

# Technical Memorandum 3

## Bus Stop Guidelines for Placement and Passenger Amenities Improvements

### INTRODUCTION

The Calvert-St Mary's Metropolitan Planning Organization (C-SMMPO) oversees planning activities in the Lexington Park-California-Chesapeake Ranch Estates Urbanized Area. The guidelines included within this document are intended to be direct future bus stop planning within the C-SMMPO area. However, the two transit systems (Calvert County Public Transportation (CCPT) and St. Mary's Transit System (STS)) that operate with the jurisdiction should examine the prospect of incorporating these guidelines system-wide.

The field survey component of the effort evaluated each documented stop location for its amenities and ADA compliance. The survey found that few stops within the C-SMMPO had any signage or amenities. A comprehensive summary of these findings can be found in Technical Memorandum 2. As the front door of a transit system, bus stops serve an important, yet underestimated, role in providing safe, friendly, and visible service.

The following guidelines are intended to provide C-SMMPO, CCPT, and STS with specific physical design criteria to be integrated with local comprehensive plans, land use ordinances, pedestrian plans, and other street design guidelines. The guidelines may also prove to be useful when working with local jurisdictions in planning pedestrian infrastructure with access to bus stops.

The following technical memorandum is organized into the following sections:

- **Bus Stop Placement and Design Factors** – Guidelines for appropriate placement of bus stops and the different types of street-side designs.
- **Bus Stop Hierarchy** – Guidelines for improving accessibility to bus stop locations and passenger amenities at bus stops.
- **Prioritization Factors** – Guidelines for local priorities such as flag-stops and prioritization based on a hierarchy of bus stops.

## BUS STOP PLACEMENT AND DESIGN FACTORS

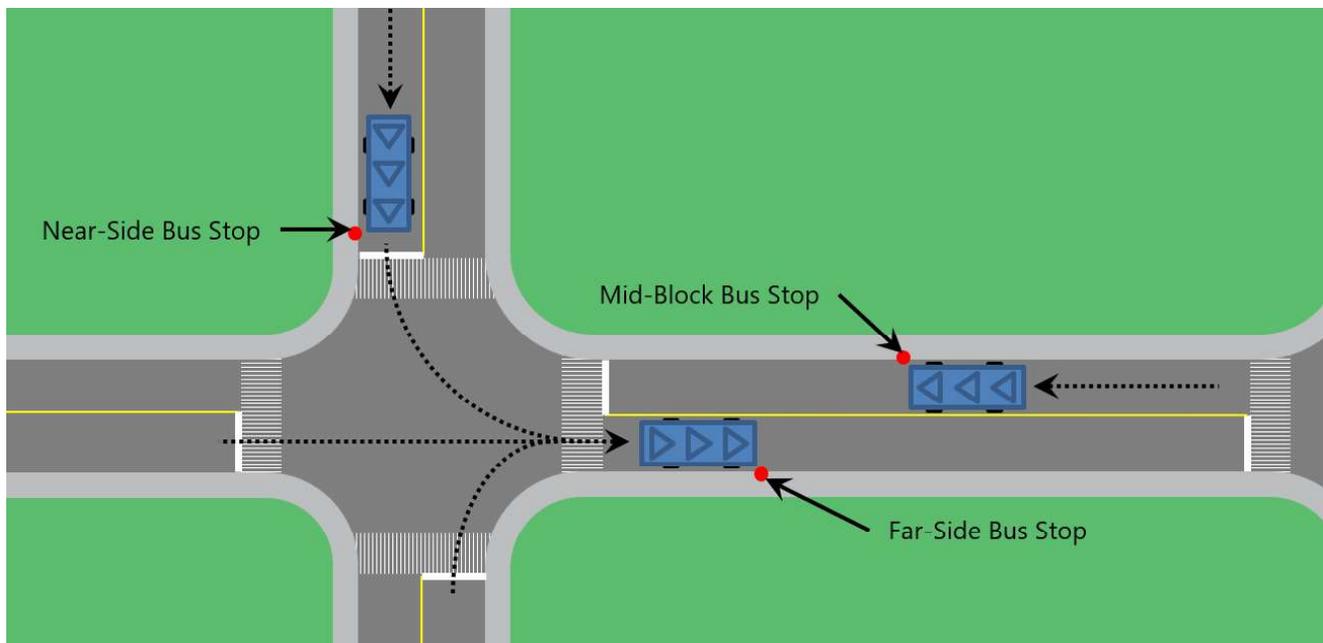
In terms of bus stops, the primary challenge facing transit providers within the C-SMMPO is the lack of signage and accessible pedestrian pathways. Both CCPT and STS operate utilizing a “flag-stop” system. Flag-stops allow passengers to flag-down a bus anywhere along a bus route; the bus operator then determines a reasonable and safe location for the bus to stop and for the passenger to board. Flag-stops may provide convenience for passengers but they can also be dangerous as unexpected stops can lead to vehicular collisions and an unsafe environment for pedestrians. The following section outlines specific placement considerations and design factors for locating safe and access bus stops.

