



[3] Bus Stop Typologies

Introduction

While each bus stop is unique, there are basic elements that should be present in most common bus stop configurations. The following bus stop typologies provide guidance for the typical layouts and configurations based on the local environment and context. Each typology reflects a standard 40' bus and could be modified for other sizes of transit vehicles or if multiple buses will use the stop.

These samples are provided for guidance only. They do not cover every type of bus stop and all aspects of design for a bus stop. Rather, the graphics and summary notes identify key elements of typical bus stop designs based on resources provided in this guide, best practices, and current requirements. Specific site conditions at the bus stop location must be considered to determine the preferred layout, design, and amenities. Also, bus stop designs should be developed through coordination with the public transit agency, owner of the roadway, and the adjacent property owner, if applicable. Bus stops can be a community asset, focal point of the streetscape, and public gathering space. Creative design solutions, such as integration of public art, can improve visibility of the bus stop and help to create a sense of place for the community.

Community Context

The bus stop typologies reflect different environments or contexts where fixed route public transportation may operate. The community context influences the bus stop design, configuration, and key elements.

Rural: The rural context includes predominately agricultural uses or natural landscapes interspersed with small-scale and low-density residential or commercial development set back from the roadway. Transit may be provided along key corridors in a rural community to serve specific trip origins/destinations, such as a commercial area, medical center, institution or civic use. In the rural context, roadways typically have limited shoulders and no sidewalks. Additionally, traffic volumes and speeds may be higher on key transit corridors.

Suburban: The suburban context includes predominately residential, commercial, or industrial land uses that are separated and buildings are set back from the roadway. Most suburban communities were designed and built to be accessible by car, so roadways are wider, surface parking is prevalent, and sidewalks are limited. Transit may be provided along key corridors and bus routes may divert off of the primary route to serve a specific origin/destination.

Urban: The urban context can include cities, boroughs, towns, or village centers that have a mix of land uses, higher densities, and buildings closer to the roadway. From a transportation perspective, sidewalks are prevalent and on-street parking is often provided. Bus stop infrastructure is typically integrated with the sidewalk and pedestrian realm.



Bus Stop Categories

The bus stop typologies are presented in three categories that reflect the different features that may be appropriate given community contexts, transit levels of service, and ridership.

Limited: Limited stops include an ADA loading pad and bus stop sign. These stops meet the minimum requirements for an ADA accessible stop with access to the public right-of-way. Limited stops may be appropriate for areas where a sidewalk is not feasible or desirable.

Basic: Basic stops include an ADA loading pad, bus stop sign, and connecting sidewalks or other pedestrian infrastructure. These stops meet minimum requirements for an ADA accessible stop and connected pedestrian route.

Enhanced: Enhanced bus stops include an ADA loading pad, bus stop sign, connecting pedestrian infrastructure. Optional amenities for the transit riders may also include a bench, shelter, lighting, and bicycle rack.

Bus Stop Accessibility

FTA Circular 4710.1 is a helpful resource that provides transit agency requirements related to ADA accessible bus stops and ADA accessible routes to bus stops. For example, if a bus stop or route to a bus stop is not accessible for a passenger, they may request a reasonable modification from the operator to slightly adjust the boarding/alighting location to an accessible location. The individual with disabilities may also be eligible for complementary paratransit, at least on a conditional basis. See FTA Circular 4710.1 for more information.



Notes on Key Bus Stop Elements—Applicable to all Bus Stop Typologies

The following notes on key bus stop elements are generally applicable for all of the bus stop typologies. Additionally, each bus stop typology includes elements and notes that are specific to the layout, configuration, and context.

While providing an ADA compliant pedestrian connection to the paired bus stop for the opposite direction is preferred, this is not shown on the typologies.

ADA loading pads

- Firm and stable surface, typically concrete
- Minimum clear length of 8’ measured perpendicular to the roadway
- Minimum clear width of 5’ measured parallel to the roadway. Wider pad is desirable.
- Maximum cross slope is 1:48

Bus stop location signs

- Minimum 2’ between the sign support structure and the curb/edge of the roadway
- Minimum 2’ from ADA loading pad
- Vertical clearance from the ground to the bottom of the sign between 7’ and 8’
- Not obstructing pedestrian accessible route
- Mounted on a post (or a shelter) that does not include any traffic control devices

Shelters

- Minimum clearance of 4’ from the curb and not obstructing the clear area for the ADA loading

- pad or the pedestrian accessible route
- Minimum clearance of 4’ around the shelter, which may be reduced to 2’ for the distance between the back of the shelter and a building face or wall
- Installation in PennDOT’s right-of-way requires a Transit Shelter Right-of-Way Placement Agreement. Installation on other public right-of-way or private property may require a maintenance agreement.
- Accessible route with a desirable minimum width of 4’ (and minimum clear width of 3’) between the shelter and the ADA loading pad

Amenities

- Benches, bicycle parking, trash receptacles, lighting, landscaping, and other amenities can be provided at bus stops. While optional, these features can increase the visibility, comfort, convenience, safety, and attractiveness of a bus stop. Amenities can also serve the needs of transit riders and the community.
- Locate amenities to ensure they do not obstruct access to the bus stop or the pedestrian access route

Clear zones for rear door access

- Level area free of obstructions to access the bus via the rear door
- Desirable minimum length is 4’ measured perpendicular to the roadway and the desirable minimum width is 10’ measured parallel to the roadway

- Paved area (or a wider sidewalk) is preferred to accommodate rear-door boarding/alighting and provide more space for waiting passengers
- Grass may be provided in certain locations with existing constraints or where rear-door boarding/alighting may be used less frequently.

Safety buffers

A safety buffer should be provided between the end of the bus stop zone and the edge of the crosswalk or intersection/driveway point of curve. The safety buffer prevents buses from blocking access, particularly for pedestrians. The safety buffer distance should be based on existing conditions and sight distance. A safety buffer of 10’ is preferred.

