

TRANSIT DESIGN



GUIDELINES



September
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SECTION 1 - INTRODUCTION

GOALS OF THE GUIDE



Design stops and stations as introductions to the transit system

- National Association of Transportation Officials (NACTO) Transit Street Design Guide³

The primary goal of a transit agency is to provide customers with transportation to their destination in a safe, convenient, efficient, and reliable manner.¹ Stops and stations are the introduction to the transit system, and thus their design, safety, and accessibility are crucial for any community.

The purpose of this manual is to provide design criteria guidelines (developed by Omnitrans and working with local jurisdictions) for use by planners, designers, traffic engineers, and property developers when designing and placing bus stops and transit facilities. This information is not to be used as a set of standard details on which to base a final design, but rather as recommended criteria and general guidelines for the placement and safe design of transit facilities.

It cannot be overemphasized that these guidelines must be used in conjunction with the full evaluation of the facts and local conditions, as well as the application of sound planning / engineering judgment. Each site must be thoroughly examined, and each project must be evaluated from the aspect of safety, operational requirements, and cost-effectiveness. Design solutions may need to be adjusted accordingly to satisfy site specific constraints and applicable local ordinances. It is also important to note that the preferred dimensions should be planned for, and minimum dimensions are applicable only in specific constrained circumstances.

The goals of the guidelines are to:

- Promote consistency in local bus stop and transit facility placement and design throughout Omnitrans' service area.
- Provide guidance for cities, property owners, real estate developers, and other partners to incorporate bus stops and other facilities within new development that meet Omnitrans' operational needs.
- Help communities meet their mobility needs by providing safe, comfortable, and convenient transit facilities that encourage public transportation use.

GUIDING VALUES

Omnitrans is the transit agency serving the San Bernardino Valley and, as part of the agency's strategic plan, strives to provide innovative mobility solutions that connect the region and strengthen the economy. Omnitrans is committed to the values of safety, a focus on customer needs, performance, integrity, innovation, diversity, collaboration, and leadership. Towards the

mission of connecting the community with coordinated and sustainable transit service, the following values undergird these design guidelines for bus stops so that Omnitrans can best serve the needs of its riders. For more information about Omnitrans' strategic plan, please visit: <https://omnitrans.org/about/strategicplan/>

- **Safety**

Safety First

- The physical safety of customers is vital to the success of any transit system to not only retain existing ridership but also encourage new riders.¹ Ultimately, it is important that bus stops are easily identifiable, safe, accessible, and a comfortable place to wait for the bus.²

- **Equity**

Universal Design is Equitable Design

- It is vital to design streets so that people of all ages and abilities can safely reach transit stops and board comfortably. The elements that make transit more smoothly accessible can benefit all transit riders, regardless of physical or sensory ability. Thoughtful, human-centered design of transit infrastructure elevates the experience of riding transit and can save both time and money.³

- **Community**

More than Transit Infrastructure

- Bus stops are integral parts of a local community connecting riders with transit often at important local destinations. Valuing and responding to the community's voiced needs and desires not only can provide safe and equitable bus stops but can also create a sense of place and local identity.



OMNITRANS SERVICES

As of June 2023, Omnitrans operates fixed bus route services, one bus rapid transit (BRT) line (sbX), paratransit services (OmniAccess) for individuals with disabilities and microtransit service (OmniRide) in three local communities. For the most up-to-date information on routes, schedules, and other services, please visit:

<https://omnitrans.org/services/overview/>

These guidelines focus on bus stop design, requirements and amenities for fixed routes and BRT stops. OmniRide service uses virtual stops rather than established stops on fixed routes, and OmniAccess operates curb-to-curb.

SECTION 2 - COORDINATING AND WORKING WITH OMNITRANS AND LOCAL JURISDICTIONS

When a development is constructed adjacent to an existing or proposed bus stop location, the developer should be responsible for providing the minimum requirements and preferred amenities as described in the sections below. Jurisdictions are encouraged to require the placement of shelters that conform to local standards for customer recognition and ease of maintenance. Cities should submit a copy of all street improvement and development plans to Omnitrans to ensure proper coordination and placement of transit amenities. (See Appendix B for more details).

In most cases, transit agencies are limited in their ability to improve sidewalks and curb ramps around bus stops.¹ Thus, coordination between local jurisdiction, Omnitrans and developers is vital. It should be noted that Omnitrans currently coordinates and partners with all 16 member jurisdictions.

See Appendix A for Omnitrans Development Review flow chart. Omnitrans uses the flow chart for steps to take when considering bus stop design and placement in development plans. Developers can contact Omnitrans with questions about bus stops at or around their development at BusStops@Omnitrans.org.

REQUESTS TO CHANGE A BUS STOP

Placement of potential bus stops or concerns regarding existing stops may originate from city staff, Omnitrans staff, riders, developers, or the public. These requests include issues such as requests to add, move, or remove bus stops or bus service; add, move, or remove amenities at existing bus stops; and operational or safety/security concerns related to the stop location.

Requests for information or changes in bus stops should be sent to:

BusStops@Omnitrans.org

The process below will be followed:

- Both Omnitrans and local jurisdiction (city or county) staff will review the request and will jointly determine if a stop should be changed, relocated, or removed; if amenities should be removed or added; or if the stop in question raises any safety or operational challenges.
- If the issue affects the safety and security of Omnitrans riders, both Omnitrans and the local jurisdiction will perform an analysis of the site to identify options to reduce the dangerous condition. Careful consideration should be taken to determine how removal of the stop will affect persons who utilize the stop regularly.
- Omnitrans and the local jurisdiction will confirm, in writing, the work to be completed by each agency.
- The jurisdiction will notify adjacent property owners if necessary.

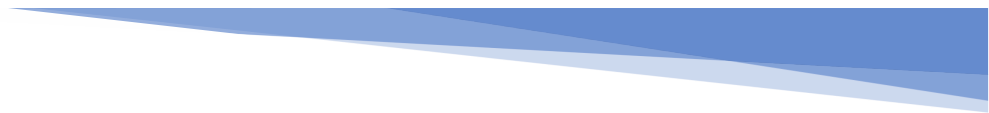
City officials should see Appendix B, when a local jurisdiction (city or county) begins the process of creating or updating a general plan, specific plan, or roadway project for coordinating and incorporating transit in the process.

Also see Appendix C, for informing Omnitrans when construction could impact bus stops or bus operations.

RESOLUTION OF CONFLICTS BETWEEN OMNITRANS AND JURISDICTIONS

While the local jurisdiction will consider Omnitrans' recommendations prior to making a final determination, ultimately the decision on the location of bus stops is the responsibility of the local jurisdiction. Jurisdictions have the authority to remove bus stops in cases where safety and security issues exist. When jurisdictions remove stops for such concerns, they shall notify and work in conjunction with Omnitrans to solve the safety and security problem with the goal to reopen or relocate the stop in a timely manner.

If situations occur where the staff of Omnitrans and that of the jurisdiction are unable to agree on a proposed plan, bus stop locations, or other concerns, the issue is to be raised to higher levels. Normally, a meeting will be held at the director level in an attempt to resolve disagreements. If the issue remains unresolved, an additional meeting will be held at the CEO/General Manager and City Manager level. If the issue is still unresolved, the jurisdiction's representative may present the disagreement to the Omnitrans Board of Directors at the next regular meeting.



SECTION 3 - VEHICLE TYPES

The dimensions of Omnitrans' vehicles impact the design criteria for bus stops and roadways.

25' Cutaway Vehicles

Access vehicles, some fixed routes and some of Omnitride's micotransit fleet are 25' long, 16-seat cutaway vehicles, as shown in Figure 3-1. The smaller size of these vehicles allows for navigation through narrow residential streets more cost-effectively than standard 40' coaches.



Figure 3-1

Standard 40' Vehicle

The majority of Omnitrans' fleet is the standard 40' coach, whose dimensions are shown in Figure 3-2. These are the primary vehicles used for most fixed routes. See Figure 3-3 for an example of a 40' vehicle design for future use as part of the Bus Rapid Transit (BRT) sbX fleet.

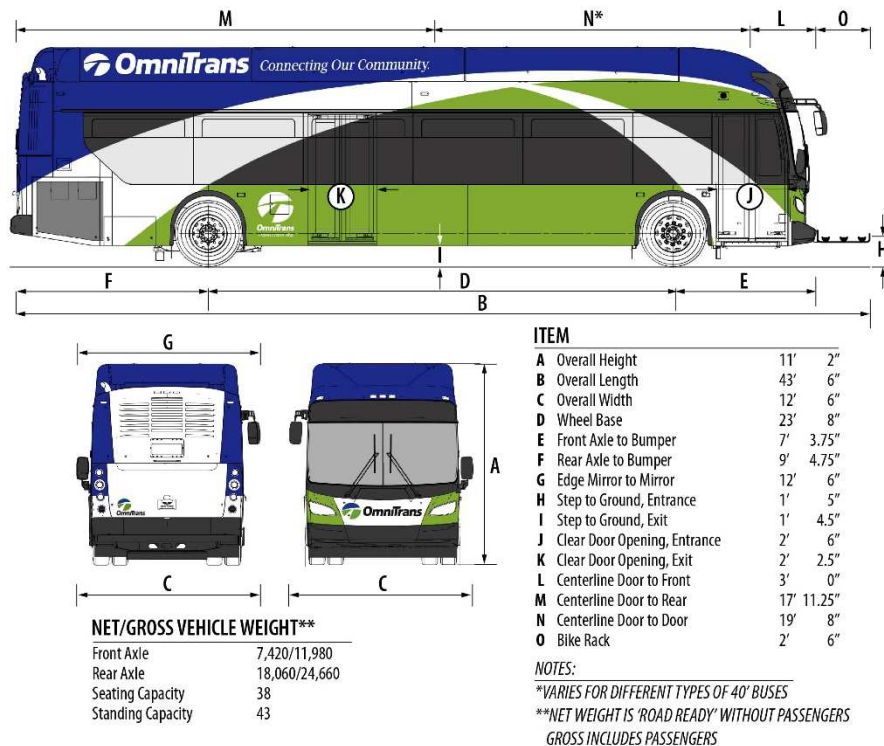


Figure 3-2: Dimensions for 40' vehicle

60' Articulated Vehicle

The sbX system uses specialized 60' articulated vehicles. While longer, the articulated design of the 60' vehicles allows for a tighter turning radius than a 40' vehicle. The 60' buses used currently by Omnitrans are specially designed for the features of the Bus Rapid Transit (BRT) line. However, in the future, 60' articulated vehicles may be used for local service, depending on ridership needs. All future Omnitrans BRT lines will have the sbX branding, with a color line designation for each line, and similar station architecture on all lines ("E" Street - Green Line; West Valley Connector - Purple Line).



Figure 3-3: Design for 40' sbX vehicle



Figure 3-4: Design for 60' sbX vehicle

ZERO-EMISSION FLEET

In 2018, the California Air Resources Board mandated that California transit agencies transition to a 100 percent zero-emission bus fleet by 2040. Under this mandate, Omnitrans has begun converting its fleet to battery electric buses as well as considering fuel cell buses. As part of this transition, charging infrastructure is needed, particularly on-route to charge buses during end-of-line layovers. This will require space for installing the chargers, as well as electrical infrastructure to power them.

As further guidelines and criteria are specified for charging stations on bus routes, Omnitrans will make these available for developers and city jurisdictions to incorporate for designs of transit centers and end-of-line layover stops.

SECTION 4 – BUS STOP TYPES AND PLACEMENT

BUS STOP TYPES

There are five types of bus stops – *minimum, basic, preferred, premium, and custom*. For a minimum stop, these are the essential requirements that are needed at any bus stop. The listed amenities for basic and preferred bus stops are recommended when space allows. Premium bus stops offer more amenities to riders for convenience and comfort. Finally, custom bus stops are generally for BRT stations (such as the sbX) or transit centers.

A summary for each of these requirements and recommendations is provided below for reference. Details for each of these types of bus stops are explained later in the document. (See pg. 23 and/or pg. 29)

Table 4-1: BUS STOP TYPES

FEATURE	Minimum	Basic	Preferred	Premium	Custom/ sbX	Transit Center
ADA Compliance	✓	✓	✓	✓	✓	✓
Bus pole & Signage	✓	✓	✓	✓	✓	✓
Trip System Info	✓	✓	✓	✓	✓	✓
Lighting	✓	✓	✓	✓	✓	✓
Bench* or Lean Bar		✓	✓	✓	✓	✓
Trash Receptacle*		✓	✓	✓	✓	✓
Shelter*			✓	✓	✓	✓
Standard Shelter			✓			
Premium Shelter				✓		
Bike parking					✓	✓
Landscaping					✓	✓
Local Art					✓	✓
Variable Message Sign (with real-time bus arrival)				✓	✓	✓
CCTV & public announcement Security System					✓	✓
Elevated platform with guardrails (BRT stop)					✓	✓
Restrooms for staff/public						✓
Charging for electric buses on layover						✓

* **Private / City Amenities:** Benches, trash receptacles, and shelters can be owned and maintained by Omnitrans, by the city, or by a private party. Check with the local jurisdiction for local requirements as some cities prefer to have amenities unique to their community versus the standard Omnitrans ones.

BUS STOP PLACEMENT

Bus stops are generally located at intersections as this maximizes pedestrian accessibility from both sides of the street and provides connection to intersecting bus routes. There are three possible locations to place a bus stop relative to an intersection, the far-side (after the intersection), near-side (before the intersection) and mid-block. See Figures 4-1 to 4-3 for these placements.

Local fixed-route bus stops are generally placed about ¼ mile apart to accommodate average acceptable walking distance for transit riders. sbX bus rapid transit stations are generally placed further apart, such as ½ mile apart, to reduce travel times. sbX bus rapid transit lines are generally underlaid by a less frequent local route that provides access to the more closely spaced local bus stops.

The exact location of bus stops at intersections varies from site to site. However, general considerations for the placement of bus stops include:

- Mid-block stops are highly discouraged because they typically place transit riders far away from a safe (signalized) crossing and encourage unsafe street crossings.
- When a route requires a left turn or a right turn, the preferred location for the bus stop is on the far side of the intersection after the left or right turn is completed.
- If there is a high volume of right turns at an intersection, the preferred location for a stop is on the far side of the intersection away from the turning traffic.
- In circumstances where the accumulation of buses at a far side stop would spill over into the intersection and additional stacking length is not available, the stop should be placed on the near side of the intersection. This removes the potential for queuing buses to overflow into and block the intersection.
- At complex intersections with multi-phase signals or dual right or left turn lanes, far side stops are preferred because they remove the buses from the area of complicated traffic movements at that intersection.
- Finally, far side placement is preferred as the safest for pedestrians because they are more visible in the crosswalk to other drivers who are entering the intersection.

For a fuller comparison of advantages and disadvantages of each placement, see the table in Appendix D.

