BUS STOP DESIGN STANDARDS MANUAL

Updated 2023

INTERcity TRANSIT

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1 CONTEXT AND OVERVIEW

1.1 PURPOSE

Intercity Transit (IT) provides public transportation for people who live and work in the IT service area, known as a Public Transportation Benefit Area (PTBA). The PTBA encompasses the city limits of Olympia, Lacey, Tumwater, and Yelm, as well as those cities' urban growth areas, which fall under the jurisdiction of Thurston County.

Intercity Transit operates 21 fixed routes and maintains about 1,000 bus stops—ranging from full shelters on downtown Olympia's sidewalks to sign poles on rural Thurston County's road shoulders. The 101-square-mile PTBA includes geographically diverse urban, suburban, and rural areas; no two stop locations exist in exactly the same site context.

*This manual is intended to offer **clear and uniform guidance** to coordinate the design and placement of bus-related facilities and amenities across Intercity Transit's service area.*

This Bus Stop Design Standards Manual is intended to offer clear and uniform guidance to coordinate the design and placement of bus-related facilities and amenities across the service area. Application of these standards will encourage a more consistent, more accessible, and better connected network of bus stops over time. These guidelines are based on a review of standards and best practices applied at other transit agencies across the country.

1.2 GOALS

1.2.1 Safety & Accessibility

Safety is a critical component of any Intercity Transit project and is a primary goal in the design of all IT bus stops. Certain elements should be primarily considered at each stop to provide a safe and secure location for customers and allow for our transit vehicle dimensions:

- Barrier-free pedestrian access to adjacent sidewalks, crosswalks, trails and pathways,
- A familiar and inviting waiting area that uses available streetlighting,
- Recognizable landing pads that distinguish intended locations for customers to board and alight the vehicle, and
- Preservation of adequate driver sight distances intended to protect both pedestrians and motorists from conflict or collision.

1.2.2 Regional Consistency

Intercity Transit's overarching goal for this manual is to achieve regional application of the standards that will harmonize and simplify the design, permitting, and placement of bus stops and zones in all of the jurisdictions being served by fixed route transit service. This outcome supports other goals, including safety and accessibility, as well as implementation of IT's Short- and Long-Range Plan and is consistent with State and regional transportation goals that shape local transportation planning and development. Maintaining regional consistency in design and placement will maximize the familiarity of Intercity Transit's brand, while preserving reliable operability and serviceability of all bus stops within our community.

1.3 HOW TO USE THIS MANUAL

These standards are designed to be flexible and should be tailored to the conditions of individual stops, while also identifying the components of bus stop design and connectivity considerations that are essential at all stops.

This manual is intended to provide PTBA jurisdictions, private developers, and other partners a technical reference tool for developing fixed-route transit bus stops and zones. It aims to outline Intercity Transit's standards, preferences, and industry best practices for bus stop design, which can be integrated into roadway, development, or other projects that affect or interact with the bus stop zone.

Because of the wide variety of site contexts and settings across the service area, a given transit stop's physical context may offer opportunities to meet the standards in some ways but not others. Accordingly, these standards are designed to be flexible and adaptable to the conditions of individual stops, while also identifying the components of bus stop design and connectivity considerations that are essential at all stops. Concessions on the application of these standards should be limited to site-specific constraints subject to the mutual agreement of the governing jurisdiction and Intercity Transit.

The bus stop serves as riders' first interaction with Intercity Transit's bus service and includes more than just the area where riders get on and off at the bus stop sign.

Ultimately, PTBA jurisdictions should view this manual as a "living" reference tool with qualitative considerations and quantitative guidelines to ensure that any transit stop and zone is safe and accessible while striving to remain consistent with other Intercity Transit stops and compatible with its surroundings. The bus stop serves as riders' first interaction with Intercity Transit's bus service and includes more than just the area where riders get on and off at the bus stop sign. The following should be taken into consideration when siting a bus stop:

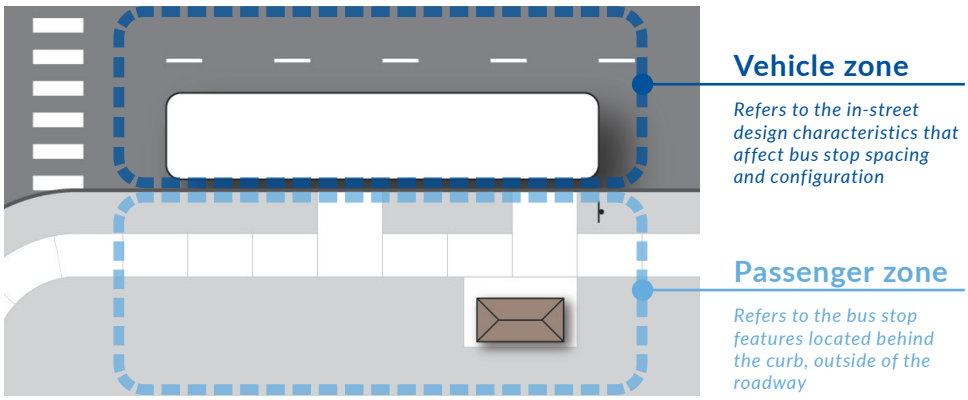
- How will all pedestrians or bicyclists, of all capabilities, **gain access** to the stop?
- How will all current and future bus operators negotiate the roadway configuration, traffic tendencies, and other fixed objects to uniformly and **reliably serve the stop** in all conditions?
- How will the **local context** influence riders' experience and perception of safety while waiting for the bus or exiting from the bus?
- Will this bus stop work to advance the mission of Intercity Transit to **provide and promote transportation choices**?

1.3.1 Components of the Bus Stop Zone

In order to understand the organization of this document, it is critical to understand the components of the bus stop zone. The bus stop zone encompasses all elements of the bus stop, including the vehicle zone (in the street) and the passenger zone (behind the curb), as illustrated in Figure 1-1. Intercity Transit designed this document to be a concise and logical reference tool, organized principally by the vehicle zone and passenger zone characteristics:

- **Vehicle zone characteristics** encompass roadway features, such as traffic speeds, travel lanes, pedestrian crossings, and intersection designs, all of which influence the location of bus stops as well as their spacing, design type, and overall operability.
- **Passenger zone characteristics** encompass off-street infrastructure, such as sidewalks, pathways, drainage, utilities, streetlights, urban landscaping, and transit landing pads. Intercity Transit Facilities staff maintain responsibility over

Figure 1-1 Components of the Bus Stop Zone



Intercity Transit encourages the PTBA jurisdictions to reference this document in their development codes and transportation engineering and design standards, where applicable.

transit amenities (i.e. bus shelters, benches, pole signs, solar lighting, and trash cans). All of the passenger zone characteristics come together to affect and influence the experience of bus riders and pedestrians.

1.3.2 Integration with Jurisdictional Processeses

Intercity Transit encourages its PTBA jurisdictions—Thurston County, Olympia, Lacey, Tumwater, and Yelm—to reference this document in their development codes and transportation engineering and design standards, where applicable.

To help standardize and streamline jurisdictions' permitting processes for new or improved bus stops and zones, this document's appendix includes standard engineering drawings of IT bus stop landing pads, as well as diagrams and recommended dimensions of larger transit zones. The appendix also includes a list of resources and other useful information that is referenced within the document.

2 BUS STOP PLACEMENT AND COORDINATION

2.1 JURISDICTIONAL COORDINATION

Jurisdictional coordination with Intercity Transit should occur as early as possible in the development process.

Each jurisdiction in the Intercity Transit service area has unique permitting procedures and requirements governing use and development of private property as well as the public right-of-way. Depending upon the applicant and the jurisdiction in which a project is located, the permitting process will vary. IT works with each jurisdiction to ensure compliance with permitting requirements for each project.

Intercity Transit, jurisdictions, and land developers should coordinate bus stop infrastructure, site selection, and installation where there is a new development within the service area.