Grading/Stormwater

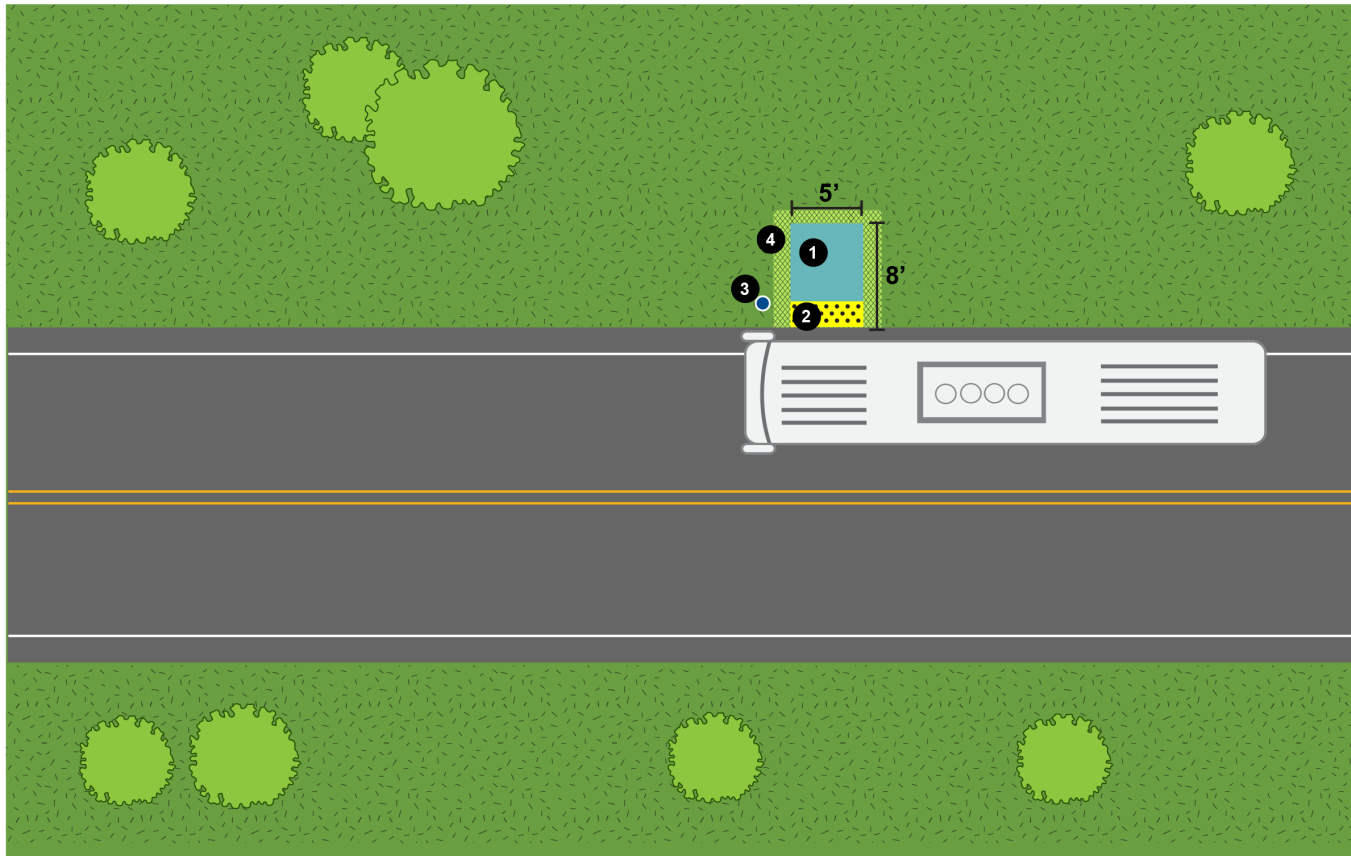
Grading and consideration of stormwater/roadway runoff will be required. The specific design will depend on the existing conditions. Cut/fill slopes adjacent to bus stops shall be 4:1 max, unless site conditions do not allow. A cut/fill slope 2:1 max may be allowed in certain situations, depending upon slope stability and erosion control. The design of potential roadway appurtenances will need to be considered when retrofitting the ADA loading pad in the roadside area. A safety railing, retaining wall, or other ADA compliant barrier may be necessary.

[See Part 2: Design Resources for additional details regarding the design of key bus stop elements](#)



1. Rural/Suburban Stop – Street Level – Limited

See page 3-3 for Notes on Key Bus Stop Elements



Plan View

Not to Scale

- 1 ADA loading pad**
 - Street level in an area adjacent and connected to the shoulder of the roadway
 - Longitudinal slope may follow the roadway slope
- 2 Detectable warning surface**
 - Width consistent with the ADA loading pad
 - 2’ length measured perpendicular to the roadway
 - Design complies with ADA standards
- 3 Bus stop sign**
- 4 Grading/Stormwater Management**

Notes:

- Depending on existing conditions, transit vehicle, and other factors, this design may not meet ADA design standards. In particular, a ramp deployed from the bus to the street level may exceed the maximum slope of 1:6. This should be evaluated during the design process. A curb-height ADA loading pad may be considered.
- The roadway shoulder or other areas within the right-of-way may not meet the requirements of an ADA compliant pedestrian accessible route. Providing a connecting sidewalk or other ADA compliant pedestrian facility is preferred.

Location Characteristics

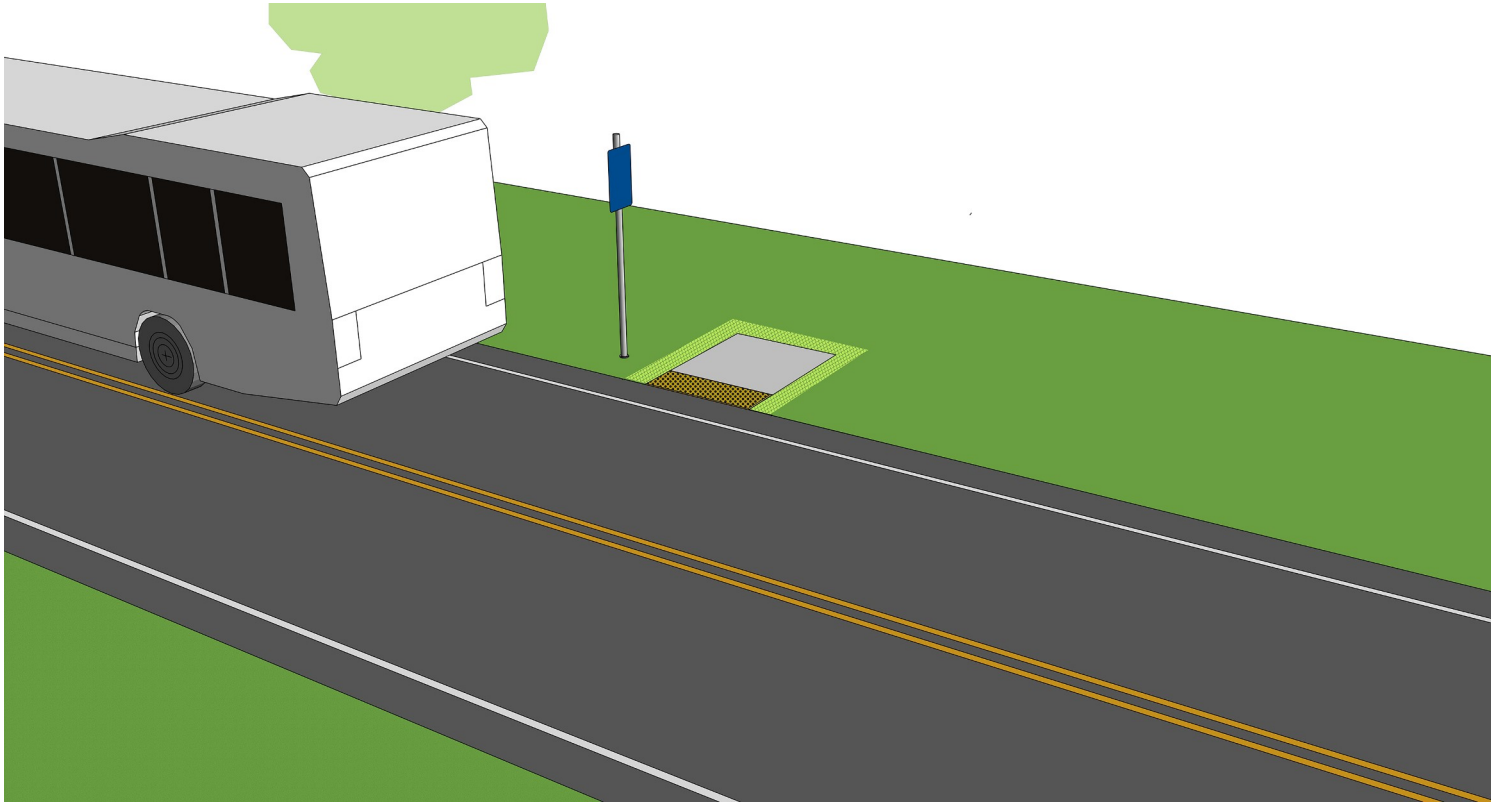
- Near-side, Far-side, or Mid-block
- Curbside
- Travel Lane – Shoulder stop
- Bus stop near a key generator/destination

Roadway & Roadside Characteristics

- Minimal shoulder
- No curb (along roadway)
- No sidewalk
- No parking on roadway



