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INTRODUCTION

Sidewalk-level protected bikeways are at or near the elevation of the sidewalk and are physically separated from the roadway by a vertical curb. Sidewalk-level protected bike lanes are the preferred bikeway type for any street reconstruction project on a street identified as a low stress bikeway on the All Ages and Abilities Network where a shared use path or neighborhood greenway are unfeasible or not preferred. They may also be implemented as part of a roadway retrofit project, but other forms of protected bike lanes are more common in that scenario due to retrofit cost realities.



Sidewalk-level protected bike lanes on Washington Ave

Figure 3.4F.1:

Sidewalk-level protected bike lane dimensions table

Sidewalk-level Protected Bike Lane	Bike Lane			Buffer	
	Preferred Width (ft)	Minimum Width (ft)	Maximum Width (ft)	Minimum Width (ft)	Constrained minimum width to pedestrian clear zone (ft)
One-Way	6-7	5 ^{a b}	8	1.5 ^c	0.5 ^d
Two-Way	10-12	8	14		

a Constrained minimum widths should only be used for short stretches in constrained right-of-way where every consideration has been taken to narrow roadway street zones. Constrained minimum widths are inclusive of the gutterpan.

b A minimum combined bike lane and buffer width of 6' clear of any vertical obstructions must be maintained at all times to accommodate winter maintenance.

c 3' is recommended if buffer is adjacent to a parking lane; typical buffer without parked cars is 2' (or wider if the buffer has signs or other street furnishings).

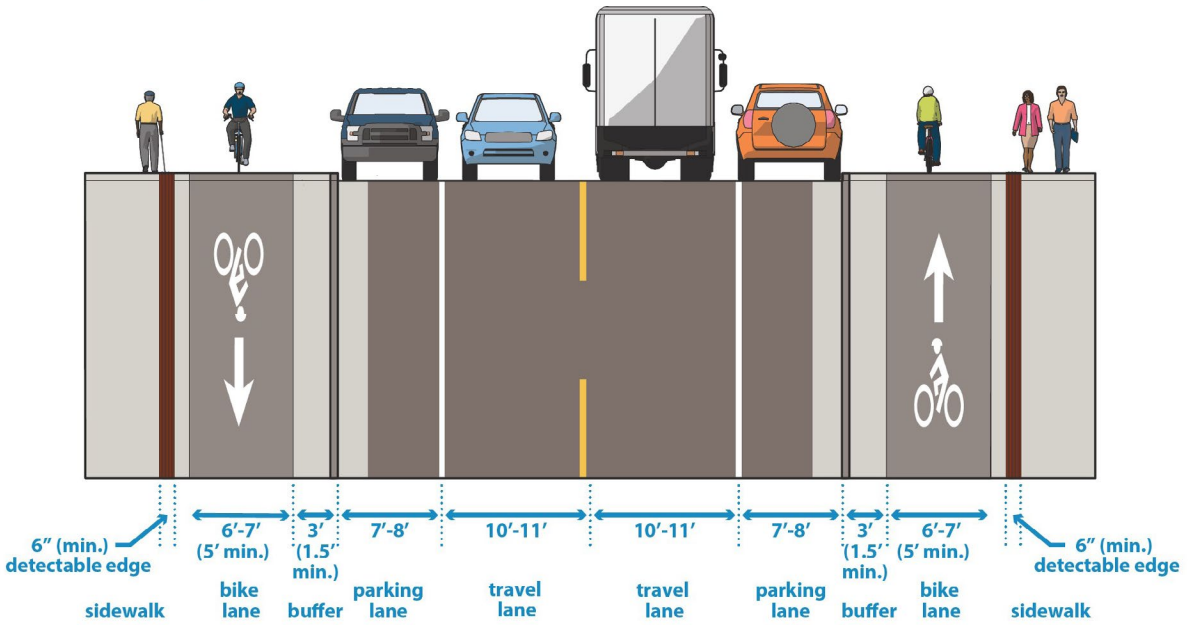
d 1' or wider is preferred where possible.

