Washington Metropolitan
Area Transit Authority

April 23, 2024

MWCOG-RPTS Bus Stop Design Forum

Discussion Roundtable

RD OR SV BL YL GR metrobus Metro Access

Overview of Today's Session

Current State of Bus Stop Design | **Roundtable on Island Stops** | **Roundtable on Shared Stops** | **Roundtable on Stop Infrastructure**

Current State of Bus Stop Design

Designing for Multi-Modal Uses in Limited Space

Municipalities are moving toward more multi-modal roadways and corridors

- When designing for bike lanes (typically) the safest and most effective location is the space next to the sidewalk curb; coincidentally, this is also where bus infrastructure is placed (both stops and bus lanes).
- Limited space in many jurisdictions means that the ability to install bike lanes is limited by available road lanes, sidewalk widths, and/or external property owners (e.g., NPS in DC).
- Contrary to popular belief in both the public space and with elected officials, Bus Operators do not own or control the land under most bus stops in the region.
- Consistency of appearance and user experience for these installations is key but must be coordinated across multiple right-of-way owners.

A Wide Range of Separate Goals

Bus Operations

- *Improving travel speeds and dwell times*
- *Increased enforcement (Clear Lanes)*
- ? *How do operators know if customers are waiting at stop?*

Bicycle Safety

- *Increase use of protected bikeways*
- *Reducing conflict with other modes*
- ? *Concerns over bumps or curves behind stops?*

Pedestrian Access to Stops

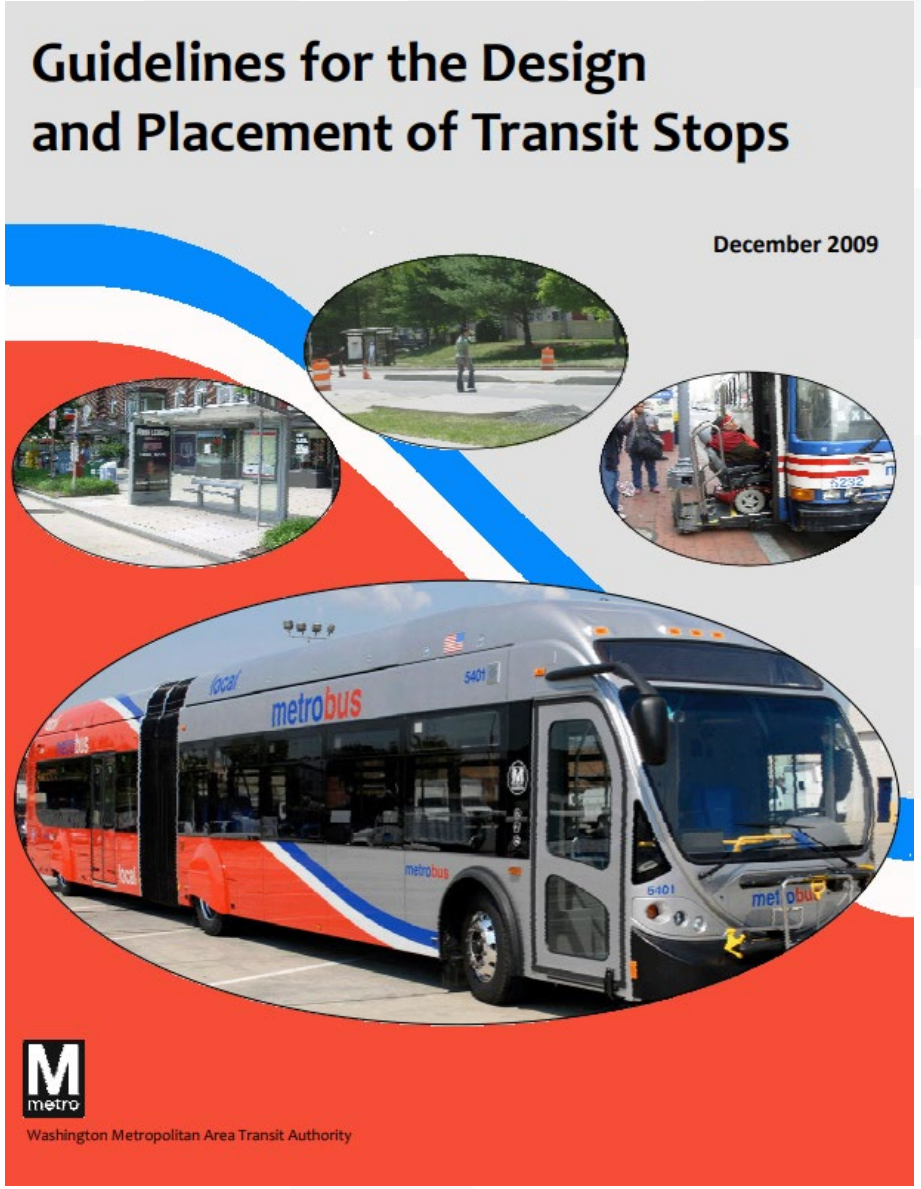
- *Sufficient space at stops for amenities*
- *Supporting all-door boarding efforts*
- ? *Confusion over where to wait?*

Accessibility for Disabled Riders

- *Buses fully meet the curb*
- *Easier boarding/ramp deployment*
- ? *How to navigate from sidewalk to stop?*
- ? *Awareness of other modes (bike and bus)*