1. Rural/Suburban Stop – Street Level – Limited



3D View

Not to Scale



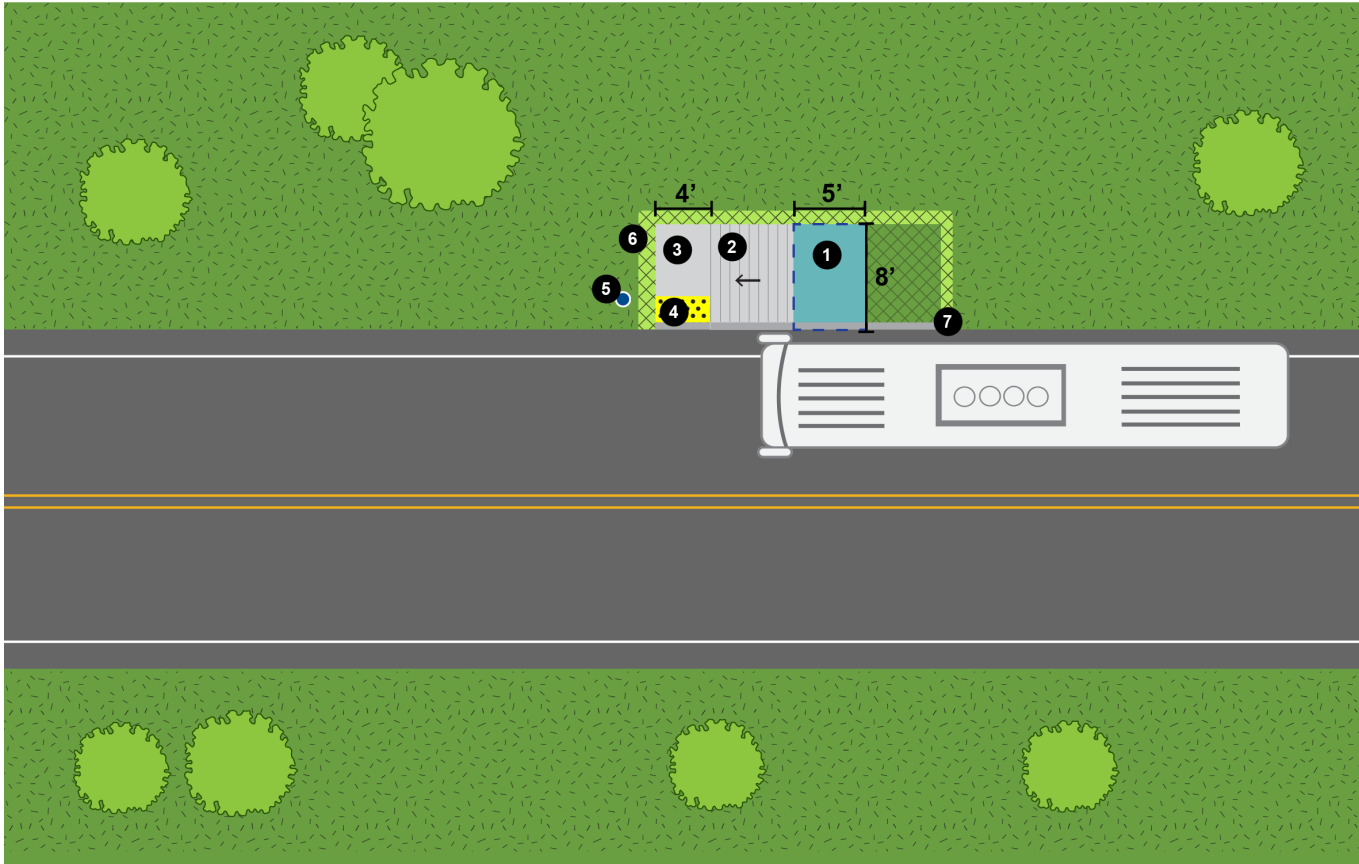
Image of a street level ADA loading pad for an Intercity Transit bus stop in Thurston County, WA

Image credit: Skillings Connolly, Inc.



2. Rural/Suburban Stop – Curb Height – Limited

See page 3-3 for Notes on Key Bus Stop Elements



Plan View

Not to Scale

- 1 ADA loading pad**
 - Curb height, typically 8"
- 2 Ramp**
 - Ramp connecting curb height ADA loading pad to street level. The ramp can be provided in either direction from the ADA loading pad
 - Ramp length (measured perpendicular to the road) of 8' and consistent with ADA loading pad is preferred. Minimum ramp length is 5'.
 - Maximum slope of 1:12
- 3 Level landing area**
 - Minimum 4' width measured parallel to the roadway
- 4 Detectable warning surface**
 - Width consistent with the landing area
- 5 Bus stop sign**
- 6 Grading/Stormwater management**
- 7 Curb end treatment**

Notes:

- The roadway shoulder or other areas within the right-of-way may not meet the requirements of an ADA compliant pedestrian accessible route. Providing a connecting sidewalk or other ADA compliant pedestrian facility is preferred.

Location Characteristics

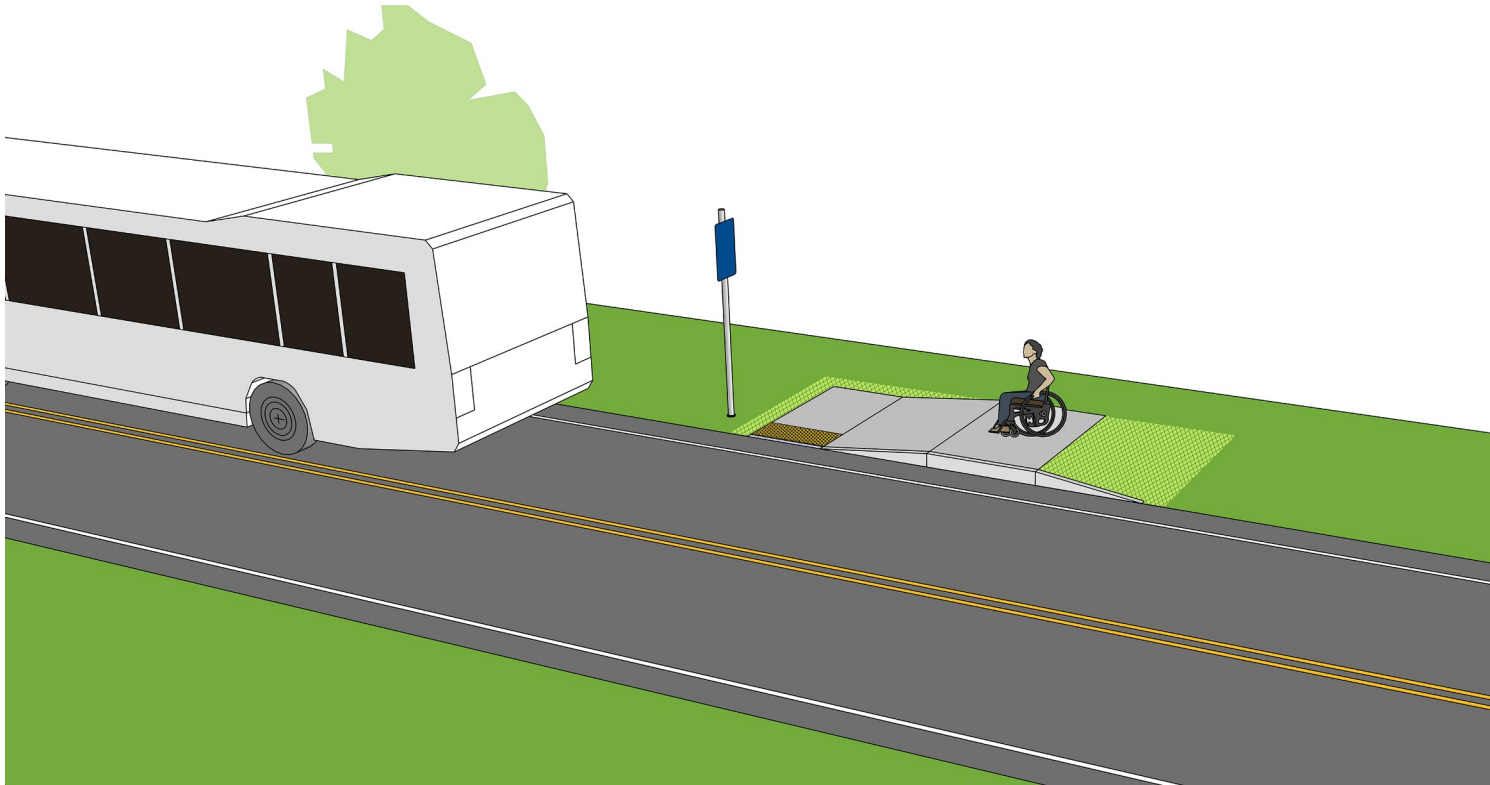
- Near-side, Far-side, or Mid-block
- Curbside
- Travel Lane – Shoulder stop
- Bus stop near a key generator/destination