### Bus Stop Placement

Shown in Figure 3-1, the categorization of bus stop placement generally refers to the placement of the stop relative to the nearest intersection. The general placement categories include:

- **Near-Side** – before the bus passes through the intersection
- **Far-Side** – after the bus passes through the intersection
- **Mid-Block** – between intersections

Figure 3-1: Bus Stop Placement Overview



Bus stops are largely centered around intersections due to the greater likelihood of safe and accessible pedestrian infrastructure including curb ramps, crosswalks, and pedestrian signals. However, the best placement will depend on vehicle and pedestrian travel patterns at the intersection, right-of-way availability, bus routing, pedestrian facilities, and other conditions at the site. The advantages and disadvantages of each type of bus stop location are provided in Table 3-1.

**Table 3-1: Bus Stop Placement Overview**

Placement	Near-Side	Far-Side	Mid-Block
<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Allows passengers to board and alight while the bus is stopped at a red light</li> <li>• Passengers can access the bus close to the crosswalk</li> <li>• Minimizes interference with heavy traffic on the far-side of the intersection</li> </ul>	<ul style="list-style-type: none"> <li>• Encourages pedestrians to cross behind the bus</li> <li>• Provides greater right turn capacity at the intersection versus near-side stops</li> <li>• Drivers can take advantage of gaps in traffic created by the intersection</li> </ul>	<ul style="list-style-type: none"> <li>• Minimizes sight distance problems for pedestrians and vehicles</li> <li>• Buses experience less pedestrian and traffic congestion</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>• Increases conflicts with right turning vehicles</li> <li>• Stopped buses may obscure traffic and pedestrian control devices</li> <li>• May block the through lane during peak periods</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic may queue behind bus blocking the intersection</li> <li>• Could obscure sight lines for crossing vehicles</li> <li>• May require the bus to stop after stopping for a red light</li> </ul>	<ul style="list-style-type: none"> <li>• Encourages jaywalking</li> <li>• Increases walking distance for passengers crossing intersections</li> </ul>
<b>When Recommended</b>	<ul style="list-style-type: none"> <li>• Traffic is heavy on the far-side</li> <li>• Pedestrian controls and infrastructure is safer on the near-side</li> <li>• Bus routing continues through the intersection</li> </ul>	<ul style="list-style-type: none"> <li>• There is a high volume of right turns</li> <li>• Intersections with multi-phase signals or dual turn lanes</li> <li>• Traffic is heavier on the near-side</li> </ul>	<ul style="list-style-type: none"> <li>• Problematic traffic conditions at the nearest intersection</li> <li>• Passenger generator is located midblock</li> </ul>

## **Placement Factors**

Beyond the bus stop's proximity to an intersection, other significant placement factors should also be considered when establishing bus stops.

### ***Bus Stop Pairs***

A key for passenger convenience is establishing bus stop pairs. While this is not feasible along one-way or loop routes, any bi-directional route segments should have an inbound and outbound stop located in close proximity to one another – preferably across the street. These paired stops will ensure consistency and simplicity for passengers when they are planning their trip.

### ***Service to Specialized Facilities***

Bus stops serving locations with vulnerable passengers (schools, hospitals, senior centers, etc.) should be placed in close proximity to the specific location or facility to ensure ease of access and the ability for facility personnel to visually monitor to stop location in an effort to increase safety and security.

### ***Driveways***

As a general rule of thumb, always avoid the placement of bus stops in close proximity to driveways whenever possible. If this is unavoidable, adhere to the following guidelines:

- Attempt to keep at least one exit and entrance driveway open for vehicles to access the site.
- Locate the stop where visibility for vehicles leaving the site is not obstructed (e.g. far-side of the driveway).
- Locate the stop so that passengers do not wait, board, or alight in the driveway.
- It is preferable for the bus to fully block rather than partially block a driveway.