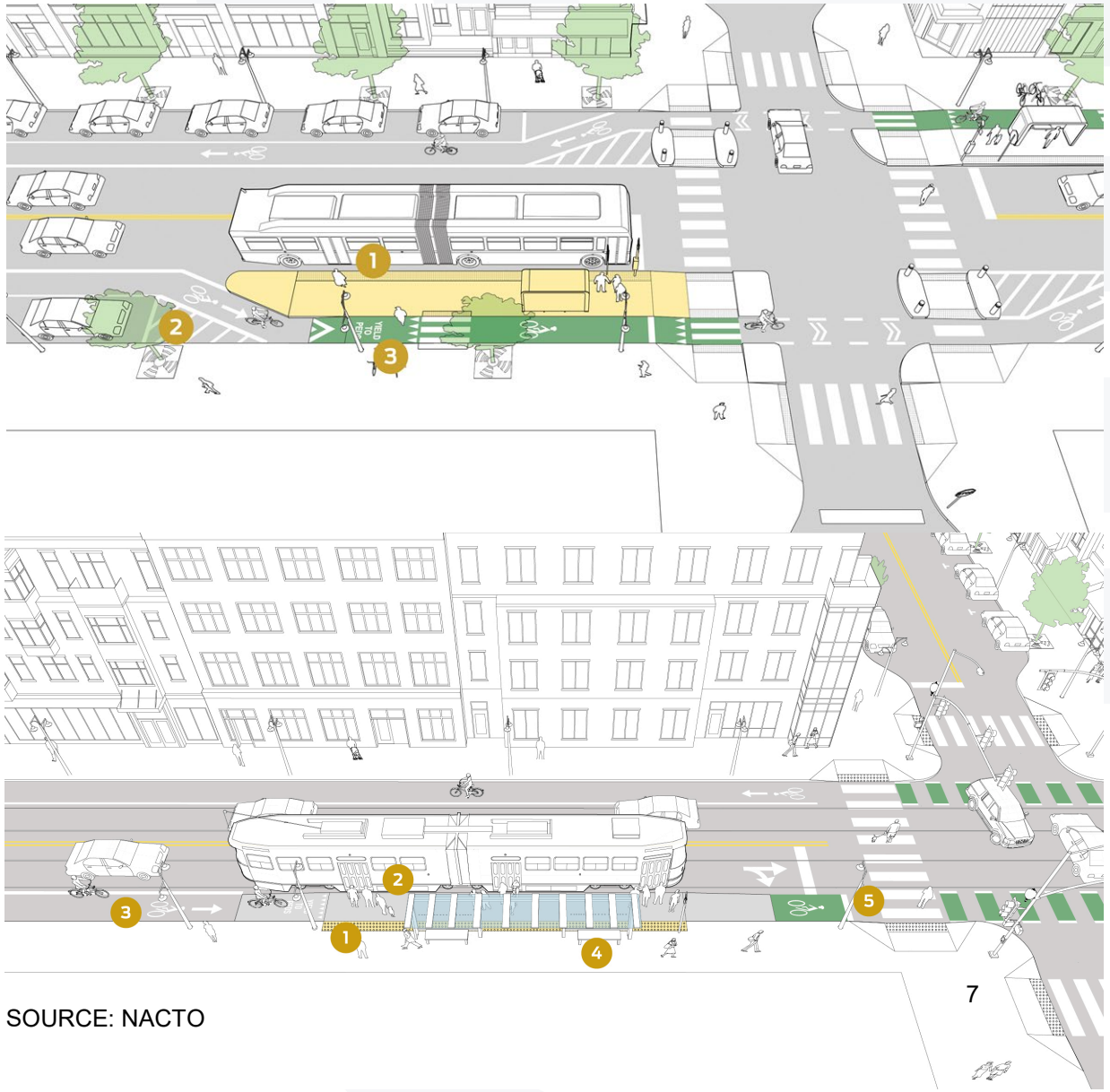
What Guidelines Exist?

- WMATA has developed updates to its "Guidelines for Design and Placement of Transit Stops" document (pending board adoption)
  - *However, the update does not YET include guidelines specific to shared/island stops.*
- Local jurisdictions may have complementary documents for stop design (e.g. Arlington Co.)
- The Americans with Disabilities Act (ADA), Public Right-of-Way Accessibility Guidelines (PROWAG), and the Manual on Uniform Traffic Control Devices (MUTCD) provide regulatory guidance, but they may not account for every element of these stop designs.



Small Steps Toward Standards

- NACTO Transit Street Design Guide
  - *Provides some guidelines for prototypical stops (photos right; island stop above, shared stop below)*
  - *Does not explicitly provide standards for stop length, width, design materials, etc.*
  - *Does not fully account for installations at different intersection types (near side vs far side; mid-block; etc.)*
  - ***Not great, but the closest to a national consensus so far.***
- Initial progress toward regional consensus through local jurisdiction pilot programs (e.g. Montgomery County)



SOURCE: NACTO

Bus Boarding Island (1st Generation)

- In 2017, the County built its first bus boarding islands, with 4 on Spring/Cedar.
  - *Found that the 8' min platform isn't wide enough.*
  - *Channelized bike lanes present navigation challenges for wheelchair users.*
  - *All 4 are being rebuilt soon to upgrade them to our best-practices.*

Bus Boarding Island (2nd Generation)

- In 2017, took a group of blind and low-vision pedestrians to visit the floating bus stops along Spring Street.
  - *Suggestions were used to improve the next generation.*
- In 2019, we built 3 second-generation bus boarding islands.
  - *Heard significant concerns on certain design elements.*

