RFTA

ROARING FORK TRANSPORTATION AUTHORITY

BUS STOP DESIGN STANDARDS & GUIDELINES

March 2025

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1. OVERVIEW

1.1 Purpose

The purpose of the ***Bus Stop Design Standards and Guidelines*** document is to assist City, County and RFTA staff, developers, local partners and private property owners to locate and design bus stops and their associated passenger amenities within the RFTA service area. The document consists of the following chapters:

1. **Overview** — discusses how to use the standards and guidance.
2. **The Big Picture** — discusses the transit network as it currently exists and the envisioned future of transit service in the RFTA Service Area
3. **Street-side Characteristics** — discusses the factors associated with the roadway that influence bus operations.
4. **Curb-side Characteristics** — discusses the factors associated with the comfort, safety and convenience of patrons at bus stops.
5. **Next Steps** — describes RFTA's goals for improving bus stops and bringing them into compliance with these guidelines.

1.2 Development of Standards and Guidance

This guidance document was created with the assistance of the ***Transfort Bus Stop Design Standards and Guidelines*** and RFTA staff.

Other important tools that may provide guidance and regulation on the location and design of RFTA's bus stops include:

- FTA ADA Regulations (see FTA ADA Circular 4710.1)
- The CDOT Design Guide (CDOT Roadway Design Guide 2023 — Colorado Department of Transportation - codot.gov)
- TCRP Report 19: Guidelines for the Location and Design of Bus Stops (1996) (TCRP Report 19: Guidelines for the Location and Design of Bus Stops - trb.org)

In addition, notwithstanding fundamental bus operational requirements and passenger safety and security, RFTA needs to honor the land use codes, standards and guidelines of the applicable jurisdictions. If conflicts arise between sources, the more specific and/or stringent standards will apply. **RFTA has specifications and as-built drawings of recently-constructed stops available upon request.**

2. THE BIG PICTURE

2.1 Introduction

Bus stops are a critical part of the transit system as they serve as the first point of contact between the customer and the service. In addition, bus stop placement throughout the community acts to promote alternative modes of transportation to the traveling public. The spacing, location and design all affect the operation of the transit system and, in turn, the transit patron's satisfaction. The standards and guidance in this document are intended to guide the design of transit stops that complement their immediate surroundings, meet the transit patron's comfort and safety needs, and support an efficient transit network. Bus stops must be designedby qualified architects and engineers to ensure tht they meet all local and state codes and reqwuirments for transit facilities. The placement of transit stops is guided by safety considerations, community context, patron's origins and destinations, and RFTA's strategic planning efforts. RFTA's Strategic Plan is the agency's long range planning tool; however, it is possible that community growth and change will occur in ways not anticipated by the Strategic Plan, and therefore routes and bus stops may be different from those envisioned. Routes and stops are depicted in Figure 1.

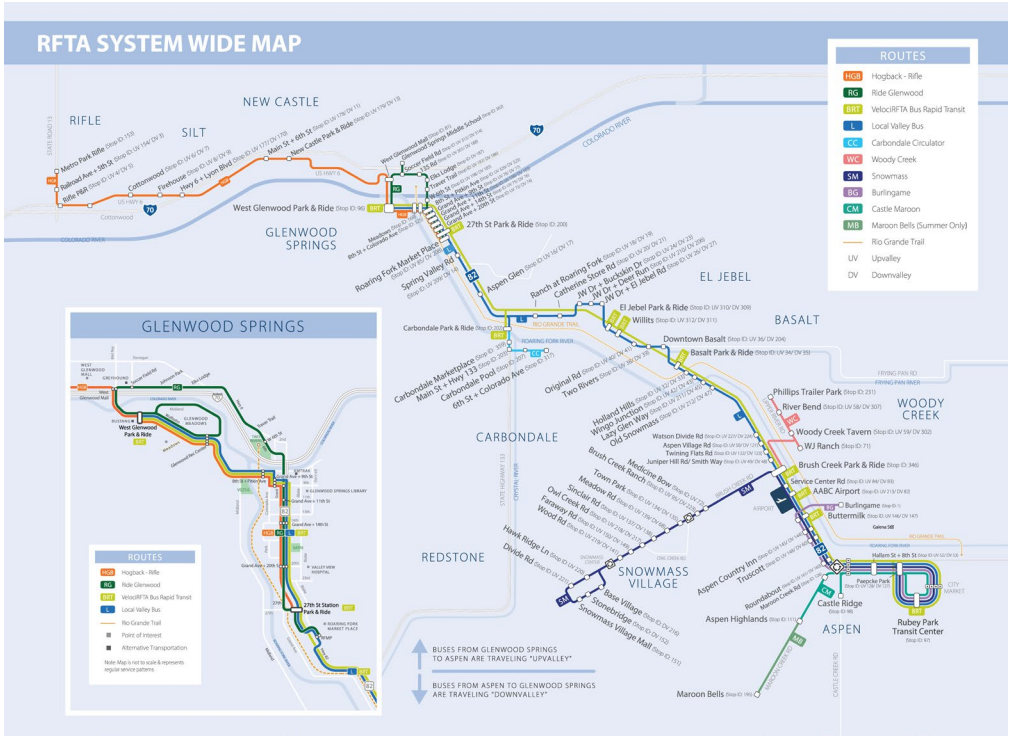


Figure 1: RFTA Routes and Stops

2. THE BIG PICTURE

2.2 Transit System Overview

RFTA is a Regional Transportation Authority in Western Colorado that includes the communities of Aspen, Snowmass Village, Pitkin County, Basalt, a portion of Eagle County, Carbondale, Glenwood Springs and New Castle. RFTA provides BRT service from Aspen to Glenwood Springs (Roaring Fork Valley), and regional bus service from Glenwood Springs to Rifle (Hogback), and local service in Aspen and Glenwood Springs. RFTA also contracts with Garfield County, Aspen Skiing Company, Pitkin County, Aspen and the United States Forest Service for additional seasonal bus routes.

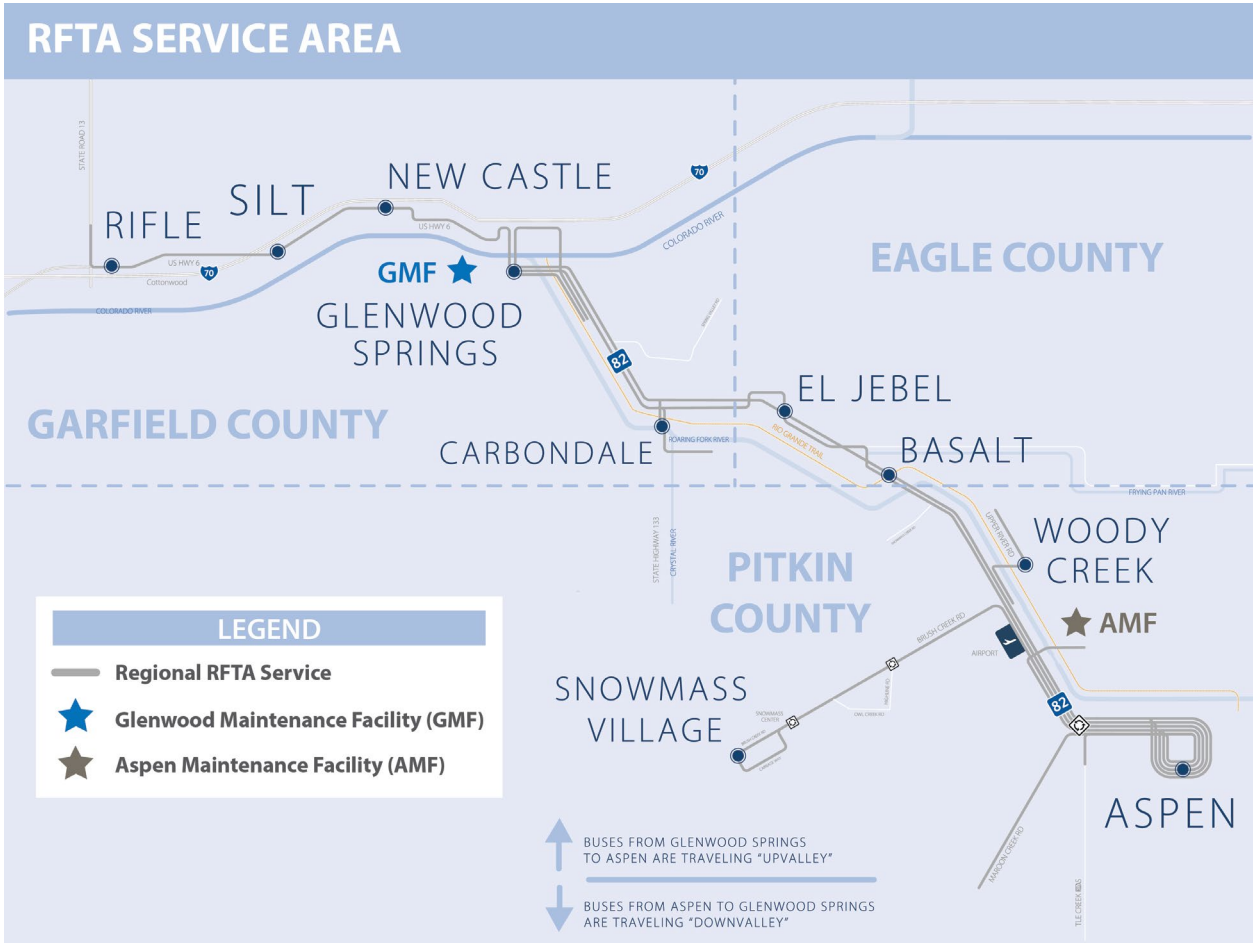


Figure 2: RFTA Service Area

2. THE BIG PICTURE

2.3 Bus Stop Installation and Upgrade – How does it happen?

As of the date of this report there are over 200 bus stops in the RFTA service area which have been constructed over the last several decades. As a result, many do not meet the standards outlined in this document. In addition to existing bus stops that RFTA currently serves, service expansion in this growing region, particularly in the I-70 corridor will require the development of new bus stops. This document is designed to guide the development and redevelopment of existing and new bus stops and ensure that they meet standards for safety, ADA, amenities and consistency in design and branding throughout RFTA's transit system.

There are a variety of ways transit facilities are installed and upgraded throughout the system, and they are described below:

1. **RFTA's Strategic Initiative Process:** — RFTA's annual budgeting and prioritization process, known as RFTA's "Strategic Initiatives" process, allows for the construction of new bus stops, improvements to existing bus stops, or bus stop relocations. Projects are presented to the executive team for consideration each year, in conjunction with RFTA's annual budgeting process. Projects are advanced contingent on available funding and organizational priorities. There are no guarantees of funding in any given year through this process.