Rural areas may present challenges for bus stop design and placement because of limited sidewalk networks, high-speed roadways, and non-supporting transit land uses such as industrial buildings, vacant parcels, and open spaces. In these cases, efforts should be made by local jurisdictions (in coordination with Omnitrans) to find the most level and open area for the bus stop to ensure customer access and safety. Stops must include ADA accessible waiting pads, a landing area for the bus ramp, any necessary wheelchair ramps constructed of concrete or asphalt, and connections to existing intersections or developments. See Section 6 for further details about ADA compliance at bus stops.

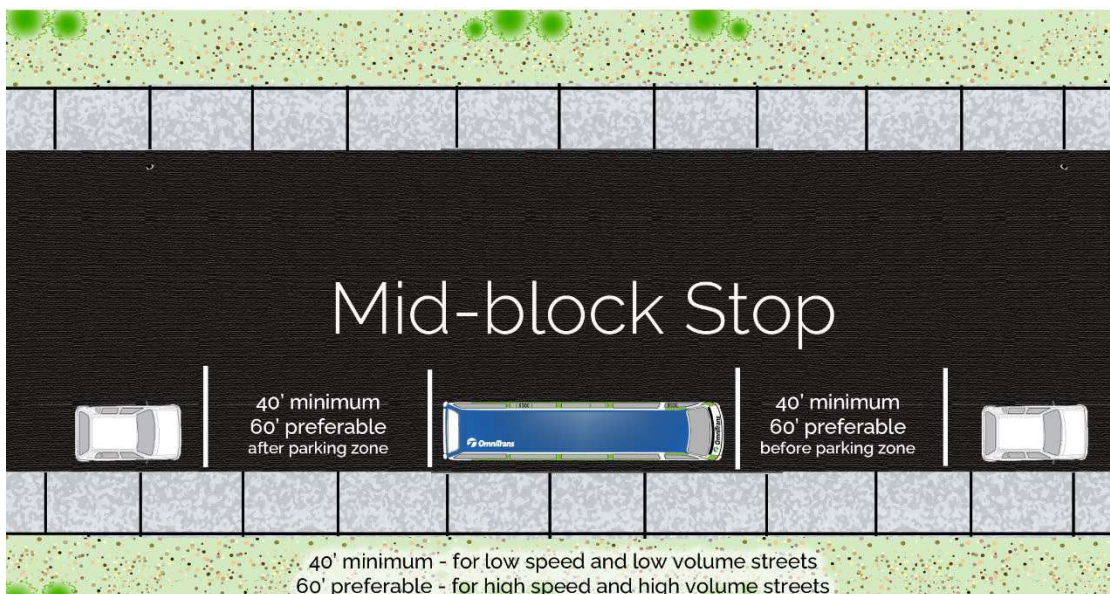
Figure 4-1



Figure 4-2



Figure 4-3



BUS RAPID TRANSIT (BRT)

Bus Rapid Transit (BRT) is a high-quality bus-based system that seeks to blend features similar to a light rail system with the flexibility and affordability of a bus route, thereby providing more reliable, convenient and faster service than regular bus services.⁴ Planned future sbX BRT lines in Omnitrans' service area will have a portion of dedicated bus lane, transit signal priority system throughout the corridor, elevated platforms and premium station amenities with real-time customer information and security systems at stations. These features provide comfort and efficiency helping buses avoid the delays from being stuck in traffic and stopping frequently between major arteries.

Although developers and city officials generally will not build BRT stations, the information and dimensions are particularly useful for future BRT lines and corridors to ensure there is enough ROW to build potential stations (60' x 10-14') and dedicated bus lanes (12' wide lanes).

BRT Features on Omnitrans' sbX Lines

- Corridor: sbX lanes are 12' wide, separate lanes for each direction of bus traffic, and ideally run down the center of the street to avoid conflicts with other traffic. A concrete median or landscape median is needed in the center of the street to avoid other traffic turning left across bus lane; legal turns and u-turns for other traffic must be made available only at signalized intersections.
- Corridor: sbX lines have transit signal priority throughout the corridor and could use queue jump lanes to help buses avoid traffic at intersections where there are not dedicated lanes. (See Figure 4-6).
- Corridor: sbX BUS ONLY lane markings are needed, particularly at intersections to denote that other traffic cannot use bus lanes. Colored pavement, such as red pavement, is also ideal to denote bus lanes. Dedicated bus lanes also have separate vertical/horizontal line signals instead of the standard 3 color traffic light at intersections to avoid confusion for other traffic.



Figure 4-4: Center-running BRT station.



Figure 4-5: Side-running BRT station

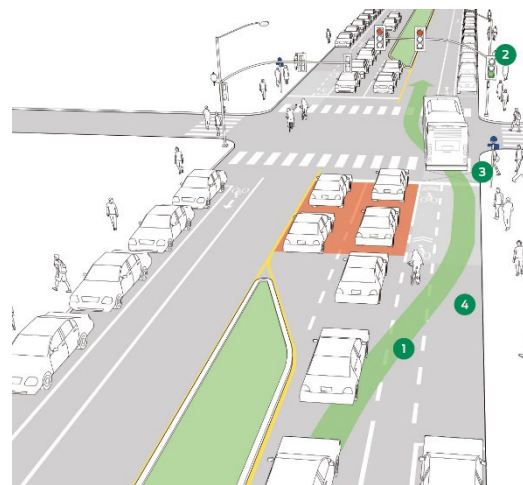


Figure 4-6: National Association of City Transportation Officials (NACTO) example of a queue jump where buses can use transit signal priority to skip ahead of traffic at an intersection.

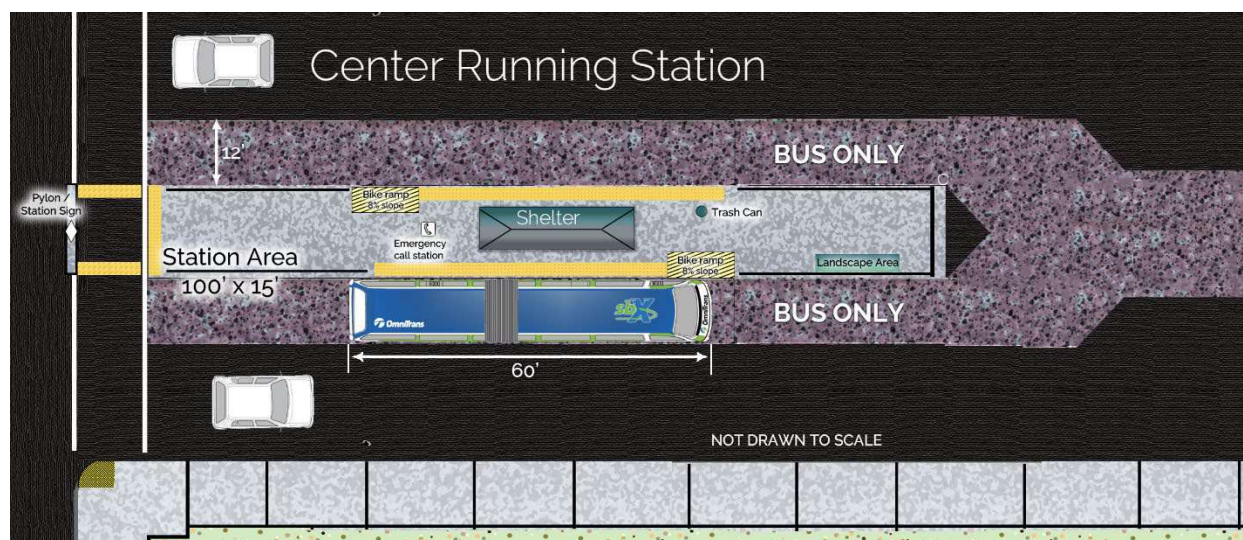
*For more info see the resources page for the link to NACTO's website.

- Station: sbX stations should be designed for use by 40' or 60' vehicles (as shown in Figures 3-3 and 3-4). For 40' vehicles, a bike-loading ramp is needed at 13" platform height stations for riders to take the bike to street level for loading it onto the front of the bus. (See Figure 4-8).
- Station: Omnitrans uses left-side boarding stations for center-running lanes. These stations have level boarding with a 13" platform height and truncated dome warning strips along the edge of the platform. Side running stations that are at standard curb height can be used by local buses.

Figure 4-7:
Side-running
BRT station
diagram.



Figure 4-8:
Center-running
BRT station
diagram.



BUS STOP PLACEMENT AND BICYCLE SAFETY

As a part of Omnitrans' Bus Stop Safety Improvement Plan (BSSIP)⁵, Omnitrans is building relationships with residents and local community groups to improve the safety of riders and gather essential information about pedestrian and bicycle access. Beyond simply putting in a bus stop, city planners, designers, developers, and other public officials should consider how greater pedestrian and bicycle access can encourage transit use and how such features can be integral to the development's design. For more information and ideas, see Omnitrans' document on Transit-Oriented Development.⁶

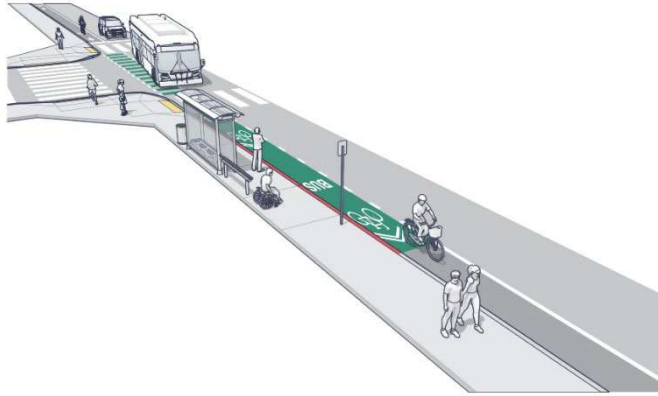


Fig 4-9: Bus stop with Class II bike lane
Source: AC Transit⁶

Designing bus stops that limit the potential for conflict between buses and bike riders, particularly when there is a bike lane next to a bus stop, can promote safety for all. Figure 4-9 from AC Transit’s Multimodal Corridor Guidelines shows a typical bus stop at the curb with a Class II bike lane. When a bus is stopped for boarding/alighting riders, cyclists are likely to move out of the bike lane and are at great risk of an accident with a car in the traffic lane or with a pedestrian on the sidewalk.

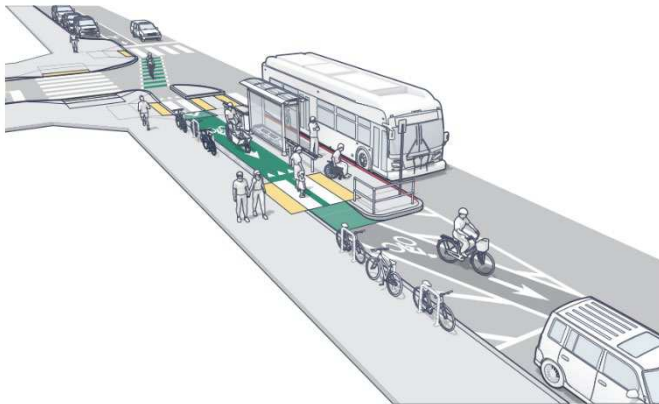


Fig 4-10: Class 2 bike lane with floating bus stop.
Source: AC Transit⁶

Figures 4-10 and 4-11 show a different option for a floating bus stop where the bike lane is routed behind the stop. This allows for riders to board or alight a bus without causing an obstruction and potential accident with cyclists.

Considerations for floating bus stops and the effect on traffic flow need to be considered, particularly if the flow of traffic is stopped for boarding / alighting riders. Typically, floating bus stops should not be installed on high-speed roads where the average travel speed is 35 miles per hour or greater, as stopping in the travel lane in such conditions may be unsafe.⁷ For further details on how infrastructure that supports both transit and cyclists, please see the link for AC Transit Multimodal Corridor Guidelines in the references section.

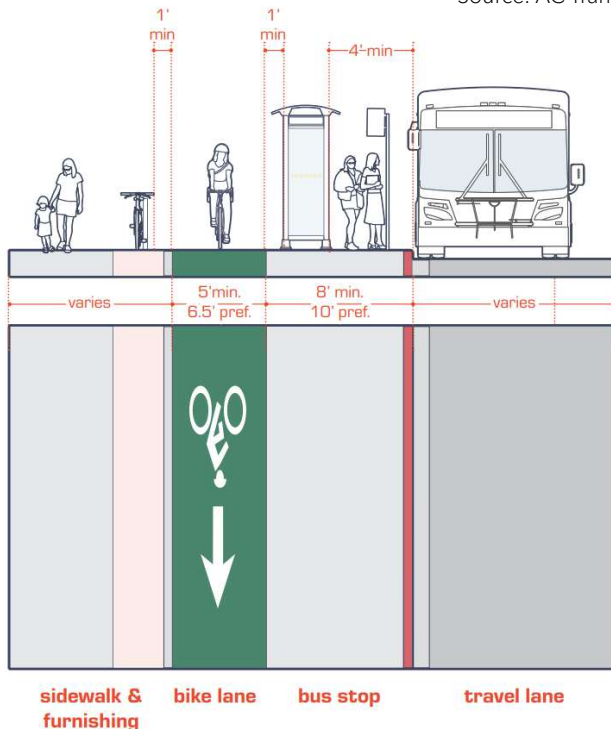


Fig 4-11: Floating bus stop and bike lane spacing.
Source: AC Transit⁶

SECTION 5 – BUS INFRASTRUCTURE RECOMMENDATIONS / OPTIONS

This section provides details of infrastructure design guidelines for bus facilities.

BUS PADS *(Highly recommended for street longevity)*

Roadway pavements (or shoulders, if that is where the buses stop) need to be of sufficient strength to accommodate repetitive bus axle loads of up to 25,000 pounds. Exact pavement designs will depend on site-specific soil conditions. Areas where buses start, stop, and turn are of particular concern because of the increased loads associated with these activities. Using reinforced concrete pavement pads (see Figures 5-2 and 5-3) in these areas reduces pavement failure problems that are common with asphalt.

A minimum 8" thick reinforced concrete pad should be provided, with engineering consideration of the specific soil conditions. The pad should be 12' wide with a pavement section designed to accept anticipated loadings. The length of the pad should be based on the anticipated length of the bus that will use the bus stop and the number of buses that will be at the stop simultaneously.