3.4F Sidewalk-level protected bike lanes

Figure 3.4F.2:

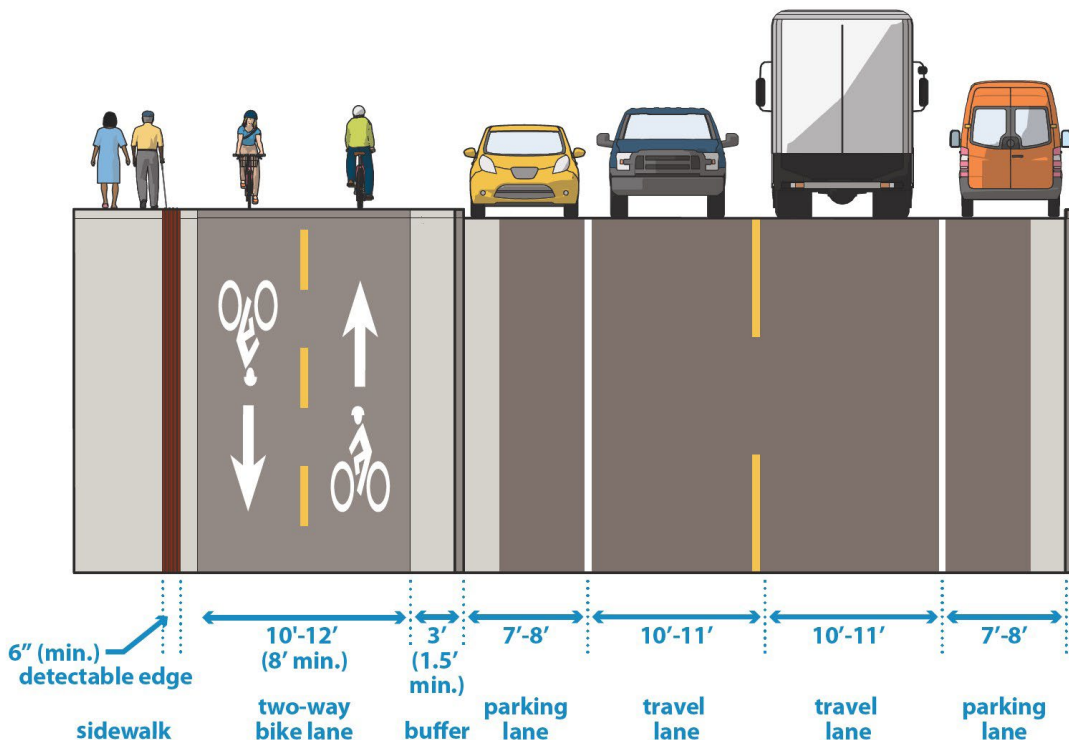
Sidewalk-level protected bike lane dimensions graphic