2. **Development and/or Redevelopment:** — As properties develop and are redeveloped within RFTA's service area, RFTA will work collaboratively with jurisdictions and developers to identify the need and conceptual design, as further defined within these guidelines, for necessary transit infrastructure and passenger amenities appropriate for the scope of development. The local jurisdictions, not RFTA, have control over which stops are improved via this method and RFTA may only offer funding for design, construction, or on-going maintenance through a pre-negotiated development improvement and maintenance agreement. All new bus stops proposed through land development or redevelopment efforts will require a written agreement confirming that RFTA can and will serve the stop, and must identify provisions for the long-term repair and maintenance of the new stop. This guideline document makes no financial commitment for any projects or identifies any ability to serve any proposed stops without the express written consent of RFTA.

3. **Member Jurisdiction Capital Improvement and Street Maintenance Projects:** — The Cities and Counties in RFTA's service area may implement capital improvements which may include upgrades to bus stops. RFTA and its member jurisdictions must execute a written agreement identifying the long-term maintenance and repair of these transit improvements, including financing and repair and replacement responsibilities, before commencing any work.

2.4 Challenges to Improving Transit Infrastructure

Many challenges exist to renovate existing bus stops or to construct new bus stops, including:

- Limited space or access within existing public or private ROW.
- Lack of safe, ADA-compliant connections between bus stops and adjacent neighborhood sidewalks and other infrastructure.
- Lack of safe pedestrian street crossings near a bus stop, particularly across major streets and highways. RFTA will not build or relocate stops in SH82 or other major roadways without safe crossings, ideally grade-separated from vehicular traffic.
- Access to or relocation of utilities.
- The expense to build or improve a bus stop that meets industry safety standards, ADA standards, and RFTA bus stop guidelines.

RFTA works actively with the cities and counties in its service area to make improvements to bus stops and improve connections to the surrounding the bicycle and pedestrian network. However, it may require many years to address all the necessary improvements. Figure 3 and Figure 4 below demonstrate some of the challenges to transit facility improvements.

Figure 3: Aspen Glen, Downvalley

In **Figure 3**, the Aspen Glen stops have inadequate lengths and tapers for the design speed of State Highway 82, and lack bike/ped connections, ADA improvements, lighting, landscaping, and a safe crossing of SH82. This area is located in Garfield County, a non-member jurisdiction. Improvements to bus stops in non-member jurisdictions require financial participation from those jurisdictions.

Figure 4: Ranch at Roaring Fork DV Stop

In **Figure 4** the Ranch at Roaring Fork Stop, also in Garfield County (a non-member service area) lacks the basic amenities and has limited ROW for improvements.

2.5 Bus Stop Maintenance

The development of a new bus stop, the improvement to, or the relocation of an existing bus stop will present different challenges and issues depending on the stop's location within RFTA service area. Ownership of the property on which the bus stop is located, the availability of and the payment for the utilities required for the stop as well as provisions for the long-term repair and maintenance of the stop will be negotiated on a case by case basis prior to the approval of the project. Many stops lack ownership and maintenance agreements with member jurisdictions. This is an issue that RFTA will need to address long-term.

3. STREET SIDE CHARACTERISTICS

3.1 Introduction

This section discusses preferred and alternative street-side stop characteristics. Street-side characteristics are influenced by elements of the road networks, such as traffic speeds, street design, and intersection design. These roadway features, in turn, determine the location of acceleration/deceleration lanes, the location of bus stops, and the design components of bus stops that extend into the street.

Figure 5: Steet Side Characteristics

3. STREET SIDE CHARACTERISTICS

3.2 Stop Spacing

Stop spacing refers to the distance between stops along a bus route. Stop spacing takes intoconsideration the trade-offs between transit vehicle travel times and walking distances to bus stops. While more frequently placed bus stops reduce walking distances, it also slows down bus service. In contrast, longer distances between stops streamlines transit route travel times but may result in customers having to walk longer distances to get to bus stops. This is described in TCRP Report 19: Guidelines for the Location and Design of Bus Stops as trade-offs between operating efficiencies and customer accessibility, as follows:

Close Stops (Every block or 1/8 mile - 1/4 mile spacing)	• Short walking distances • More frequent stops, creating longer travel time
Further Distance Between Stops (Beyond 1/4 mile spacing)	• Longer walking distances • Less frequent stops, creating shorter travel time

Table 1: Trade-offs of Stop Spacing

TCRP Report 19: Guidelines for the Location and Design of Bus Stops also describes the industry standards for bus stop spacing, typically being influenced by land use or by proximity to major trip generators. These standards suggest using closer spaced stops in more densely populated areas, such as the central business core, and increasing space between stops when approaching more suburban and rural areas of the community. Alternatively, Bus Rapid Transit (BRT) type routes generally suggest longer distance between stops to streamline BRT travel times. **Table 2** describes typical ranges for the different land use environments.

3. STREET SIDE CHARACTERISTICS

Environment	Route Type	Spacing Range
Urban Area (within a City, Town or major activity center)	Local	1/8-mile to 1/4-mile
	Express or BRT	1/2 mile to 1 mile (or as needed)
Suburban Area (immediately adjacent to Cities or major activity centers)	Local	1/4-mile to 1/2-mile
	Express or BRT	1-mile minimum
Rural Area	Local	1/2-mile minimum
	Express or BRT	1-mile minimum

Table 2: Stop Spacing Recommendations

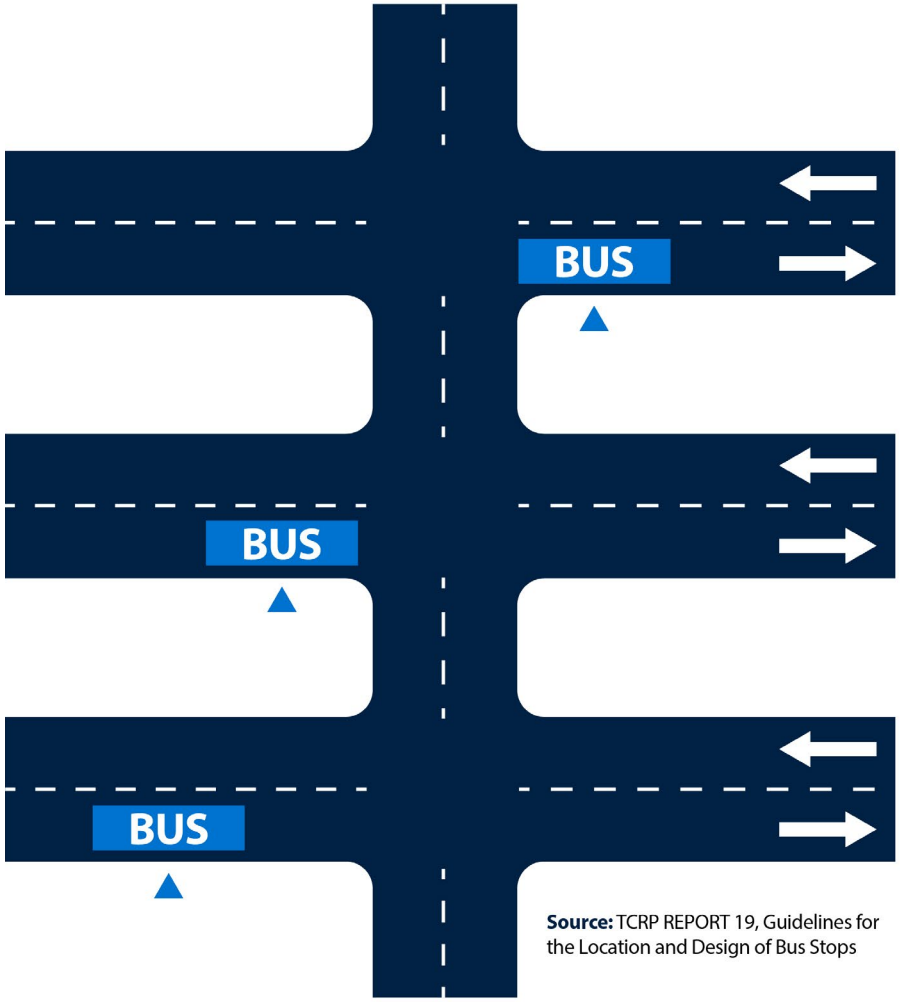
RFTA uses these ranges as references, but in general the main considerations for bus stop location and spacing are safety, such as reducing conflicts between buses and other roadway users; and proximity to major trip generators, such as concentrations of residences and businesses. Within municipalities, stops shall be located approximately ¼ mile apart. In more rural areas, such as outside the municipalities, and for BRT, stops may be several miles apart.

3.3 Stop Locating

Within more typical urbanized areas, there are generally three location options for bus stops: near-side, far-side and mid-block, as shown in Figure 6. Many factors influence the location of stops, such as site-specific safety considerations, traffic patterns, intersection geometry, passenger origins and destinations, pedestrian accessibility, route design and available space. **Table 1**, **Table 2** and **Table 3** may be used to help determine appropriate bus stop locations based on the tradeoffs of each possible location.

Far-side stops are, in general, RFTA's preferred stop location because they have shown to be the safest for passengers exiting the bus and minimize conflicts with other vehicles. Therefore, farside stops are required. RFTA must approve any deviations from this standard.

3. STREET SIDE CHARACTERISTICS



Far-side Bus Stop - Bus stops immediately after passing through an intersection.

Near-side Bus Stop - Bus stops immediately prior to an intersection.

Midblock Bus Stop - Bus stops within the block

Source: TCRP REPORT 19, Guidelines for the Location and Design of Bus Stops

Table 3: Stop Location Considerations

3. STREET SIDE CHARACTERISTICS

Location	Advantages	Disadvantages
Near-Side Stop	• Minimizes interferences when traffic is heavy on the far side of the intersection • Allows passengers to access buses closest to the crosswalk • Results in the width of the intersection being available for the driver to pull away from curb • Eliminates the potential of double stopping • Allows passengers to board and alight while the bus is stopped at a red light • Provides driver with the opportunity to look for oncoming traffic, including other buses with potential passengers	• Increases conflicts with right-turning vehicles • May result in stopped buses obscuring curbside traffic control devices and crossing pedestrians • May cause sight distance to be obscured for cross vehicles stopped to the right of the bus • May block the through lane during the peak period with queuing buses • Increases sight distance problems for crossing pedestrians
Far-Side Stop	• Minimizes conflicts between right turning vehicles and buses, providing additional right turn capacity • Minimizes sight distance problems on approaches to intersection • Encourages pedestrians to cross behind the bus • Creates shorter deceleration distances for buses since the bus can use the intersection to decelerate	• May result in the intersections being blocked during peak periods by stopped buses • May obscure sight distance for crossing vehicles • May increase sight distance problems for crossing pedestrians • Can cause a bus to stop far-side after stopping for a red light, which • Interferes with both bus operations and all other traffic

	• Results in bus drivers being able to take advantage of the gaps in the traffic flow that are created at signalized intersections	• May increase number of rear-end accidents since drivers do not expect buses to stop again after stopping at a red light • Could result in traffic queued into intersection when a bus is stopped in travel lane
Mid-Block Stop	• Minimizes sight distance problems for vehicles and pedestrians • May result in passenger waiting areas experiencing less pedestrian congestion	• Requires additional distance for no- parking restrictions • Encourages patrons to cross street at mid-block (jay-walking) • Increases walking distance for patrons crossing at intersections
Source: TCRP Report 19, Guidelines for the Location and Design of Bus Stops		

Figure 6: Stop Location Options

3.4 In-Street Design

In-Street Design is associated with the path the bus takes to enter and exit a bus stop. Options include, for example, stopping in the roadway, using a bus pullout, using acceleration and deceleration tapers, or using the shoulder of the roadway. Determining appropriate design for each bus stop location depends on safety considerations, street design, available right of way, ridership and other factors. Bus pullouts may be used in areas where there is high ridership, a large number of route transfers or where traffic is considered to be high volume. Queue jumps refer to an intersection design that allows the bus to move ahead of queueing traffic to progress through congested intersections more efficiently. Queue jumps and bus pullouts typically originate from recommendations of a corridor, sub-area or service-related planning effort. In addition, a bus pullout may be required when multiple routes transfer at the location, to allow more than one bus to stop at the same time.