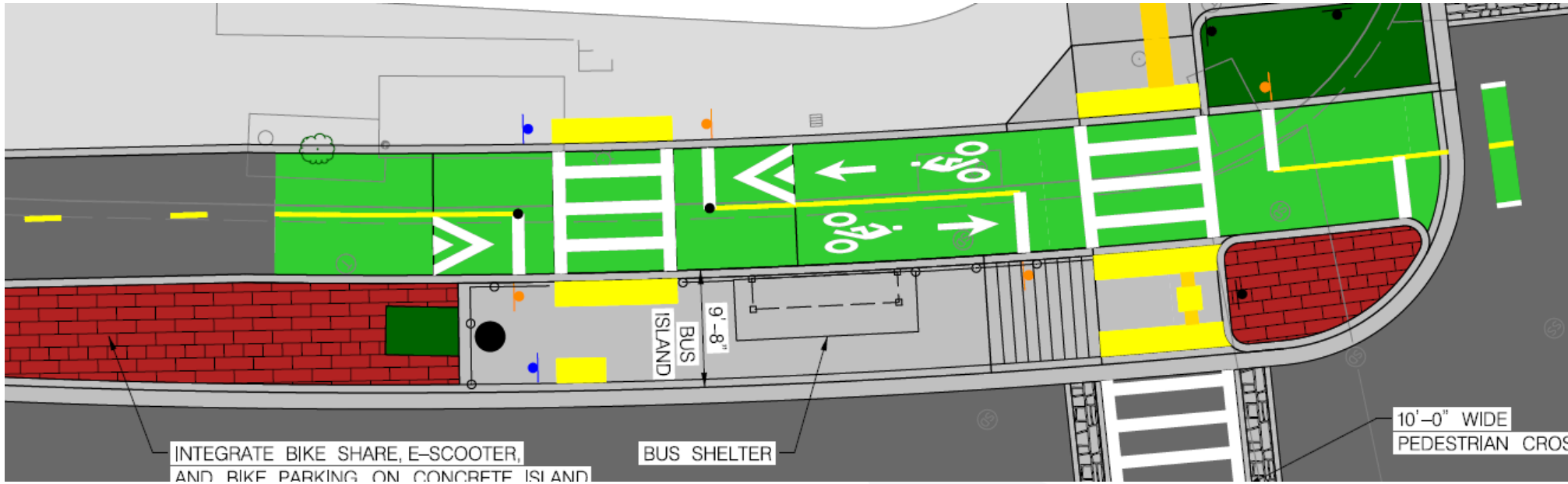
Designing Streets for People with Vision Disabilities

- Based on the feedback from people with vision disabilities, MCDOT applied to MWCOG for a TLC grant to study how to better design streets for people who have a vision disability.
- The study was completed in September 2021, and has been posted to our website.
- Recommendations for sidewalks, crossings, bus stops, lighting, public engagement, and staff training.
- The study also included a pilot design for an intersection in Silver Spring.

https://www.montgomerycountymd.gov/DOT/Projects/TLCVision/

Bus Boarding Island (3rd generation)

- Co-locate with signal
- Raised speed table at one end
- Sign on sidewalk in addition to on platform
- Tactile Walking Surface Indicators