Roadway & Roadside Characteristics

- Minimal shoulder
- No curb (except along ADA loading pad and connecting ramp)
- No sidewalk
- No parking on roadway



2. Rural/Suburban Stop – Curb Height – Limited



3D View

Not to Scale

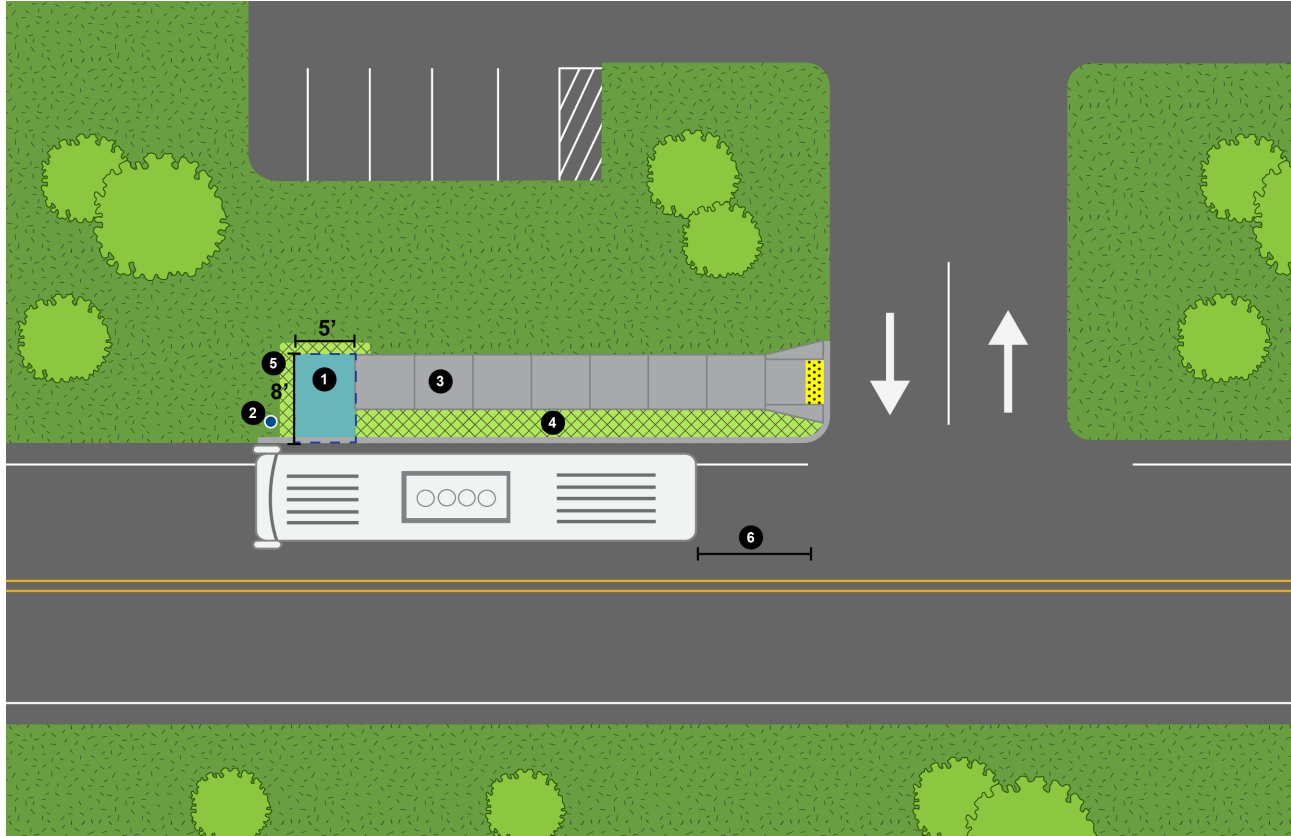


Image of a curb height ADA loading pad for bus stop in Montgomery County, MD

Source: Montgomery County Bus Stop Pad Configurations



3. Rural/Suburban Stop – Far-Side – Commercial Driveway – Basic



See page 3-3 for Notes on Key Bus Stop Elements

- 1 **ADA loading pad**
– Curb height, typically 8"
- 2 **Bus stop sign**
- 3 **Sidewalk, curb, and curb ramp with detectable warning surface**
– Minimum sidewalk width is 5'
- 4 **Clear zone for rear door access**
– Paved area (or a wider sidewalk) is preferred, but grass is optional
- 5 **Grading/Stormwater management**
- 6 **Safety buffer**
– 10' is preferred

Notes:

- Providing internal pedestrian circulation between the bus stop and building entrance is preferred. ADA compliant pedestrian connections may be provided along driveways or directly from the ADA loading pad.
- Whenever possible, a bus stopped for boarding/alighting should not block a driveway, particularly if it provides the only access to a property.