3. STREET SIDE CHARACTERISTICS

In-Street Design alternatives are illustrated below in **Figure 7** and **Figure 8**. The flow chart in **Figure 9** helps to determine what In-Street Design is appropriate; and the trade-offs of each design are described in **Table 4**.

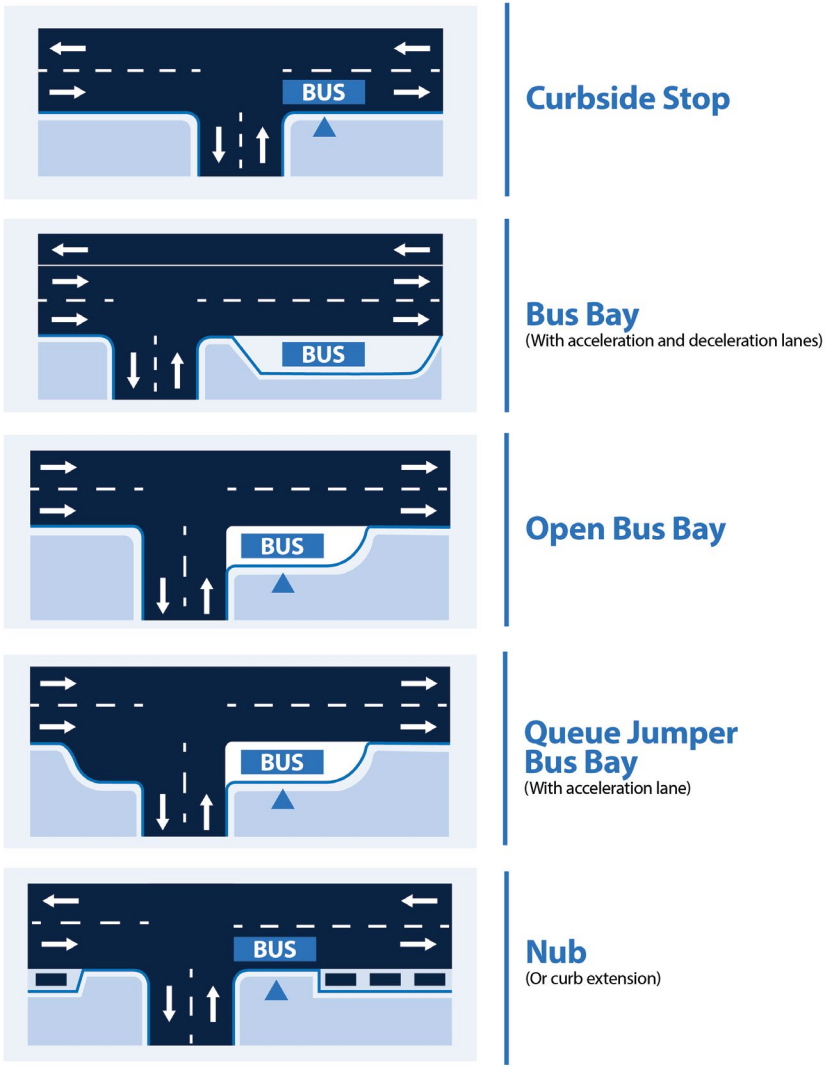


Figure 7: In-Street Bus Stop Design Considerations

3. STREET SIDE CHARACTERISTICS

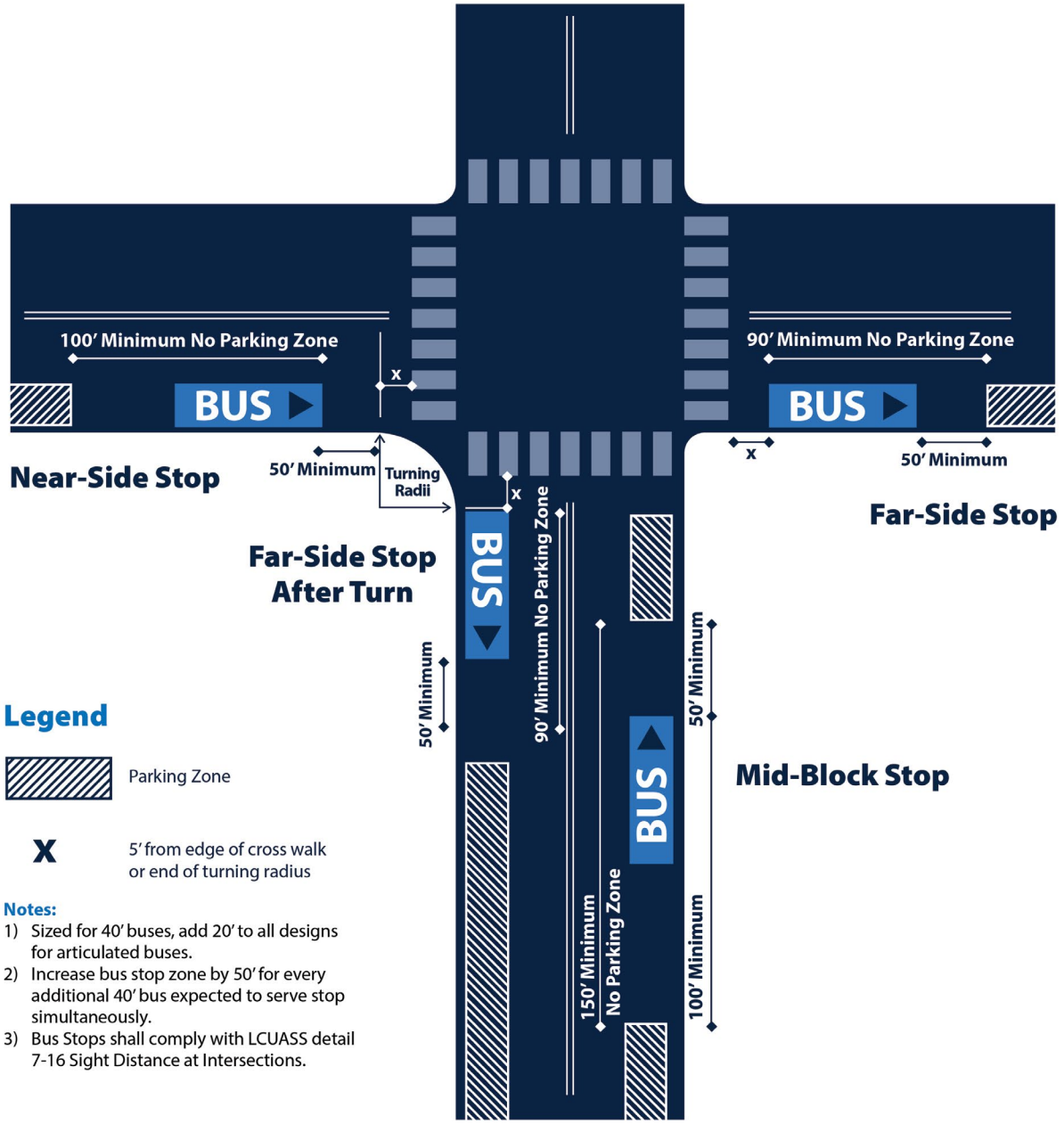


Figure 8: Bus Stop Zone Dimension (where on-street parking is present)

