



Community-Engaged Informed Floating Bus Stop Guidelines

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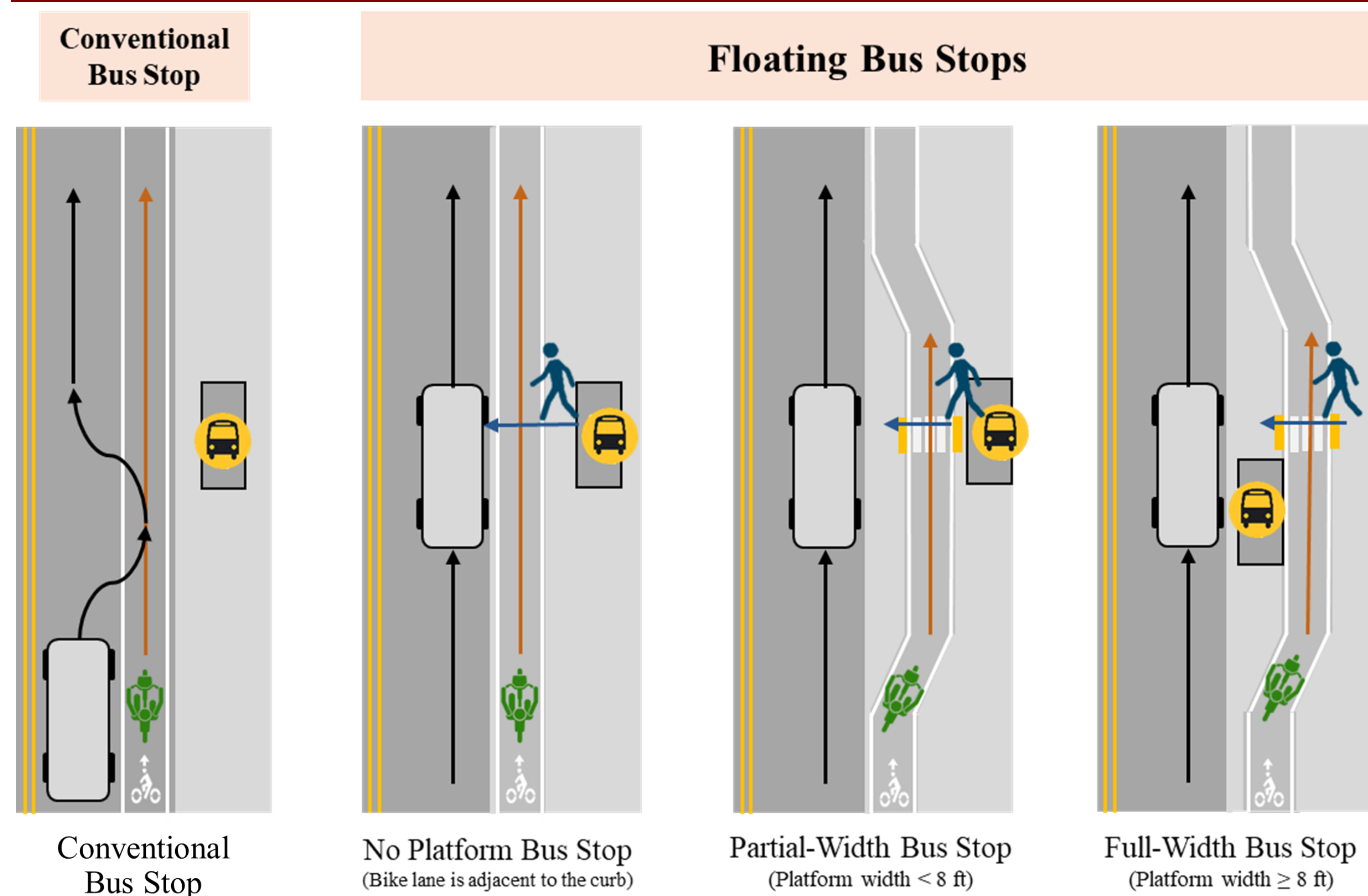
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Introduction



Advantages

- Eliminates bus-bike conflicts
- Raised platform for bus riders except no platform bus stops

Research Objectives

- Review current design guidelines and gather user and professional community input.
- Propose design guidelines to mitigate conflicts between bus riders of all abilities and bicyclists.

