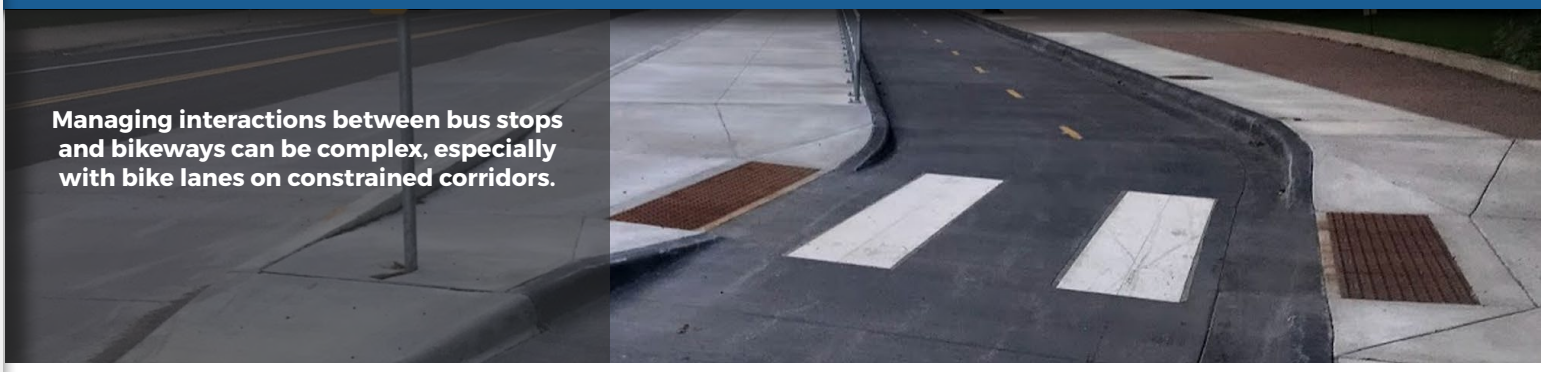
3.5D Bus stops and bikeways



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INTRODUCTION

Managing interactions between bus stops and bikeways can be complex, especially with bike lanes on constrained corridors. There are two main options for managing this interaction:

- Floating bus stops, which are preferred for protected bike lanes; and
- Bus stop mixing zones, which are the default bus stop design for unprotected bike lanes and can be utilized for protected bike lanes in constrained situations.

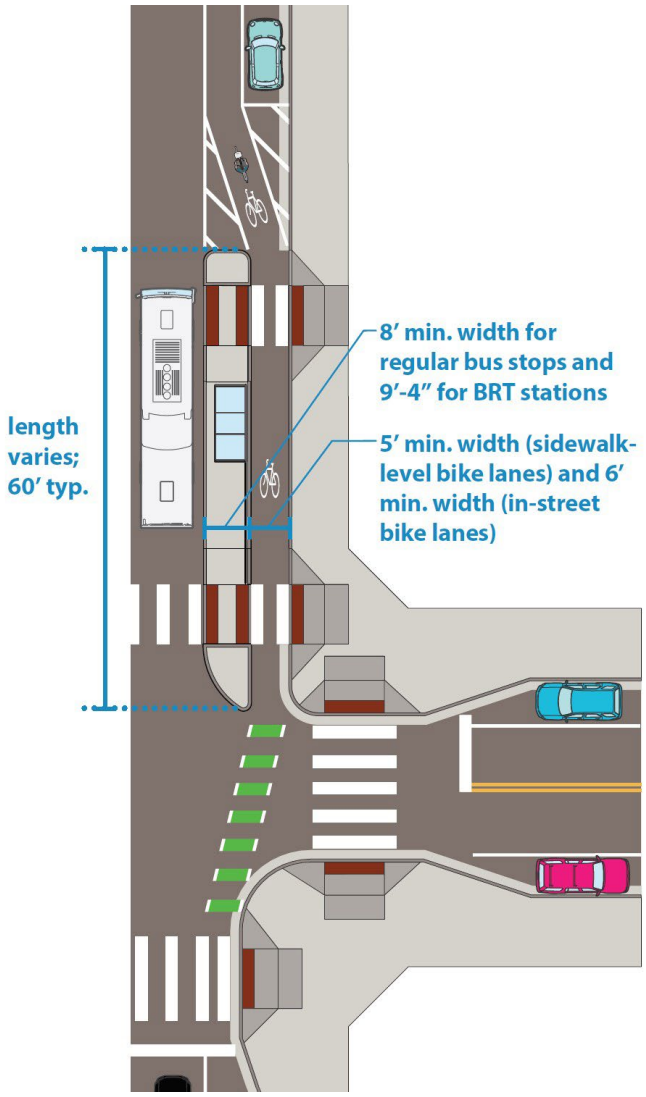
Additional treatments for managing bus and bikeway interactions will be evaluated for consideration in future updates to the Street Design Guide.

