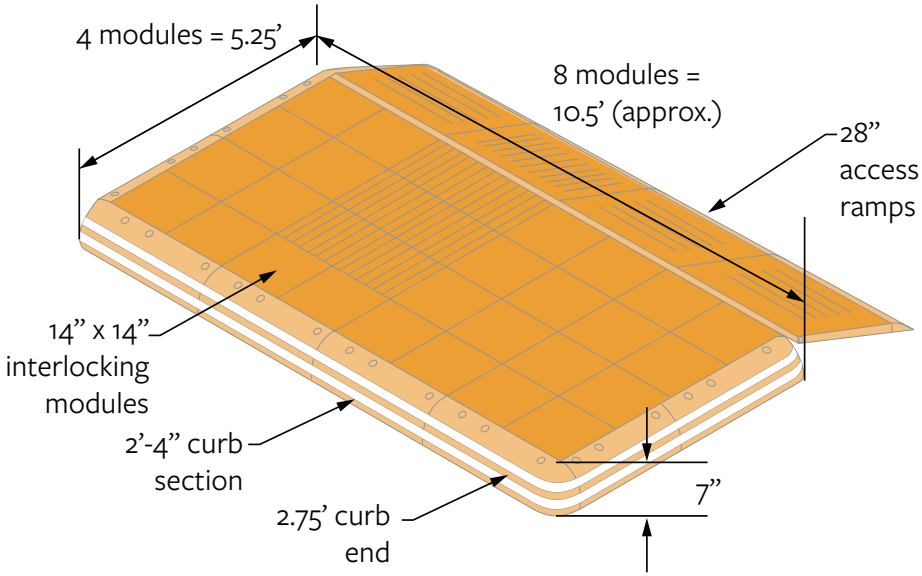
General Design Guidance

- The Ziclas bus platform is modular and able to be assembled to various, desired widths and lengths
- Access ramps can be adjusted to height of adjacent curb / sidewalk

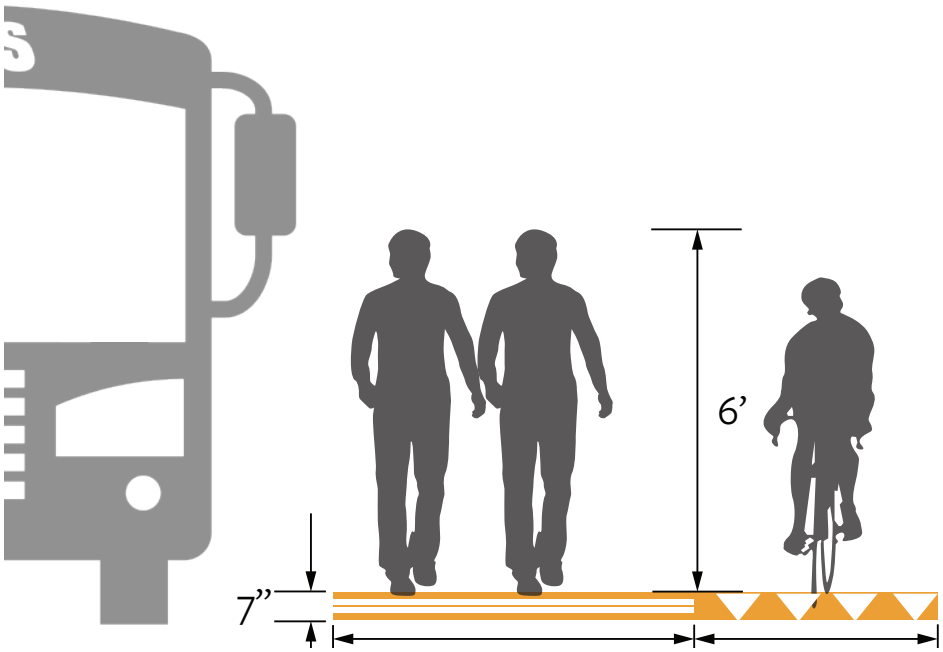
Design Notes

- Bus platforms prioritize transit by allowing buses to pull out immediately after picking up passengers, without having to wait to merge back into traffic
- Bus platforms provide space for passengers to wait on a non-slip, elevated surface, visible to bus drivers, and separate from the sidewalk
- Bus platforms can be placed in existing on-street parking lanes or wide bike lane buffers
- The Ziclas access ramp allows bus platforms to be installed quickly where curb cuts do not currently exist
- Thru bike lanes can reduce bike / pedestrian conflicts by reducing the need for passengers to negotiate crossing the bike lane and boarding the bus simultaneously
- Thru bike lanes can reduce bike / vehicle conflicts by providing a clear path while the bus is stopped at the bus stop