3. STREET SIDE CHARACTERISTICS

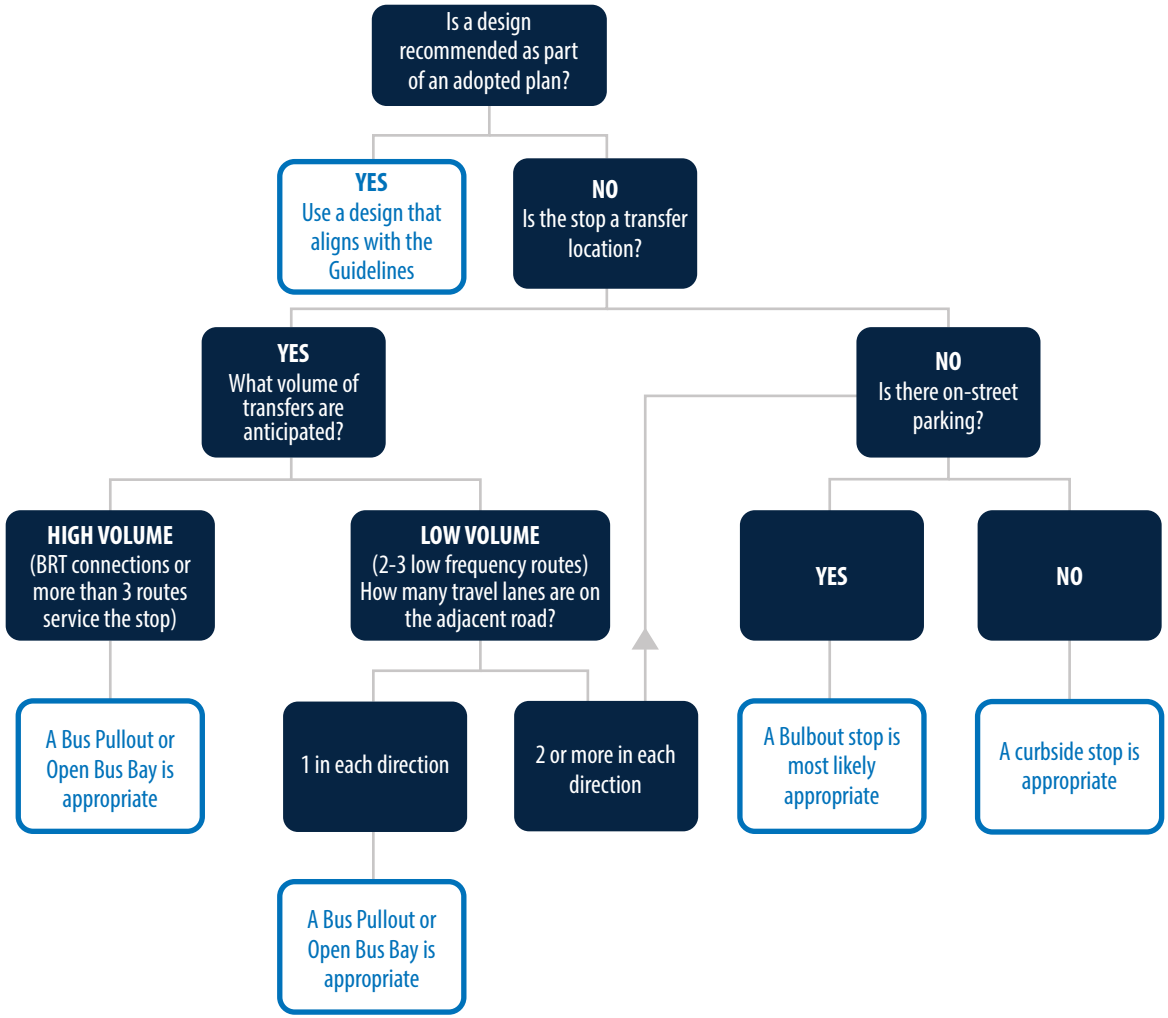


Figure 9: In-Street Design Recommendations

3. STREET SIDE CHARACTERISTICS

Type of Stop	Advantages	Disadvantages
Curb-Side	• Provides easy access for bus drivers and results in minimal delay to bus • Is simple in design and easy and inexpensive for a transit agency to install • Is easy to relocate	• Can cause traffic to queue behind stopped bus, thus causing traffic congestion • May cause drivers to make unsafe maneuvers when changing lanes in order to avoid a stopped bus
Bus Bay	• Allows patrons to board and alight out of the travel lane • Provides a protected area away from moving vehicles for both the stopped bus and the bus patrons • Minimizes delay to through traffic	• May present problems to bus drivers when attempting to re-enter traffic, especially during periods of high roadway volumes • Is expensive to install compared to curbside stops • Is difficult and expensive to relocate • Can require right-of-way acquisition
Open Bus Bay	• Allows the bus to decelerate (if far side) or accelerate (if near side) as it moves through the intersection • Less construction cost • See Bus Bay advantages	• See Bus Bay disadvantages
Queue-Jumper Bus Bay	• Allows buses to bypass queues at a signal, which can provide a substantial time savings at congested intersections • See Open Bus Bay advantage	• See Bus Bay disadvantages • May cause delays to right-turning vehicles when a bus is at the head of the right turn lane

Bulbout	• Removes fewer parking spaces for the bus stop • Decreases the walking distance and time for pedestrians crossing the street • Provides additional sidewalk area for stop improvements or landscaping • Eliminates delay associated with re-entering the through traffic stream	• Costs more to install compared to curbside stops • Can complicate storm-water flow • See Curb-Side disadvantages

Table 4: Bus Stop Types, Advantages and Disadvantages

If acceleration and deceleration tapers are part of the design of the stops listed in **Table 4,** the following recommendations apply:

Through Speed (mph)	Entering Speed[a] (mph)	Length of Acceleration Lane (Feet)	Length of Deceleration Lane[b] (Feet)	Length of Taper (Feet)
35	25	250	184	170
40	30	400	265	190
45	35	700	360	210
50	40	975	470	230
55	45	1400	595	250
60	50	1900	735	270

[a]Bus speed at end of taper, desirable for buses to be within 10 mph of travel lane vehicle speed at the end of the taper
[b]Based on 2.5 mph/sec deceleration rate

Table 8: Bus Turnout Dimensions

4. CURB-SIDE CHARACTERISTICS

4.1 Introduction

This section describes criteria that all bus stops shall meet, provides conceptual layouts of passenger amenities at stops and describes amenities that should be included at a stop, depending on the level of service. Curbside characteristics refer to features associated with the comfort, safety and convenience of customers at bus stops. These features include factors like sidewalk width, connections to adjacent land uses, and bus stop passenger amenities such as shelters, benches, bike racks, trash and recycling receptacles and lighting. Newly constructed or renovated bus stops shall meet the standards in this section to the maximum extent feasible.

Figure 10: Curb-Side Characteristics

4.2 Universal Design and ADA Accessibility

The Americans with Disabilities Act of 1990 regulated enforceable accessibility standards for new construction and alterations to places of public accommodation, which include bus stops. FTA Circular 4710.1 AMERICANS WITH DISABILITIES ACT GUIDANCE the most recent guidance, outlines the following four basic principles to accomplishing ADA accessibility at bus stops, as it applies to all newly constructed or altered bus stops. While there may be some latitude in selection and scope of amenities at bus stops, all new or relocated bus stops must be ADA compliant and must be deemed safe, secure and operationally functional by RFTA.

1. **Surface** — The bus stop boarding and alighting area, including benches, shelters, trash receptacles, lighting fixtures, bike racks and connections shall be constructed have a firm, stable surface. Concrete or asphalt is required, unless otherwise approved by RFTA.
2. **Dimensions** — The bus stop boarding and alighting area shall provide a clear length of 8' minimum, measured from the curb, and a clear width of 5' minimum, measured parallel to the roadway (see **Figure 11**)
3. **Connection** — The bus stop boarding and alighting area shall be connected to streets, sidewalks, and pedestrian paths by an accessible route, of at least 4' wide.
4. **Slope** — The slope of the bus stop boarding and alighting area shall be the same as the roadway to the maximum extent practical, and not steeper than 1:48, a 2% grade.

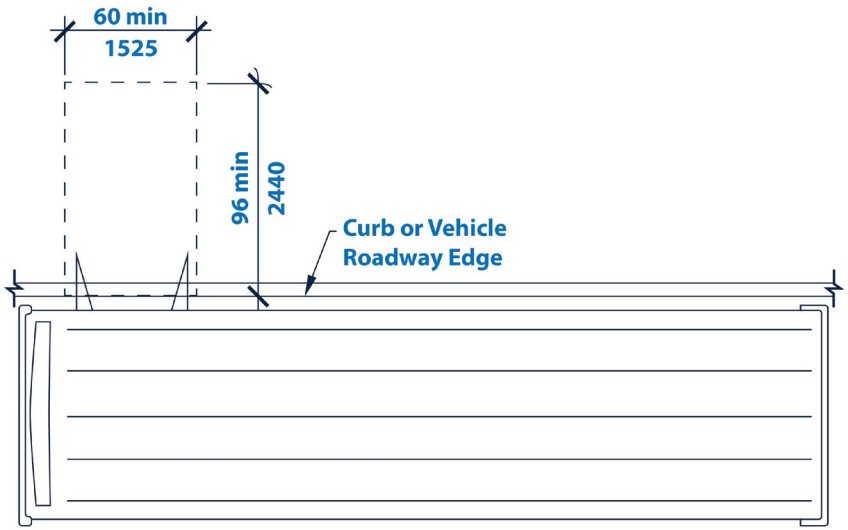


Figure 11: Dimensions of Boarding and Alighting Area

If a bus stop has a shelter, there shall be a minimum clear floor space of 30" wide by 48" deep inside the shelter and an accessible path leading from the shelter to the boarding and alighting area (**Figure 12**).

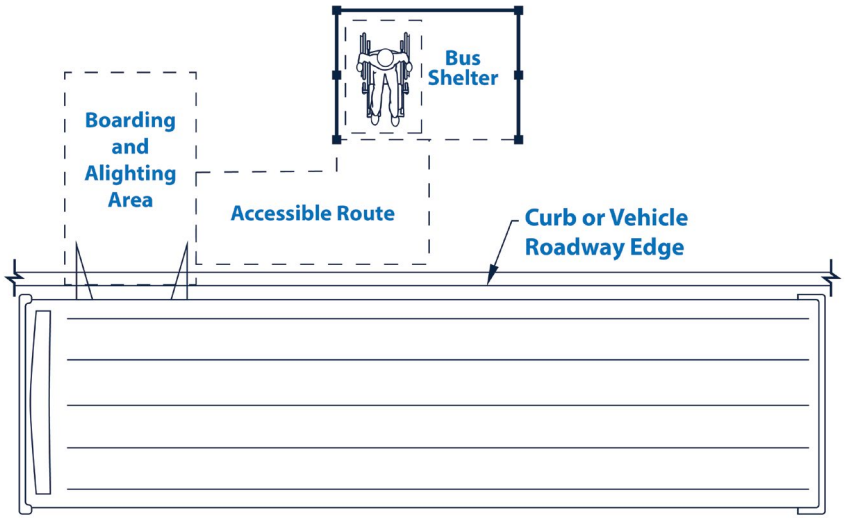


Figure 12: ADA Interior Bus Shelter Space

4.3 Bus Stop Types

RFTA has four typical stop types tailored to the context of each stop area. Amenities such as a shelter, bike rack, trash receptacle and lighting are generally required. Free standing stop illumination options, either solar powered or connected to the electric utility provider are preferred for all stop types.. See https://tolarmfg.com/product-categories/solar-solutions/ as an example. Lower ridership areas may have fewer amenities; however, RFTA encourages all stops to be at least Type III (Shelter) stops, to provide all passengers shelter and security. The stop types are described below:

Type I – Sign Stop: A bus stop with a bus stop sign and basic ADA-compliant landing surface are the primary features of this stop type, meaning there is no bench or shelter. This is the most basic stop type and is appropriate only for areas with land constraints and low ridership. **Figure 13** illustrates standard and constrained options for this type of stop, depending on the available right-of-way and sidewalk design.

4. CURB-SIDE CHARACTERISTICS

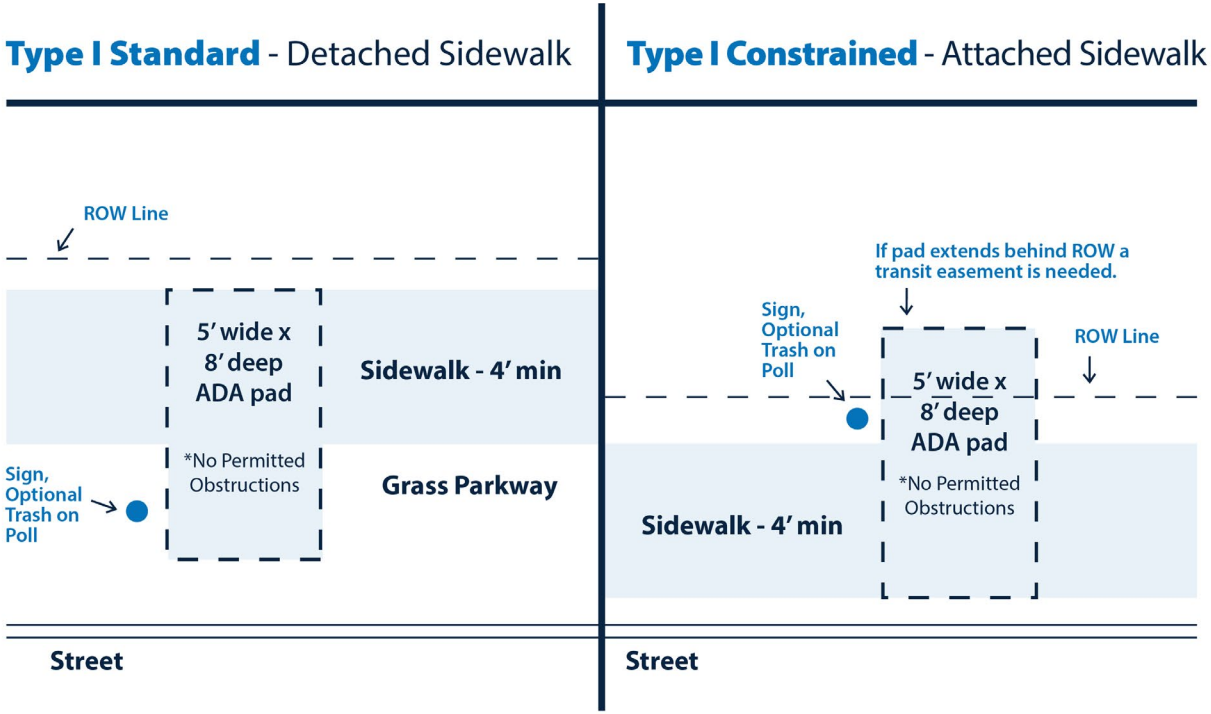


Figure 13: Type 1 Standard and Type 1 Constrained Stop

Constrained Example: Cemetery Ln + Alta Vista Dr Bus Stop

Type II – Bench Stop: This describes a bus stop with a stand-alone bench as the primary feature, and which does not include a shelter. The most appropriate sites for f Bench Stops are areas with low ridership and with land constraints. **Figure 14** shows standard and constrained options for Type II – Bench Stops.