Location Characteristics

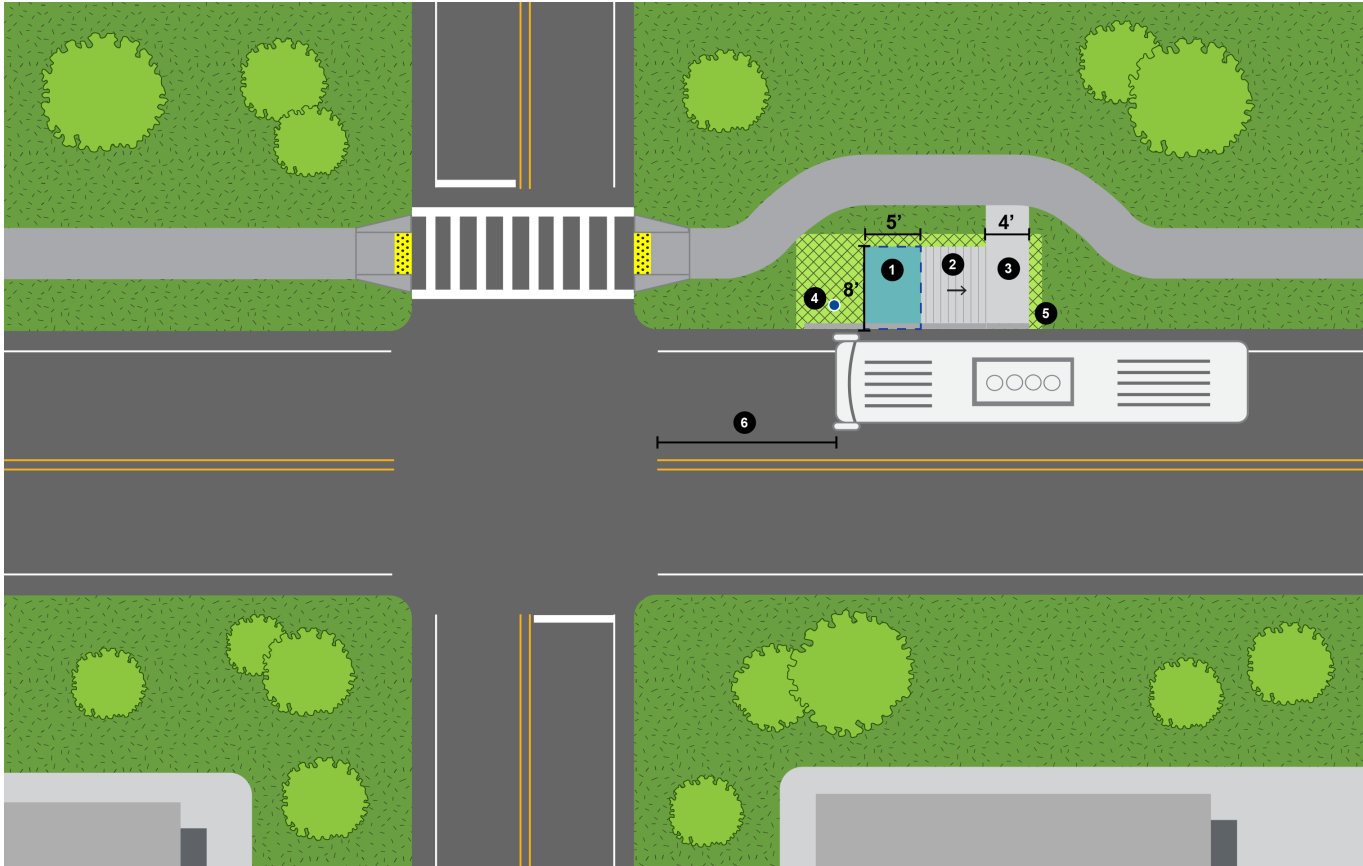
- Curbside
- Travel Lane – Shoulder stop
- Bus stop near a commercial driveway for a key generator/destination

Roadway & Roadside Characteristics

- Minimal shoulder
- No curb (except along ADA loading pad and sidewalk)
- Sidewalk with grass buffer (only at bus stop)
- No parking on roadway



4. Rural/Suburban Stop – Near-Side – Intersection – Basic



Plan View

Not to Scale

See page 3-3 for Notes on Key Bus Stop Elements

- 1 ADA loading pad**
 - Curb height, typically 8"
- 2 Ramp**
 - Ramp connecting curb height ADA loading pad to existing grade
 - Ramp length (measured perpendicular to the road) of 8' and consistent with ADA loading pad is preferred. Minimum ramp length is 5'
 - Maximum slope of 1:12
- 3 Landing area**
 - Minimum 4' width measured parallel to the roadway
 - Connection to path/trail
- 4 Bus stop sign**
- 5 Grading/Stormwater management**
- 6 Safety buffer**
 - 10' is preferred

Location Characteristics

- Curbside
- Travel Lane – Shoulder stop

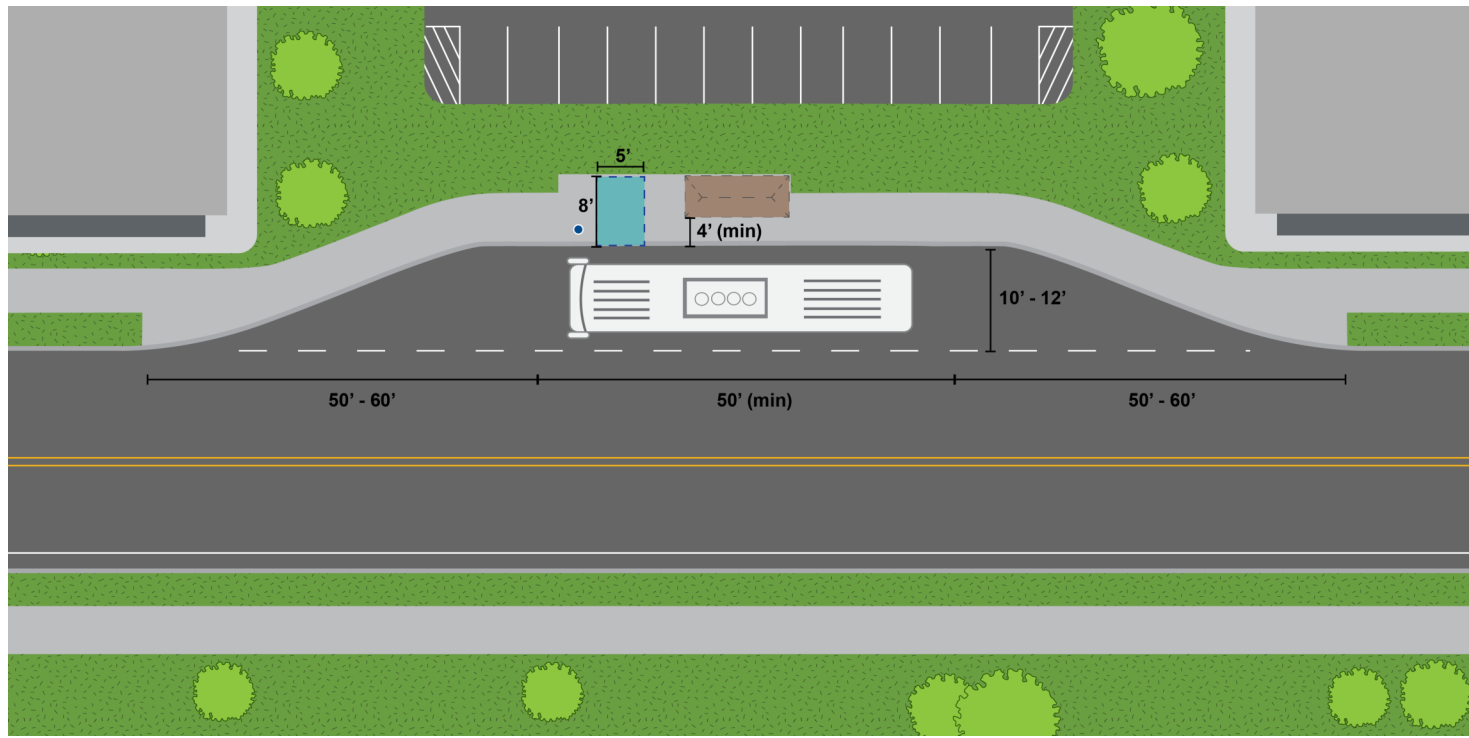
Roadway & Roadside Characteristics

- Minimal shoulder
- No curb (except along ADA loading pad and connecting ramp)
- Asphalt path/trail with grass buffer along roadway
- No parking on roadway



5. Rural/Suburban Stop – Closed Bus Bay – Enhanced

See page 3-3 for Notes on Key Bus Stop Elements



Plan View

Not to Scale

- 1 **ADA loading pad**
– Curb height, typically 8"
- 2 **Bus stop sign**
- 3 **Shelter (Optional)**
– Located at least 4' from the curb and not obstructing the clear area for the ADA loading pad or the pedestrian accessible route
– Provide a minimum clearance of 4' around the shelter, which may be reduced to 2' for the distance between the back of the shelter and a building face or wall
- 4 **Bus bay width**
- 5 **Stopping area**
- 6 **Entrance taper**
- 7 **Exit taper**