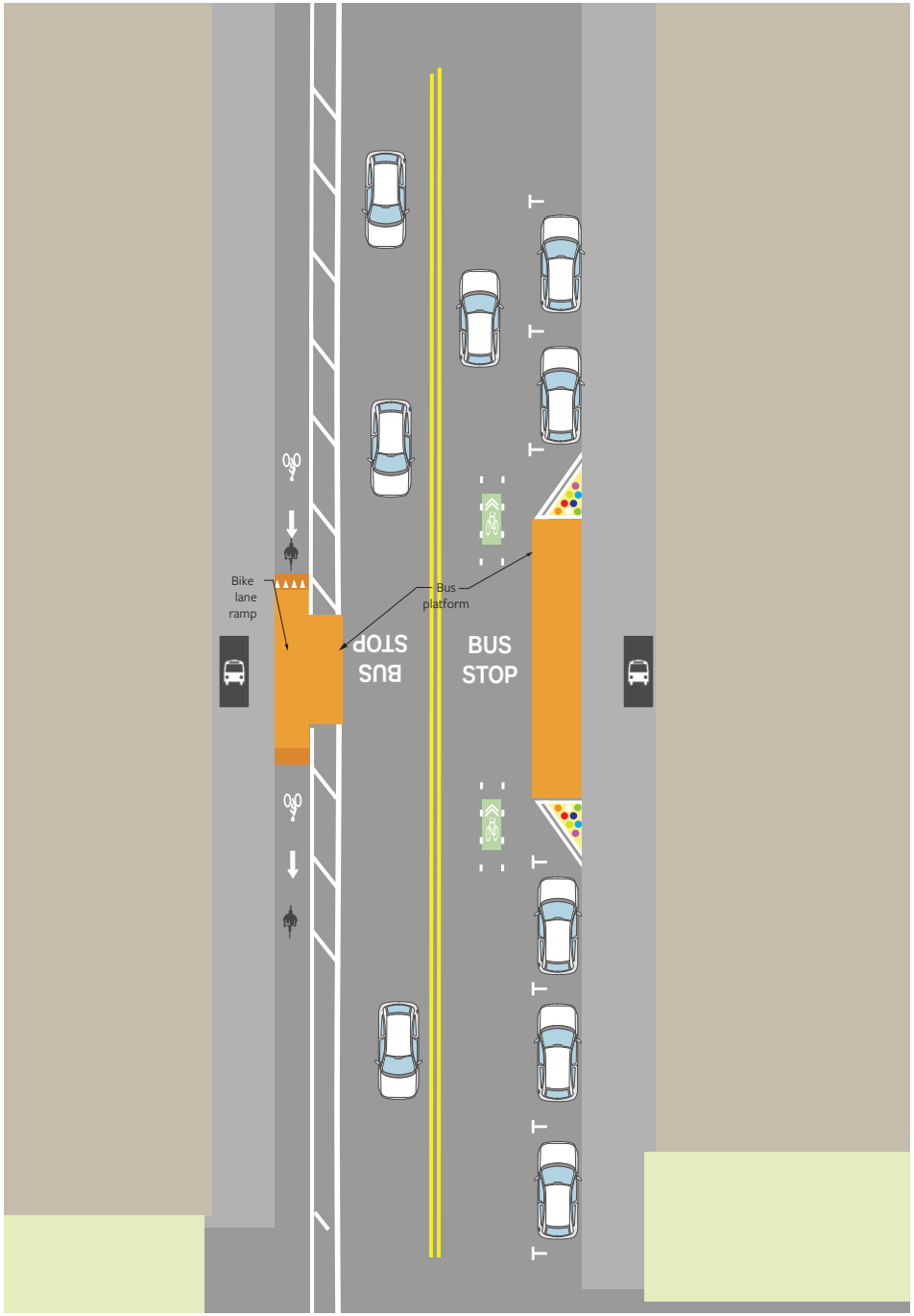
DETAILS



PROFILE



IN CONTEXT



SURFACE TREATMENTS

5. SURFACE TREATMENTS

Six materials may be used for surface treatment related to striping, marking, and designating street designs that support safe walking, bicycling, and driving. Because a few of the materials have not been used on Burlington's streets, it is anticipated that a range of materials and locations be tested so that performance / public response can be used to expand the materials list and shape quick build projects in the years to come. Indeed, The City of Burlington will need this flexibility as it optimizes surface material choices to address safety, durability, aesthetics, and maintenance concerns.