FLOATING BUS STOPS

Floating bus stops are the preferred design for managing interactions between bus stops and protected bike lanes. Floating bus stops channelize the bike lane behind the bus stop to separate bicycle traffic and people boarding, alighting, or waiting for transit. Floating bus stops allow buses to stop in-lane while maintaining physical bike lane protection without the need for a mixing zone.

Floating bus stops require pedestrians to cross the bikeway operating area to access the bus stop. Bicycle traffic is expected to yield to pedestrians crossing the bikeway.

Figure 3.5D.1:
Floating bus stop graphic



DESIGN CONSIDERATIONS

A. Design coordination	Floating bus stop design should be closely coordinated with Metro Transit.
B. Bus stop platform dimensions	**1.** Floating bus stop platform dimensions should generally align with guidance for regular-route bus stops and Bus Rapid Transit stations. **2.** The minimum width is 8' for regular-route bus stops and 9'4" for BRT stations. **3.** Bus platform length varies, but is typically a minimum of 60'.
C. Bikeway clearance	2' clear zone is preferred from the bikeway to the floating bus stop and any vertical obstructions, though a 0' clear zone may be considered in space-constrained corridors.
D. Roadway clearance	Any vertical obstructions located on the floating transit stop must maintain 1.5' clearance from the roadway face-of-curb.
E. Curb height	Floating bus stops are typically sidewalk-level (6") for regular service bus stops, and at a 9" elevation for Bus Rapid Transit (BRT) Stations.
F. Bikeway width	See sidewalk-level protected bike lane guidance for recommended bikeway width. A minimum bike lane operating width of 6' must be maintained for maintenance operations.
G. Bikeway design speed	For State Aid streets, steep bike lane tapers to accommodate the floating transit stop will require a State Aid variance if design speeds are less than 20 mph.
H. Stormwater maintenance	Floating bus stops must accommodate access to and maintenance of all stormwater infrastructure. Floating bus stop design should be coordinated with Surface Water and Sewers.

3.5D Bus stops and bikeways

I. Pedestrian and bike mixing zones

Employ pedestrian mixing zones where people biking must yield to pedestrians crossing the bike lane to access the floating bus stop. Design considerations for these mixing zones include:

1. For in-street bike lanes (retrofit projects):

- » Pedestrian crossings.
  - Considered raised pedestrian crossings across the bikeway to reinforce yielding to pedestrians.
  - Truncated domes and curb ramps (when there is a grade change) should be installed at all locations where pedestrians are expected to cross the bike lane operating area.
  - Consider crosswalk pavement markings at all locations where pedestrians are expected to cross the bike lane operating areas.
- » Bike lane differentiation. Consider using colored concrete to visually differentiate the bike lane operating space.
- » Slip-ramps. On-street bike lanes may employ slip ramps to raise up to sidewalk level adjacent to the floating transit stop.
- » Additional guidance. See in-street curb-protected bike lane guidance for additional details.

2. For sidewalk-level protected bike lanes (retrofit and full reconstruction projects):

- » Bike lane differentiation. Colored concrete or asphalt should be used to visually differentiate the bike lane operating space and standard concrete to delineate pedestrian mixing zones
- » Crosswalk markings. Consider crosswalk pavement markings at all locations where pedestrians are expected to cross the bike lane operating areas.
- » Detectable edge. A detectable edge (1' wide preferred; 0.5' minimum) should be implemented when sidewalk-level bike lanes are located directly adjacent to the pedestrian clear zone (see sidewalk-level bike lane guidance for addition details).
- » Sidewalk dimensions. See sidewalk zone guidance for recommended sidewalk widths by street type. 6' or wider pedestrian clear zones are recommended adjacent to sidewalk-level bike lanes. A minimum 4' pedestrian clear zone can be considered in rare, constrained situations where every consideration has been taken to narrow other street zones.
- » Additional guidance. See sidewalk-level protected bike lane guidance for additional details.