Depending on a development project's location and the jurisdiction's standards, the project may warrant installing sidewalks, streetlights, landing pads, bulb-outs, and/or other transit-supportive improvements along portions of the property perimeter. It is important to recognize that as a result of passenger tendencies or safety, Intercity Transit may need to alter or adjust a stop or its location during or following project development. Moreover, some projects may also necessitate ADA paratransit (Dial-A-Lift) supportive improvements to the design and flow of internal street networks and parking lots. Coordination with Intercity Transit should occur as early as possible in the development process.

2.2 DETERMINING BUS STOP PLACEMENT

2.2.1 Development Sites with Existing Transit Service

Builders of development sites with an existing bus stop or stops should coordinate with the jurisdiction and Intercity Transit to determine how to reincorporate the bus stop(s) into the improved frontage along the roadway with the transit route. As a result of the change or intensity of use, IT may request that the developer create a new transit stop or stops, or relocate/consolidate existing stop(s) to new locations along the parcel perimeter. Property owners may be requested by IT to make transit-supportive enhancements to both the vehicle zone and the passenger zone, including a new or larger bus landing pad.

2.2.2 Development Sites without Existing Transit Service

Builders of development sites without existing bus service or stops should also coordinate with the jurisdiction and Intercity Transit to determine whether a bus stop or transit supportive elements should be installed to support future bus service. IT may request developers in areas of the community where future transit service is likely to construct a passenger zone, in preparation for transit service, or to exclude frontage improvements that would complicate future installation of a bus stop (e.g. trees, vegetation, utilities, or stormwater). Installation of a bus stop, or supportive frontage improvements, may not be required as part of the construction of frontage work if transit is unlikely to ever serve the site, or there are adequate existing bus stops within the site vicinity.

2.3 ADDITIONAL CONSIDERATIONS

Many factors exist outside of Intercity Transit's control, which can make providing quality transit facilities a complex task at times. External factors that can influence bus stop improvement include local and federal regulatory requirements; available space (including public right-of-way) for stop infrastructure; and the presence of accessible sidewalks and street crossings connecting to stops. IT actively works with the local jurisdictions to make improvements to the sidewalk network and to add accessible bus stops in conjunction with planned construction activities; additional guidance related to passenger accessibility can be found in Section 4.2 of this document.

2.3.1 Equitable Distribution of Service

As a recipient of Federal Transit Administration (FTA) grant funding, Intercity Transit is required to set system-wide service standards and policies which include the equitable distribution of service, vehicles and amenities.

I'M A DEVELOPER. WHAT'S MY ROLE IN TRANSIT COORDINATION?

For development projects located in Intercity Transit's PTBA, transit coordination is an essential but often overlooked task. There are three simple steps you can take to ensure your project is sufficiently coordinated with existing and planned transit routes:

Step 1 – Check to see whether there is an existing bus route along the frontage of the parcel(s) being developed.

Step 2 – Discuss with your jurisdiction whether a bus pad improvement is needed. If there is not a current stop nearby, have the City or the County verify with Intercity Transit that a future route isn't anticipated.

Step 3 – If a bus pad needs to be added or improved, the developer should meet with Intercity Transit to discuss location and style.

Capital Mall Dr. at Courtside St., westbound

2.3.2 Preservation of Public Rights-of-Way

Intercity Transit will not initiate bus service prior to determining the alignment of a fixed route and the location of its bus stops. When launching a new route or realigning an existing route, Intercity Transit will coordinate with the affected jurisdiction(s) to assess and select bus stop locations within the public right-of-way. When it is necessary to place some or all of a bus stop on private property, IT will also coordinate with the property's designated representative to secure an easement.

Depending on the permitting jurisdiction's requirements and the bus stop's complexity, Intercity Transit will provide the permitting jurisdiction this document's standard bus stop drawings (see Appendix B) or provide alternative drawings prepared by a professional engineer. Per the local jurisdiction's permitting requirements, IT will also pay standard permit fees, identify potential obstacles (e.g. utilities, trees, and road signs) within the public right-of-way, and provide traffic control plans for bus stops where installation work must occur within the roadway.

2.3.3 Removal or Relocation of a Bus Stop

It may be necessary to occasionally consider removal of a stop. The following are some circumstances in which removal or relocation may be appropriate:

- **Safety concerns:** A request to remove the shelter because it is posing a pedestrian or traffic problem.
- **Police request:** Request for removal by police due to adjacent crime, noise, or loitering.
- **Vandalism and accidents:** When a shelter is subjected to repeated acts of vandalism, or has been damaged a number of times by vehicular accidents.
- **Neighborhood/community requests:** A request to remove the shelter by a neighborhood or community group.
- **Private property owner requests:** A request to remove the shelter because of the extent of problems caused to adjacent private property.
- **Change in environment:** If there has been a change in the nature of adjacent land uses or the surrounding community.

3 VEHICLE ZONE CHARACTERISTICS

*The **vehicle zone** refers to the portion of the bus stop zone located within the roadway, where transit vehicles dwell to pick up and drop off passengers.*

This section addresses characteristics of the **vehicle zone**—those in-street design characteristics that affect bus stop spacing, location, and the configuration of bus stop zones, which in turn influence both system performance and customer satisfaction. While Intercity Transit has standard bus stop designs and a preferred placement of stop zones, other street design characteristics also factor into bus stop design and location decisions, including roadway curves, lane configurations, block lengths, and traffic speeds. IT also factors into its decisions bus route frequency and stop ridership, as well as surrounding land use zoning and density.

3.1 BUS STOP SPACING

Bus stop spacing is influenced by a number of factors, and trade-offs must be considered between travel times and walking distances between bus stops.

Generally, Intercity Transit aims to place a bus stop every 1,000 feet (or about every one-fifth of a mile) along a fixed route with regular transit service. Stops may be placed closer together or farther apart, however, depending on the frequency of bus service, the size of blocks, and the density of households and jobs along a bus route. Bus stops are generally closer together in densely built downtown Olympia, for example, and spaced farther apart as one travels away from the urban core.

IT considers trade-offs between travel times and walking distances between bus stops. Placing stops closer together, for example, decreases passenger walking distances but slows down bus service. Table 3-1 describes Intercity Transit's general recommendations for spacing bus stops.

Table 3-1 Recommended Bus Stop Spacing

ENVIRONMENT	SPACING RANGE
Highest density and bus frequency	500–1,000 feet
Moderate density and bus frequency	800–1,200 feet
Low density and bus frequency	1,200+ feet

Source: Adapted from TCRP Report 19

3.2 BUS STOP POSITION

***Far-side stops** are Intercity Transit's preferred bus stop position, but other positions may be considered when warranted by a site's context.*

Bus stops can be located in one of three areas on the street, which can generally be described by their proximity to an intersection or location within a block:

- **Far-side stops** are those located immediately *past* an intersection (in the direction of travel).
- **Near-side stops** are those located immediately *prior to* an intersection.
- **Mid-block stops** are those located in the *middle* of a block, away from the intersections.

Stop position can be determined by a variety of factors, including pedestrian access and ADA considerations, passenger safety, traffic signals and stop spacing, location of buildings and driveways, and the availability of right-of-way to locate a stop and/or enhance one in the future. Each position has its advantages and disadvantages; Figure 3-1 on the following page illustrates each of the three stop positions, and Table 3-2 details the trade-offs that should be considered when placing a bus stop.

3.2.1 Preferred Bus Stop Position

Far-side is the preferred bus stop position for Intercity Transit's stops. Where practicable, bus stops should be located on the far side of a street intersection, or pedestrian crosswalk, to reduce the space required for the bus stop zone and to minimize conflicts between buses re-entering the traffic stream and vehicles making right turns onto cross-streets. On routes with transit signal priority (see text box below), far-side stops also allow the bus to get through the intersection faster to board and alight passengers, as opposed to delaying traffic on the near side and then potentially getting stopped again at the traffic signal.