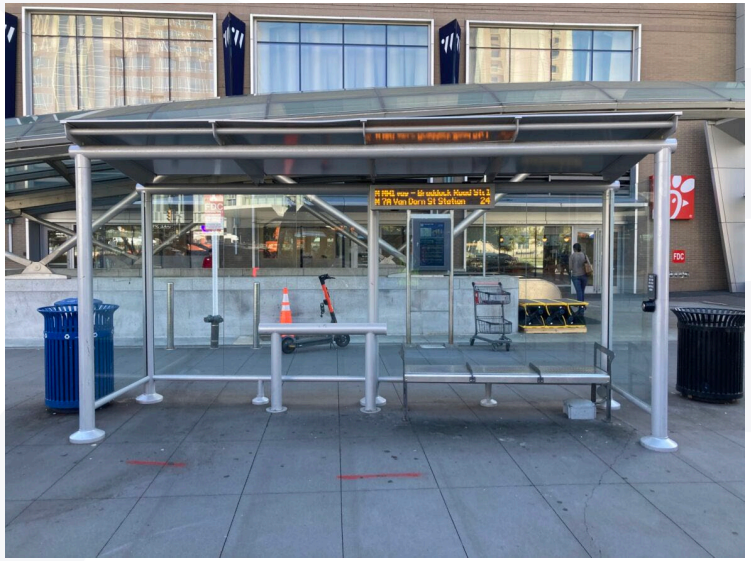
Bus Boarding Island Pilot

Roundtable Discussion Topics

Discuss Island Stops *(issues and proposals)*

Discuss Shared Stops *(issues and proposals)*

Discuss Stop Infrastructure and Amenities



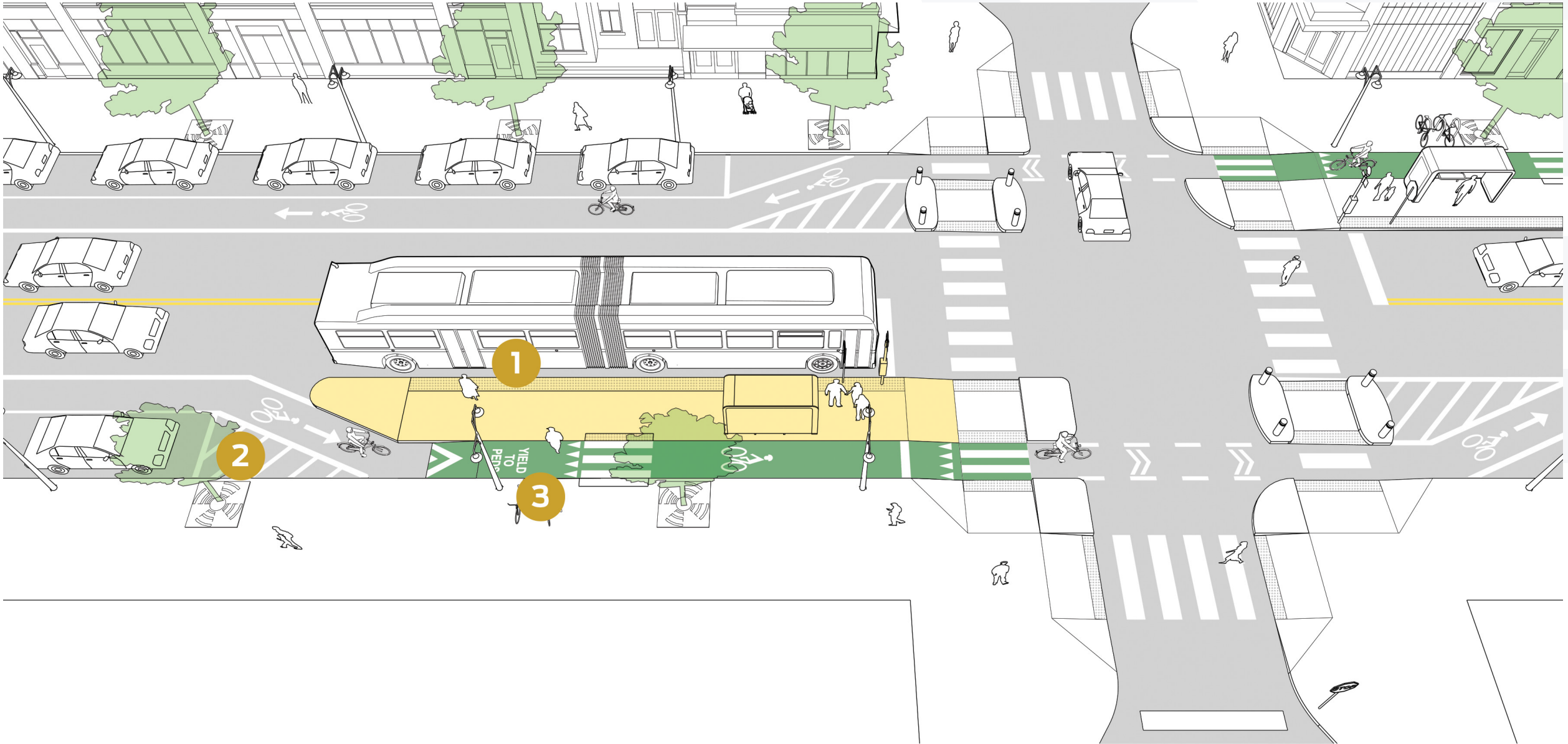
We know we will not solve all these questions today!

Island Stops (aka ‘Floating’)

Island Stops

- Sometimes called “floating” bus stops, these installations route the bike lane behind a wide (6+ ft.) bus platform.
- Typical in areas with a wider street; less common in dense urban cores (though they do exist!)
- Provides a separate ‘waiting’ area for bus riders but introduces a new crossing over the bike lane to get to the island.
- For bus riders with a disability, how should access to the island be addressed?
- How can we highlight for bicyclists the areas where riders will cross?
- How to ensure consistency across the region?

Side Boarding Island Stop (NACTO)

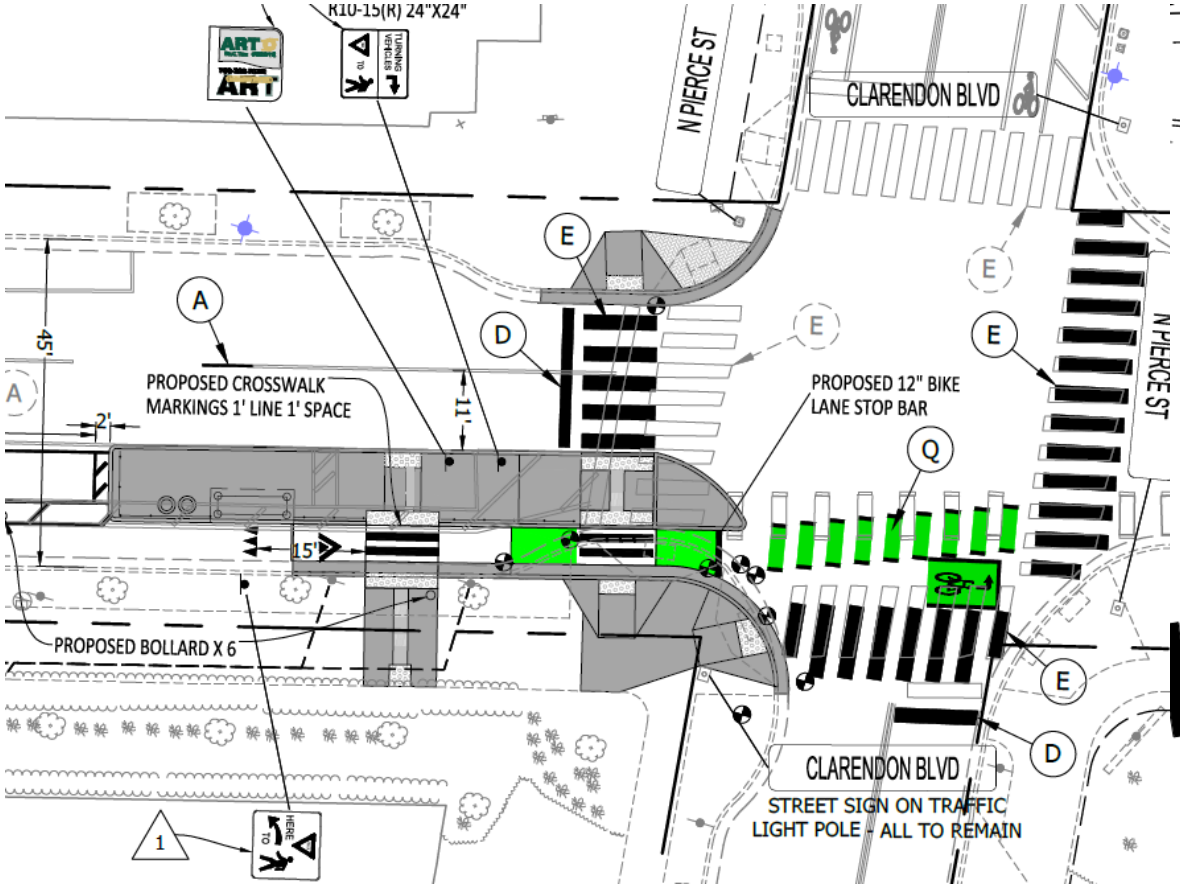


Example Island Stop (DDOT)