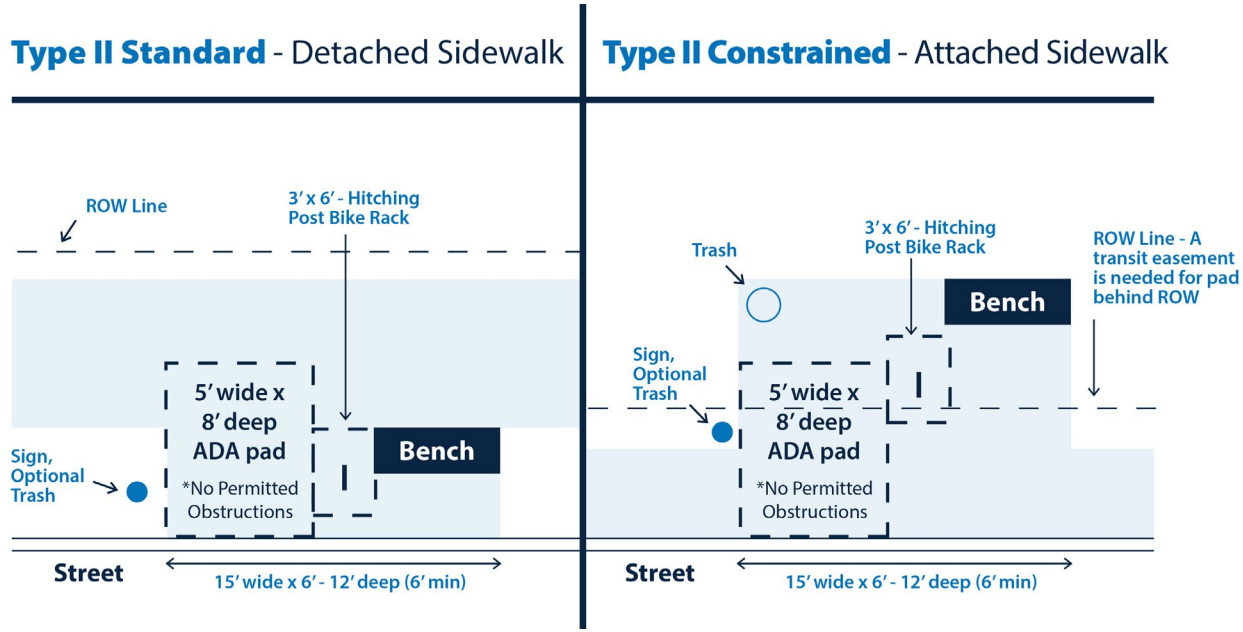


Figure 14: Type II Stops - Standard and Constrained

Standard Example: 6th St + Colorado Ave Bus Stop

Constrained Example: Aspen Glen Upvalley Bus Stop

4. CURB-SIDE CHARACTERISTICS

Type III – Shelter Stop: This describes a bus stop with a shelter as the primary feature. This is RFTA's preferred stop type. This stop type should also include a bus stop sign (as described in Type I and Type II), a trash receptacle, one or more bike racks, and interior and exterior lighting. All variations of the type III bus stop must designate an area for snow storage which has a mountable curb to facilitate snow plowing operations. Standard shelter should be 5'W x 15'L, with an anti-vagrant bench matching the design off the shelter, positioned at the inside back of the shelter, extending approximately 80% of the length. . Please contact RFTA for specifications and vendor list.

There are four alternative designs for Type III stops. The alternative chosen depends on the sidewalk design, public right-of-way and existing structures that may render the standard design impractical. A qualified engineer or architect should determine which design is appropriate for each individual situation. **Figures 15–22** show examples of Type III Shelter Stop configurations. The existing stop images aren't necessarily compliant with the organization/siting recommendations for passenger amenities in this section. For the appropriate organization/siting of passenger amenities, see the "amenity detail" following each Type III configuration.

Type III Standard - Detached Sidewalk

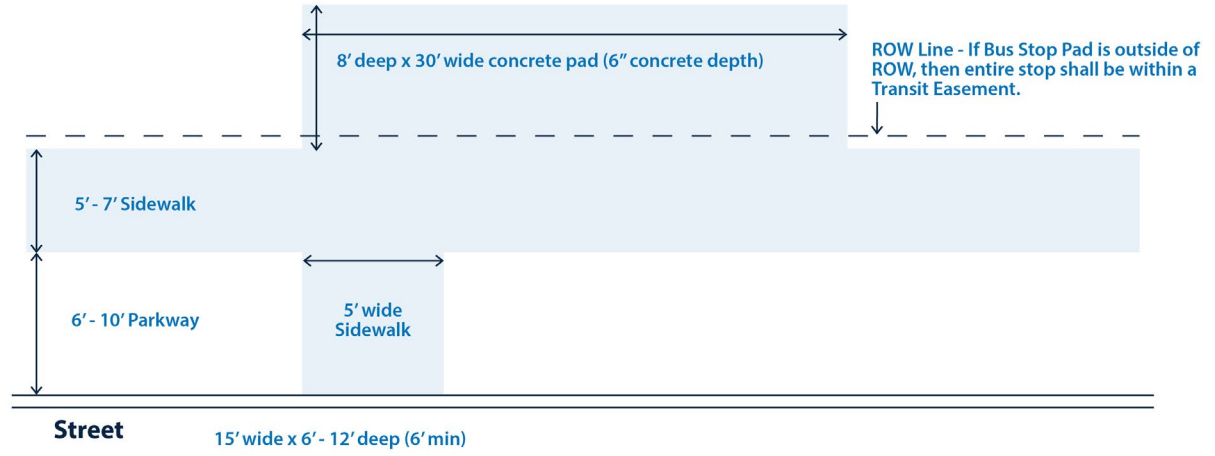


Figure 15: Type III Standard – Detached Sidewalk

4. CURB-SIDE CHARACTERISTICS

Type III Standard - Detached Sidewalk: Amenity Detail

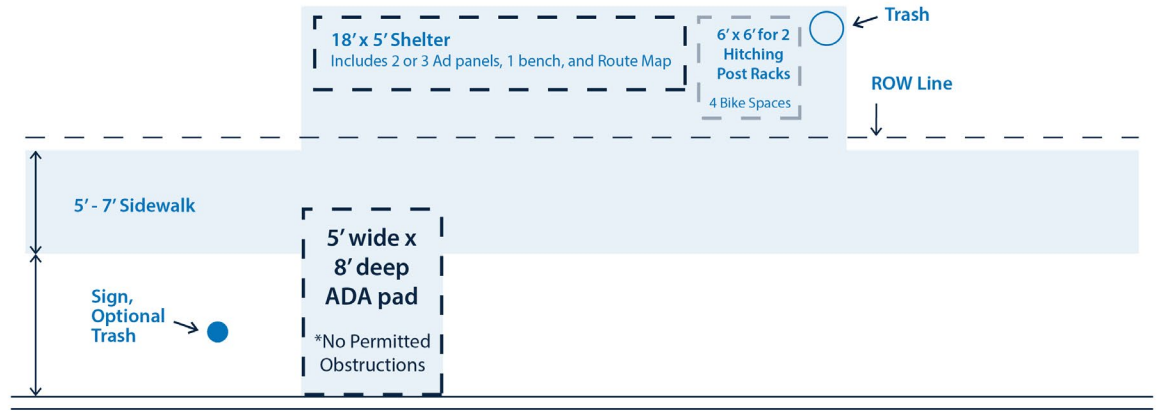


Figure 16: Type III Standard (Detached Sidewalk) – Amenity Detail

Type III Constrained - Detached Sidewalk

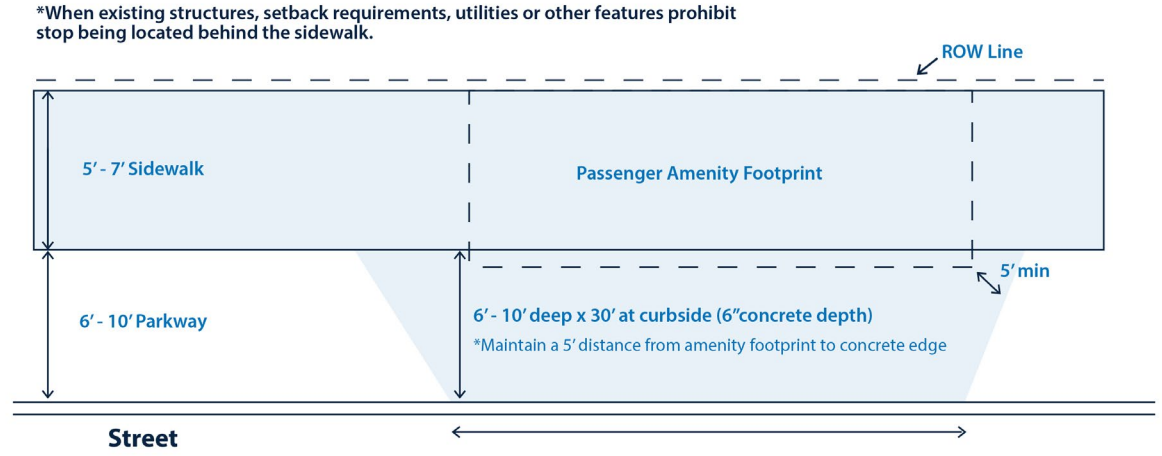


Figure 17: Type III Constrained (Detached Sidewalk)