Disadvantages

- Create conflicts between bikes and bus riders
- Accessibility concerns

Methodology

Literature Review

- 20 guidebooks and research studies in the United States and internationally.



User Focus Groups

- 21 participants with visual, hearing, and/or mobility impairments.
- Sessions included description of bus stop types, sharing of participant experiences and concerns as well as their recommendations for improving accessibility.

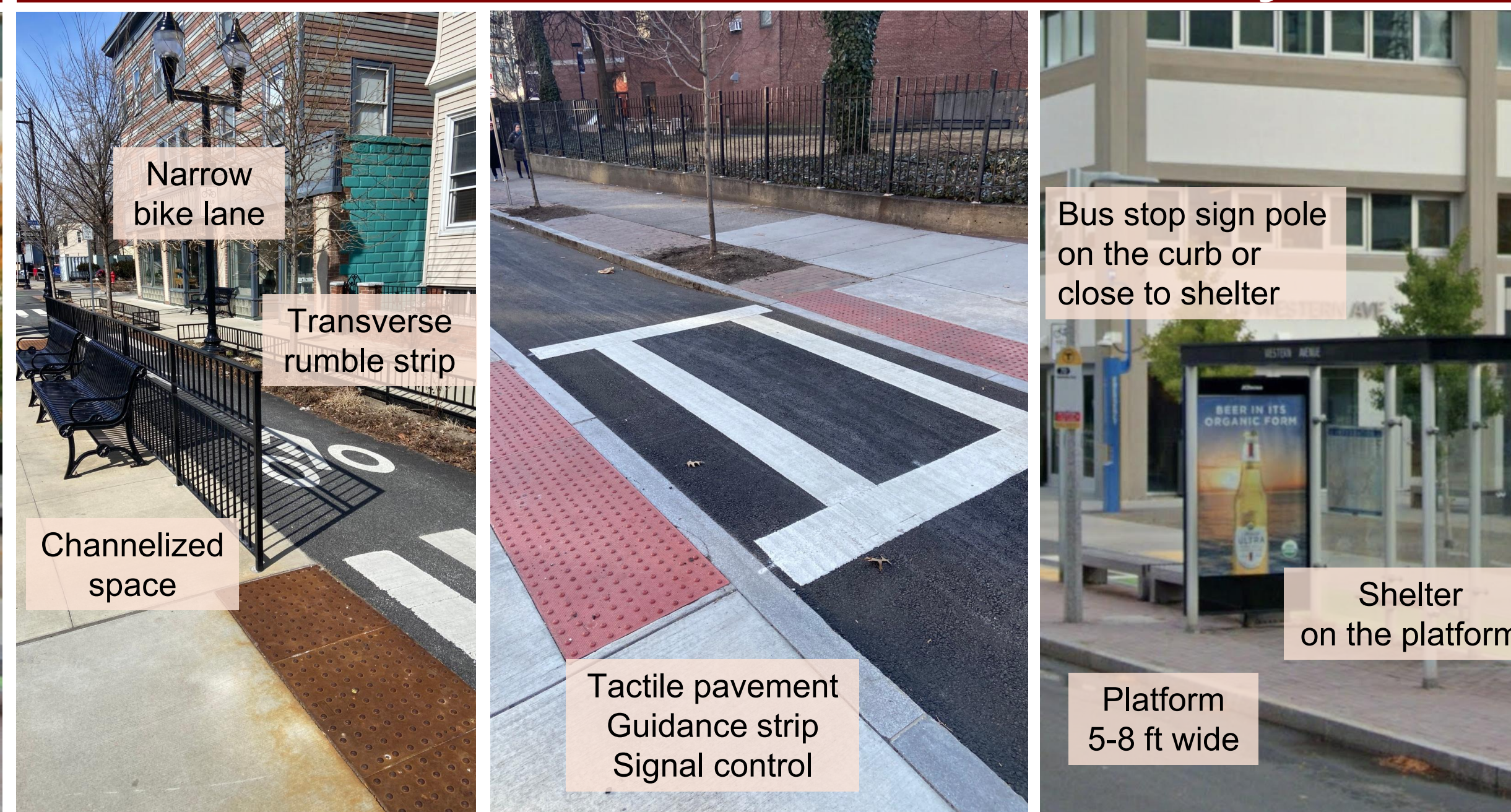
Professional Community

- Interviews with city officials and representatives of engineering and planning firms that have that have worked with cities that have integrated bus stops and bike infrastructure and developed design guidelines, i.e., Amsterdam, Netherlands; Montreal and Toronto, Canada; Montgomery County, MD, and Austin, TX.

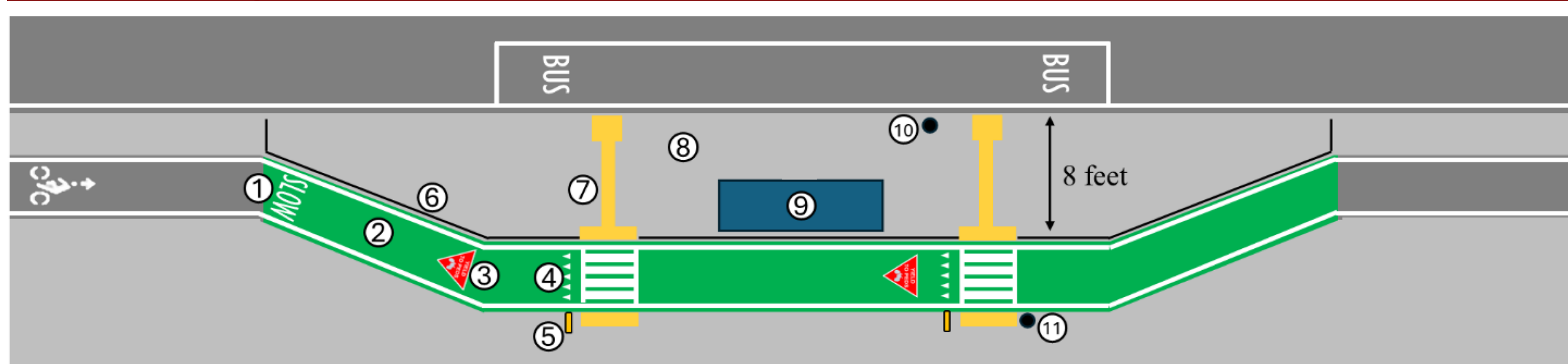
Feedback from User Focus Groups



Feedback from Professional Community



Proposed Design



- ① A "SLOW" stencil with colored pavement on the bike lane section approaching the bus stop area
- ② Vertical and horizontal deflection for the bike lane when approaching the bus stop area
- ③ A "YIELD TO PEDS" pavement marking before each crosswalk
- ④ Yield markings (sharks teeth) before crosswalks
- ⑤ An "In Street Crossing" sign or a "Bicycle Yield to Peds" sign on the sidewalk side of each crosswalk
- ⑥ Fences with openings only at crosswalks
- ⑦ Crosswalks that are aligned with boarding areas and equipped with tactile pavement
- ⑧ Platforms that are at least 8 feet wide
- ⑨ Shelters/benches that are located on the platform
- ⑩ A bus stop sign pole near the shelter/bench and boarding area
- ⑪ A secondary bus stop sign pole at the sidewalk side of a crosswalk to indicate the crosswalk location for visually impaired riders and provide bus route information

