Bike Lanes & Bus Stops

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Making bicycling and walking possible for every trip...

Toole Design Group is the nation’s leading planning, engineering, and landscape architecture firm specializing in multimodal transportation.
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National Expertise

- Downtown Dennison
- Denver NW Corridor
- MassDOT Separated Bike Lane Guide
- National Best Practices


Achieving Multimodal Networks: Designing Secure & Robust Corridors
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Types of People Biking

Who are they?
A 60-year-old, life-long, daily commuting bicyclist. He prefers direct routes to his destinations to save time. He is confident riding in mixed traffic and knows to be wary of opening car doors and turning trucks. He enjoys riding on shared use paths, but typically avoids them during congested periods.

1% Experienced and Confident

**Types of People Biking**

**Who are they?**
A woman on the North Shore who rides her bike downtown every morning to her job at the hospital. She prefers to ride on neighborhood streets, but doesn’t mind riding the last few blocks on a busy street since there’s a bike lane.

1% **Experienced and Confident**

7% **Casual and Somewhat Confident**

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lower stress tolerance

higher stress tolerance

Types of People Biking

Who are they?
A mother and daughter in Western Mass who enjoy Saturday rides to the library along the trail that runs near their house. The need to cross a busy road prevents them from riding together to the elementary school during the week.

1% Experienced and Confident
7% Casual and Somewhat Confident
60% Interested but Concerned

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EXHIBIT 2A: MOTORIST’S VIEW AT SEPARATED BIKE LANE

EXHIBIT 2B: MOTORIST’S VIEW AT CONVENTIONAL BIKE LANE
EXHIBIT 5K: FLOATING BUS STOP (NEAR-SIDE)

EXHIBIT 5K shows a raised separated bike lane alongside a near-side floating bus stop. When occupied by a bus, near-side stops reduce approach sight distance for right-turning motorists before crossing the separated bike lane (see Section 4.2.3).

- Consider raised crossings if near-side bus stop diminishes motorist approach sight distance or increases the effective turning radius for motor vehicles. ①
- Consider railing or planters to channelize pedestrian access to and from busy bus stops. ②
- Locate near-side stop far enough from the cross street to provide space for a forward bicycle queuing area and, if applicable, a corner refuge island. ③
General Street Definition

EXHIBIT 2: Context Zones
A regular bike lane

1. Bus shelter (optional)
2. Accessible landing zone (min. 5’ x 8’)
3. Rear clear zone (11.5’ x 8’)
4. Green pavement (optional)
5. Furnishing zone
6. Bus stop pole
A basic floating bus stop
### A basic floating bus stop

1. **Bus shelter (optional)**
2. **Accessible landing zone** (min. 5’ x 8’)
3. **Rear clear zone** (11.5’ x 8’)
4. **Green pavement (optional)**
5. **Bikes yield to peds sign (optional)**
6. **Bicyclist yield area**
7. **Bicycle ramp (max 1:12 slope)**
8. **Furnishing zone/Detectable edge**
9. **Bike lane taper** (preferred 1:10 / max. 1:5)
10. **Detectable warning surface**
11. **Vertical railing (optional)**
12. **Bus stop pole**
13. **Red curb zone (optional)**

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**Diagram: A basic floating bus stop**

- **Bus Stop** (length varies with platform length, pull-in/out taper, and sightline clear space)
- **Platform**
  - varies 6’ pref.
  - 10’ min.
  - (length varies with bus length and headways)

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**Details:**
- 8’ min.
- 10’ pref.
- 1:5 taper max.
Details…

6 The bicyclist yield area provides space for bicyclists to stop for crossing pedestrians while also being protected from traffic.

7 The maximum bicycle ramp slope should be 1:12 from street to sidewalk level.

9 The bike lane transition taper of 1:10 is preferred, with a maximum of 1:5.17
Details continued…

What is a longitudinal detectable edge?