Type III Constrained - Detached Sidewalk: Amenity Detail

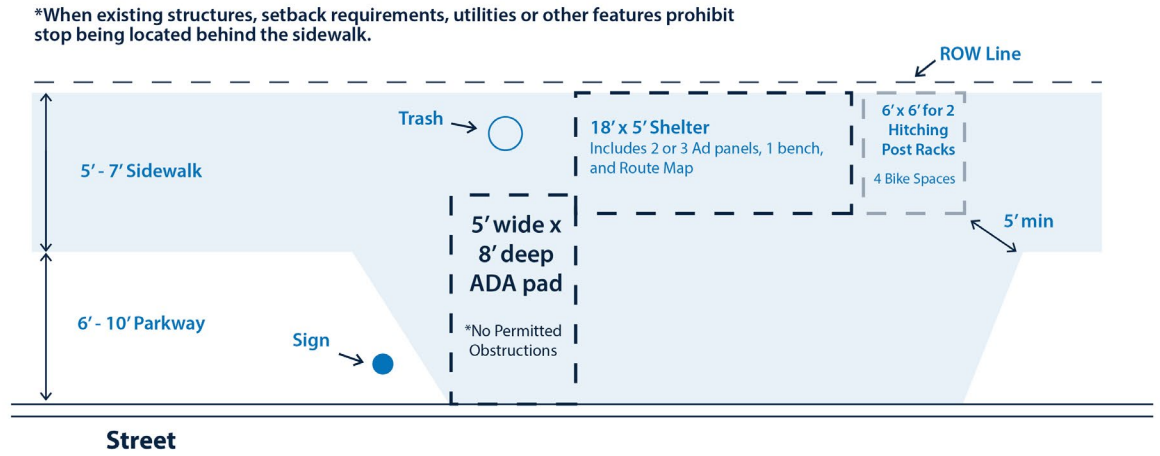


Figure 18: Type III Constrained (Detached Sidewalk) – Amenity Detail

Type III Constrained - Attached Sidewalk

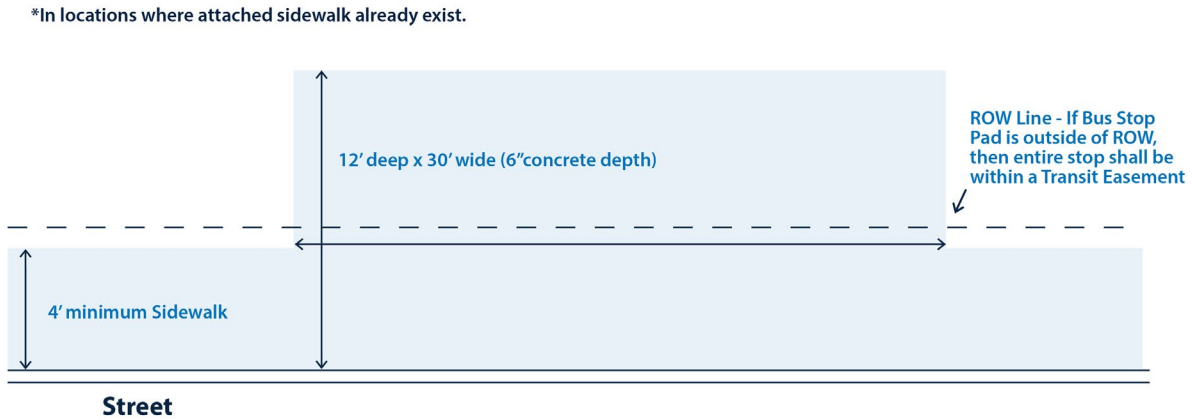


Figure 19: Type III Constrained (Attached Sidewalk)

Type III Constrained - Attached Sidewalk: Amenity Detail

*In locations where attached sidewalk already exist.

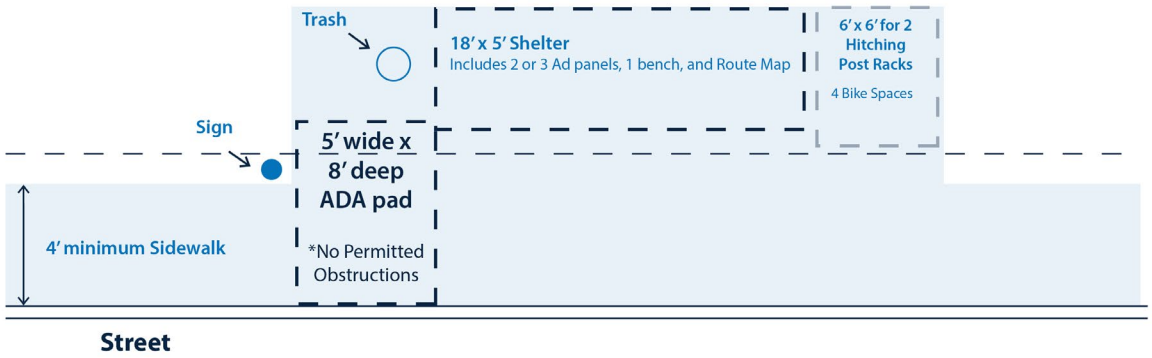


Figure 20: Type III Constrained (Attached Sidewalk) – Amenity Detail

Type III Wide Parkway - Detached Sidewalk

*To be used in areas with wider than typical parkways such as E. Harmony Road.

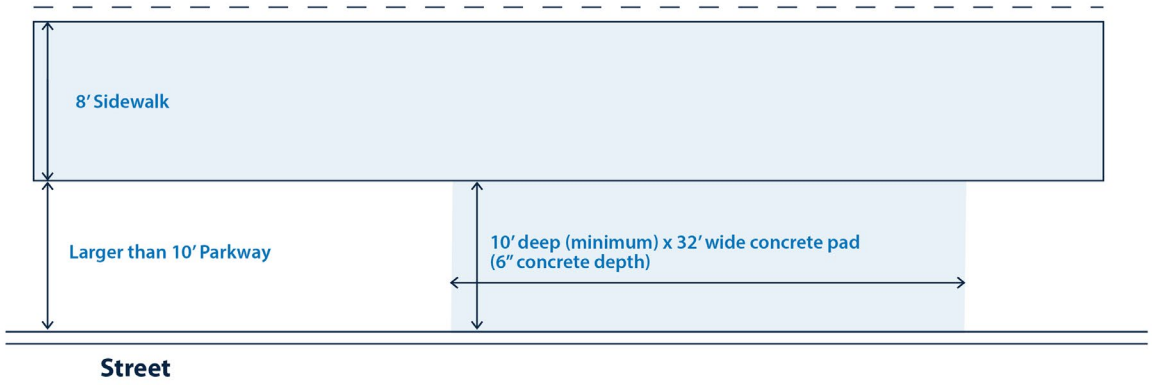


Figure 21: Type III Wide Parkway (Detached Sidewalk)

Type III Wide Parkway - Detached Sidewalk: Amenity Detail

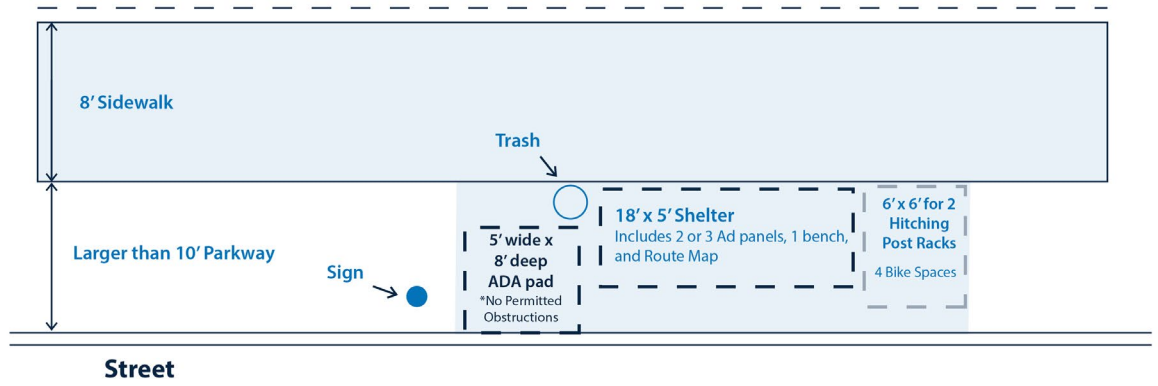


Figure 22: Type III Wide Parkway (Detached Sidewalk) - Amenity Detail

Type IV – Station Stop: This describes a bus stop that has enhanced passenger amenities such as a ticket vending machine, real time next bus LED and/or digital signage, a unique shelter structure, as well as the standard passenger amenities provided at Type III stops. VelociRFTA BRT Stations are currently the only Type IV Station Stops in RFTA's system. Stations should be used on BRT routes and corridors that are designed for high frequency transit, and supported by multimodal options, such as bicycling, walking, bike share, and microtransit While BRT stations meet the Type IV standards, design and implementation must be considered carefully. The location and number of BRT stops were established to balance regional accessibility and highly efficient travel time. Additional BRT stops will impact travel time, unless infrastructure improvements can be made to offset the travel time penalties.

This stop includes the following amenities:

- Bus Stop Signs with Text Marks
- Bike Loading Signs
- ADA requirements for Surfaces, Minimum area, Connections to streets, sidewalks, or pedestrian paths, and Slopes
- Benches
- Shelter (Semi-enclosed space)

(continued)

4. CURB-SIDE CHARACTERISTICS

- Bicycle Racks (covered bike parking and/or secured bike parking preferred)
- We-Cycle Station (most locations)
- Trash/Recycling Receptacles
- Lighting
- Bus Route Map
- Ticket Vending Machine
- Detectable Warning Surfaces at boarding/alighting locations
- Security Cameras
- Wind Screen
- Snow Storage with mountable curb
- Wayfinding Signage
- Wifi
- Restrooms (optional)
- Voice Annunciation[1] (required in conjunction with digital signage)
- Variable Message Sign indicating when the next bus arrives
- Bus Signaling Device
- Cigarette Disposal

Figure 23: BRT Station

[1]Voice annunciation is required at all Station Stops; however, this is an emerging requirement, and RFTA must determine how best to incorporate tolls for the sight impaired.

4.4 Passenger Amenities

Passenger amenities are a significant element in attracting people to use public transportation. Shelters are the most preferred passenger amenity because they offer the best protection from the elements. Other important amenities include: benches; customer information such as transit maps; real-time bus arrival information and directional signage; lighting; bike racks; and trash and recycling facilities. All passenger amenities must be located within public right-of-way easement, or other approved mechanism that provides for public access. The Bus Stop Passenger Amenities required, based on Stop Type described in Section 4.3, are provided in **Table 5: Bus Stop Amenities**. In addition, see **Table 8: Curb-Side Design Considerations** for determining stop type.