In addition to the far side of the intersection, IT also prefers bus stops (often mid-block stops) to be placed on the far side of pedestrian crossings. Placing the bus on the far side of the crossing discourages passengers exiting the bus from attempting to cross the street in front of the bus. While far-side positions are often preferred, it may be necessary in some cases to place a bus stop mid-block or on the near side of an intersection or crosswalk, as outlined in Table 3-2.

WHAT IS TRANSIT SIGNAL PRIORITY?

IT uses Transit Signal Priority (TSP) on certain routes to give buses priority on our busiest and most congested corridors. TSP facilitates transit vehicle movement through signalized intersections using priority request generators installed on buses and a "queue jump" lane (usually a right-turn or bus-only lane) on the intersection approach. This allows buses to bypass queues and enter traffic flow in a priority position at busy intersections. Applied thoughtfully, TSP treatments can significantly reduce delay, improve reliability, and allow transit service to be time-competitive with other modes of travel.

Queue jump lane on State Ave. at Washington St., westbound

Figure 3-1 Bus Stop Position in Relation to Intersections

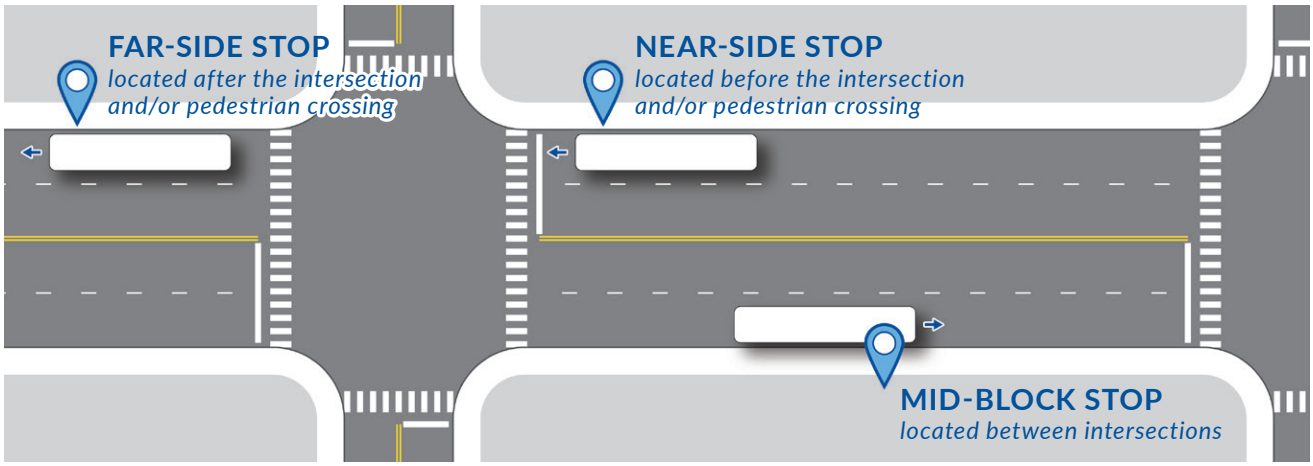


Table 3-2 Advantages and Disadvantages of Each Bus Stop Position

BUS STOP POSITION	ADVANTAGES	DISADVANTAGES
FAR-SIDE (PREFERRED) **Recommended at:** » Complex intersections with multi-phase signals » Intersections where traffic is heavier on the near side than on the far side » Intersections with a high volume of right turns » Pedestrian crossings behind a bus (at a crosswalk) are better than crossings in front of a near-side stop	» Provides additional turn capacity by making curb lane available for traffic » Minimizes conflicts between right turning vehicles and parked buses » Results in bus drivers taking advantage of gaps in traffic flow created at intersections » Encourages pedestrians to cross behind the bus » Minimizes sight distance on intersection approach » Reduces wear on buses and streets by avoiding lane shifts during braking	» Intersections may be blocked during peak periods by parked buses » May increase sight distance problems for pedestrians » A bus may stop at a far-side stop just after stopping at a red light » May increase number of rear-end collisions, as drivers do not expect buses to stop again after a red light
NEAR-SIDE **Recommended when:** » There are no far-side stop options » Traffic is heavier or more complicated on the far side (such as with roundabout intersections) » Existing pedestrian conditions are better than on the far side	» Minimizes interference when traffic is heavy on far-side of intersection » Keeps intersection's far side clear to receive turns » Allows passengers to access buses closer to the crosswalk » Allows passengers to board and alight while bus is stopped at light » Provides driver with opportunity to look for oncoming traffic	» Increases conflicts with right-turning vehicles » May result in buses obscuring curb-side traffic-control devices and crossing pedestrians » May hide a stop sign on the right corner when bus is stopped » Increases sight distance problems for crossing pedestrians » Makes transit priority treatments less effective » Double stop potential—once to serve the stop and then again if the light is red
MID-BLOCK **Recommended at:** » Intersections with problematic traffic » Locations where a passenger traffic generator is located mid-block » Locations with large distances between uncontrolled intersections	» Minimizes sight distance for vehicles, pedestrians » Stops can be adjacent to major activity centers » May result in passenger waiting areas with less pedestrian congestion	» Requires additional distance along curb for no-parking zone » Encourages jaywalking » Increases walking distance for patrons crossing intersections

Source: Adapted from NACTO Transit Street Design Guide and other sources

As the first point of contact between the passenger and the transit service, the bus stop is a critical element in a transit system's overall goal of providing timely, safe, and convenient transportation.

3.2.2 General Considerations

As the first point of contact between the passenger and the transit service, the bus stop is a critical element in a transit system's overall goal of providing timely, safe, and convenient transportation. Bus stop zones should be of adequate length to allow a standard 40' bus to clear crosswalks and not obstruct intersections when serving bus stops.

The physical location of any bus stop zone will be primarily determined by the following standards:

- Maximizing safety;
- Optimizing operational reliability and efficiency;
- Minimizing risks of collision or interference with adjacent trees, vegetation, or utilities;
- Minimizing impacts to adjacent property; and
- Compatibility with other right-of-way uses.

3.2.3 Additional Considerations

ROUNDABOUT INTERSECTIONS

Roundabout intersections present a unique situation for siting a bus stop. Because roundabouts are specifically designed to keep traffic flowing, it can be difficult to site a bus stop in the preferred far-side location.

At single-lane roundabouts, the preferred bus stop location is near-side, behind the pedestrian crossing. This prevents queueing into the roundabout while also maintaining pedestrian safety. If it cannot be located at the near-side pedestrian crossing, it should be located on the far side with a pull-out or at a sufficient distance from the roundabout to prevent queuing into the roundabout.

At multi-lane roundabouts, the preferred bus stop location is a far-side stop with a pull-out. This prevents queueing into the roundabout and doesn't impact pedestrian crossing safety.

3.3 BUS STOP CONFIGURATION

Bus stop configuration refers to the design of the vehicle zone where a bus stops—or dwells—when it picks up and drops off passengers. Intercity Transit considers a stop's ridership, street design, vehicle speeds, available space, and other factors when determining where buses dwell. There are different bus stop configurations, as illustrated in Figure 3-2, that should be considered depending on the roadway and intersection layout and other aspects of the site's context:

IN-LANE CONFIGURATIONS

- **Curbside stops** are the simplest configuration, with the bus stopping in the travel lane to pick up and drop off passengers.
- **Bulb-out stops** utilize an extension of the sidewalk into the parking lane to align the stop with the travel lane, and also allow buses to remain in the travel lane to serve the stop.

OUT-OF-LANE CONFIGURATIONS

- **Pull-out stops** require buses to pull completely out of the travel lane into an engineered pull-out area to serve the stop; they must then merge back into the travel lane.
- **Wide shoulder stops** are different from an engineered pull-out zone and occur when there is a shoulder wide enough to accommodate a curbside pull-out.