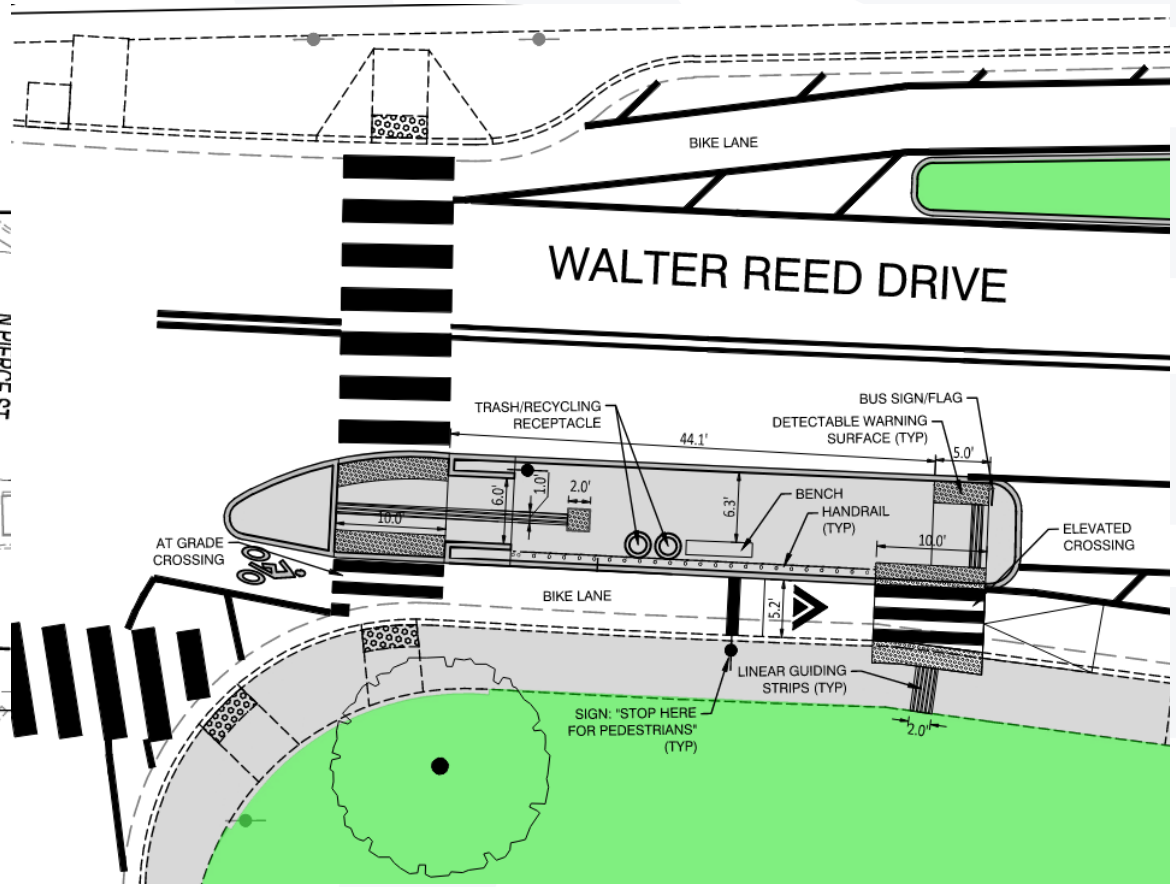
Type A: Island Stop

C St NE

Near Side Island Stop Design (Arl. Co.)