Acknowledgement

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Design Recommendations

Separation Between Bicycles and Pedestrians

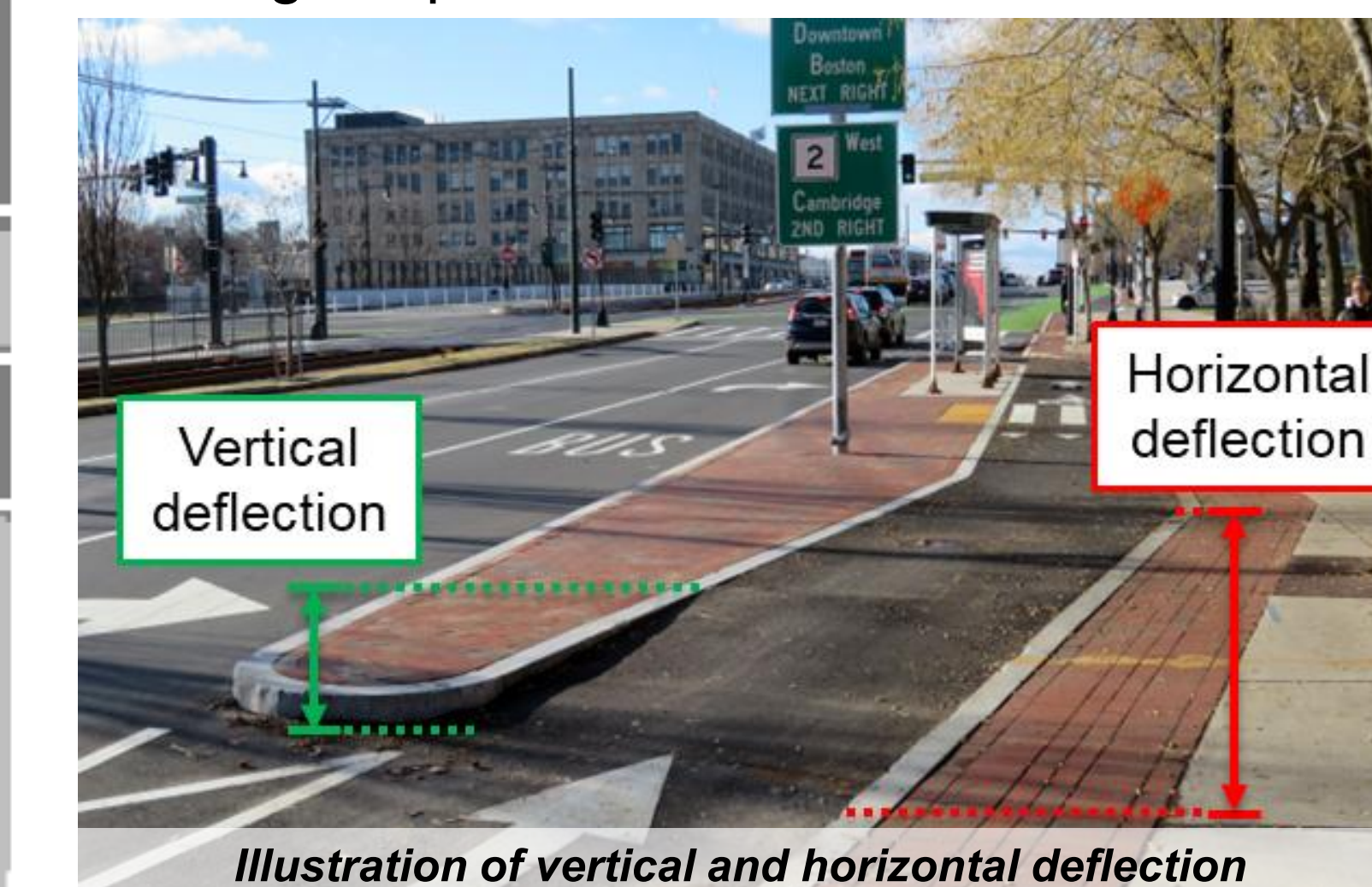
Stronger speed management strategies are needed when separation is weak

- Strong preference for *full-width platform bus stops*
 - Narrow/Divert the adjacent bike lane
- Stop bikes when the bus door is opened at *no platform bus stops*
 - Signage, markings, education



Bicycle Speed Management

- Vertical/Horizontal deflection
- Change in pavement surface



Wayfinding

- Align crosswalk, tactile pavement, and boarding area in a straight path
- Mark the location of crosswalks by installing flexposts or secondary bus stop sign poles



Future Work

- Evaluate speed management treatments using LiDAR-based trajectory data.
- Incorporate insights to further refine floating bus stop design guidelines.