*Generally, Intercity Transit prefers **in-lane stops**, where buses dwell within the travel lane, so as to avoid conflicts associated with re-entering the traffic stream.*

3.3.1 Preferred Bus Stop Configuration

Generally, Intercity Transit prefers in-lane stops, where buses dwell within the travel lane, so as to avoid conflicts associated with re-entering the traffic stream. Sometimes, however, a site's unique context warrants alternative bus zone designs. Each of the configuration types is described in more detail below, and Table 3-3 describes the advantages and disadvantages of each.

3.3.2 Recommendations for Each Configuration Type

IN-LANE CONFIGURATIONS

With in-lane stops, the bus remains in the rightmost travel lane to pick up and drop off passengers. As noted in Section 3.3.1, in-lane stops are Intercity Transit's preferred bus stop configuration.

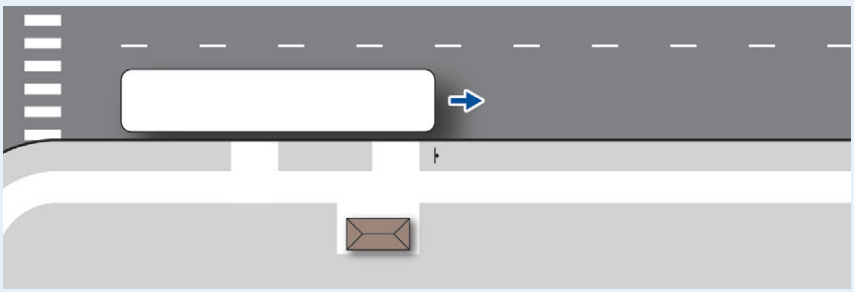
Curbside Stops

The most common design is a curbside stop that consists of a dedicated zone on the street curb for passenger loading and unloading. Bus stops must be clear of parking and loading zones in order to guarantee space for the bus to stop. IT cannot guarantee bus stop accessibility unless the bus has a clear path to the curb.

In order for buses to be able to pull completely to the curb, Intercity Transit needs the vehicle zone, where the bus dwells at the curb, to be free of parked vehicles and other obstacles. This can be achieved by clearly marking a curbside bus stop as a "no parking" or "bus only" zone with signs and/or curb painting.

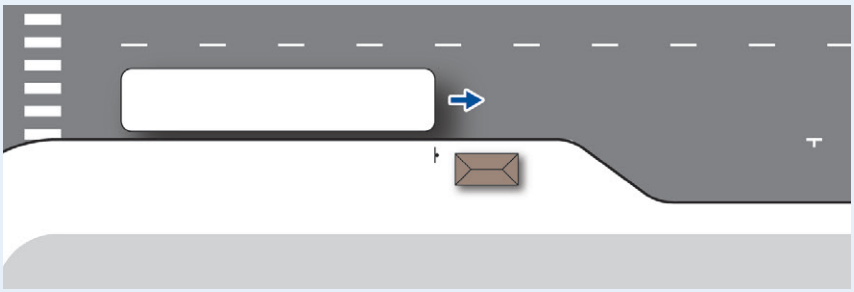
Figure 3-2 Bus Stop Configurations

IN-LANE CONFIGURATIONS



CURBSIDE STOP

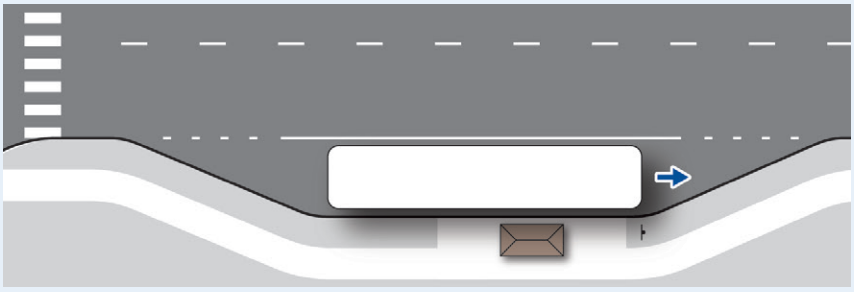
Curbside stop on Capitol Way at Maple Park Ave., northbound



BULB-OUT STOP

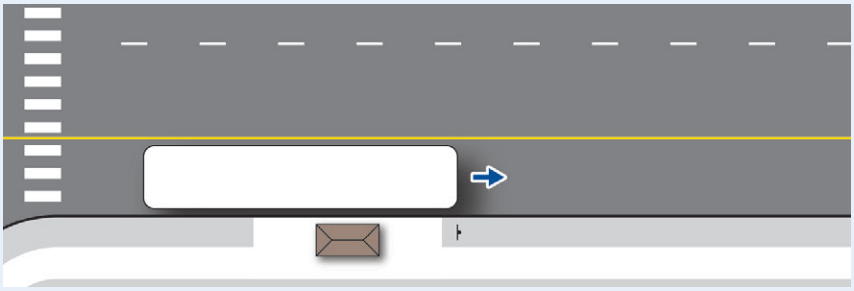
Bulb-out stop on Capitol Way at A Ave., southbound

OUT-OF-LANE CONFIGURATIONS



PULL-OUT STOP

Pull-out stop on Capitol Blvd. at Israel Rd., southbound



WIDE SHOULDER STOP

Wide shoulder stop on 4th Ave. at Central St., eastbound

Bulb-Out Stops

A bus bulb-out is a horizontal curb extension into the adjacent on-street parking lane, allowing the bus to remain in the rightmost travel lane when loading and unloading passengers. The bulb typically replaces a small section of on-street parking to allow passengers to safely reach the bus, which allows for a larger waiting area and also allows for buses to proceed quickly after loading passengers. The addition of a bulb-out can also help overcome limitations on sidewalk space near bus stops.

Bulb-outs are typically associated with near- or far-side bus stops, but can also be effective for mid-block stops. Bulb-outs should be considered at the following bus stop locations:

- Locations with high pedestrian activity and limited sidewalk area;
- Locations where vehicles queue up frequently and make it difficult for buses to merge in and out of traffic;
- Locations where traffic volumes inhibit safely accessing a curb stop;
- Locations with limited sidewalk space where shelters and benches are needed or desired; and
- Locations with lengthy pedestrian crossing distances or multi-lane roads without a pedestrian refuge.

Bulb-out designs must be consistent with the local jurisdiction's transportation engineering and design standards. The NACTO Transit Street Design Guide provides useful design guidance for bus bulb-outs and other transit infrastructure.

OUT-OF-LANE CONFIGURATIONS

Out-of-lane stops, which require buses to pull completely out of the travel lane to pick up and drop off passengers, are inefficient and often less preferred to in-lane stops. IT encourages bus pull-outs and wide shoulder stops to be used only in certain settings, such as higher-speed streets.

Pull-Out Stops

A bus pull-out is a specifically designed area outside the normal travel lanes where a transit bus can exit traffic to serve the stops. The pull-out typically coincides with the curb and sidewalk design and has tapers on both ends for deceleration/acceleration; they require the curb to be set back from the travel lane to bring the bus out of the flow of traffic. A pull-out stop requires the bus to pull completely out of and merge back into the travel lane in order to serve the stop.

Pull-out stops can be considered at locations where:

- Higher vehicle speeds, along with limited sight distance, may generate an unsafe condition for the bus and motorists;
- Longer-than-average dwell times occur, such as scheduled layovers or operator relief points; or
- The design of the roadway is such that the distance between the travel lane and the passenger zone (i.e. sidewalk or roadside) is large enough for the bus to completely exit the travel lane.