Figure 5-1: Bus turnout with bus pad

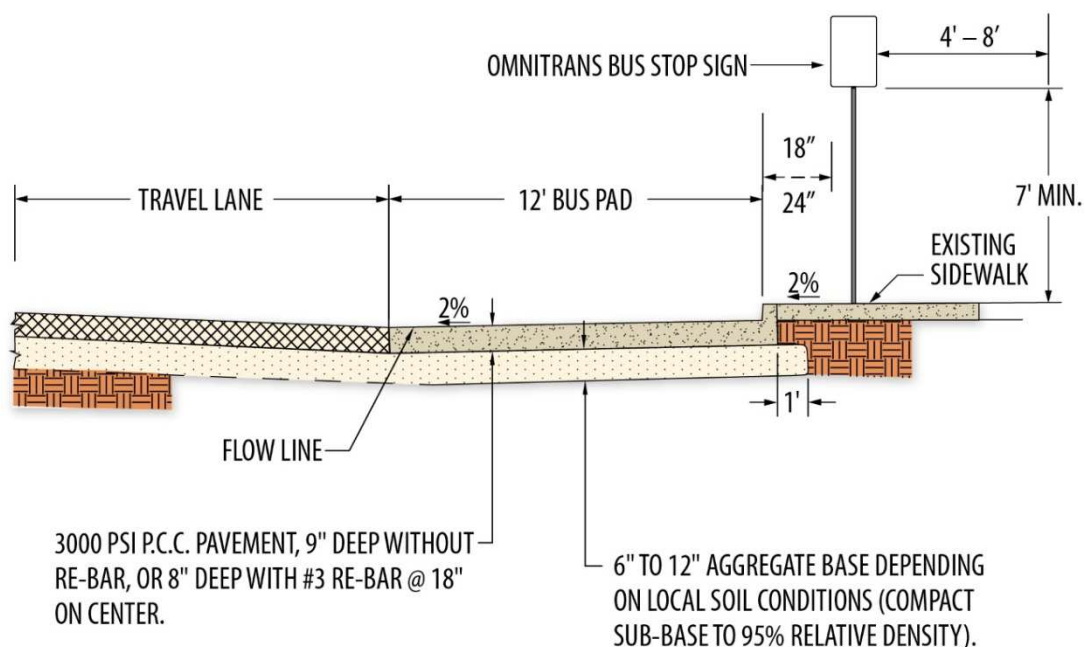


Figure 5-2: Specifications for a bus pad

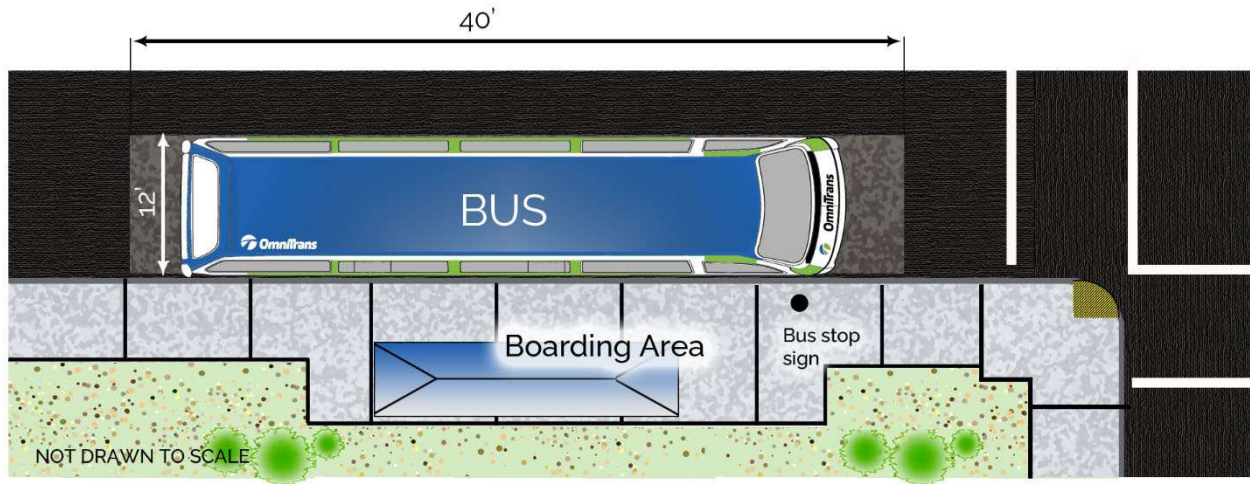


Figure 5-3: Bus pad dimensions

BUS TURNOUTS *(Recommended for certain locations when conditions are met)*

Bus turnouts are designated areas where buses can pull out of the flow of traffic to stop for boarding or alighting riders. Because bus turnouts use additional right-of-way and make it more difficult for buses to re-enter traffic, turnouts should only be used when the first criterion is met as well as one of the following conditions:

- Street traffic speeds are 40 mph or higher.
- Peak period boarding average exceeds 20 boardings per hour.
- Average peak period dwell time exceeds 30 seconds per bus (i.e. a bus timepoint or an end-of-line break time).
- The local jurisdiction becomes aware of a high frequency of accidents involving buses and/or pedestrians within the past year.
- When traffic in the curb lane exceeds 250 vehicles during the peak hour or when bus volumes exceed 10 or more during peak hours.
- Where bus stops in the curb lane are prohibited.
- Where sight distances prevent traffic from stopping safely behind a stopped bus (i.e. hills, curves).
- At stops where there are consistent wheelchair boardings.
- Where buses are expected to layover at the end of a trip. These turnouts may also include electrical infrastructure to charge electric buses (see pg. 8 of Section 3).
- Where there is adequate space for turnout length and depth given to allow a bus to safely exit and enter the flow of traffic.

The far side of an intersection is the preferred location for turnouts. Nearside turnouts typically should be avoided because of conflicts with right turning vehicles, and delays to transit service as buses attempt to re-enter the travel lane. The exception is where buses use a right turn lane as a queue jump lane. Often, this is associated with transit signal priority for transit and where a far side pullout is not possible. Turnouts in mid-block locations are not desirable unless associated with key pedestrian access to a major transit-oriented activity center and safe ways to cross the street. See the above guidelines about bus stop placement.

Guidelines for bus turnouts:

- Turnouts should be placed at signalized intersections where the signal can create gaps in traffic allowing the bus to re-enter the street.
- On streets with bike lanes and where bus layovers occur, the width of the turnout should not block bike traffic. (See section 4 for other considerations and potential options to consider for bus stops next to bike lanes).
- Where the outside travel lane is wide, a partial turnout width may be used. The minimum combined width of the outside travel lane plus turnout width must be at least 24' 6", to allow traffic to pass the bus.

Bus turnout designs are illustrated in Figures 5-4 through 5-7.

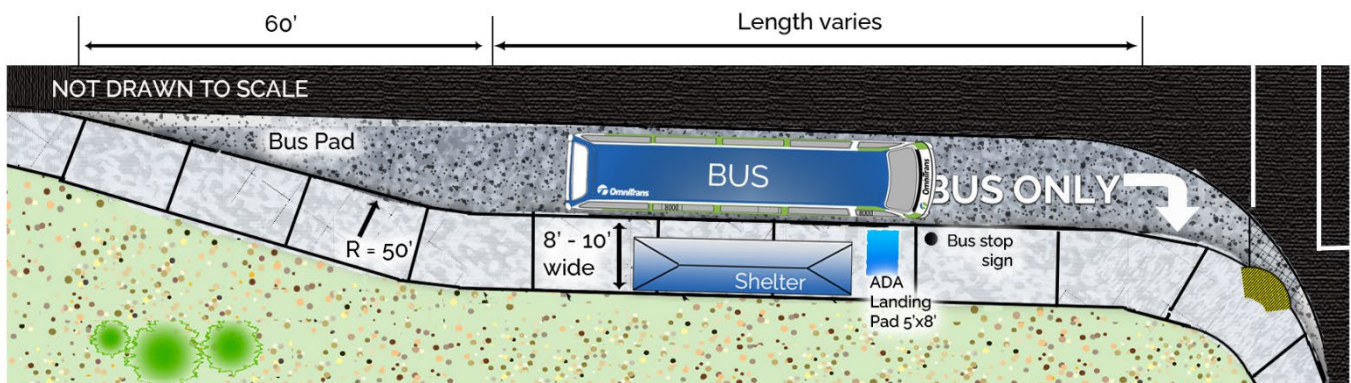


Figure 5-4: Near Side Turnout Design

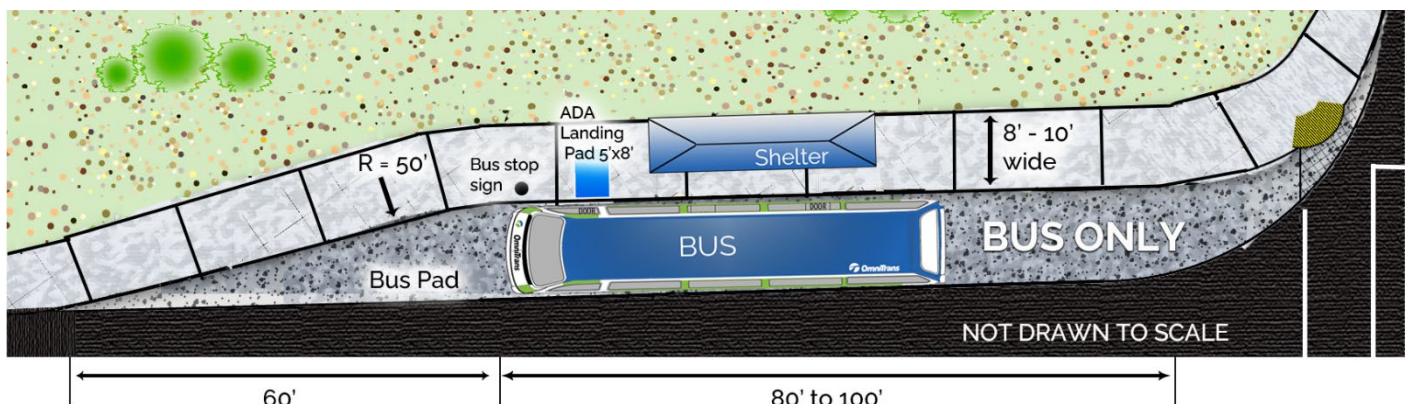


Figure 5-5: Far Side Turnout Design

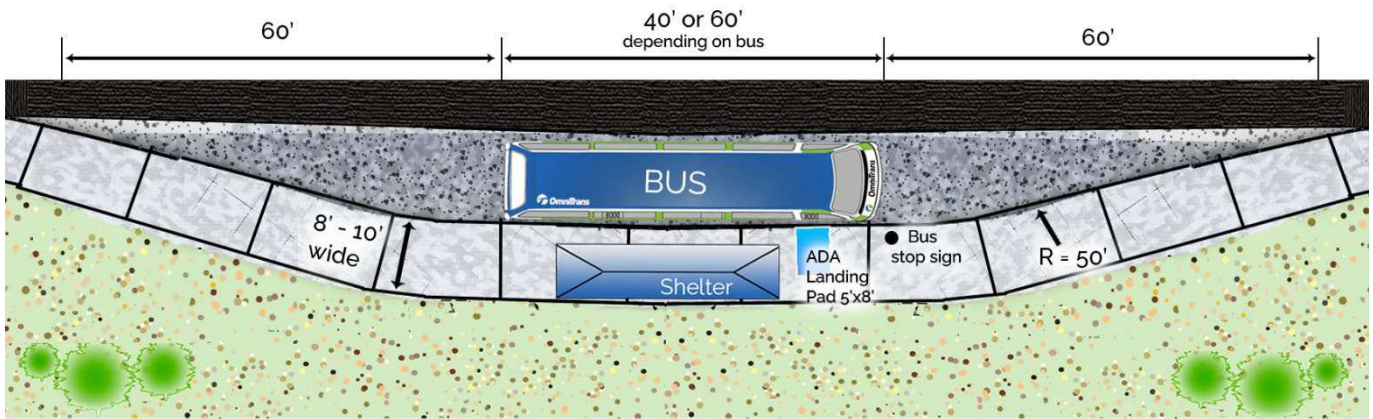


Figure 5-6: Turnout design where not immediately at an intersection (60' spacing).

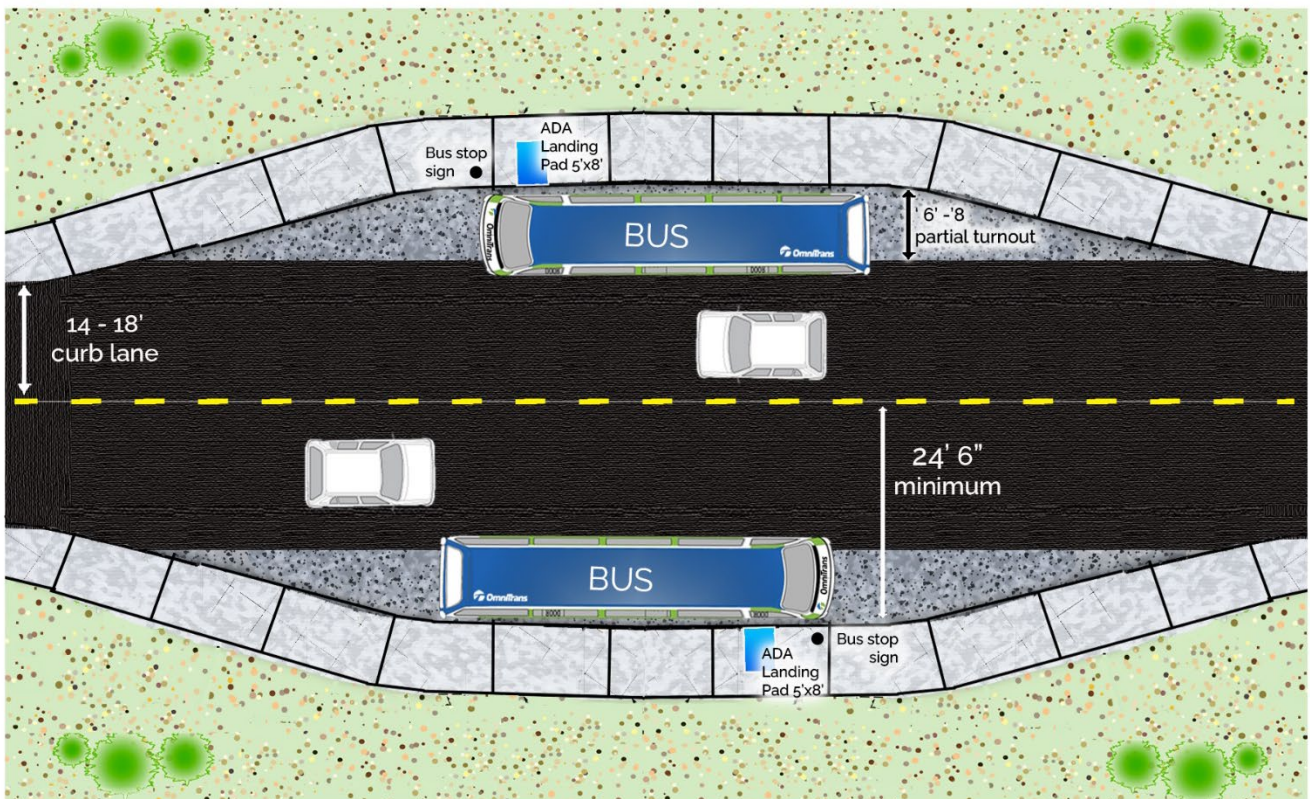


Figure 5-7: Partial Bus Turnout with curb lane but limited ROW. This allows buses to pull out of traffic and allows vehicles to pass.

CURB EXTENSIONS *(Depends on location if recommended when conditions are met)*

Curb extensions, also known as bus bulbouts or nubs, are essentially a sidewalk extension through the parking lane that becomes directly adjacent to the travel lane. This can create more space for bus stop amenities in dense urban environments with considerable pedestrian traffic. With a bulbout, a bus will stop in the traffic lane instead of weaving into the parking lane.