Item 8.
Bikes in both directions!? Great!
CONSTRANGED BUS STOP

EXHIBIT 5M shows a constrained bus stop, which elevates the bike lane to sidewalk level to avoid conflicts with buses but utilizes the bike lane as a portion of the bus stop platform. Bicyclists must yield to people boarding and alighting, and must proceed with caution at all other times to avoid conflicts with waiting passengers.

Constrained bus stops should only be considered when the introduction of a floating bus stop would do one of the following:

- Create non-compliant elements of the public right-of-way according to the most recent accessibility standards.
- Narrow the sidewalk below an appropriate width given pedestrian volumes and context of the built environment.
- Narrow the bike lane below 4 ft. along the bus stop (less than 5 ft. requires a design exception).

Constrained bus stops require additional considerations:

- Place crosswalks with blended transitions at the boarding and alighting area and the rear door clear zone to align with bus doors. Coordinate with the local transit agency to identify vehicle type(s) anticipated to serve the stop.
- Place DONOT PASS WHEN BUS IS STOPPED sign in advance of the first pedestrian crossing a bicyclist approaches (i.e., the rear door clear zone).
- When included, place shelter and/or bench at the back of the sidewalk.
- Consider optional colored pavement within the constrained bike lane.
Rhode Island Bus Stop Design Guide
DEMONSTRATION PROJECT

Temporary installation on Broad Street between Public and Potters:

- 2-way urban trail
- Painted curb extensions
- 2 painted plazas
- Flash mob!

Artists:

- Lisa Perez
- Tamara Diaz
- Dana Heng
TWO-WAY URBAN TRAIL
PAINTED CURB EXTENSIONS
Cycle track continues all the way in front of the Casino but ends at Dexter street before the Boston border. Looks like there will even be a floating bus stop!
NOTES:
1. SEE STREETSCAPE MATERIALS PLAN, SHEETS L-2.
2. SEE CURB TIE PLAN, SHEETS L-22.
3. SEE GRADING PLAN, SHEET L-32.
4. SEE PLANTING PLAN, SHEET L-42.
5. SEE STRIPING PLAN, SHEET L-52.
6. SEE SIGNAGE PLAN, SHEET L-62.
7. SEE IRRIGATION PLAN, SHEET L-72.
8. UNLESS OTHERWISE NOTED, CONCRETE SIDEWALK EXTENDS TO F.O.B.
9. COORDINATE PARKING METER AND SIGN LOCATIONS WITH ENGINEER.
NOTES:
1. SEE SURFACE MATERIALS PLAN, SHEETS L-2 & L-3.
2. SEE CURB Tie PLAN, SHEETS L-22 & L-23.
3. SEE GRADING PLAN, SHEET L-33.
4. SEE PLANTING PLAN, SHEET L-43.
5. SEE STRIPING PLAN, SHEET L-53.
6. SEE SIGNAGE PLAN, SHEET L-43.
7. SEE IRRIGATION PLAN, SHEET L-33.
8. UNLESS OTHERWISE NOTED, CONCRETE SIDEWALK EXTENDS TO F.O.B.
9. COORDINATE PARKING METER AND SIGN LOCATIONS WITH ENGINEER.
NOTES:
1. SEE SURFACE MATERIALS PLAN, SHEETS L-15.
2. SEE CURB TIE PLAN, SHEETS L-25.
3. SEE GrADING PLAN, SHEET L-35.
4. SEE PLANTING PLAN, SHEET L-45.
5. SEE STRIPING PLAN, SHEET L-54, L-55.
6. SEE SIGNAGE PLAN, SHEET L-56, L-55.
7. SEE IRRIGATION PLAN, SHEET I-35.
8. UNLESS OTHERWISE NOTED, CONCRETE SIDEWALK EXTENDS TO F.O.B.
9. COORDINATE PARKING METER AND SIGN LOCATIONS WITH ENGINEER.