Table 3-3 Advantages and Disadvantages of Each Bus Stop Configuration

IN-LANE STOPS (PREFERRED)		
Stop Configuration	**Advantages**	**Disadvantages**
Curbside Stop Recommended at most locations.	» Provides easy approach for bus drivers and results in minimal delay to the bus » Simple design and less expensive to install » Easier to adjust exact positioning	» Can cause traffic delays since bus stops in the travel lane » May cause drivers to make unsafe passing maneuvers
Bulb-Out Stop Recommended at locations with: » High pedestrian activity and limited sidewalk area » Frequent vehicle queues that make it difficult to merge in and out of traffic » Heavy traffic volumes » Limited sidewalk space where shelters and benches are needed » Lengthy pedestrian crossing distances	» When located on a street with on-street parking, removes fewer parking spaces than other types » Minimizes conflicts between waiting passengers and pedestrians walking through the bus stop area » Provides additional sidewalk area for passengers » Helps maximize speed and efficiency of the transit network	» Can cause traffic delays since bus stops in the travel lane » May cause motorists to make unsafe passing maneuvers » Costs more to install compared to curbside stops

OUT-OF-LANE STOPS		
Stop Configuration	**Advantages**	**Disadvantages**
Pull-Out Stop Recommended at locations with: » Higher speed roads with limited sight distance » Longer-than-average dwell times occur frequently » There is a layover or relief point for bus drivers	» Bus is out of travel lane, minimizing delay to traffic » Passengers board/alight out of traffic	» Re-entry into congested traffic can be difficult and cause delays to bus service » Expensive to install, making relocation difficult/expensive » Can increase the chance of collisions as buses re-enter the roadway
Wide Shoulder Stop Recommended at locations with: » Two or more buses are likely to be serving a stop simultaneously » Longer-than-average dwell times occur frequently » There are large gaps between the travel lane and the sidewalk (or roadside)	» Bus is out of travel lane, minimizing delay to traffic » Passengers board/alight out of traffic	» Re-entry into congested traffic can be difficult and cause delays to bus service » The bus may be required to negotiate on-street parking or other roadside obstacles that prevent reliable access to the bus stop » Can increase the chance of collisions as buses re-enter the roadway

Source: Adapted from NACTO Transit Street Design Guide and other sources

The WSDOT Design Manual recommends that a bus pull-out should incorporate a deceleration lane or taper on the approach, a staging area for all anticipated buses, and a merging lane or taper exiting the pull-out. As roadway operating speeds increase, the taper length should increase accordingly.

Wide Shoulder Stops

Transit buses can also serve out-of-lane wide shoulder stops, which are similar in function to an engineered pull-out but do not include deceleration/acceleration tapers that coincide with curb and sidewalk design. Wide shoulder stops often compete with other roadside uses and therefore offer less surety for bus access.

As with pull-out stops, wide shoulder stops can be considered at locations where:

- Higher vehicle speeds, along with limited sight distance, may generate an unsafe condition for the bus and motorists;
- Longer-than-average dwell times occur, such as scheduled layovers or operator relief points; or
- The design of the roadway is such that the distance between the travel lane and the passenger zone (i.e. sidewalk or roadside) is large enough for the bus to completely exit the travel lane.

WHY NOT INSTALL PULL-OUTS AT ALL BUS STOPS?

Intercity Transit often gets asked why we don't create pull-out lanes at all stops so buses don't have to stop in the travel lane to load and unload passengers. In short, keeping the bus in the travel lanes allows IT to provide the most efficient bus service possible.

Pull-out stops require buses to pull completely out of the travel lane to serve the stop before merging back into traffic. **It is quicker, easier and safer for the bus to stop in the travel lane than it is to pull out of the lane and then try to merge back in again.** Re-entry into congested traffic can be difficult and cause delays to bus service.

However, this doesn't mean pull-out stops are inappropriate in all cases. Pull-out stops are recommended on high-speed roads, stops with longer-than-average dwell times, or where multiple buses are likely to be serving the stop at the same time. See Table 3-3 for additional information and a comparison of the various bus stop configurations.

Pull-out bus stop on Rural Rd. at 48th Ave., northbound

3.3.3 Additional Considerations

DRIVEWAY LOCATION

Maintaining adequate separation between driveways/intersections and bus stop zones can increase the safety and efficiency of both the roadway and transit service. When locating a bus stop in relation to existing driveways or locating a driveway in relation to an existing bus stop, the following guidelines should be taken into consideration:

- A bus stop should not be located where the transit vehicle will block sight distance from a driveway or road intersection.
- Driveways should not be located within the taper of a bus pull-out.
- Ideally, the bus stop zone should be located at least 20 feet from any driveways.

4 PASSENGER ZONE CHARACTERISTICS

*The **passenger zone** refers to the portion of the bus stop zone located behind the curb (outside of the roadway) where transit riders wait, board, and alight the bus.*

Passenger zone characteristics refer to those bus stop features located behind the curb—outside of the roadway—that are associated with bus riders' access, equity, comfort, safety, and convenience. Such characteristics include signage and landing pads, as well as certain amenities including shelters, benches, and garbage cans. Passenger zones coincide with adjacent infrastructure such as sidewalks, streetlights, and connected walkways. Transit stops are where transit passengers and transit vehicles meet and interact—and the characteristics of the passenger zone define these interactions and contribute to the overall experience of using public transportation.

The success of a transit system depends in large part on how well the passenger zone responds to the needs of people riding and operating transit, and how well it works with the design of transit vehicles themselves. It must accommodate various forms of ability and provide capacity for predictable and reliable boarding, alighting, and waiting for transit buses without unnecessarily interrupting the flow of pedestrian traffic on nearby sidewalks. Each configuration presents its own opportunities, benefits, and challenges, interacting differently within street, passenger, and transit operations contexts.

Newly constructed or altered bus stops should meet the standards in this section to the maximum extent feasible.

4.1 BUS STOP INFRASTRUCTURE

Intercity Transit considers a bus stop's ridership, location, and other criteria when determining whether the stop should have a bus shelter or sign pole, pad(s), and other amenities. This section describes IT's recommended standards for any infrastructure provided at a new or retrofitted bus stop.

4.1.1 Signage

All active bus stops are required to have an Intercity Transit bus stop sign. IT will arrange for the installation of the signage at the time service is initiated at a stop.

4.1.2 Landing Pads

All new or retrofitted bus landing and shelter pads should be designed to the engineering standards set by Intercity Transit and the local jurisdiction, and should seek to comply with federal Americans with Disabilities Act (ADA) universal access requirements.

All new and retrofitted landing pads should have sufficient surface area to enable riders to board and alight from the front and rear doors of Intercity Transit's 40-foot buses. This can be accomplished by building one large pad that is at least 24' wide. A single 24' pad is often capable of supporting a standard bus shelter and represents Intercity Transit's preferred design. In some settings where a single 24' landing pad is not feasible, an alternative design of two separated front and rear landing pads, with a linear distance of 18' between pad centerlines (12' space between pads' inner edges; see Appendix B) is acceptable.

In both landing pad applications it is recognized that the forward pad (or portion of the pad) coincides with the designated accessible entrance/exit of the transit bus; the landing pad (or portion of the pad) that coincides with the rear doors of the bus are secondary and may not conform to accessibility standards for slope. Depending on the bus stop's surroundings and past or projected usage, Intercity Transit may ask the local jurisdiction permission to place landing pads flanking trees in planter strips or to trim or remove trees. Inadequate space for a landing pad may necessitate private property agreements where available.

4.1.3 Lighting

Practical, adequate lighting should be provided at bus stops and waiting areas for passengers; new or redeveloped projects should seek to locate bus stops within the available light-shed of new or existing street lighting. A well-lit waiting area will not only increase a pedestrian's feelings of security but will also allow a transit vehicle operator to clearly see the bus stop area, identify waiting passengers, and spot possible obstructions in the stop area.

4.1.4 Bus Shelters and Other Amenities

Intercity Transit maintains discretion over which bus stops within the network warrant certain amenities such as shelters and benches. To the extent a site can accommodate, higher ridership areas are often enhanced with a higher level of patron amenities such as a shelter, bench, bike rack, or trash receptacle. Lower ridership areas are likely to have fewer amenities.