Additionally, curb extensions provide enough space for bus patrons to comfortably board and alight from the bus away from nearby general pedestrian traffic. Nubs shorten the pedestrian walking distance across a street, which reduces pedestrian exposure to on-street vehicles.

Curb extensions should be considered at sites with the following characteristics:

- High pedestrian activity
- Crowded sidewalks
- A need to reduce pedestrian crossing distances
- Bus stops in travel lanes

Curb extensions have application along streets with lower traffic speeds and/or low traffic volumes where it would be acceptable to stop buses in the travel lane. Collector streets in neighborhoods and designated pedestrian districts are good candidates for this type of bus stop. Curb extensions should be designed to accommodate vehicle turning movements to and from side streets. Major collector and arterial streets should be designed to accommodate larger bus turning radius and therefore may not be good candidates for bus bulbouts. Figures 5-8 and 5-9 shows typical curb extension design.



Figure 5-8: Extended curb installed at intersection.

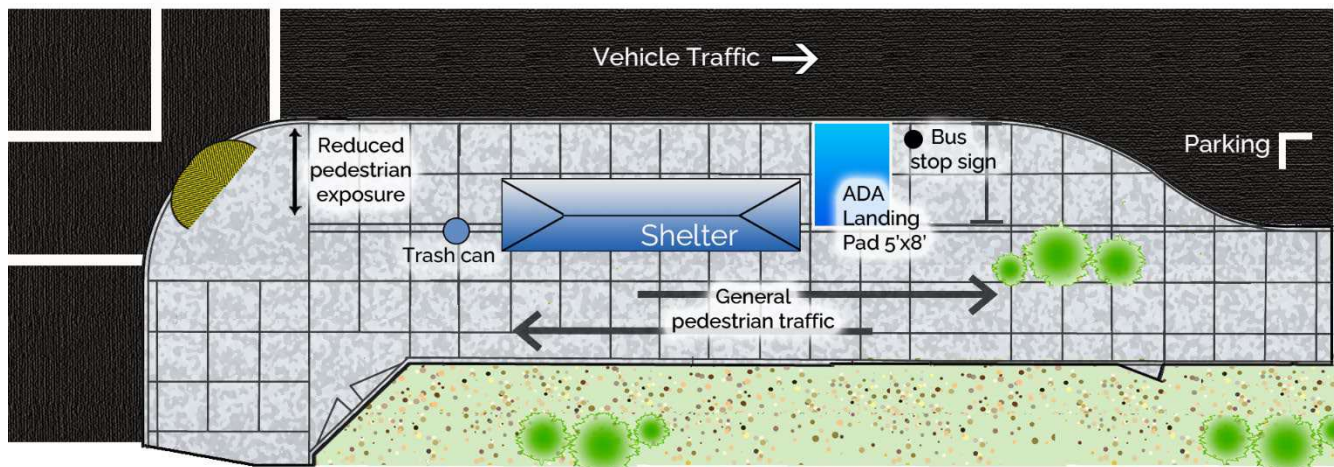


Figure 5-9: Close up of extended curb installed at intersection.

CURB TURNING RADII *(Depends on location if required; check with bus operations)*

The corner curb radii used at intersections can affect bus operations when the bus makes a right turn. The design of corner curb radii should be based on the following elements:

- Design vehicle characteristics, including bus turning radius
- Width and number of lanes on the intersecting street
- Allowable bus encroachment into other traffic lanes
- On-street parking
- Angle of intersection
- Operating speed and speed reductions
- Pedestrian safety

A trade-off in providing a large curb radius for easier turning is that the crossing distance for pedestrians is increased. This greater crossing distance increases the pedestrians' exposure to on-street vehicles and can influence how pedestrians cross an intersection, both of which are safety concerns. The additional time that a pedestrian is in the street because of larger curb radii should be considered in signal timing and median decisions.

Figures 5-10 and 5-11 provide specific information on bus dimensions and on bus turning radii.

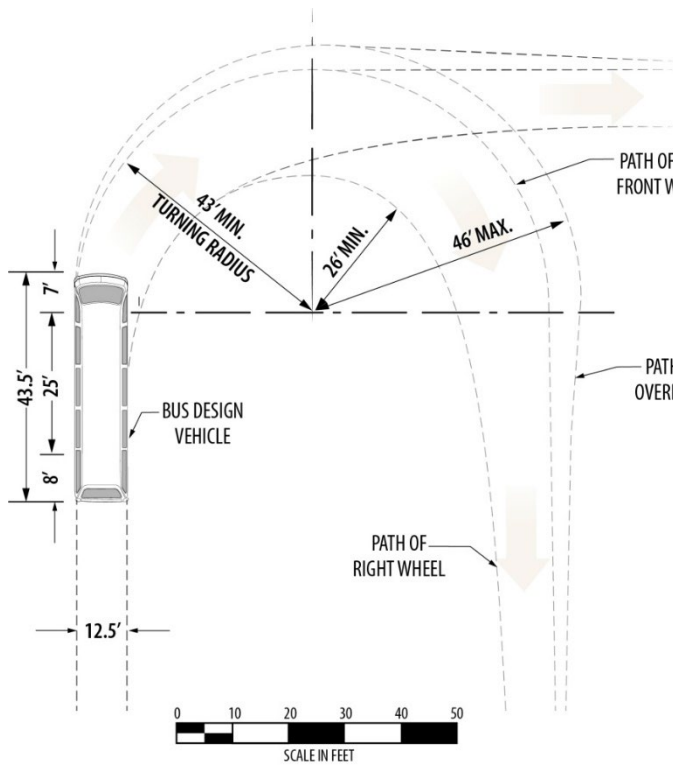


Figure 5-10: Design turning for 40' bus

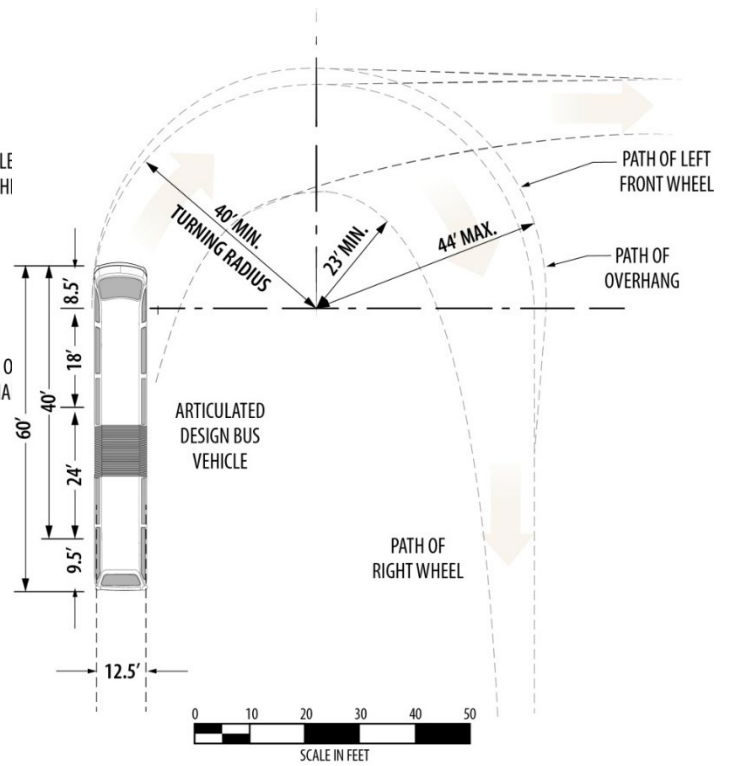


Figure 5-11: Design turning for 60' bus

SECTION 6 – MINIMUM BUS STOP REQUIREMENTS

Bus stops are critical connection points between modes of transportation. Stops should be accessible, comfortable, convenient, and designed for the local context. They should provide a sense of safety at all times of the day and complement the larger transportation network.

ADA COMPLIANCE

Americans with Disabilities Act (ADA) – These are the standards in design that allow access for people with disabilities or mobility limitations. Being ADA-compliant eliminates physical obstacles to mobility and safe access for vulnerable groups while raising overall user safety.

THE ADA GUIDELINES - MINIMUM REQUIREMENTS FOR BUS STOPS

- **ADA Landing pad (5' x 8')** – These are the minimum dimensions needed to deploy a lift or ramp and allow a customer in a wheelchair to board or alight from the vehicle. An unobstructed paved (stable and firm surface such as concrete, asphalt, brick, stone, or tile) area located immediately where the front door of the bus would stop. The landing pad shall be at a minimum of 5 ft long (parallel to the street) by 8 ft wide and near the bus stop pole. (This width measurement is from the back of the curb, excluding its thickness.)
- **Curb connection** – The landing pad shall connect the curb to the sidewalk.
- **Accessible Path** – A firm concrete path from the landing pad to the sidewalk that allows for travel to a nearby intersection.
- **Curb Ramps** – All intersections within a short distance of a bus stop shall have an accessible curb ramp.
- **Slope** – The landing pad, boarding area, and sidewalk shall be flat with no more than a 2% slope. The path of travel shall not have cracks bigger than 2 inches.

To verify a bus stop's ADA requirements, use the ADA Compliance checklist in Appendix E. See Appendix F for examples of bus stops that are and are not ADA compliant.

BOARDING AREA

Beyond the ADA guidelines above, there are additional considerations for the boarding area. The 40' buses do not have ADA ramps at the back door, but the 25' cutaway buses do have an ADA lift at the back which requires more space. As a result of each bus's differing needs, a boarding area of 25' long by 8' or 10' wide is strongly recommended (excluding curb thickness), but even longer (as much as 30' to 40') is ideal (especially if a tree or utility pole needs to be accommodated for, see Figure 6-4). This not only meets the minimum ADA requirement for the landing pad but allows the cutaway buses to use the lift in the back as well as allowing space for a shelter and amenities. There is a minimum 4' wide sidewalk required outside of the landing areas. Typical Dimensions are shown in Figures 6-2 through 6-6. Stops where more than one bus is boarding/alighting riders at the same time will need additional boarding and alighting areas which are determined by the size, placement and number of buses serving the stop.

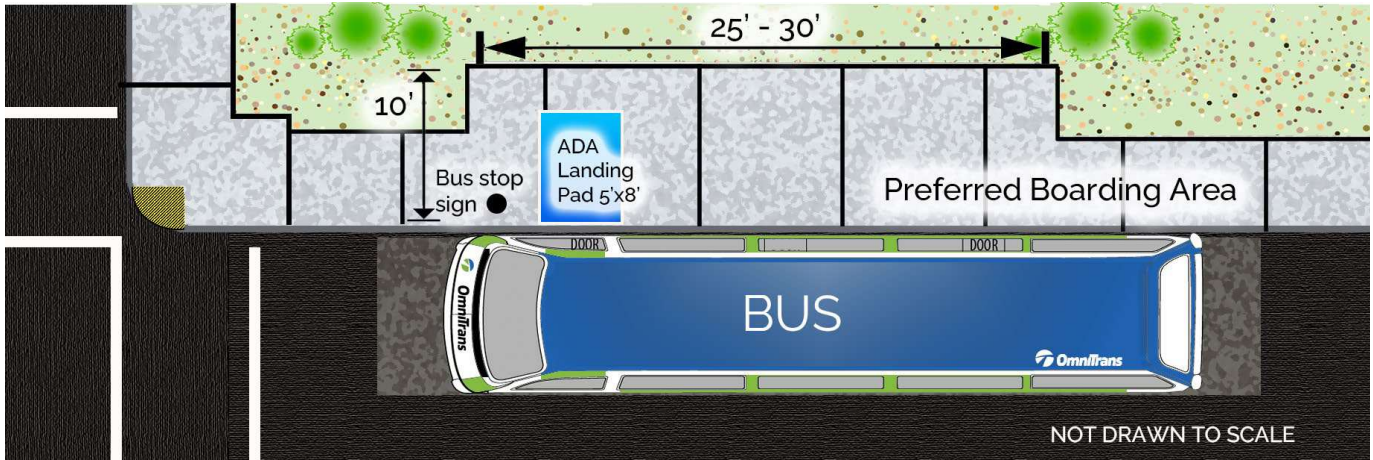


Figure 6-1: Preferred stop dimensions when sidewalk is adjacent to curb.

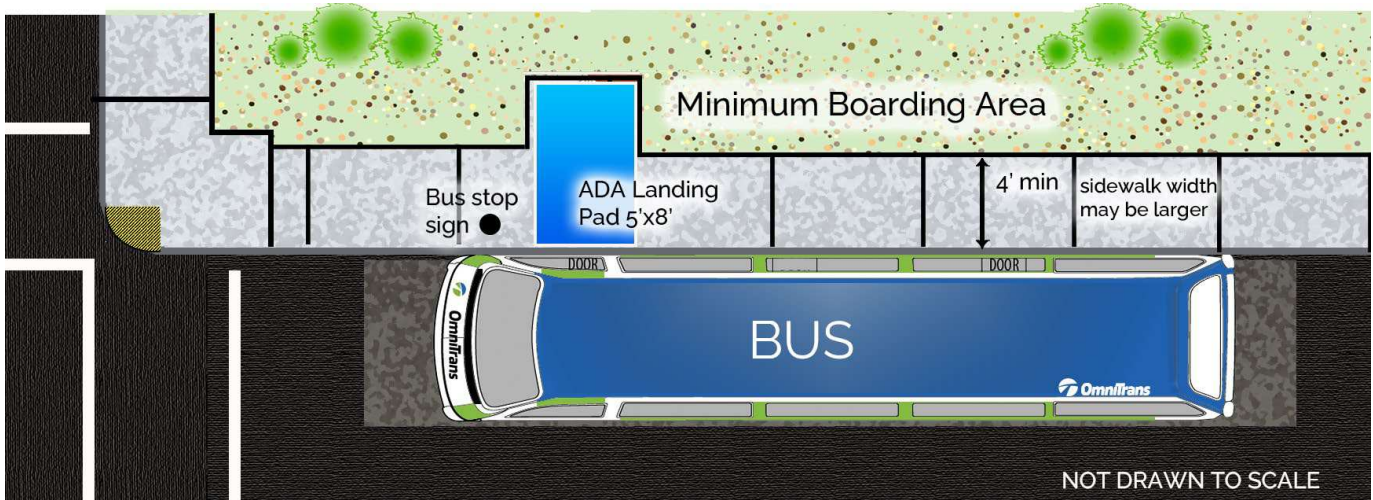


Figure 6-2: Minimum stop dimensions when sidewalk is adjacent to curb.