Location Characteristics

- Closed bus bay

Roadway & Roadside Characteristics

- Minimal shoulder
- Curb (along roadway)
- Sidewalk with grass buffer along roadway
- No parking on roadway

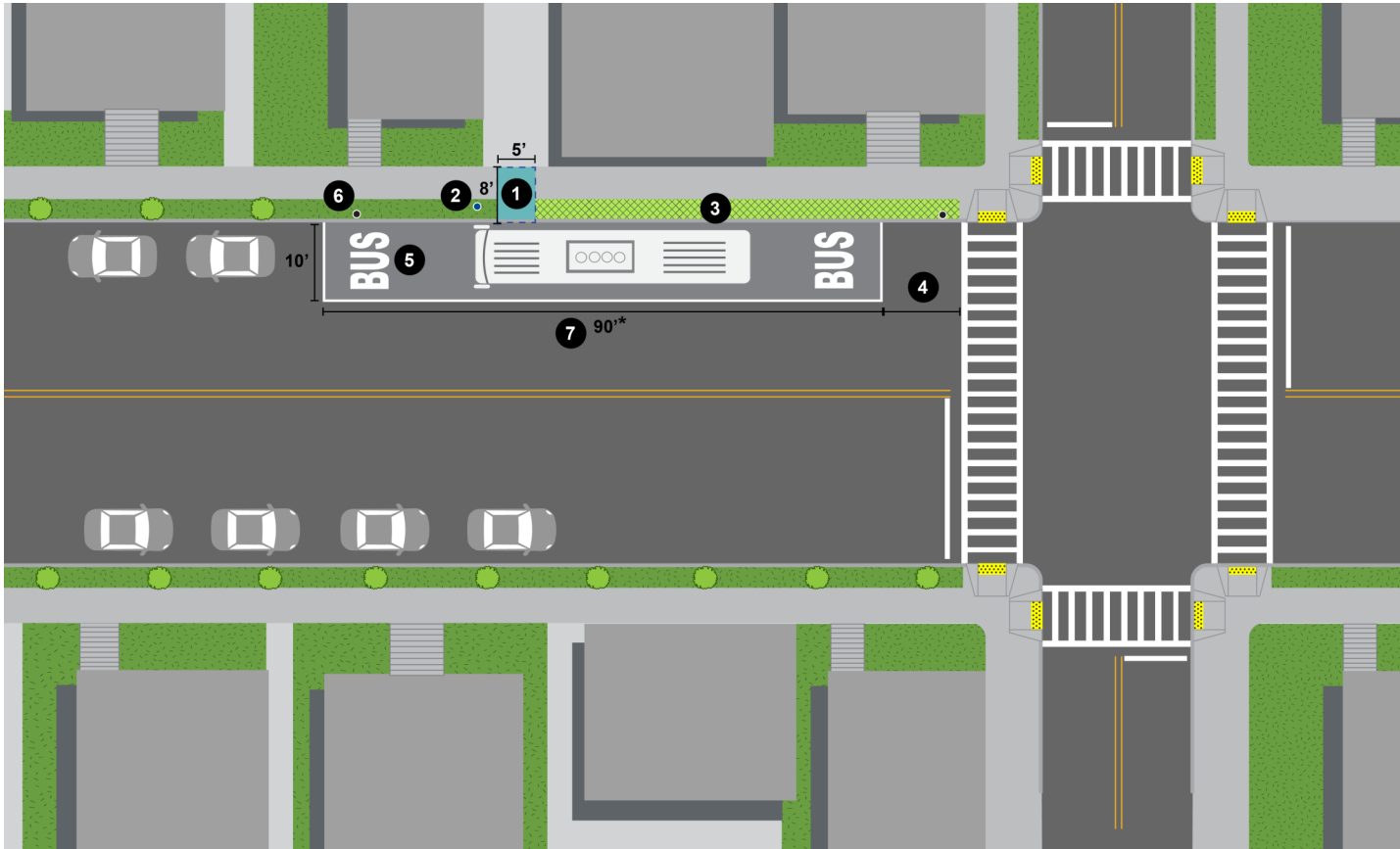
Notes: Bus bay (or turnout) dimensions in the illustration above provide general guidelines for stop locations where a bus is able to decelerate in the travel lane and enter the bus bay at or below 20 mph. The design of a bus bay should be closely coordinated with the transit agency and the municipality. Additional design guidance for bus bays is available in the following references:

- APA Planning and Urban Design Standards, 2006
- AASHTO Guide for the Geometric Design of Transit Facilities on Highways and Streets (2014)
- TCRP Report 19 – Guidelines for the Location and Design of Bus Stops (1996)



6. Urban/Suburban Stop – Far-Side – Basic

See page 3-3 for Notes on Key Bus Stop Elements



Plan View

Not to Scale

- 1 ADA loading pad**
- 2 Bus stop sign**
- 3 Clear zone for rear door access**
– Paved area (or a wider sidewalk) is preferred, but grass is optional
- 4 Safety buffer**
– 10' is preferred
- 5 "BUS" pavement markings (optional)**
- 6 No parking signs or designation**
– No parking within the bus stop zone may be designated with signs, painted curbs, and/or pavement markings
- 7 Bus stop zone length**
– 90' is the preferred length for a far-side stop, but a shorter bus stop zone may be acceptable through coordination with the transit agency and roadway owner. 60' is the recommended minimum for a far-side stop.

Location Characteristics

- Far-side
- Parking lane

Roadway & Roadside Characteristics

- No shoulder
- Curb
- Sidewalk with grass buffer along roadway
- On-street parking

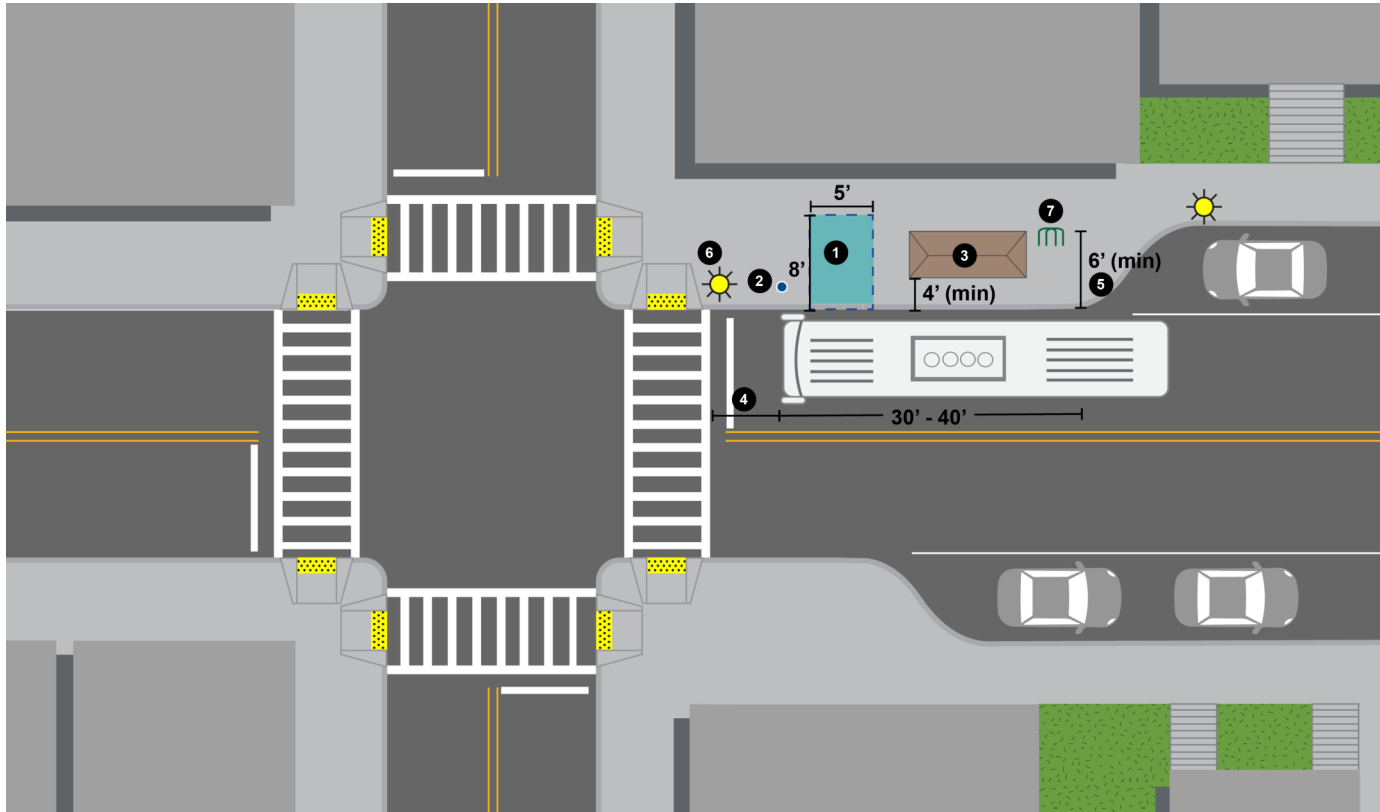
Notes:

- Municipalities are responsible for no parking designations, as well as pavement markings for the bus stop.



7. Urban/Suburban Stop – Near-Side – Enhanced

See page 3-3 for Notes on Key Bus Stop Elements



Plan View

Not to Scale

Location Characteristics

- Near-side
- Curb extension

Roadway & Roadside Characteristics

- No shoulder
- Curb
- Sidewalk with grass buffer along roadway
- On-parking on roadway

- 1 ADA loading pad**
- 2 Bus stop sign**
- 3 Shelter (Optional)**
 - Located at least 4' from the curb and not obstructing the clear area for the ADA loading pad or the pedestrian accessible route
 - Provide a minimum clearance of 4' around the shelter, which may be reduced to 2' for the distance between the back of the shelter and a building face or wall
- 4 Safety buffer**
 - 10' is preferred
- 5 Curb extension**
 - [PennDOT PUB 383 Pennsylvania Traffic Calming Handbook](#) provides additional design guidelines for curb extensions.
- 6 Lighting (Optional)**
 - Various options for providing appropriate lighting at the bus stop, including solar powered lights that integrated with the shelter or pedestrian scale lighting that is part of the streetscape
- 7 Bicycle rack (Optional)**
 - Located to ensure that parked bicycles do not obstruct access to the bus or access along the pedestrian route through the stop



8. Suburban Stop—Within a Site—Employment / Commercial Center

Deviating a bus route to serve a key generator must be evaluated and agreed upon by the transit agency. The evaluation should consider several factors, including the potential ridership, additional delay to existing riders, and additional operating expenses. It may also require a legal agreement for access to the property.

When providing a bus stop within a site, the bus routing and the location and design of the bus stop should be based on the specific site and transit service. Listed below and illustrated on the following pages are two general options for potential bus routes and bus stop locations. The advantages and disadvantages listed below provide key considerations that can be used to develop, evaluate, and design bus stops within a site.

Option A

Bus routing and bus stop located away from the building entrance

Advantages

- Reduces conflicts with pedestrians and vehicles associated with high activity areas near the building entrance
- Minimizes impacts to bus travel times and operating expenses

Disadvantages

- Creates potential conflicts with vehicular access, circulation, and parking
- Can impact or reduce on-site parking spaces
- If the bus stop is too far away from the building entrance or in a location that is not visible, it is less convenient and attractive for transit riders

Option B

Bus routing and bus stop located near the building entrance

Advantages

- Provides convenient pedestrian access to the building entrance for transit riders
- Potentially minimizes impacts to on-site parking
- Waiting areas, including overhangs or shelters, can be integrated with the building

Disadvantages

- Creates potential safety concerns, conflicts, and confusion due to navigating through high pedestrian and traffic activity areas near building entrances
- Longer routing, which can increase bus travel times and delays for riders on board

Location Characteristics

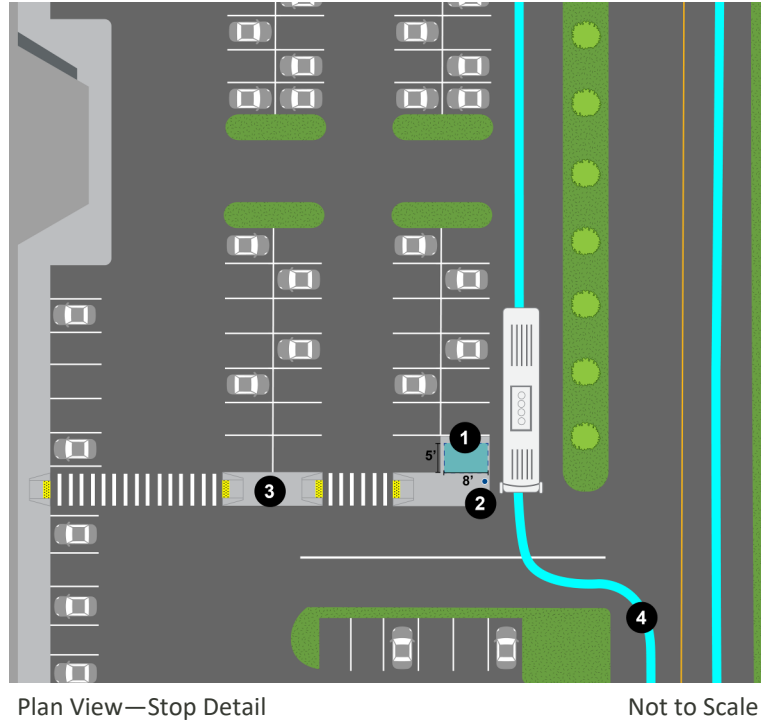
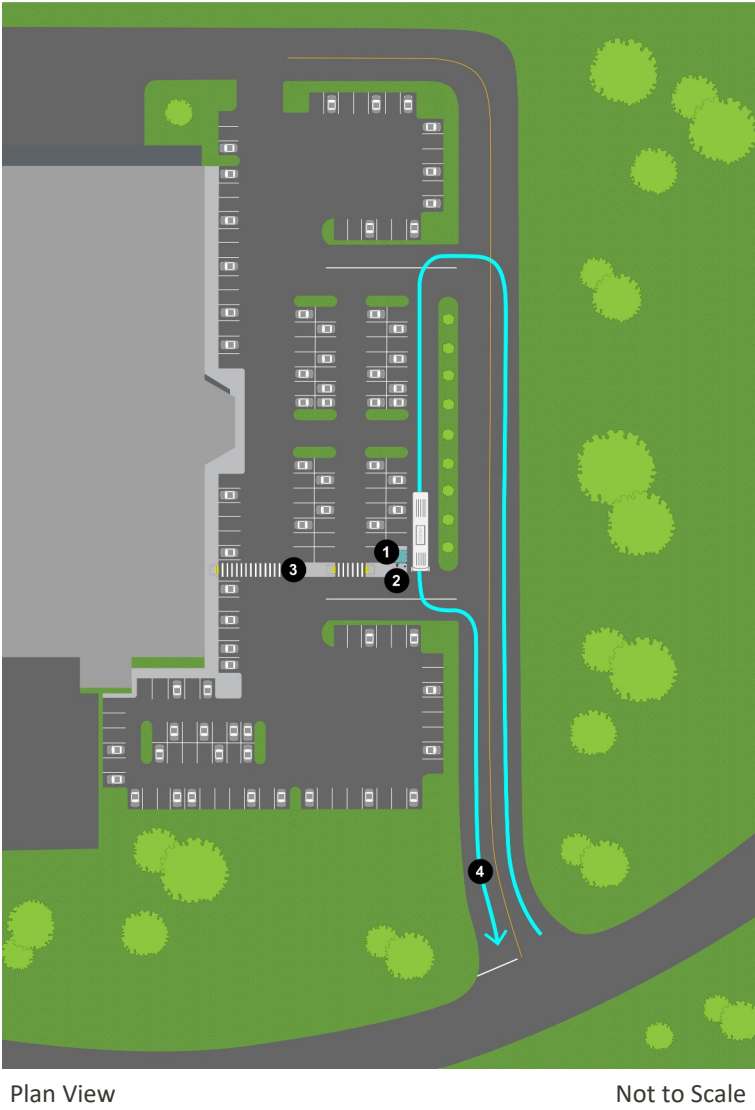
- Off-street stop on the site of a stand-alone major employment or commercial center (i.e., warehouse, corporate office, shopping center, medical facility)
- Bus deviates to serve key generator/destination