It is IT's standard to install shelters in a forward-facing—i.e. opening toward the roadway—orientation. In most cases, shelters should be installed behind the sidewalk. In cases where available right-of-way is limited and the shelter must be installed directly on the sidewalk, an accessible route with a minimum 3-foot clear width must be maintained. Final placement will be coordinated with Intercity Transit; bus shelters will be placed and designed to engineering standards set by Intercity Transit and the local jurisdiction (see Appendix B).

4.2 PASSENGER ACCESSIBILITY

It is essential that bus riders have safe access to their bus stop. Walking on narrow roadway shoulders, through mud or puddles, or through ditches is unacceptable to most bus riders and is both unsafe and uninviting. It is important to consider the collective needs of the entire community, including persons with any form of disability or special need.

New or redeveloped projects should construct passenger zones at the transit stop that are integrated with the greater accessible pedestrian network.

Making new stops conform to ADA physical dimension requirements is relatively easy. The ADA, however, is concerned with more than physical dimensions. It also involves accessibility from the point of origin to the final destination. For example, to get to the bus stop, individuals with limited mobility or vision need a path that is free of obstacles, as well as a final destination that is accessible. A barrier-free bus stop or shelter is of little value if the final destination is not accessible. New or redeveloped projects should construct passenger zones at the transit stop that are integrated with the greater accessible pedestrian network.

The "equal access" provisions of the ADA require that the route for persons with limited mobility or vision be as accessible as the route used by those without disabilities. A person with disabilities should not have to travel farther, or use a roundabout route, to get to a designated area. Minimum accessibility requirements for various characteristics of the passenger zone are described in Table 4-1.

Table 4-1 Minimum Passenger Zone Accessibility Requirements

CHARACTERISTIC	ACCESSIBILITY REQUIREMENTS
Access	» There should be a minimum 3' of clear width (walking surface) around bus shelters and seating, with some exceptions, per ADA provision 403.5.1. The NACTO Transit Street Design Guide, however, recommends a minimum of 4' to ensure riders are able to wait, board, and alight without obstruction.
Forward Positioned Landing Pads	» Landing pads — the area where a bus can deploy an accessible lift or ramp — require a grade of no more than 2 percent perpendicular to the vehicle roadway, per ADA provision 810.2.2. » Bus stop boarding/alighting areas shall provide a clear length of 96 inches (8') minimum, measured perpendicular to the curb or roadway edge, and a clear width of 60 inches (5') minimum, measured parallel to the roadway, consistent with provision 810.2.4.
Shelters	» Bus shelters should provide a minimum clear floor or ground space complying with provision 305 entirely within the shelter. » Shelters should be connected by an accessible route complying with provision 402 to a boarding and alighting area complying with provision 810.2.
Signage	» Intercity Transit will install bus stop signs and seek to comply with provision 703.5 for visual characters. » Bus schedules, timetables, and maps posted at a bus stop or bus bay are not required to comply, per provision 810.4.

Source: 2010 ADA Standards for Accessible Design

4.3 DESIGN CONSIDERATIONS ASSOCIATED WITH FIXED OBJECTS

Bus stops are generally designed around fixed objects. As with other constraints that influence bus stop design, such as limited right-of-way, fixed objects will influence the position, type, and location of amenities included at a bus stop. Intercity Transit will work with jurisdictions to ensure bus stops are compatible with any fixed objects that may be present. Recommendations for fixed objects that commonly coincide with bus stops are presented below.

4.3.1 Trees and Vegetation

Trees often present maintenance and operational issues at bus stops. Where possible, Intercity Transit desires a minimum 50' clear zone free of trees or shrubs on the leading side of the bus stop and a clear zone around the shelter/signage pole to allow bus access and rider visibility and safety. In some cases, Intercity Transit will work with the jurisdiction to request removal of trees or pruning of branches that hang less than 16' above the travel lane in order to avoid conflicts with buses.

4.3.2 Stormwater Infrastructure

Bus stops should avoid siting landing pads across stormwater swales whenever possible. If unavoidable, landing pads placed over swales must be 32' in length to compensate for the absence of adjacent ground.

Additionally, when placing a bus stop, it's important to avoid any negative impacts on nearby stormwater facilities. If the bus pad is located in a ditch or swale, a culvert with a 6" minimum diameter should be placed under the pad (culvert diameter will vary depending on the jurisdiction).

If the bus pad is impacting a bioretention facility that is being used for treatment, a perforated pipe surrounded by rock and filter fabric should be used (see details located in Appendix B).

To reduce ponding issues, the pad should have a minimum slope of 1% toward the roadway.

4.3.3 Utility Poles and Vaults

Utility poles and vaults must be accessible to utility providers. A clear zone of 4' around a utility pole is required. Offsets from guy wires can often be readjusted to accommodate bus stop amenities and pedestrian access.

Utility vault accessibility requires consideration of vault location when designing bus stops, as well as the means of access to a vault. The areas around vaults must be kept clear to allow for opening and removal of lids or doors.

4.3.4 Fire Hydrants

Fire hydrants must be accessible to firefighters. Intercity Transit will work with the jurisdiction to place bus stops around fire hydrants to ensure visibility and access for emergency vehicles; bus zones are considered compatible with hydrants, as transit vehicles dwell only momentarily at stops.

4.3.5 Irrigation Systems

Irrigation systems may be integrated into the bus stop design if piping can be relocated and/or capped to keep the system intact.

APPENDIX A

Glossary of Terms

Glossary of Terms

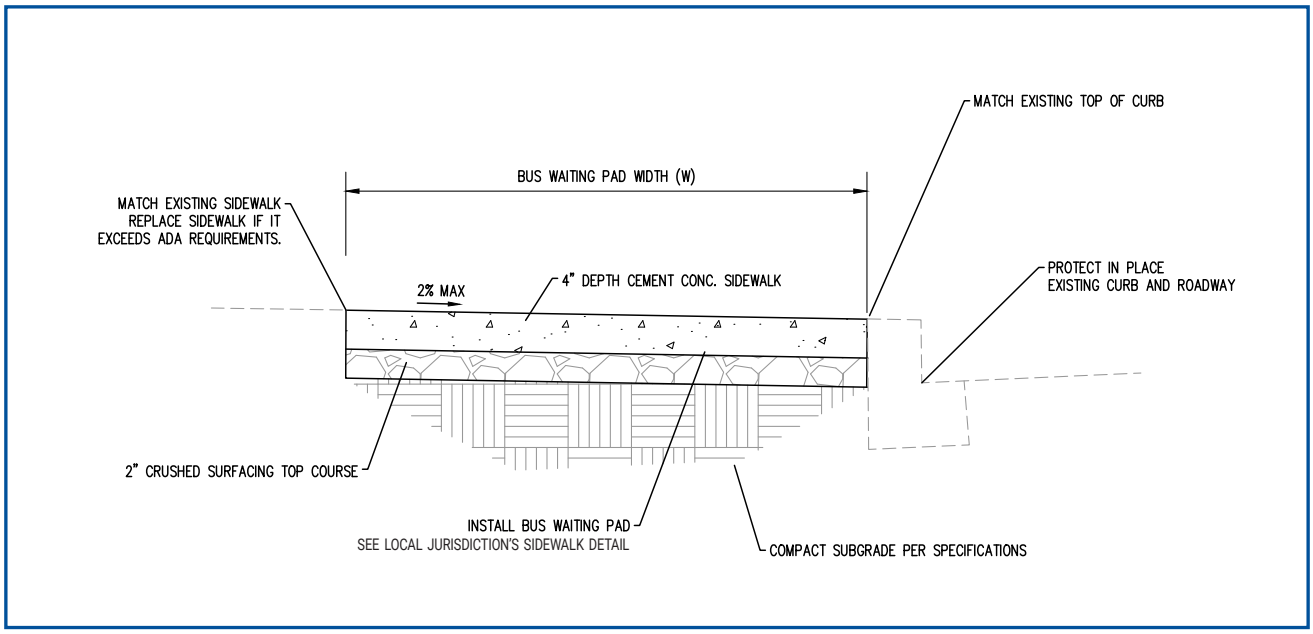
Alight	To get off or out of a transportation vehicle.
Amenities	Bus stop features, such as shelters and lighting, that enhance bus riders' comfort while waiting at the stop.
Americans with Disabilities Act (ADA)	A federal civil rights law, adopted in 1990, that establishes guidelines to ensure accessibility to those with disabilities. The ADA prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public. No new Intercity Transit bus stop may be added unless it meets minimum ADA guidelines.
Board	To get on or into a transportation vehicle.
Bulb-Out Stop	A bus stop with a horizontal curb extension that aligns the transit stop with the parking lane, allowing for an in-lane stop; used to overcome limitations on sidewalk space.
Bus	The transit vehicle.
Bus Ramp	A ramp deployed from a bus to reduce the vertical height needed to board the bus and help facilitate boarding and alighting for persons using mobility aids or those with difficulty climbing steps.
Bus Stop	An on-street location marked with site-specific signs, indicating where buses will stop to load and unload passengers.
Bus Stop Configuration	Refers to the configuration of the vehicle zone where a bus dwells when it drops off and picks up passengers. Bus stop configuration can be classified as in-lane (curbside or bulb-out stops) or out-of-lane (pull-out or wide shoulder stops).
Bus Stop Position	A bus stop's placement on the street relative to its proximity to an intersection or location within a block, generally described as far-side, near-side, or mid-block.
Bus Stop Spacing	The distance between bus stops along a fixed transit route. Intercity Transit generally aims to place a stop every 1,000 feet along a fixed route with regular service, though stops may be placed closer together or farther apart depending on service frequency, block size, and the density of households and jobs along a route.