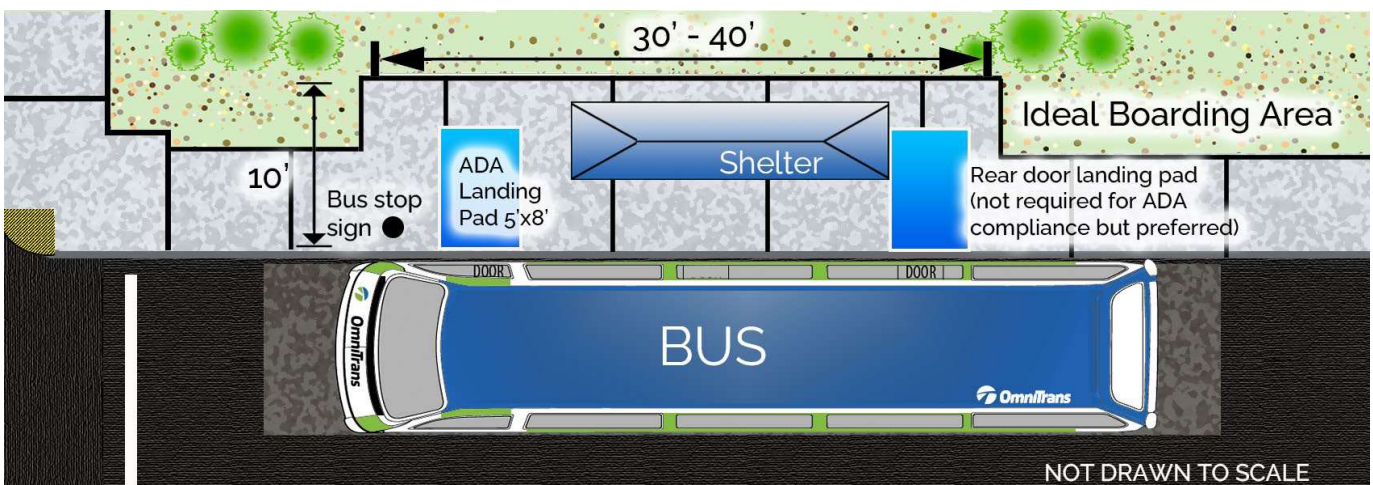


Figure 6-3: Ideal dimensions for boarding area to accommodate rear boarding and amenities.

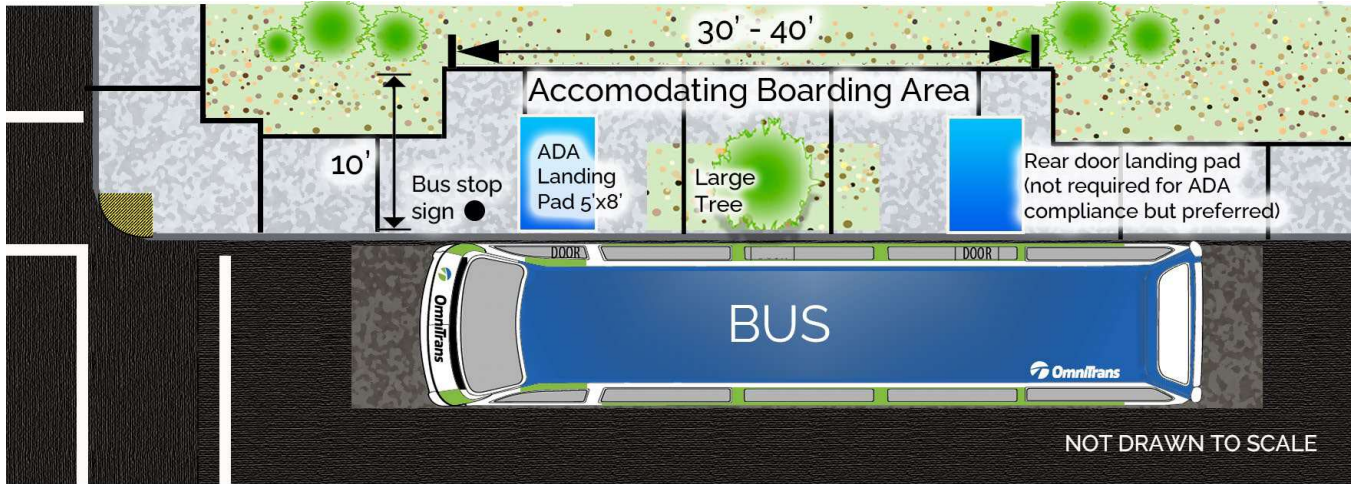


Figure 6-4: Example of accommodating a tree/utility pole while meeting ADA compliance.

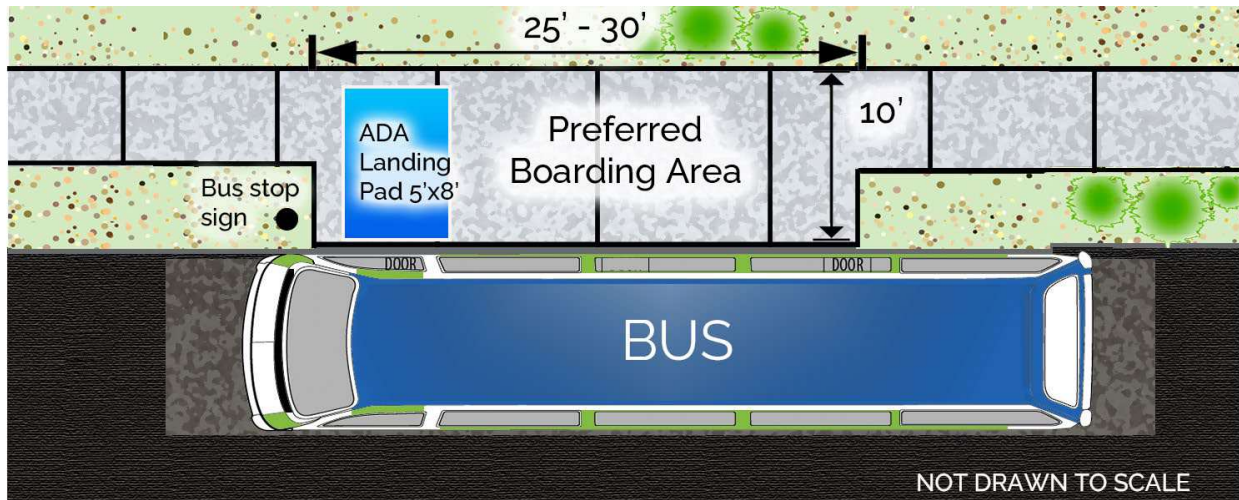


Figure 6-5: Preferred stop dimensions for sidewalk behind parkway strip.



Figure 6-6: Minimum stop dimensions for sidewalk behind parkway strip.

STANDARDS FOR MINIMUM, BASIC, & PREFERRED BUS STOPS



MINIMUM: Meets all the minimum requirements but no amenities



BASIC: Meets all the requirements and has a bench as a basic amenity.



PREFERRED (Standard): Meets all the requirements and has a standard shelter.



PREMIUM: Meets all the requirements. The landing pad is 10' x 5' and the boarding area is larger than 25' x 10'.

Compliant Bus Stops must meet all the following criteria:

- ✓ **Landing Pad:** Minimum unobstructed 8' x 5' area (with 8' excluding curb thickness).
- ✓ **Sidewalk Curb Connection:** The curb immediately connects to the boarding area and sidewalk.
- ✓ **Sidewalk Condition:** The boarding area and sidewalk have less than 2% slope and are in good condition.
- ✓ **Path of Travel:** Paved and unobstructed route from the boarding area to an intersection/crosswalk.
- ✓ **Ramps:** Nearby intersections/crosswalks have ramps.



BASIC: Meets all the requirements. The landing pad is at a minimum of 8' x 5' but is not immediately adjacent to the bus stop pole.



PREFERRED (Standard): Meets all the requirements. The landing pad is 10' x 5' but is not immediately adjacent to the bus stop pole.

SIGNAGE

In addition to ADA compliance, bus stops require signage. The sign:

- Identifies the location as a designated bus stop.
- Provides a reference for coach operators.
- Provides details for accessing up-to-date route schedule and arrival information.
- Displays general transit information (agency telephone number and website).

Omnitrans is responsible for the removal, relocation and installation of any bus sign but requires proper spacing and other criteria to be met. Coordinate with Omnitrans at BusStops@Omnitrans.org.

- Whenever possible bus stop signs should be placed independently of all other street signs for transit stop clarity.
- The bus stop sign should be located at the front of the boarding area, approximately one foot beyond the landing pad. Placement of the pole shall not impede a 48" ADA path of travel around it.
- The bottom of the sign should be 7' high (ADA compliance requires 80" at minimum) and no higher than 10' (as in Figure 6-7).
- The top of the informational cassette should be mounted no higher than 60" above the ground.
- Bus stop signs should be mounted on square uni-strut posts. See Figure 6-8 for more details.
- Pole should be placed 18" -24" from curb line to prevent obstruction or scratching of bus mirrors.

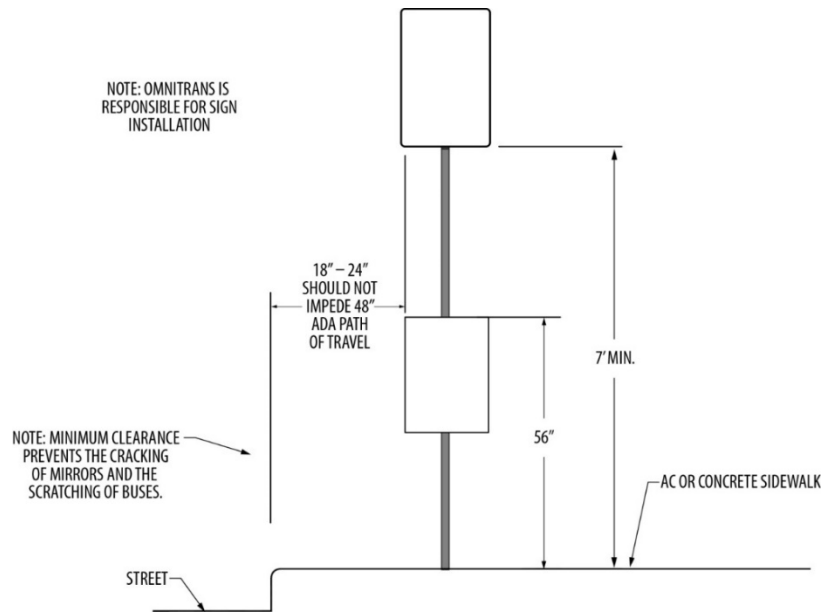


Figure 6-7

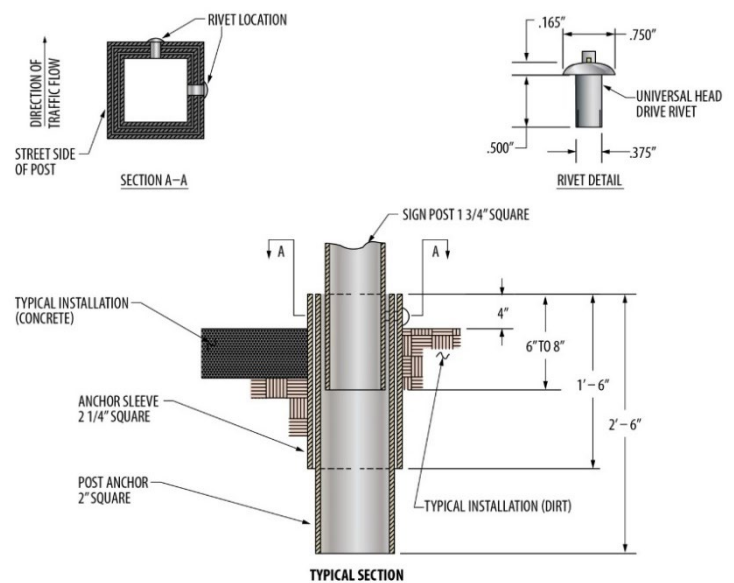


Figure 6-8

LIGHTING



Figure 6-9 - Solar light in Rialto.

Lighting is a foundational component for creating a safe environment. As a part of the community outreach for Omnitrans' Bus Stop Safety Improvement Plan (BSSIP) plan⁴, online survey results from 100 participants highlighted that over 62 percent of responses mentioned that lack of lighting was their main concern at bus stops.

Omnitrans has been working to install hundreds of pole-mounted solar lights at bus stops throughout the system. When existing streetlights do not provide adequate lighting, proper lighting ideally from solar lights should be a priority to ensure the safety and security of all transit riders.⁸ In addition, bus stops should be visible from nearby buildings, roads, and near crosswalks so passersby can help monitor the bus stop.

The placement and maintenance of lighting is normally the responsibility of the local jurisdiction, except at advertising shelters where the interior lighting is provided and maintained along with the shelter, usually by Omnitrans. The following are considerations and recommendations for developments around a bus stop.

- Where feasible, bus stops should be placed so that they will be illuminated by existing streetlights.
- At bus stops where additional light is needed, solar technology is recommended. Ornamental streetlights may also be used. Particularly for solar units, they should be installed with vandal-resistant hardware and a modular design to allow for independent replacement of solar collector, light bar, light fixtures, etc.
- In addition to street lights, stops can be lit by backlighting from advertising installed at bus shelters. If a shelter is present, both interior and area lighting are recommended.
- Lighting external to a shelter shall use 2-5-foot-candles (ft-c). For lighting within a shelter, a lighting level of 3 ft-c at 3' above ground is required throughout.
- Illumination is to be provided for a period of no less than 6 hours after dusk and 2 hours before dawn.
- All electrical work for street lighting shall follow standard practices, local electrical utility, and local municipalities' traffic engineering requirements.

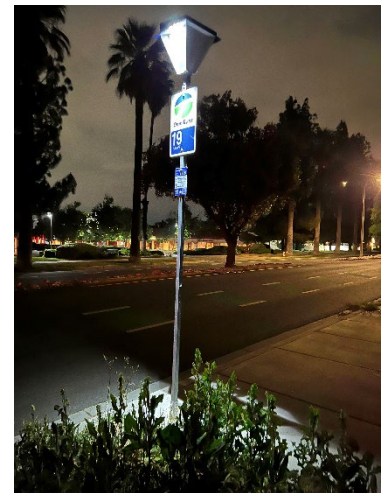


Figure 6-10 - a standard solar light in Omnitrans' service area.

Photo Credit: @JalbyMD twitter.com

SECTION 7 – BUS STOP AMENITIES RECOMMENDATIONS

Omnitrans and its JPA members have been striving to provide amenities for customers at all 2,300 bus stops across Omnitrans’ service area. Amenities are typically prioritized by the highest-ridership locations. ADA/sidewalk improvements will also need to be constructed at many bus stops (which typically falls under the responsibility of cities/local jurisdictions or property developers) before Omnitrans will be able to install rider amenities such as shelters and seating.

As activity and ridership increase, expanded amenities beyond the required bench or shelter are also warranted. The following best practice policies and design details are aimed to help local jurisdictions on how to create attractive bus stops that are safe and comfortable places to board and alight.

This section explains the various options for amenities, space requirements and other design criteria in placing them at bus stops.