Notes applicable to Options A and B

- Bus stops should be located in visible, convenient, and well-lit areas. The location of the bus stop should be clearly identified with signs, pavement markings, or other design treatments.
- The bus stop should not be located at the main entrance for a building, which are high activity areas. The bus stop should be located either before or past the main entrance doors.
- The stop should be designed to prevent obstruction of clear sight lines for pedestrians, waiting passengers, bus operators, and other motorists.
- Pedestrian infrastructure (including sidewalks, paths, and crosswalks) should be provided between the bus stop and building entrances that are key destinations for riders.
- The passenger waiting area and clear zone for rear door access should be designed based on the anticipated number of passengers. For example, if the bus stop serves an employment center with shift work, a larger waiting area may be necessary due to the high number of passengers at a shift change.
- A bench or shelter should be considered, particularly if the bus stop location is further away from the building entrance.
- The deviated bus route should be designed with travel lane widths, clearances, turning radii, and pavement to accommodate buses. This includes travel lane widths of 12' and inside turning radius of 30' and outside turning radius of 50'.
- The deviated bus route should be designed to consider bus service in both directions of travel, if applicable.
- The bus stop design should consider the need for a bus layover or operator relief point, if applicable.



8A. Suburban Stop—Within a Site—Employment / Commercial Center



Option A

Bus routing and bus stop located away from the building entrance, which can reduce conflicts associated with building access

See page 3-3 for Notes on Key Bus Stop Elements

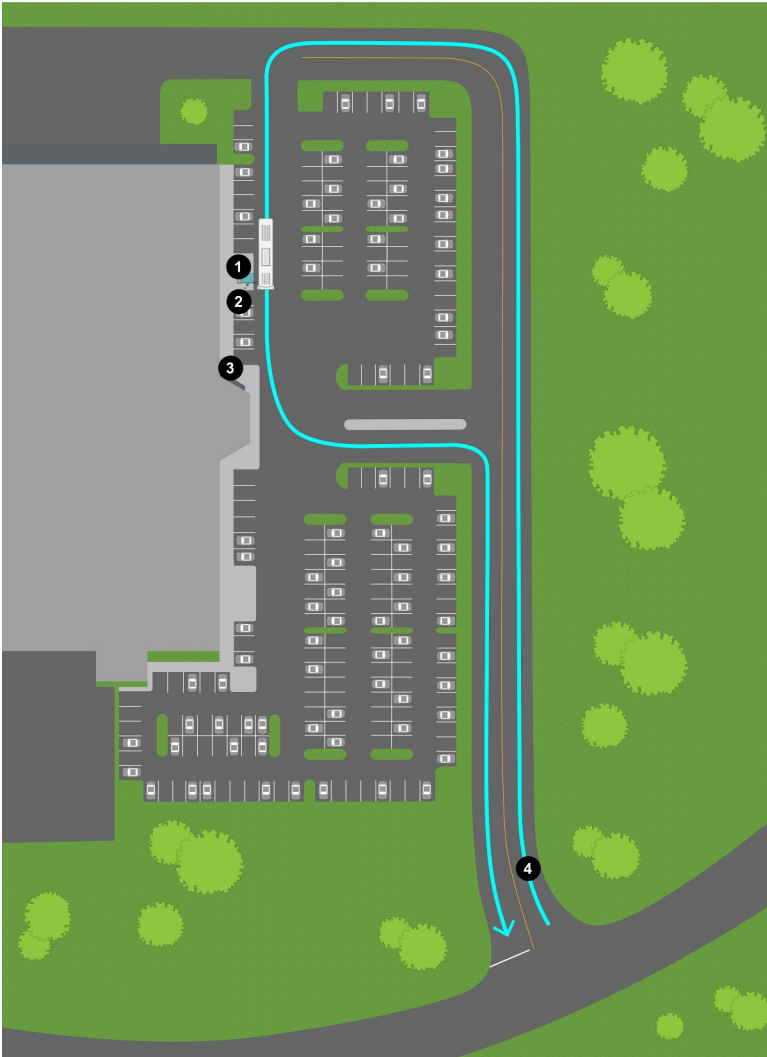
- 1 **ADA loading pad**
– Curb height, typically 8"
- 2 **Bus stop sign**
- 3 **Sidewalks, crosswalks, curb ramps with detectable warning surfaces**
– Direct and convenient connection to the building entrance with appropriate sidewalks, crosswalks, ADA compliant curb ramps, or other pavement markings, possibly through the parking lot

See Notes Applicable to Options A and B on page 3 –13

- 4 **Deviated bus route on site**

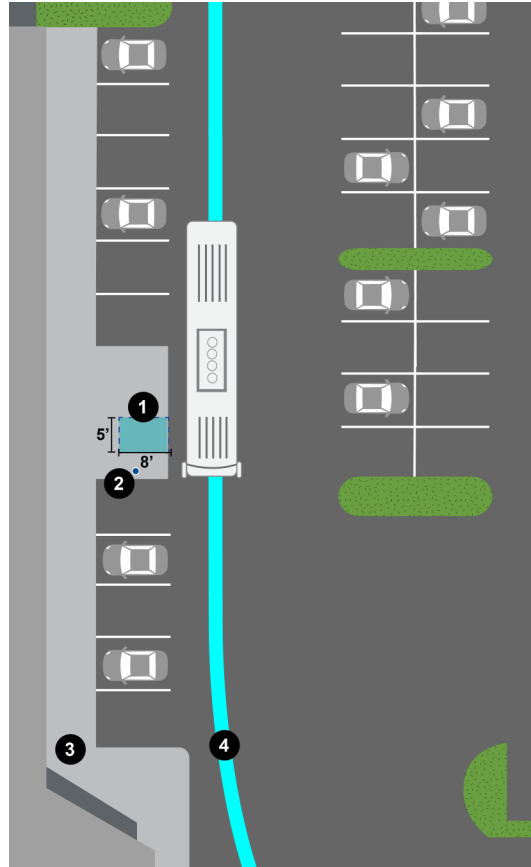


8B. Suburban Stop—Within a Site—Employment / Commercial Center



Plan View

Not to Scale



Plan View—Stop Detail

Not to Scale

Option B

Bus routing and bus stop located near the building entrance, which provides convenient pedestrian access

See page 3-3 for Notes on Key Bus Stop Elements

- 1 **ADA loading pad**
– Curb height, typically 8"
- 2 **Bus stop sign**
- 3 **Sidewalk**
– Connection to building entrance
- 4 **Deviated bus route on site**

See Notes Applicable to Options A and B on page 3–13