Bus Stop Zone	Encompasses all elements of the bus stop, including the vehicle zone (in the street) and the passenger wait zone (behind the curb).
Curbside Stop	Bus stop located in a travel lane, allowing the bus to serve the stop and continue the route without having to merge out and then back into the travel lane.
Driver	An individual responsible for driving an IT transit vehicle. Also referred to as an "operator."
Dwell Time	The length of time the transit vehicle is stationary while serving a stop.
Dwell Zone	The space, in the street, needed for a transit vehicle to stop at the curb, or edge of roadway, and perform dwell functions: rider boarding and alighting, fare collection, etc.
Far-Side Stop	A bus stop located immediately following an intersection (in the direction of travel).
In-Lane Stop	A stop where the bus dwells in the travel lane to drop off and pick up passengers; in-lane stop types include curbside stops and bulb-out stops. Generally, Intercity Transit prefers in-lane stops (as opposed to out-of-lane stops) so as to avoid conflicts associated with re-entering the traffic stream.
Landing Pad	A location, generally constructed of concrete, asphalt, or similar material, where passengers board and alight from buses.
Mid-Block Stop	A bus stop, located in the middle of a block or between intersections, that is not a far-side or near-side stop.
Near-Side Stop	A bus stop located immediately before an intersection (in the direction of travel).
Out-of-Lane Stop	A stop where the bus pulls completely out of the travel lane to drop off and pick up passengers; out-of-lane stop types include pull-out stops and wide shoulder stops.
Passenger	An individual who rides a transit vehicle. Also referred to as a "rider."

Passenger Zone	The area behind the curb (outside of the roadway) where transit riders wait, queue, board, and alight the bus. The clear zone is 6 ft. deep min., and includes the bus stop sign, accessible boarding area, space for a bus shelter, and other streetscape amenities.
Pull-Out Stop	Bus stop located in a pull-out bay, with tapers on both ends, requiring the bus to pull completely out of and merge back into the travel lane in order to serve the stop.
Right-of-Way	A type of easement granted or reserved over the land for transportation purposes.
Shelter	A covered area at bus stops installed for passengers to use while waiting for a bus.
Sight Distance	The length of roadway visible to an operator.
Standard Drawings	Design and construction drawings for IT's transit facilities including, but not limited to, architectural, construction, civil, and structural plans.
Transit Signal Priority (TSP)	A bus priority treatment that improves transit speed and reliability between stops by changing the designation of street space and/or the operation of traffic signals, allowing buses to have priority passage on the busiest and most congested corridors as a means to help transit stay on schedule.
Vehicle Zone	The portion of the bus stop zone located within the roadway, where transit vehicles dwell for passengers to board and alight.
Wide Shoulder Stop	An out-of-lane stop that occurs when there is a shoulder wide enough for the bus to pull completely out of the travel lane to serve the stop, without an engineered pull-out zone.