TABLE 7-1: AMENITIES AND SPACE REQUIREMENTS SUMMARY

<i>Amenity</i>	<i>Space Requirement*</i>
Lean Bar and Trash Receptacle	15’ x 8’ minimum boarding area
6’ Metal Bench & Trash Receptacle	15’ x 8’ minimum boarding area
13’ Non-Advertising Shelter	20’ x 8’ minimum boarding area
17’ Non-Advertising Shelter	25’ x 8’ minimum boarding area
13’ Advertising Shelter	20’ x 10’ minimum boarding area
17’ Advertising Shelter	25’ x 10’ minimum boarding area
Premium Shelter	25’ x 10’ minimum boarding area
BRT Side-Running Station	60’ x 10’-14’ minimum boarding area

*Boarding area width is measured from the back of the curb, excluding curb thickness.

AMENITIES

BASIC AMENITIES

BENCHES

Benches are installed inside typical bus shelters, but they may also be installed independently at bus stops that do not have shelters. Local communities may install benches as one element of an improved streetscape; in this case, efforts should be made to locate benches near bus stops where they do not create barriers to accessible bus boarding or sidewalk usage.

The design factors for benches should include the following (see Figure 7-1 for reference):

- Benches should be placed on a concrete boarding area allowing for wheelchair accessibility and loading at the bus stop.

- Benches should be placed toward the back side of the sidewalk a minimum of 6' to 9' from the bus stop signpost, to allow pedestrians to move past people sitting on the bench. If located on the ADA landing pad, the bench should be a minimum of 8' from back of the curb; if outside ADA landing pad, a minimum of 4' from the curb.
- Benches should be anchored to prevent unauthorized movement, yet ideally be constructed for easy relocation to allow for bus route changes, street improvement projects, etc.
- Benches should have bars or dividers between seats, placed no more than 24" apart. Seat divider bars should be at least 6" high and should either be solid, have cross-bars, or have an angled shape.
- Although Omnitrans still uses many existing concrete bus benches throughout its system, new benches should not be concrete because of Crime Prevention Through Environmental Design (CPTED) guidance for transparency; benches should be of durable perforated steel or steel mesh, poly-coated for heat and graffiti-resistance.
- The structure materials and paint treatments should be strong, durable and resistant to weather conditions, graffiti, cutting, defacing, fire, and other forms of vandalism.

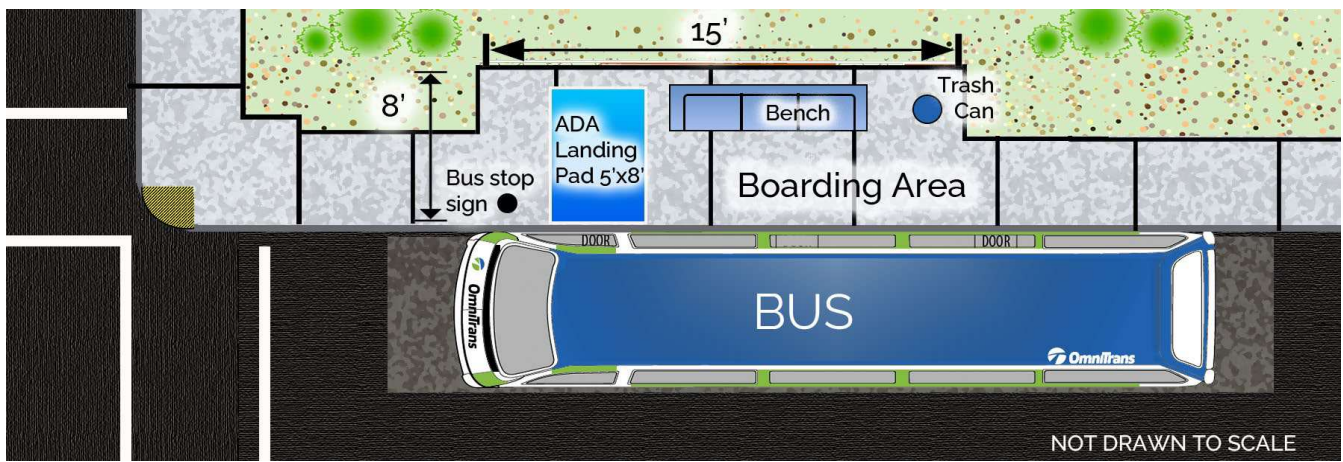


Figure 7-1: Boarding area dimensions for a bench and trash receptacle.

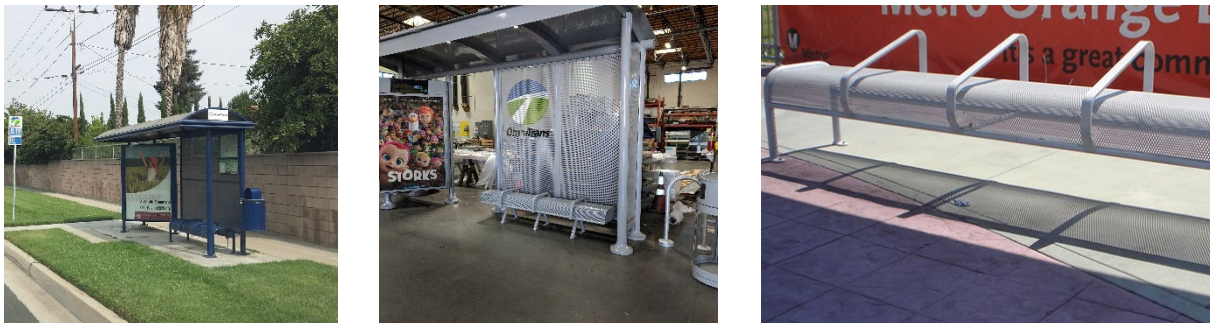


Figure 7-2: Examples of benches at a standard shelter, premium shelter, and a bench with dividers without a shelter.

Developers and local jurisdictions may design a special style of bench or shelter to fit into the landscape and complement the architectural style of their project or streetscape. However, benches and shelters that are provided through the private sector or local jurisdictions are to be maintained by the developer, landowner, or local jurisdiction. Omnitrans requests the opportunity to review the design of benches for any potential safety and security issues.

TRASH RECEPTACLES

Trash receptacles are typically provided at all stops that have shelters and should also be provided at high ridership stops or stops near locations that generate the need for a trash receptacle, such as fast-food restaurants or convenience stores.

Local communities may also install receptacles as part of an improved streetscape; in this case, efforts should be made to locate them where they do not create barriers to accessible bus boarding or sidewalk usage. Trash receptacles are to be serviced by the entity that placed them.

The design factors for trash receptacles should include:

- Made from strong, durable materials and paint that is resistant to weather conditions, fire, graffiti, cutting, defacing, and other forms of vandalism.
- Ensure that there are no conflicts with wheelchair accessibility and loading at the bus stop, locating them outside of curb clear zone or landing pad.
- Trash receptacles should be anchored to prevent unauthorized movement.
- Avoid installing trash receptacles with design features that permit liquids to pool or remain near the receptacle and attract insects or rodents.
- Trash receptacles should be lockable to prevent rummaging.
- Trash receptacles should be of durable perforated metal or metal mesh for transparency and use a semi-transparent inner plastic lining can for easy trash removal and cleanup.
- If possible, install trash receptacles in shaded areas a minimum of 3' from a bench. When installed in areas that receive direct sunlight most of the day, the heat may cause foul odors to develop.
- Solar compacting trash receptacles are also desirable, as they are more efficient for maintenance.

Omnitrans empties trash receptacles that are placed by Omnitrans, while local jurisdictions and developers are responsible for picking up trash from receptacle placed by them. Developers and local jurisdictions may design a special style of receptacle to fit into the landscape and complement the architectural style of their project or local streetscape.

PREFERRED AMENITIES (Standard and Premium)

SHELTERS

Transit shelters are installed at selected bus stops to provide weather protection as well as seating for waiting customers. Shelters can also be provided by local jurisdictions and may be required of a new development around the stop. Maintenance of shelters is typically done by Omnitrans; however, for certain jurisdictions, maintenance is the responsibility of the jurisdiction or developer.

Design factors for shelters should consider placement, structure, and other considerations:

Shelter Placement

- Locate shelters in reasonable proximity to where the front door of the bus will open to facilitate timely transit rider loading.
- Shelter must be located outside ADA-required 5' x 8' landing area.
- Shelters should not be placed such that they block sight distance at intersections or driveways. This can normally be accomplished by placing the shelter more than 25' from the beginning or end of curb return of an intersection or driveway.
- The back of the shelter should be located at least 12" from a building face, wall, or other broad vertical surfaces to facilitate trash removal and panel cleaning.
- Shelters should not be placed between a regularly used building exit and the curb so that pedestrians retain direct access to the street from the building.
- Whenever possible, do not place shelters in front of building windows used for commercial purposes (e.g. advertising, display, business names, etc.).
- Shelters should be located to avoid exposing persons to splashing water from passing vehicles and runoff from adjacent buildings and landscaping.
- Shelters should be located so that their orientation provides as much protection as possible from wind and rain, and with consideration of the sun's angles to allow maximum shade during peak use in the morning and afternoon.
- Shelters should not be placed under large shade trees that prohibit the functioning of the shelter's rooftop solar panels.

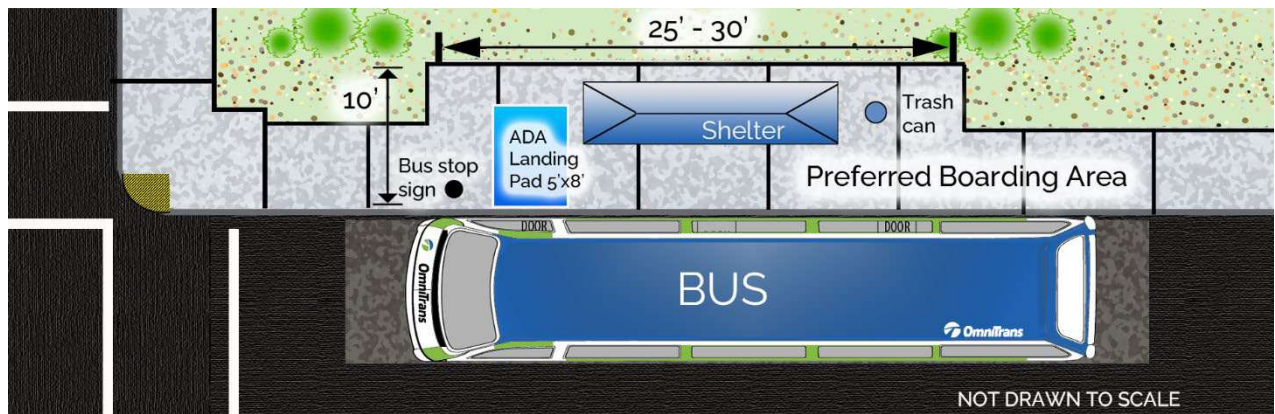


Figure 7-3: Typical Shelter Layout

Shelter Structure

- Minimum dimensions
 - Overhead canopy - 72 square feet (6' x 9') but larger canopy is preferred.
 - Vertical clearance - 7.5' between underside of roof and sidewalk surface.
 - Lateral clearance - 2' between overhead canopy and curb face is required.
- Required dimensions of the concrete pad landing area to ensure wheelchair accessibility depends on the shelter size. See Table 7-1 and Figures 7-3 to 7-5.

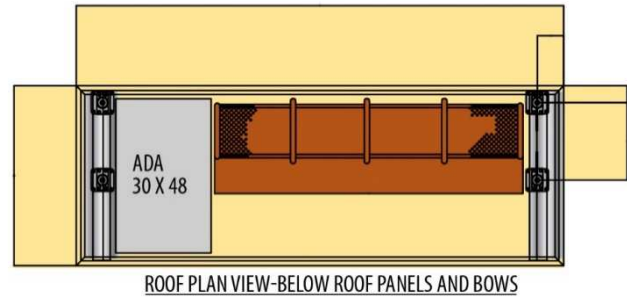


Figure 7-4: Aerial view of bus shelter

- A minimum space of 30" x 48" of clear floor space for people in wheelchairs is required under the shelter per ADA regulations (See Figure 7-4)
- The structure should be built of strong, durable materials and paint that is resistant to weather conditions, fire, graffiti, cutting, defacing, and other forms of vandalism.
- There should be internal lighting for the shelter and external lighting, when possible.
 - Provision of conduit for power and lighting and if possible, accommodations for solar power on the shelter roof.
- Seating for three to four people located under the shelter canopy is desired.
- Shelter screens should keep a minimum 6" vertical clearance from sidewalk to avoid collection of trash and debris.
- Shelter canopy should be waterproof with provisions for drainage away from waiting riders and boarding area.

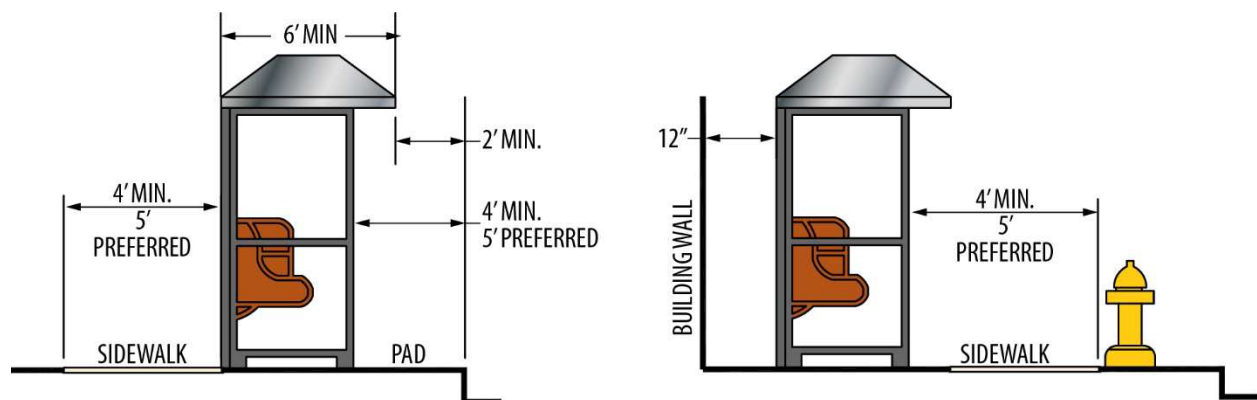


Figure 7-5: Shelter clearance

Other Considerations

- Design should be appropriate to the neighborhood (context sensitive)
- Maintenance of the shelter and other amenities ideally is simple and easy.
- Accessories to be added to the transit shelter and rider boarding area (such as bike racks, water fountains, additional information panels, etc.) are a decision for the individual jurisdiction responsible for the shelter. Each item can be weighed to balance the concerns for greater customer comfort and convenience versus concerns for security, maintenance, and cost.
- Crime Prevention Through Environmental Design (CPTED) guidelines should be considered when planning a shelter layout and materials⁹
 - Natural Surveillance: clear lines of sight where the shelter minimizes hiding places for people and packages. Good lighting and use of transparent yet vandalism-resistant screens allow operators to see riders and discourages criminal activity. Landscaping should be chosen that promotes visibility.
 - Territoriality: establishing recognized authority and control over the environment cultivates purpose and distinguishes the space from public areas. The use of signage, environmental cues (such as pavement markings) can denote the bus area.