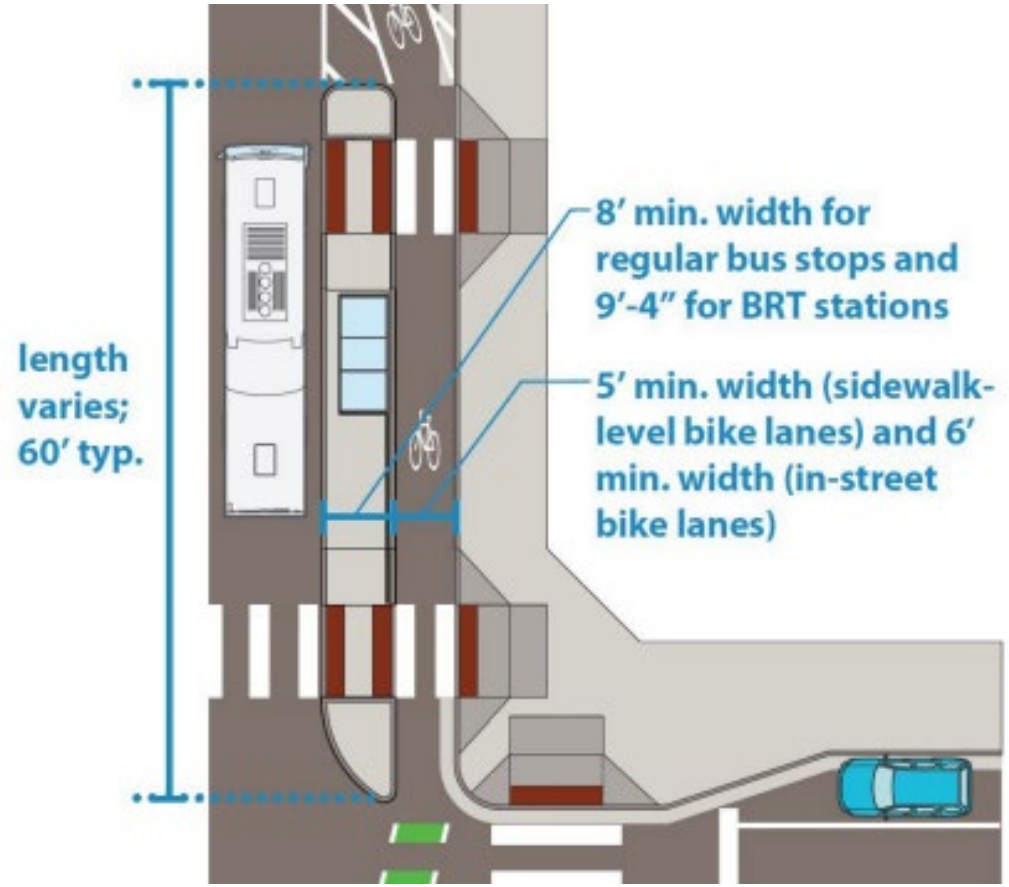


Near-side Island Stop

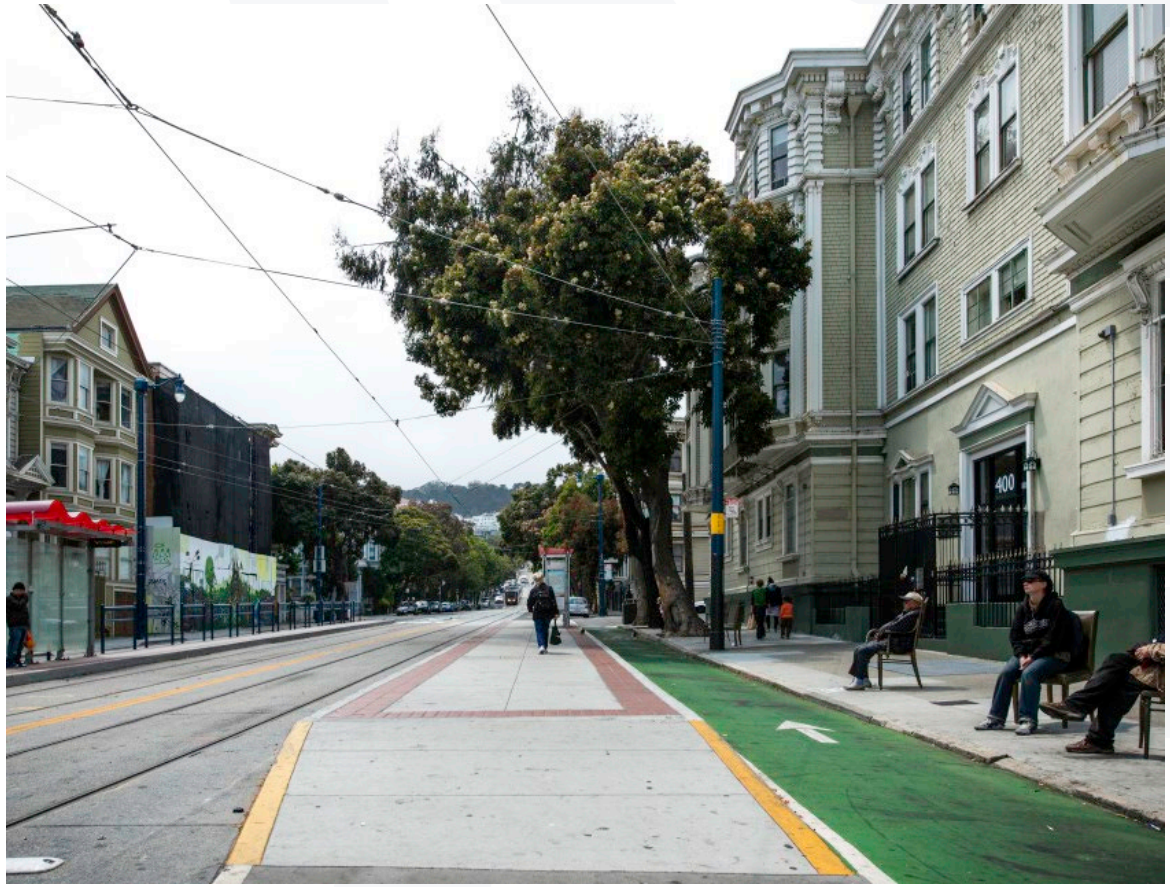


Far-Side (Unsignalized) Island Stop

Outside the Washington Region



Minneapolis Street Design Guide – Island Bus Stop



Church Street (SFMTA)

Outside the Washington Region

Inman Square - Cambridge, Massachusetts

12th Avenue South – Nashville Tennessee

Outside the Washington Region (International)