- **Bus Stop Sign**

  All active bus stops are required to have RFTA-standard bus stop signage. Signage includes a 12" x 18" rectangular bus stop sign, and a 12" x 18" rectangular sign with Stop ID Number, routes served, and a unique text to phone number, to view estimated arrival times and service alerts. See **Figure 24: RFTA Bus Stop Signs.**

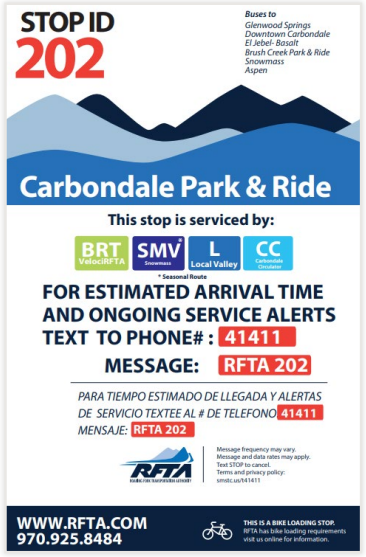


Figure 24: RFTA Bus Stop Signage

- **Text Marks**
  All bus stop signs shall have a text number, unique to the stop, that will provide estimated arrival times and other information. See **Figure 24: RFTA Bus Stop Sign.**

- **Bike Loading Signs**
  Stops that allow bike loading (listed on the RFTA system-wide map at www.RFTA.com), shall have additional signage; a rectangular 12" x 18" sign and a square 12" x 12" sign, shown in **Figure 25: RFTA Bike Loading Signage.**

*Note: *Available for all non-bike loading stops.*

Figure 25: RFTA Bike Loading Signage

- **Universal Design and ADA Accessibility**

  Must comply with 4 basic principles of accessibility, as described in Section 4.2:

  1) Surface
  2) Minimum area
  3) Connections to streets, sidewalks, or pedestrian paths
  4) Slope

- **Bench**

  All new benches should be selected from the options described in this section and shall be powder coated in either **RAL 7031 Blue-Grey (for benches in shelters)** or **RAL 5013 Cobalt Blue (for stand alone benches)**. Benches should be five to six feet in length and two to three feet wide, anti-vagrant design, optional with a seat back, and should be constructed of steel or aluminum. Benches similar to those pictured in **Figure 26** are preferred.

6' Steel Strap Bench with back

6' perforated metal bench with back and anti-vagrant bars.

5' perforated metal bench with no back and two anti-vagrant bars

Figure 26: RFTA Bench Bus Stop

4. CURB-SIDE CHARACTERISTICS

- **Shelter**

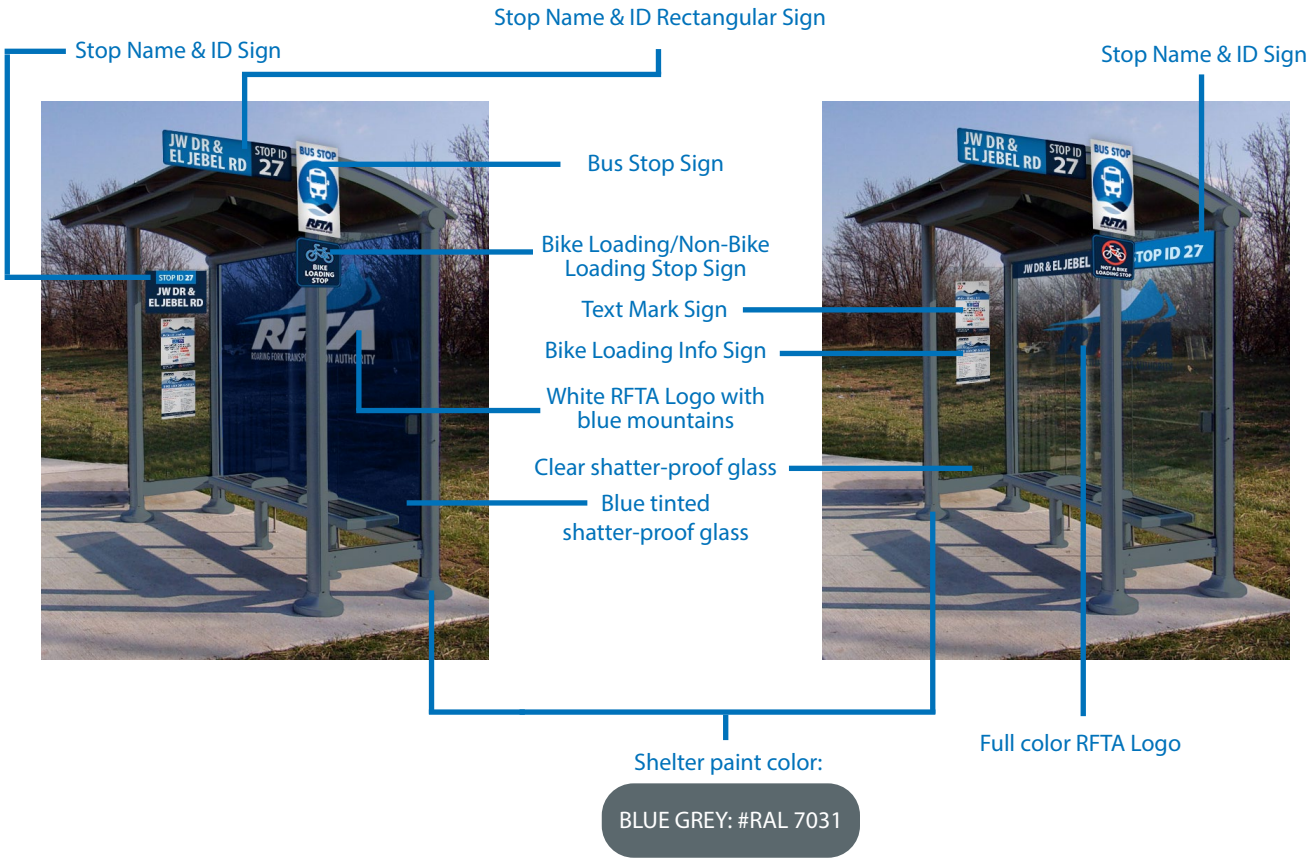
  Standard shelter should be 15'L x 5'W x 8'H. Please contact RFTA for specifications and vendor list. Walls shall be tinted bronze shatter-proof glass, with enough transparency for passengers to see through and to be seen in the shelter, and with the official RFTA-standard signage and routes served information. **See Figure 27.**

  When access to an electrical utility is not available, RFTA recommends solar panels for lighting. Standard color for shelters is RAL 7031 Blue-Grey or equivalent. See next page for color guidelines. Stops with headways of 30 minutes or longer should be considered for shelters.

Figure 27: RFTA Bus Stop Shelter

4. CURB-SIDE CHARACTERISTICS

SHELTER PAINT COLORS & BUS STOP ELEMENTS



- **Bike Racks**

  The preferred bike rack style is a simple hitching post or inverted U and powerdered coated in **RAL 7031 Blue-Grey**, as shown in **Figure 28**. The number and type installed should be based on anticipated usage. Location and design should allow options for future expansion, to the best extent possible.

Figure 28: Inverted U bike rack

- **Covered Bike Parking**

  Covered bike parking, consistent with the designs and as-built documents from BRT stations (available upon request) is required at Type IV Stations. See **Figure 29.**

Figure 29: Covered Bike Parking

- **We-Cycle Bike Share**

  Required at Type IV Stations. See **Figure 30.**

Figure 30: WE-Cycle Bike Share at Carbondale BRT Station

- **Trash and Recycling Receptacles**

  All stops shall have bear-proof stand-alone, trash receptacle, constructed of steel or aluminum and powder coated in **RAL 7031 Blue-Grey**. Examples are shown in **Figure 31.**

Figure 31: Trash and Recycling Receptacles

4. CURB-SIDE CHARACTERISTICS

- **Lighting**
  General area lighting and on-demand lighting to alert an arriving bus are required. When access to an electrical utility is not available, RFTA recommends solar panels for lighting.
- **Maps and Schedules**
  RFTA currently installs transit system maps at BRT Stations only. All other boarding locations with have a text to phone number. All schedules can be found online at **RFTA.com**
- **Ticket Vending Machines**
  TVMs are located at all BRT stations.
- **Detectable Warning Surface**
  Type IV Station Stops are required to include ground mounted cast iron tactile surfaces adjacent to boarding and alighting areas, similar to what RFTA has installed at BRT stations. Equivalent surfaces are required at other locations, where curb ramps exist. See **Figure 32.**

Figure 32: Ground Mounted Tactile Strip

4. CURB-SIDE CHARACTERISTICS

- **Security Cameras**
  Cameras are required at Type IV stations.

- **Wind Screen**
  Wind screens are integrated into the standard shelter designs, but the standard wind screens may not be adequate for the specific location. If wind is deemed to be an issue at a particular stop, additional custom panels should be considered in addition to or in lieu of the standard shelter wind panel. Stops with headways of 30 minutes or longer should also be considered for wind screens.

- **Snow Storage/ Mountable Curbs**
  Provisions for efficient snow removal, including snow storage and mountable curbs are required at all stops.

- **Braille Signage**
  Required at all stops.

- **Wayfinding Signage**
  Recommended at all stops. Review and approval by RFTA required.

- **Wi-Fi**
  Recommended at Type IV.

- **Restrooms**
  Installed at most BRT stations, but optional. Review and approval by RFTA required.

- **Voice Annunciation**
  Required at Type IV in conjunction with Variable Message Signs.

- **Variable Message Sign**
  Variable Message Sign (VMS) indicating when the next bus arrives and other passenger information, that complies with 2010 ADA Standards for Accessible Design, *part 703 Signs.*

- **Bus Signaling Device**
  A push-button device, activated optionally by passengers, that indicates a passenger is waiting in the shelter.

- **Cigarette Disposal**
  Receptacles for cigarette disposal are required at all stops. These receptacles must be ordered through RFTA. See **Figure 33.**

Figure 33: Cigarette Disposal

4. CURB-SIDE CHARACTERISTICS

Dark Blue - Required

Medium Blue - Recommended

AMENITY	DESCRIPTION/REQUIREMENTS	Type I Pole	Type II Bench	Type III Shelter	Type IV Station
Universal Design and ADA Accessibility	Must comply with 4 basic principles of accessibility, as described in ***Section 4.2*** 1) Surface 2) Minimum area 3) Connections to streets, sidewalks, or pedestrian paths 4) Slope	■	■	■	■
Bus Stop Sign with Text Marks	RFTA-standard 12" x 18" rectangular bus stop sign with Stop ID Number, routes served, and a unique text to phone number, to view estimated arrival times and service alerts. See **Figure 24: RFTA Bus Stop Sign**.	■	■	■	■
Bike Loading Signs	Stops that allow bike loading (listed on the RFTA system-wide map at **RFTA.com**), shall have additional signage; a rectangular 12" x 18" sign and a square 12" x 12" sign, shown in **Figure 25: RFTA Bike Loading Signage.**	■	■	■	■
Lighting	General area lighting and on-demand lighting to alert an arriving bus are required. When access to an electrical utility is not available, RFTA recommends solar panels for lighting.	■	■	■	■
Trash and Recycling Receptacles	All stops shall have bear-proof stand-alone, trash receptacle, constructed of steel or aluminum and powder coated RAL 7031 Blue-Grey. Examples are shown in **Figure 31**.	■	■	■	■
Snow Storage/ Mountable Curbs	Provisions for efficient snow removal, including snow storage and mountable curbs are required at all stops.	■	■	■	■
Detectable Warning Surfaces	Where curb ramps exist, detectable warning surfaces must extend the full width of the curb ramp (exclusive of flared sides) and extend either the full depth of the curb ramp or 24 inches deep minimum measured from the back of the curb on the ramp surface (§406.8). This requirement is unique to DOT's ADA Standards (2006), which apply to facilities used by state and local governments to provide public transportation. Type IV Station Stops are required to include warning surfaces adjacent to boarding and alighting areas, similar to what RFTA has installed at BRT stations. See **Figure 32**.	■	■	■	■
Braille Signage	Required at all stops.	■	■	■	■