Shelter Options

Standard Shelter – Basis of design is Tolar Model 1497-02 (for 17' shelter) or 1496-02 (for 13' shelter) or equal – includes shelter, solar lighting, map case, bench, and 32-gallon trash can. Shelter can include ad panel or no ad panel.

Premium Shelter – Basis of design is Tolar Model 31570-00 or equal – includes shelter, solar lighting, map case, bench, 32-gallon metal trash can, and electronic real-time arrival message board. Shelter can include ad panel or no ad panel. The premium shelter also allows for custom artwork on the back screen.

Any of these amenities can be powder coated in the standard colors of blue, green, or silver.



Figure 7-6 (from left to right): 13' non-ad shelter, 17' ad shelter, and premium shelter.

CUSTOM AMENITIES

BICYCLE PARKING

Bicycle parking facilities, such as bike racks (Figure 7-7) and storage lockers, may be provided at bus stops by local jurisdictions or adjacent property owners for the convenience of bicyclists using transit. Bicycle parking facilities help to maintain a clear ADA pathway at the bus stop, discourage the practice of locking bicycles onto bus facilities or onto adjacent property, and reduce visual clutter. The guidelines below are for the placement of bicycle parking facilities:



Figure 7-7: Examples of bike racks

- Locate bike rack or lockers at a convenient proximity to the bus stop and in sight of the transit riders, but outside of the clear ADA pathway.
- Coordinate the location of bicycle parking facilities with existing on-site or street lighting.
- Ensure parked bikes are always visible. Do not locate bicycle parking where views are restricted by a bus shelter or landscaping. Design and placement of bicycle parking facilities should complement other transit furniture at bus stop.
- Covered or weather protected parking locations are an important bonus to bicyclists.

When selecting bike racks or locker devices, consider the following:

- Provide ability to lock bicycle frame and at least one wheel.
- Support bicycle without pinching or bending the wheel. If the wheel slot is too narrow, a mountain bike tire will not fit.
- Avoid scratching the paint on the frame of the bike.
- Provide a place to lean the bike while locking the bike.
- Locking procedure should be quick and easy to identify.
- Design of bike rack or locker device should not trap debris.
- Device should be easy to install but difficult to steal.
- Secure bike parking rooms and bike maintenance cooperatives/shops are also ideal at locations with high volumes of transit centers who use bicycles.

LANDSCAPING

Landscaping can enhance the level of customer comfort and attractiveness of transit, but should be positioned and maintained so that safety, security, and accessibility are not compromised.

Tree branches that extend into the roadway below 11' should be trimmed back at least 2' from the curb; otherwise, they become an obstacle that the bus driver may or may not be able to avoid hitting. The area between the sidewalk and the curb at bus boarding areas should not be planted for at least 5' parallel to the street and 8' perpendicular to the street to provide accessibility (ADA landing area).

Trees for shade and lightning arrestors should not be placed within the clear curb area, and centerline 2-1/2' of back of curb line. Trees may be placed immediately outside of clear curb area, or back of sidewalk. A bus bulbout or nub may be installed to accommodate the tree line and still give proper ADA landing pad and clear curb space.

All landscaping design should adhere to Crime Prevention through Environmental Design guidelines⁸.

Omnitrans does not maintain landscaping except for landscaping installed by Omnitrans located immediately on sbX bus rapid transit platforms or in transit centers maintained by Omnitrans. All other landscaping is maintained by cities/local jurisdictions or adjacent private property owners.

BUS STOP MAINTENANCE

Omnitrans maintains bus stop amenities installed by Omnitrans, including bus stop signage, pole-mounted lights, Omnitrans standard shelter models, customer information, benches, and trash cans. Custom bus stop amenities installed by cities or private property owners must be maintained by the cities or private property owners.

Well-maintained bus stops are crucial to the image of the transit system. Damaged street furniture and trash build-up should be tended to immediately to create a positive impression for transit patrons and the public. Maintenance frequency of not less than once per week (except as noted) should include:

- Full wash-down of shelter and accessories at least once a month, or more often as needed.
- Removal of all dirt, graffiti, chewing gum and pasted material.
- Wipe-down of glass surfaces.
- Removal and replacement of trash bags once a week. Should be performed more than once a week if trash accumulates frequently.
- Litter pick up around stop or shelter/accessories to a distance of 15'.
- Manual or chemical removal of weeds.
- Pruning of obstructing foliage.
- Insect control as needed.
- Touch up of marred paint.
- Verify shelter lighting levels and replace bad bulbs and ballasts.

Repair of items that pose a safety or security problem should be performed as soon as possible.

ADOPT A BUS STOP

The development of bus stop amenities can be a community process through Omnitrans' Adopt-A-Stop program. Through the program, local businesses, non-profit organizations, community groups, families and individuals can select a stop to care for. Businesses and organizations can make a financial contribution to purchase amenities or sponsor cleaning services, while groups, families and individuals can volunteer to pick up trash at their stop once a week. A one-year commitment is required. Partners of the Adopt-a-Stop program will receive recognition on signs at their selected bus stop or through social media posts.

For more information about community partnerships and events, visit [Omnitrans.org/news/adopt-a-stop/](https://omnitrans.org/news/adopt-a-stop/) or contact the Adopt-A-Stop coordinator at AdoptAStop@omnitrans.org or 909-379-7256.

PLACEMAKING AND SPACE ACTIVATION

Figure 7-8: Placemaking examples

Right: Parklet example along VIA Metropolitan transit line (San Antonio, TX). **Below:** Go Human project from Southern CA Association of Governments (SCAG).



Placemaking to increase personal safety and quality of life at bus stops is the idea of integrating the bus stop into an attractive destination for people to meet and socialize while patronizing adjacent centers of activity and be part of a person's full day's journey - instead of just a bench and a ride to start your day's activities. The bus stop can become a positive focal point for a street or small neighborhood. There is potential for secondary effects like improved economic activity near the bus stop that increases the overall sense of safety and security for everyone.

A major aspect of placemaking is partnering with the surrounding community to help identify positive features and activities in a small area that are being considered for a bus stop. The process starts with community coordination to find positive existing assets near a bus stop to build upon and make an overall positive experience for the bus rider. Walkability, safe connected sidewalks, wayfinding signage, an events calendar, or suggestions of things to do near the bus stop all contribute to placemaking and attracting people to use transit.

Place-building activities near a bus stop typically include small parks, coffee shops, restaurants, entertainment centers, a blank wall that gets a locally developed mural or sculpture, and local efforts to paint or wrap city-owned utility boxes with art as shown in the samples below.

Programs such as utility box art and mural programs in several Omnitrans member cities can increase a local community's sense of ownership of the streetscape and bus stop. Adopt-a-stop and adopt-a-litter-container programs can also help neighbors build a sense of place around a bus stop and reduce fear of crime at a bus stop. Special events, such as Omnitrans' pop-up outreach on its ConnectTransit Plan where artists and residents painted bus benches with artistic designs, can build ownership and integrate the community in placemaking.

For more ideas and best practices, see Omnitrans' Transit-Oriented Development document⁵ and Omnitrans' Bus Stop Safety Improvement Plan (BSSIP) plan⁴, which were generated by analyzing policies, goals, objectives and best practices from the cities and communities in the project, as well as regional jurisdictions and discussions with other agencies. The intent of these documents is to provide Omnitrans and local jurisdictions opportunities to collaborate and improve safety at and around bus stops while accessing bus stops and transit centers through active transportation.

Figure 7-9: Other placemaking examples

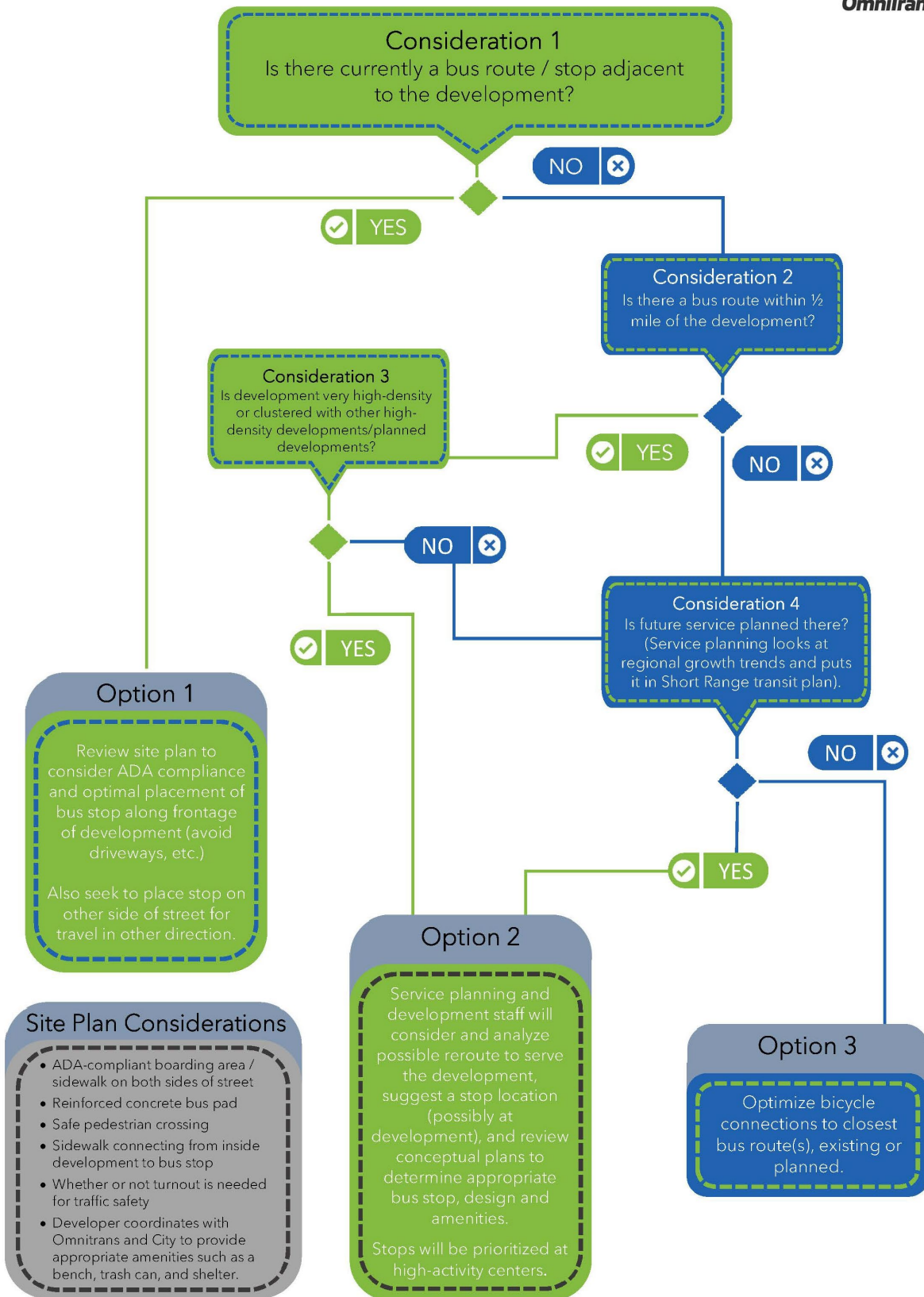
Top left: Local mural **Top Right:** Painted utility box. **Bottom Right:** A local resident helps paint bus benches for an Omnitrans event.



Bottom Left: A local artist displays her unique art design for a bus bench as part of Omnitrans' ConnectTransit pop-up outreach event.

APPENDICES

APPENDIX A: DEVELOPMENT REVIEW FLOW CHART



APPENDIX B: COMMUNITY PLANNING AND PROJECT DEVELOPMENT

When a local jurisdiction (city or county) begins the process of creating or updating a general plan, specific plan, or roadway project, or to review a development proposal, there is an opportunity to incorporate transit into the planning process. For examples and more information, see Omnitrans' document on Transit-Oriented Development⁵.

Omnitrans shall be provided the opportunity to review and respond to all proposed plan changes before and during the public review process. Any amendments to these plans that will have a direct impact on the location of stops should be forwarded to Omnitrans for review and comment. For new developments being planned, adjacent bus stops should be improved with ADA-compliant sidewalk boarding area, concrete bus pad in the pavement, and preferably amenities such as bench, trash can, or shelter.

Omnitrans will use the Development Review Flow chart in considering changes to bus stops as well as standards and recommendations in the Transit Design Guidelines.

Communications should include the name of the contact person at the jurisdiction, and the name and contact information of the developer. Omnitrans will review the plans and consult with the jurisdiction or others as necessary to properly comment on the plans. Omnitrans will provide written comments on the plans to the jurisdiction. Revised plans should be returned to Omnitrans along with prior comments for subsequent reviews.

Meeting invitations, notices, scoping letters, and copies of plans should be sent to:

Planning@Omnitrans.org

Or mailed to:

Strategic Development Department, Omnitrans
1700 W. Fifth St.
San Bernardino, CA 92411

It is recommended to include a transit element in community general plans, with information such as proposed bus routes, transit centers, and planned BRT corridors. Some cities also require property developers to construct and maintain bus turnouts or shelters in conjunction with private development.

Development and roadway improvement plans received by jurisdictions will be evaluated for potential impacts on current or future transit operations using the following criteria. Plans which meet one or more of the following criteria should be sent to Omnitrans for review:

- Identified transit streets in General or Specific Plans
- Existing streets with transit routes
- Major streets
- Projects that affect streets serving high density residential, commercial, industrial areas or educational or medical institutions

- Streets that would logically connect existing or planned transit routes or connecting areas which have or are planned to have transit service
- Any other project that in the jurisdiction's opinion should be assessed for current or future transit needs.

The following is a checklist that can be used to review development plans (see also Development Review Flow Chart), to ensure that the design is conducive to transit access:

- Any adjacent bus stops in a development must include an ADA-compliant sidewalk boarding area, a concrete bus pad in the pavement is recommended, and preferably amenities such as bench, trash can, or shelter will added after such improvements.
- Pedestrian routes to bus stops should be designed to meet the needs of all users (including those with disabilities, elderly, and children).
- The pedestrian system should provide convenient connections between destinations including residential areas, schools, shopping centers, public services and institutions, recreation, and transit.
- Provide a dedicated sidewalk and/or bike paths through new development that are safe and direct to the nearest bus stop or transit center.
- Minimize the distance between buildings and the bus stop through proximity and orientation. This can be encouraged by including transit accessibility concerns in zoning policies, setback guidelines, building orientation guidelines, and parking requirements to encourage transit-oriented development.
- Buildings should be located with entrances from sidewalks, wherever possible.
- Minimize the use of elements that restrict pedestrian movement such as meandering sidewalks, walled communities, and expansive parking lots.
- Pathways should provide pedestrians a straight, direct path wherever possible.
- Eliminate barriers to pedestrian activity. This includes sound walls, landscaping, berms, or fences which impede pedestrian access or visibility. If there is restricted access, gates should be installed at access points.
- Pave pedestrian pathways and ensure they are accessible to everyone. Provide accessible circulation routes that include curb cuts, ramps, visual guides, signage (visual and Braille) and railings where needed. Place ADA compliant curb ramps at each corner of intersections.
- Adequate drainage should be provided to avoid pooling and muddy conditions.
- Provide street lighting along bus stop access routes and safety lighting at intersections to promote safety and security for transit patrons. Ideally bus stops should be illuminated by nearby street lighting, if not; consider installation of solar lighting at the bus stop.