	RUBY LAKE GLASS	EPOXY GRAVEL	METHYL METHACRYLATE	ACRYLIC TRAFFIC PAINT	CONTRACTOR GRADE TRAFFIC TAPE	RETROREFLECTIVE THERMOPLASTIC
STRIPING + MARKING						
Crosswalk	●	●	●	●	●	●
Solid White Stripe				●	●	●
Dashed White Stripe				●	●	●
Stop Bar				●	●	●
Yield Line Markings				●		●
Directional Arrow				●		●
Chevrons				●	●	●
Shared Use Lane Marking (Sharrow)				●	●	●
Bike Lane Marking				●	●	●
Elephant Feet				●	●	●
PEOPLE WALKING						
Curb Extension / Refuge Islands	●	●	●	●		
Pedestrian Plaza	●	●	●	●	●	●
Mid-Block Crossing	●	●	●	●	●	●
Parklets	●	●		●	●	●
Intersection Murals				●	●	●
PEOPLE BICYCLING						
Green Backed Super Sharrow	●		●	●		
Bicycle Box	●	●	●	●		●
2-Stage Left Turn Box / Pocket	●	●		●		●
Green Crossbike / Conflict Area Marking	●			●		●
Bike Corral	●	●	●	●		
PEOPLE DRIVING						
Roundabout	●	●	●	●		
Flush Median	●	●	●	●	●	●
Chicane	●	●	●	●	●	●
Pinch Point	●	●	●	●	●	●
Site Triangle Visibility Zone	●	●	●	●	●	●

5.B SURFACE MATERIALS COLOR PALETTE

Colored pavement can amplify the visibility and intended use of Quick Build projects. For example, the use of green paint within a bicycle lane increases the visibility of the bikeway, identifies potential areas of conflict with motorists, and/or assigns priority to bicyclists along Neighborhood Greenways. Surface treatment materials are available in an almost unlimited number of colors, and creative use of these options is encouraged.
As such, the tan colored areas in this guide are candidates for colorful patterns and community murals. The Color Palette Matrix presented here is intended to guide the use of color for specific project types.

SURFACE TREATMENT COLOR	DESIGN APPLICATION NOTES	REQUIRED	RECOMMENDED	OPTIONAL
GREEN				
Through Movements				
Bike Lane Intersection Ingress	Paint 50' ingress to bike box entrance or intersection stop bar		●	
Super Sharrows	Use along all Neighborhood Greenways	●		
Turn Movements				
Bicycle Box	Use at signal controlled intersections where two on-street bikeways intersect		●	
Two-Stage Queue Box	Apply at signal controlled intersections where two on-street bikeways intersect		●	
Left-Turn Pocket	Use to facilitate left-turn movements from right-side bike lanes at T intersections		●	
Conflict Areas				
Crossbike Markings	The use of specific crossbike markings to be determined by conflict area type*	●		
Through Bike Lane / Combined Bike-Turn Lane	Use to continue bike lane where right-turn lanes are introduced at intersection approach	●		
Shared Bikeway + Bus Stop Conflict Zone	Apply where bike lanes interact with bus stop zones	●		
TAN				
Walking				
Pedestrian Plaza	Apply at irregular intersections with redundant street segment / excess capacity		●	
Pedestrian Refuge Islands	Use at mid-block crossings on multi-lane thoroughfares		●	
Curb Extension	Apply at crosswalks / where greater visibility / safety is desired		●	
Cycling				
Bike Corral	Use at corner or mid-block locations where space is limited / bike parking demand is high		●	
Bicyclist Refuge Island	Apply along Neighborhood Greenway or path crossings over multi-lane thoroughfares		●	
Driving				
Roundabout/Neighborhood Traffic Circle Island	Neighborhood Greenway, Neighborhood/Corridor Slow Zone		●	
Chicane	Neighborhood Greenway, Neighborhood Slow Zone		●	
Pinch Point	Neighborhood Greenway, Neighborhood Slow Zone		●	
Site Triangle Visibility Zone	Thoroughfares with on-street parking		●	
Flush Median	Neighborhood Greenway, Neighborhood / Corridor Slow Zone		●	

*See page for 26-27 for specific application guidance

SURFACE TREATMENT COLOR	DESIGN APPLICATION NOTES	REQUIRED	RECOMMENDED	OPTIONAL
STREET MURAL 				
Walking				
Pedestrian Plaza	Apply at irregular intersections with redundant street segment / excess capacity			●
Pedestrian Refuge Island	Use at mid-block crossings on multi-lane thoroughfares			●
Curb Extension	Apply at crosswalks / where greater visibility / safety is desired			●
Intersection Mural	Apply at low-speed and low-volume streets, such as Neighborhood Greenways / Slow Zones			●
Cycling				
Bike Corral	Use at corner or mid-block locations where space is limited / bike parking demand is high			●
Bicyclist Refuge Island	Apply along Neighborhood Greenway or path crossings over multi-lane thoroughfares			●
Driving				
Roundabout / Neighborhood Traffic Circle Island	Neighborhood Greenway, Neighborhood/Corridor Slow Zone			●
Chicane	Neighborhood Greenway, Neighborhood Slow Zone			●
Pinch Point	Neighborhood Greenway, Neighborhood Slow Zone			●
Site Triangle Visibility Zone	Thoroughfares with on-street parking			●
Flush Median	Neighborhood Greenway, Neighborhood / Corridor Slow Zone			●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