47 Broadway, London UK

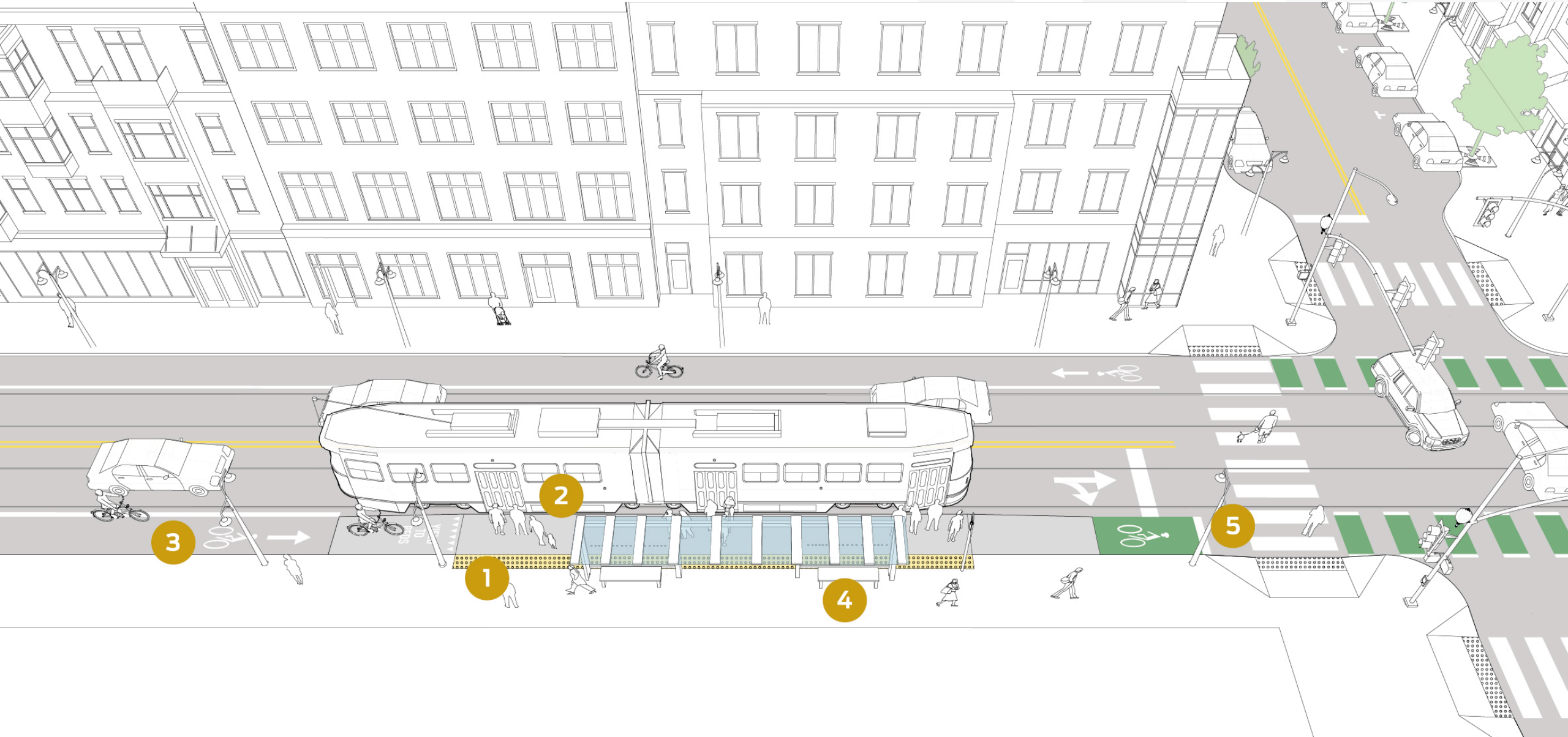
Mestre, Venice Italy

Shared Stops (bulb-outs)

Shared Stops

- Also called “bulb outs”, these installations extend the sidewalk out to meet the travel lane, allowing buses to stop without moving over to the curb.
- More common in denser urban areas.
- Can be constructed to match the existing sidewalk, (photo right) or can be installed more tactically using prefabricated segments
- How do we communicate to bus riders where they should wait for the bus (i.e. not in the green bike space)?
- How do we communicate to bicyclists that they need to slow down as they approach and traverse the stop?
- How to ensure consistency across the region?

Shared Cycle Track Stop (NACTO)



Example Shared Stop (DDOT)

Type B: Shared Stop

Where islands are not feasible, the boarding platform is integrated with the bike lane

Detectable warning surfaces at crossings

Green paint highlights the conflict zone for all road users

Vertical signs reinforce narrowing and alert people riding bikes that they should anticipate and stop for people boarding/alighting