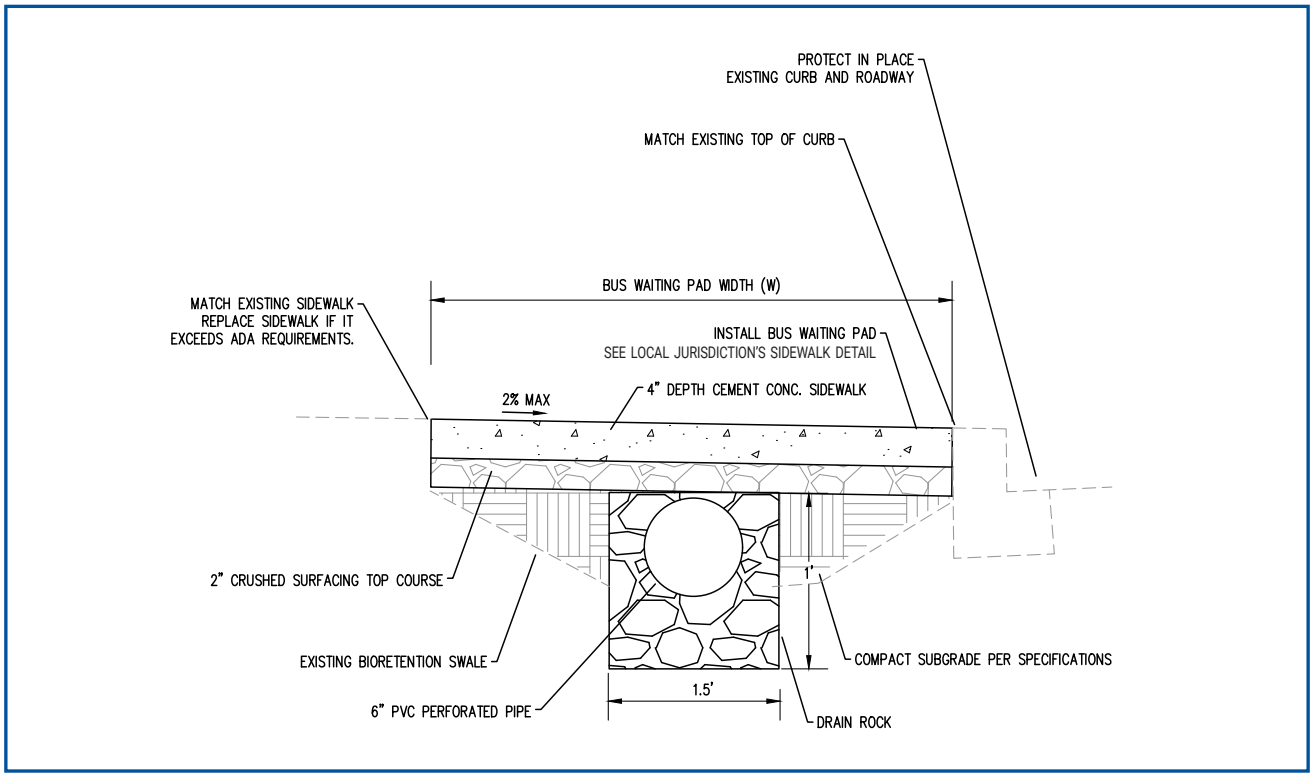
APPENDIX B

Technical Specifications



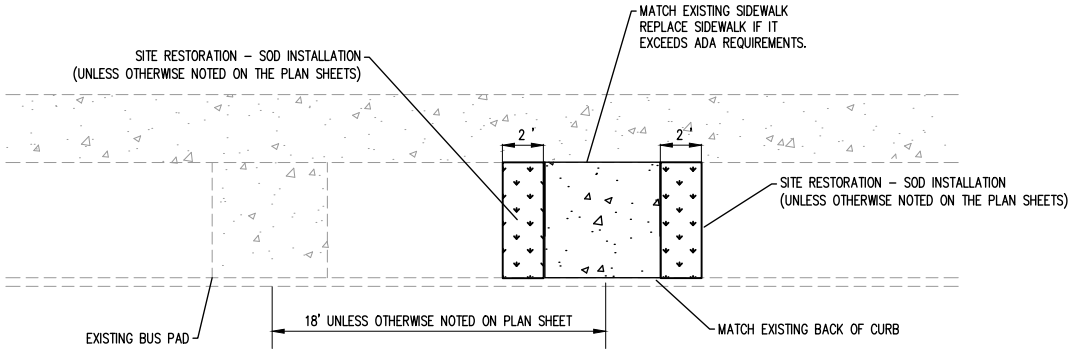
BUS PAD, TYPICAL

CROSS SECTION *not to scale*



BUS PAD IN A BIORETENTION FACILITY

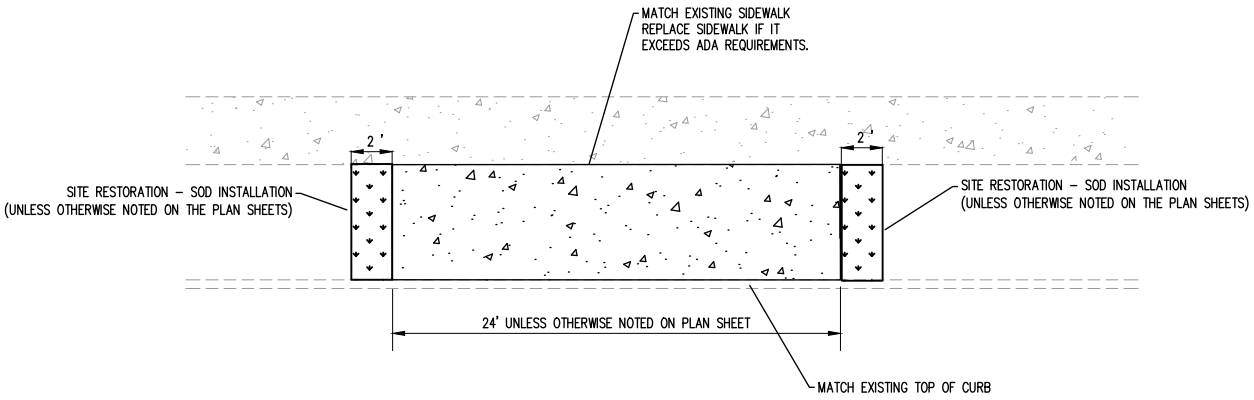
CROSS SECTION *not to scale*



REAR BUS PAD

PLAN VIEW

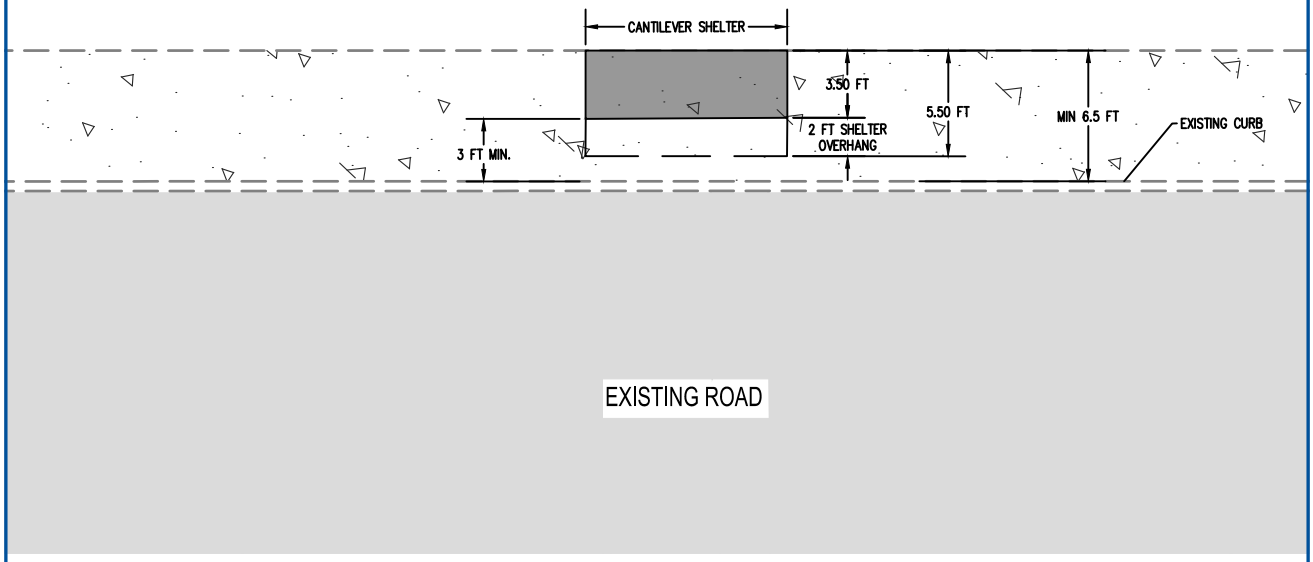
not to scale



LARGE BUS PAD

PLAN VIEW

not to scale



GENERAL NOTES:

1. It is Intercity Transit's standard to install forward-facing shelters.
2. Minimum clear width of an accessible route shall be 36 in.
3. Accessible route for 90-degree turn requires a path width of 36 in.
4. Bus pads shall meet ADA requirements for accessible design, Sections 305, 402, and 810.2.

BUS SHELTER LAYOUT

PLAN VIEW

Scale: 1" = 10'-0"

APPENDIX C

Resources

Resources

2010 ADA Standards for Accessible Design

https://www.ada.gov/law-and-regs/design-standards/2010-stds/

The Americans with Disabilities Act (ADA) is a federal civil rights law that establishes guidelines to ensure accessibility to those with disabilities. The ADA *Standards for Accessible Design* set minimum accessibility requirements for newly designed and constructed facilities, including transit facilities. No new Intercity Transit bus stop may be added unless it meets minimum ADA guidelines.

Intercity Transit Short- and Long-Range Plan

https://www.intercitytransit.com/sites/default/files/IntercityTransitShort-%26Long-RangePlan.pdf

Intercity Transit's *Short- and Long-Range Plan* establishes a long-term vision for transit in Thurston County, as well as near-term strategies to improve service and move toward that vision over time. It provides the framework for technical review of current fixed route services and also serves as a roadmap for future service enhancements.

NACTO Transit Street Design Guide

https://nacto.org/publication/transit-street-design-guide/

The *Transit Street Design Guide* provides design guidance for the development of transit facilities on city streets, and for the design and engineering of city streets to prioritize transit, improve transit service quality, and support other goals related to transit. The guide has been developed on the basis of other design guidance, as well as city case studies, best practices in urban environments, research and evaluation of existing designs, and professional consensus.

TCRP Report 19: Guidelines for the Location and Design of Bus Stops

https://nacto.org/docs/usdg/tcrp_report_19.pdf

The Transit Cooperative Research Program develops near-term, practical solutions to problems facing transit agencies. This report offers guidelines on various issues including bus stop placement, safety checklists, amenity layout, etc.

WSDOT Design Manual, Chapter 1730: Transit Facilities

https://wsdot.wa.gov/publications/manuals/fulltext/M22-01/1730.pdf

Chapter 1730 of WSDOT's *Design Manual* provides general guidance for the siting and design of transit facilities. It is intended for use by WSDOT engineering and planning staff, local transit providers, developers, and local agencies engaged in the collaborative development of transit facilities on or adjacent to state highways.