Table 5: Bus Stop Amenities

4. CURB-SIDE CHARACTERISTICS

Dark Blue - Required

Medium Blue - Recommended

AMENITY	DESCRIPTION/REQUIREMENTS	Type I Pole	Type II Bench	Type III Shelter	Type IV Station
Bench	Should be five to six feet in length and two to three feet wide, anti-vagrant design, optional with a seat back, and should be constructed of steel or aluminum[1]. Benches shall be powder coated in either RAL 7031 Blue-Grey (for benches in shelters) or RAL 5013 Cobalt Blue (for stand alone benches). See **Figure 26**.				
Shelter	Shelter shall be 15'L x 5'W x 8'H. Please contact RFTA for specifications and vendor list. Standard color for shelters is ***RAL 7031 Blue-Grey or equivalent***. Walls shall be tinted bronze, shatter-proof glass with enough transparency for passengers to see through and to be seen in the shelter, with the official RFTA-standard signage and routes served information. **See Figure 27**.				
Bike Racks	The preferred bike rack style is a simple hitching post or inverted U, as shown in **Figure 28**. The number and type installed should be based on anticipated usage. Location and design should allow options for future expansion, to the best extent possible.				
Bike Racks	The preferred bike rack style is a simple hitching post or inverted U, as shown in **Figure 28**. The number and type installed should be based on anticipated usage. Location and design should allow options for future expansion, to the best extent possible.				
Cigarette Disposal	Receptacles for cigarette disposal are required at all Type III and Type IV stops. These receptacles must be ordered through RFTA. See **Figure 33.**				
Bus Signaling Device	A push-button device, activated optionally by passengers, that indicates a passenger is waiting in the shelter.				
Covered Bike Parking	Covered bike parking, consistent with the designs and as-built documents from BRT stations (available upon request) is required at Type IV Stations. See **Figure 29.**				
We-Cycle Bike Share	Required at Type IV Stations. See **Figure 30**.				
Maps and Schedules	RFTA currently installs transit system maps at BRT Stations only. All other boarding locations will have a text-to-phone number. All schedules can be found online at **RFTA.com**				
Security Cameras	Cameras are required at Type IV stations.				

[1]From AC Transit Bus Stop Furniture Guidelines (September 2022) - https://www.actransit.org/sites/default/files/2023-02/BSFG_Final_2023_01_14.pdf

Table 5: Bus Stop Amenities

4. CURB-SIDE CHARACTERISTICS

Dark Blue - Required

Medium Blue - Recommended

AMENITY	DESCRIPTION/REQUIREMENTS	Type I Pole	Type II Bench	Type III Shelter	Type IV Station
Wind Screen	Wind screens are integrated into the standard shelter designs, but the standard wind screens may not be adequate for the specific location. If wind is deemed to be an issue at a particular stop, additional custom panels should be considered in addition to or in lieu of the standard shelter wind panel.				
Variable Message Sign	Variable Message Sign (VMS) indicating when the next buses arrive and other passenger information, that complies with 2010 ADA Standards for Accessible Design, ***part 703 Signs***.				
Voice Annunciation	Required at Type IV in conjunction with Variable Message Signs.				
Ticket Vending Machines	Ticket Vending Machines TVMs are located at all BRT stations. While TVMs remain a recommended element, the need for TVMs may be reduced as RFTA moves towards mobile ticket purchase options.				
Wi-Fi	Recommended at Type IV.				
Restrooms	Installed at most BRT stations, but optional. Review and approval by RFTA required.				
Wayfinding Signage	Recommended at all stops. Review and approval by RFTA required.				

Table 5: Bus Stop Amenities

Bus Stop Checklist

To be filled out by RFTA Staff

Location (cross streets): _____

Block Location: ☐ Near-side ☐ Far-side ☐ Mid-block

Service: ☐ On Existing Transit Route ☐ Future Transit Route

Street Side Design Considerations:

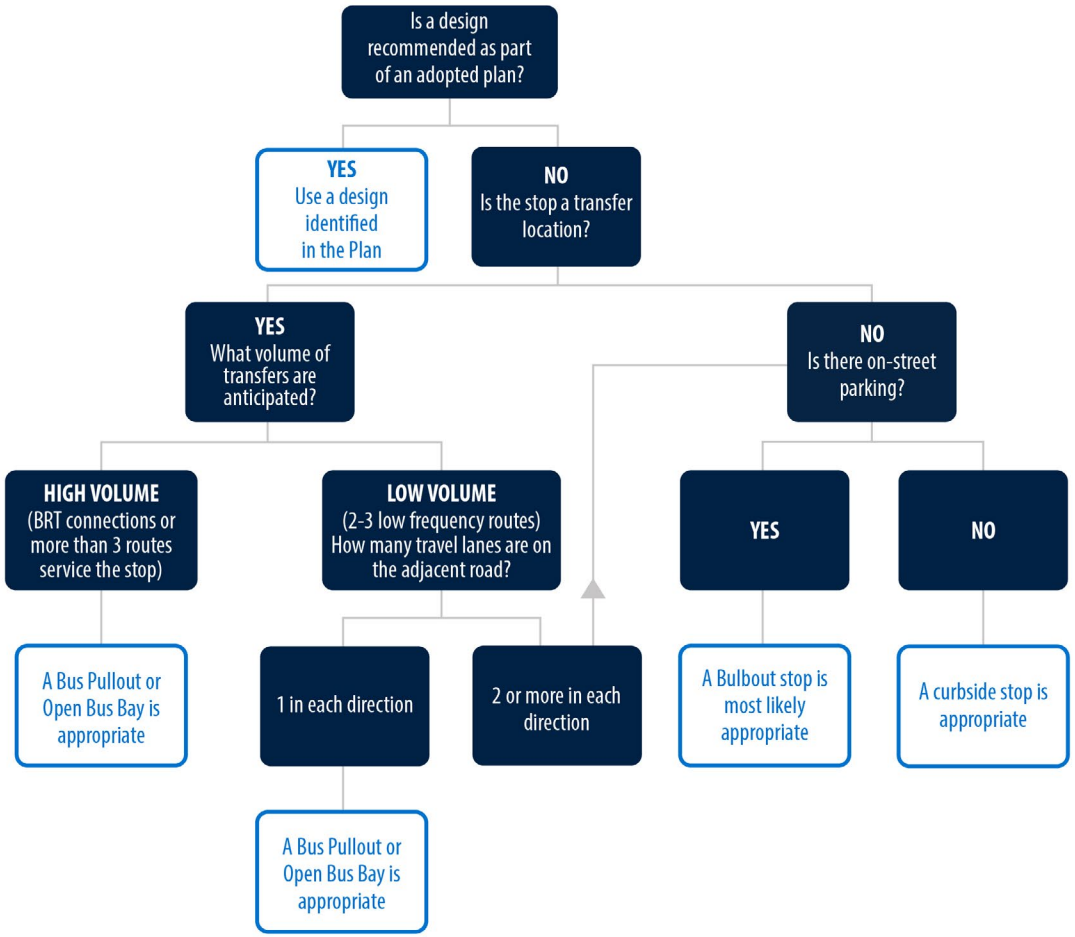


Figure 36: Bus Stop Check List

4.5 Bus Stop Type Determination

RFTA's current system contains four types of bus stops:

- Type I – Sign
- Type II – Bench
- Type III – Shelter
- Type IV – Station

It is RFTA's intent to upgrade or add only Type III and Type IV stops. Type I and Type II stops should only be considered in areas where space is too constrained for a higher-level stop, or if the Type I or II stop can be incorporated into an existing structure. Therefore, Type I and Type II stops will only be allowed by written approval from RFTA.

Type III stops shall be the standard stops.

Type IV Station Stops are intended for transportation corridors designed for high frequency transit, and supported by multimodal options, such as bicycling, walking, bike share, and microtransit. For BRT Stations, design and implementation must be considered particularly carefully. The location and number of BRT stops were established to balance regional accessibility and highly efficient travel time. Additional BRT stops will impact travel time, unless infrastructure improvements can be made to offset the travel time penalties.

Bus Stop Type	Determination – Appropriate for the Following Conditions
Type I – Sign **Type II – Bench**	1. By written approval from RFTA only. 2. Highly constrained areas only. 3. Stops exclusively for drop-off only. 4. Low Boardings (less than 10/day or less suggested). 5. Incorporated into infrastructure that provides shelter or other amenities, such as the inside of a building or the side of a building with an awning.
Type III – Shelter	All new, upgraded, or relocated shall meet this standard.
Type IV - Station	1. By written approval from RFTA only. 2. Very high ridership identified or forecasted (250/day or more suggested). 3. For corridors designed for high frequency transit, and supported by multimodal options, such as bicycling, walking, bike share, and microtransit. 4. Funding for construction and long-term maintenance identified
Type IV - Station	Same as Type IV – Station, and 1. On BRT corridors 2. Strategies verified by a licensed transportation engineer to demonstrably offset the increase in regional travel time created by the addition of the station; design and funding in place to design and construct such improvements prior to implementation of the BRT station.

Table 6: Bus Stop Type Criteria

5. NEXT STEPS

5.1 RFTA Bus Stop Improvement Plan

RFTA has been operating since the 1970s and serves over 200 bus stops; some of which meet the design and amenity distribution standards outlined in Sections 3 and 4. Retrofitting all stops to be in full compliance with ADA standards would likely cost in the millions of dollars. Section 6.2, describes RFTA's goals for improving bus stops, including achieving (at a minimum) ADA accessibility at all bus stops.

In the coming years RFTA will consider the following initiatives:

1. Developing plans for routine inventory of stops and amenities.
2. Setting goals for accessibility, focusing on the highest ridership stops and stops in areas of high concentrations of elderly and disabled.
3. Conducting a third-party ADA survey
4. Developing maintenance agreements with member jurisdictions
5. Assessment of RFTA's bus stops to determine the extent to which they comply with section

6. ADDITION OR RELOCATION OF BUS STOPS

6.1 Practical Application of the Addition or Relocation of Bus Stops

When RFTA works with developers or jurisdictions to add or relocate a bus stop, a multitude of elements need to be considered, such as operational elements, planning standards, and physical development. Some, but not all, or these have been incorporated into this document. All new or renovated transit facilities should be designed by qualified architects or engineers and meet all industry standard for safety, ADA and transit operations.

If a developer or other party intends to add or relocate a bus stop or stops, the proposed applicant must complete an Initial application for a new or relocated bus stop. This application contains general information required to help RFTA staff determine the feasibility of the proposal, and whether to approve, deny, or approve with conditions the submittal of a Permit to add or relocate a bus stop. More information and documents on the application, permitting and approval process are available upon request.