Bike lane narrows to signal slow zone for bikes

Bike lane ramps up to sidewalk level, signaling to people riding bikes to slow

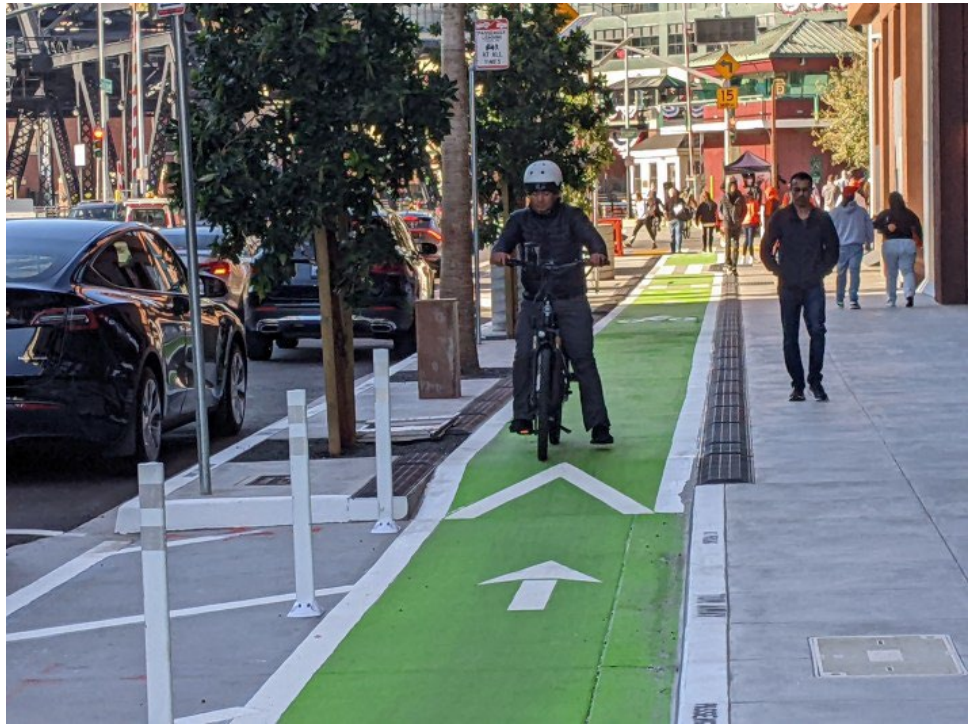
Penn Ave SE

Outside the Washington Region

Sidewalk Level Bike Lane in San Francisco

Outside the Washington Region

Sidewalk Level Bike Lane in San Francisco



Signage/Stop Flags & Amenities

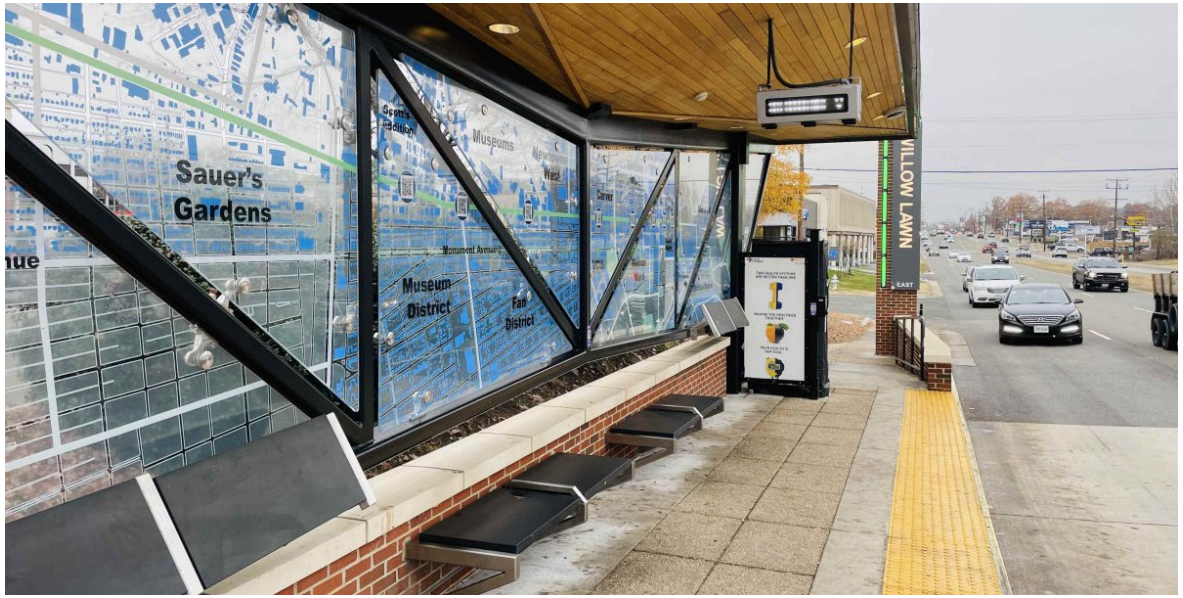
Consistency in Bus Stop Elements

- Aside from regional consistency in the design of shared bus-bike stops, increased coherence in how bus stops appear around the region can help riders feel more at ease as they move across the Washington Metropolitan Area.
- Elements such as bus stop flags, seating, lighting, messaging devices, real-time arrival screens, and others can help riders navigate consistently regardless of where their trips go.

Bus Stop Pylon with Amenities (ConnectPoint SmartStop – Santa Clara)

La Sombrita

Updated WMATA Shelter (at rail station)



Enhanced Bus Shelter (Richmond PULSE BRT)

Real Time Arrival Screen (E-Paper)

Tactical Seating Installation (Simme-Seat)

Next Steps

Next Steps

Bring This Info Back To Your Organizations

- Use the resources presented today to help others on your teams learn about the issues present in these stops.
- Reach out to WMATA staff to suggest elements to include in future updates of the Bus Stop Design Criteria

Continue The Conversation!

- Have a meeting about bus stops or bike lanes? Consider inviting some of the people you met today!
- Bring this discussion up to your elected officials, disability advocacy groups, etc.

Reconvene?

- As the discussions continue across the region, let MWCOG staff know if it would be helpful to have another session on this (or related!) topic.
- Other groups such as the National Capital Region Bus Leaders Subcommittee on Bus Stops and Amenities may also have opportunities for a regional meeting.

Thank you!

Washington Metropolitan
Area Transit Authority

Links for Reference

- AASHTO – Guide for the Development of Bicycle Facilities (2012 Edition)
- DDOT – Bus Priority Toolkit – Bus/Bike Stops
- FHA - Separated Bike Lane Planning and Design Guide
- Maryland.gov – In-lane Floating Bus Stops
- Minneapolis Street Design Guide - Bus Stops and Bikeways
- Montgomery County MD – Bicycle Facility Design Toolkit (page 59)
- SEPTA – Bicycle-Bus Conflict Area Study
- TriCounty Link (SC) – Transit and Bus Stop Guidelines (pg 3-9)
- TRIMET (Portland) – Island Bus Stop Demonstration Video
- Video of Cycling Around Dutch (Netherlands) Bus Stop
- Video of WMATA Metrobus Using Island Stop on 14th Street