1-Way Sidewalk-Level Protected Bike Lanes



Preferred widths shown - see chart for more information

2-Way Sidewalk-Level Protected Bike Lanes



Preferred widths shown - see chart for more information

DESIGN CONSIDERATIONS

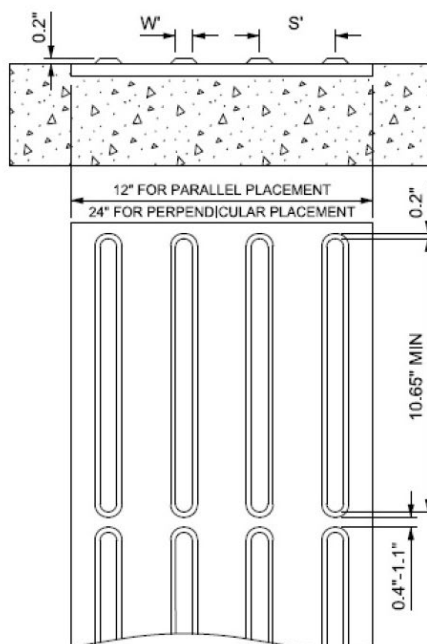
A. Operation	May be designed for one-way or two-way bicycle traffic.
B. On-street to off-street transitions	On-street protected or un-protected bike lanes may transition to sidewalk-level protected bike lanes by employing bicycle-specific slip ramps. For slip ramp transitions, a pedal-compatible adjacent curb height (2" or less) or a mountable curb should be pursued between the bikeway and sidewalk/furnishing zone.
C. Maintenance	A constrained minimum bikeway + buffer width of 6' is required to accommodate snow clearance/removal.
D. Greening	Buffer areas between the bike lane and roadway or sidewalk may be considered for greening where adequate space exists.
E. Buffer zones	<p>Sidewalk-level protected bike lanes should have buffers between both the roadway and pedestrian clear zone.</p> <ol style="list-style-type: none"> 1. Buffers may be either hardscaped or landscaped depending on available widths and adjacent land uses and curbside contexts. 2. On streets with higher pedestrian demand (e.g. Downtown Core and Mixed Use Commercial Connector streets), it's preferable to have wider buffer space between the pedestrian clear zone and the bikeway. On streets with relatively fewer potential conflicts between pedestrians and bicyclists, it's preferable to have wider buffer space between the roadway and bikeway. 3. Wider buffers are also preferred outside of downtown to allow for additional snow storage space between the bikeway and curb. 4. Sign posts, lighting, utilities, plantings, and street furniture may be located in the buffer areas. <ul style="list-style-type: none"> » 2' Minimum clearance generally should be maintained from fixed objects to the bikeway operating area. » 1' minimum clearance can be considered for contiguous installations like fencing or railings and for objects placed at bikeway stop locations. » See utilities and signs guidance or street lighting guidance for more details.
F. Materials	<ol style="list-style-type: none"> 1. When adjacent to a concrete sidewalk, the bikeway should use materials such as asphalt or colored concrete to visually differentiate the bikeway operating area from the sidewalk and adjacent buffer zones. 2. Care should be taken to ensure the bikeway maintains a smooth and rideable surface, including limiting utility access covers and handholes in the bikeway operating area, and saw-cutting concrete rather than tooling joints in the bikeway area. When locations for utility access or handholes cannot be accommodated outside of the bikeway operating area, utility covers, manholes, and handholes should be flush with the bikeway surface.

G. Detectable edge

In areas where a sidewalk-level bike lane is located adjacent to the pedestrian clear zone [link], a detectable edge (also referred to as a directional guideway) should be utilized to provide visual and tactile delineation between the sidewalk and bike lane.

1. The detectable edge should be a minimum of 6" wide (1' preferred) and should be located parallel to the bikeway between the pedestrian clear zone and bikeway.
2. The detectable edge should run to the corner bicycle and pedestrian mixing zone (link), but should not run through the corner mixing zones to prevent impacts to sloping grades, detectable ramps, APS push button placement, and to reinforce that pedestrians maintain the right of way in this area.
3. Preferred detectable edge designs are currently being piloted and are under evaluation. This guide will be updated to reflect the recommended directional guideway design elements once evaluation has been completed. Figure 3.4K shows details for one example design.

Figure 3.4F.3: Example of detectable edge between sidewalk level protected bike lane and sidewalk



*Note that this detectable edge design is currently being piloted and is under evaluation.

H. Parking lane considerations

When locating a sidewalk-level protected bike lane adjacent to a parking or loading zone, a minimum buffer of 3' should be maintained between the back-of-curb and the bikeway to accommodate door zone conflicts. In loading zones and areas with high parking turnover, consider paving the buffer area to accommodate access from the parking/loading zone to the sidewalk.

I. ADA considerations

Designers should implement strategies to support ADA access to parking spots, bus stops, and Metro Mobility drop off points along protected bike lanes. Additional details will be forthcoming in a future update to the Street Design Guide.

J. Intersection guidance

See also [bikeway intersection design guidance](#).