For more information and ways to incorporate transit into development, please see Omnitrans' Transit-Oriented Development document⁵.

APPENDIX C: CONSTRUCTION IMPACTS

Public Works and private development construction activities often impact bus operations and bus stops. The following information attempts to reduce construction conflicts, provide information for the contractor, and guide local jurisdiction staff coordinating both design and construction work with the private development community. Omnitrans considers construction coordination a local function but is available to provide assistance if requested. Omnitrans will participate in any decisions on construction that requires temporary stop closures, relocations, or route disruptions.

Construction coordination information should be directed to:

Detours@Omnitrans.org

Construction impacts caused by private development or public projects can be minimized through conditions of approval applied to the development, such as the following two examples:

Provide the public transportation agency, Omnitrans, a written notification five (5) days prior to any construction that will impede a nearby bus stop or service.

Provide written notification to Omnitrans five (5) day prior to any road closures and/or construction detours that will impact a bus stop or service as a result of this project.

Plans and specifications usually contain language requiring contractors to maintain pedestrian access and signage, etc. Notes on the construction plans provide instructions to contractors and construction inspectors.

Typical standard plans and specifications may include the following notes:

A minimum four (4) feet wide walkway shall be provided to maintain rider access to and from bus stops during construction.

Temporary access to bus stop zones during construction shall be approved by Omnitrans in advance of construction activities.

The contractor shall notify Omnitrans at least 5 workdays in advance for all street closures affecting transit operations regardless of the duration of the closure. This will allow Omnitrans sufficient time to plan detours and notify the general public.

The contractor shall work with Omnitrans to establish an approved temporary bus stop location.

Omnitrans will provide and post the appropriate temporary bus sign signage.

The contractor shall notify Omnitrans at least 5 days in advance of construction completion so that permanent bus stop signs can be re-installed by Omnitrans.

Recommended construction plan notes include:

- Contact Omnitrans at BusStops@Omnitrans.org for coordination and review requirements.

- Contractor may not remove any bus stop signs without prior authorization from Omnitrans.
- All work shall conform to the requirements of the Americans with Disabilities Act (ADA) including provisions for temporary access to and from bus stops.
- Temporary access to bus stop zones during construction shall be approved by Omnitrans at least 5 days in advance of construction activities.
- The contractor is responsible for all costs incurred for loss or damage to bus stop signs, hardware, and street furniture. Project acceptance will be delayed at the request of the local jurisdiction for any damaged street furniture or non-payment of costs.
- Temporary removal of street furniture to avoid damage and conflict during construction requires a 30-day advance notice to both the city and the owner of the street furniture.
- The contractor is responsible for construction of the rider boarding pad on which street furniture will be placed. The pad must be designed and located in conformance with local jurisdiction standard details. Any necessary deviations from standard details require the written approval of the local jurisdiction.
- The contractor shall receive approval from the local jurisdiction for the location of street furniture placement prior to construction of the rider boarding area.
- Prior to final acceptance or release of certificate of occupancy, the local jurisdiction must be notified to inspect and approve all bus stop related improvements.
- A minimum of 48 hours advance notice to local jurisdiction and Omnitrans for final inspections is required.

In addition, the construction plans need to show existing and proposed bus stop locations. The following special provisions may be included in the permitting process, the inspection process, pre-construction conferences, or wherever it is most appropriate:

Contractor shall provide Omnitrans with the name and telephone number of the contractor's construction manager prior to the commencement of all construction projects involving bus stops or bus route detours.

Contractors shall make every effort to schedule their work to minimize impacts and the duration of impacts to transit operations and the general public.

The contractor is responsible for the construction of the rider boarding area.

A representative of Omnitrans should be invited to the project's pre-construction conference.

APPENDIX D: BUS STOP PLACEMENT COMPARISON



Figure D: Three types of bus stop placements

BUS STOP LOCATION COMPARISON

<i>Bus Stop Location</i>	<i>Advantages</i>	<i>Disadvantages</i>	<i>Recommended when these location conditions exist.</i>
Near side Located immediately before an intersection	<ul style="list-style-type: none"> • Less potential conflict with traffic turning onto the bus route street from a side street. • The bus boarding door is close to the crosswalk. • Bus has intersection to merge into traffic. • Bus driver can see oncoming buses with transferring riders. 	<ul style="list-style-type: none"> • Potential conflicts with right turning traffic due to cars cutting in front of the bus. • The stopped bus obscures the sight distance of drivers and pedestrians entering from the right. • The stopped bus may block visibility of the stop signs or traffic signals. • At signalized intersections, may result in schedule delays. 	<ul style="list-style-type: none"> • When traffic is heavier on the farside than on the approaching side of the intersection. • When pedestrian access and existing landing area conditions on the nearside are better than on the farside. • When street crossings and other pedestrian movements are safer when the bus stops on the nearside than the farside. • When the bus route goes straight through the intersection. • When adequate sight distance can be achieved at the intersection.
Far side Located immediately after an intersection	<ul style="list-style-type: none"> • Does not conflict with vehicles turning right. • Appropriate after the route has made a turn. 	<ul style="list-style-type: none"> • The stopped bus obscures the sight distance to the right of drivers entering from the cross street to the right of the bus. 	<ul style="list-style-type: none"> • When traffic is heavier on the nearside than on the farside of the intersection. • At intersections where heavy left or right turns occur.

	<ul style="list-style-type: none"> • The stopped bus does not obscure sight distance to the left for vehicles entering or crossing from the side street. • At signalized intersections, buses can more easily re-enter traffic. • The stopped bus does not obscure traffic control devices or pedestrian movements at the intersection. 	<ul style="list-style-type: none"> • If the bus stopping area is of inadequate length, the rear of the stopped bus will block the cross street (especially an issue for stops where more than one bus may be stopped at a time). • If the bus stops in the travel lane, it may result in queued traffic behind it blocking the intersection. 	<ul style="list-style-type: none"> • When pedestrian access and existing landing area conditions on the farside are better than on the nearside. • At intersections where traffic conditions and signal patterns may cause delays. • At intersections with transit signal priority treatments.
<p>Mid-Block Located 300' or more beyond or before an intersection</p>	<ul style="list-style-type: none"> • The stopped bus does not obstruct sight distances at an intersection. • May be closer to major activity centers than the nearest intersection. • Less conflicts between waiting and walking pedestrians. 	<ul style="list-style-type: none"> • Often, there is no safe crosswalk available mid-block. • May increase customer walking distances if the trip generator is close to an intersection. • Length of mid-block stops can vary due to depth of a turn-out and a bus' ability to maneuver in/out of traffic lanes. • Requires most curb clearance of the three options (unless a mid-block sidewalk extension or bus nub is built). 	<ul style="list-style-type: none"> • When there is a safe, well-marked crossing or signalized crossing (such as a High Intensity Activated CrossWalK HAWK signal) adjacent to the stop.

APPENDIX E: ADA COMPLIANCE CHECKLIST

ADA Compliance & Required Bus Stop Checklist

Question	Response	
<p>Is the ADA landing pad 8 ft wide x 5 ft long?</p> <p>The ADA boarding area refers to the immediate paved landing pad. It should be unobstructed with a min of 8 ft x 5 ft. The width is measured from the back of the curb.</p>	Yes	No
<p>Is the curb connected to the sidewalk?</p> <ul style="list-style-type: none"> • Flat paved boarding area must connect the curb to the sidewalk. • If there is dirt, gravel, grass, or landscape between the sidewalk and curb it is not ADA compliant. 	Yes	No
<p>Does it look flat? If it has 2 in. cracks, is uneven, and has more than a 2% slope it is a no.</p>	Yes	No
<p>Does it have a curb ramp at the nearest intersection (with a sidewalk connecting from bus stop intersection)?</p>	Yes	No
<p>Is the bus stop ADA compliant?</p> <p>Yes, if the above listed are ALL yes No if ONE of the below listed is a no</p>	Compliant	Not Compliant
<p>What is the length of the paved boarding area immediately at the bus stop? (This boarding area refers to the entire paved area that has the landing pad, bus pole, and bus stop amenities.)</p>		LENGTH (in ft):
<p>How wide is the boarding area immediately at the bus stop?</p> <p>Minimum for ADA landing pad: 8 ft Preferred: 10 ft</p> <p>The width is measured from the back of the curb excluding its thickness.</p>		WIDTH (in ft)
<p>What is the material of the boarding area?</p> <p>Concrete; Dirt/Gravel; Grass; Tile; Asphalt; Plant Landscape; Other</p>		MATERIAL:
<p>Does the bus stop have a sidewalk?</p>	Yes	No
<p>What is the width of the sidewalk, particularly outside the boarding area, excluding curb thickness?</p> <p>Minimum: 4 ft Preferred: 5 ft or more</p>		WIDTH (in ft)

<p>What is the condition of the sidewalk?</p> <ul style="list-style-type: none"> • No sidewalk - The bus stop has no sidewalks • Poor- Big cracks (> 2in), very uneven, damaged, potholes, tree damage. • Fair - Small cracks, weeds, slightly uneven. • Good- Not new but has no cracks, even slope, and in good condition • Excellent- Perfect Condition. No cracks. Even slope. 		
<p>General Comment (any other things to note about the bus stop):</p>		

APPENDIX F: GALLERY OF ADA COMPLIANCE AND NON-COMPLIANCE

Noncompliant Bus Stops

A bus stop is much more than an identifying pole. A bus stop area can lack a safe, clear, and stable connection to a sidewalk. Bus stops lacking full ADA compliance are difficult for customers to access and do not meet the minimum requirements. Here are some instances of bad design/missing elements:

Landing Pad: No landing pad or if is less than 4 ft wide or 2 ft long (grass, dirt, gravel, or plant landscape is not considered a landing pad)

NO Curb Connection to Sidewalk

NO Sidewalk

NO Path of Travel

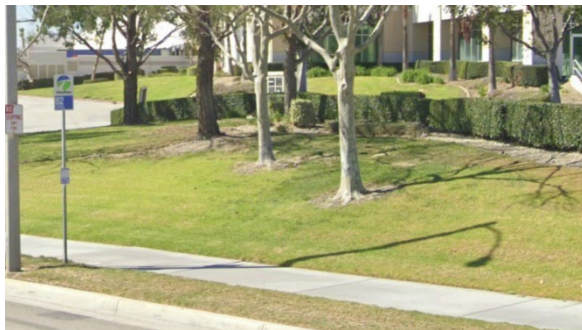
NO Ramps



No curb connection to the sidewalk. No clear path to ramps or intersections. There are no sidewalks.



There is no landing pad or boarding area. No access to ramps, intersections, or sidewalks.



There is no landing pad or boarding area. No curb connection to the sidewalk.



The landing pad does not adhere to ADA standards. Additionally, the bench partly obstructs it. The path of travel is narrow and cramped, and the sidewalk is not very accommodating.



Landing pad is less than 3 ft wide.



MINIMUM: Meets all the minimum requirements but no amenities



BASIC: Meets all the requirements and has a bench as a basic amenity.



PREFERRED (Standard): Meets all the requirements and has a standard shelter.



PREMIUM: Meets all the requirements. The landing pad is 10' x 5' and the boarding area is larger than 25' x 10'.

Compliant Bus Stops must meet all the following criteria:

- ✓ **Landing Pad:** Minimum unobstructed 8' x 5' area (with 8' excluding curb thickness).
- ✓ **Sidewalk Curb Connection:** The curb immediately connects to the boarding area and sidewalk.
- ✓ **Sidewalk Condition:** The boarding area and sidewalk have less than 2% slope and are in good condition.
- ✓ **Path of Travel:** Paved and unobstructed route from the boarding area to an intersection/crosswalk.
- ✓ **Ramps:** Nearby intersections/crosswalks have ramps.



BASIC: Meets all the requirements. The landing pad is at a minimum of 8' x 5' but is not immediately adjacent to the bus stop pole.



PREFERRED (Standard): Meets all the requirements. The landing pad is 10' x 5' but is not immediately adjacent to the bus stop pole.

ADDITIONAL RESOURCES & REFERENCES

- National Association of City Transportation Officials (NACTO)
 - Transit Street Design Guide: nacto.org/publication/transit-street-design-guide/
 - Queue Jump Lanes: <https://nacto.org/publication/transit-street-design-guide/intersections/intersection-design/queue-jump-lanes/>
- Omnitrans - Bus Stop Safety Improvement Plan
 - omnitrans.org/wp-content/uploads/2022/02/Omnitrans-BSSIP_FINAL-1.pdf
- Alameda-Contra Costa Transit District - Multimodal Corridor Guidelines
 - actransit.org/website/uploads/AC_Transit_Multimodal_Corridor_Guidelines_Final.pdf
- Omnitrans' Transit-Oriented Development Document
- American Public Transportation Association - Bus Stop Design and Placement Security Considerations
 - https://nacto.org/wp-content/uploads/2016/05/1-17_APTA-Bus-Stop-Design-and-Placement-Security-Considerations_2010.pdf

¹ Federal Highway Administration (2008), Pedestrian Safety Guide for Transit Agencies; at https://safety.fhwa.dot.gov/ped_bike/ped_transit/ped_transguide/transit_guide.pdf

² TriMet Portland Oregon (2010), Bus Stops Guidelines; at https://nacto.org/docs/usdg/bus_stop_guidelines_trimet.pdf

³ National Association of City Transportation Officials (2016), Transit Street Design Guide; at <https://nacto.org/publication/transit-street-design-guide/stations-stops/station-stop-principles/>

⁴ Federal Transit Administration (2015), Bus Rapid Transit; at <https://www.transit.dot.gov/research-innovation/bus-rapid-transit>

⁵ Omnitrans (2021) Bus Stop Safety Improvement Plan; at https://omnitrans.org/wp-content/uploads/2022/02/Omnitrans-BSSIP_FINAL-1.pdf

⁶ Omnitrans Transit-Oriented Development (2013),

⁷ Alameda-Contra Costa Transit District (2018), AC Transit Multimodal Corridors Guidelines https://www.actransit.org/website/uploads/AC_Transit_Multimodal_Corridor_Guidelines_Final.pdf

⁸ American Public Transportation Association (2012), Design of On-street Transit Stops and Access from Surrounding Areas; at https://www.apta.com/wp-content/uploads/Standards_Documents/APTA-SUDS-UD-RP-005-12.pdf

⁹ American Public Transportation Association (2010), Crime Prevention Through Environmental Design (CPTED) for Transit Facilities; at https://nacto.org/wp-content/uploads/2016/05/1-17_APTA-Bus-Stop-Design-and-Placement-Security-Considerations_2010.pdf