### ***Sight Lines***

Bus stops should be located where they are easy to see by the approaching bus operator as well as other drivers and bicyclists. To minimize the risk of a bus being struck from behind while stopped at a bus stop, or pulling back into traffic from an off-street bus stop, bus stops should not be placed over the crest of a hill or immediately beyond a curve where traffic is curving right.

## Placement Design Factors

### Near-Side Stops

Near-side bus stops are popular due to the proximity of the stop to crosswalks and the ability to time the bus stop with a red traffic light. However, near-side bus stops can encourage other drivers to attempt to overtake the bus when turning right leading to possible pedestrian and vehicular collisions. Use the following guidelines when deciding to place a near-side bus stop.

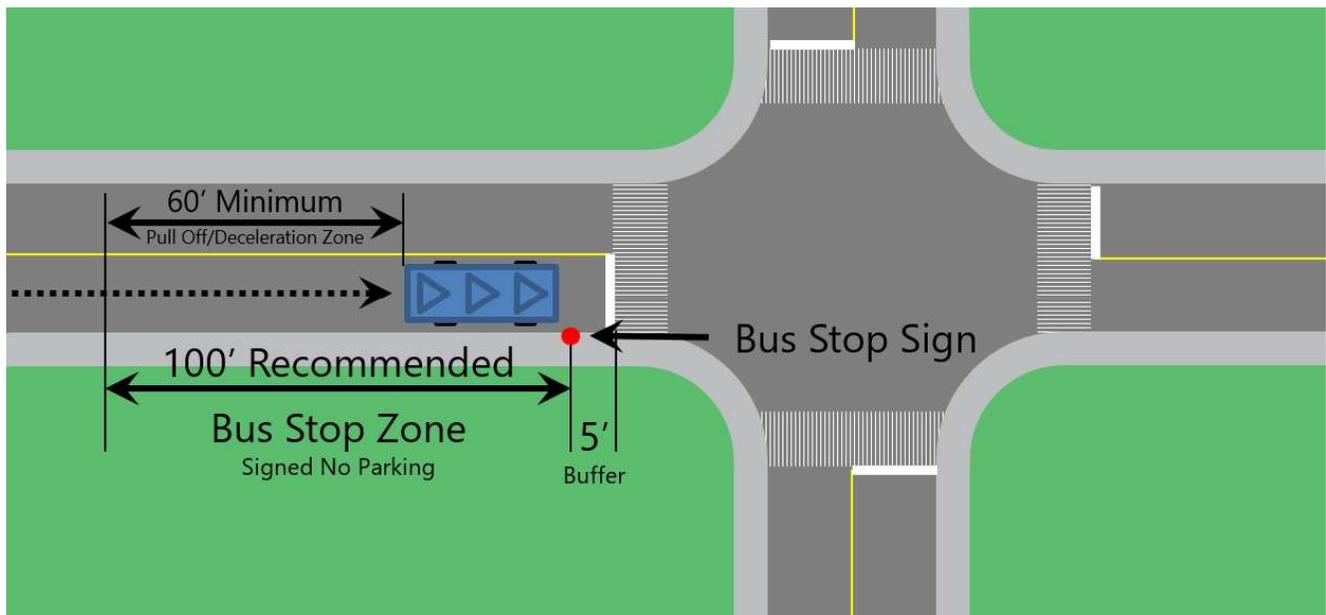
#### Utilize Near-Side Bus Stops If:

- The primary trip generator is near-side of the intersection
- Existing pedestrian facilities are greater and safer than on the far-side
- The route requires a right turn at the intersection
- Vehicle traffic is heavier on the far-side of the intersection

#### Specific Design Factors to Consider:

- Install a 100' bus stop zone with enforceable no parking signs
- Provide a 5' buffer between the stopped bus and crosswalk/intersection
- Provide a 60' pull off/deceleration zone before the bus stop

Figure 3-2: Near-Side Bus Stop Design Considerations



## Far-Side Stops

Far-side stops are popular because they encourage passengers to cross behind the bus and they allow the bus operator the ability to utilize gaps in traffic created by the intersection. However, far-side bus stops can lead to an unexpected stop for drivers following the bus and may lead to queuing in the intersection. Use the following guidelines when deciding to place a near-side bus stop.

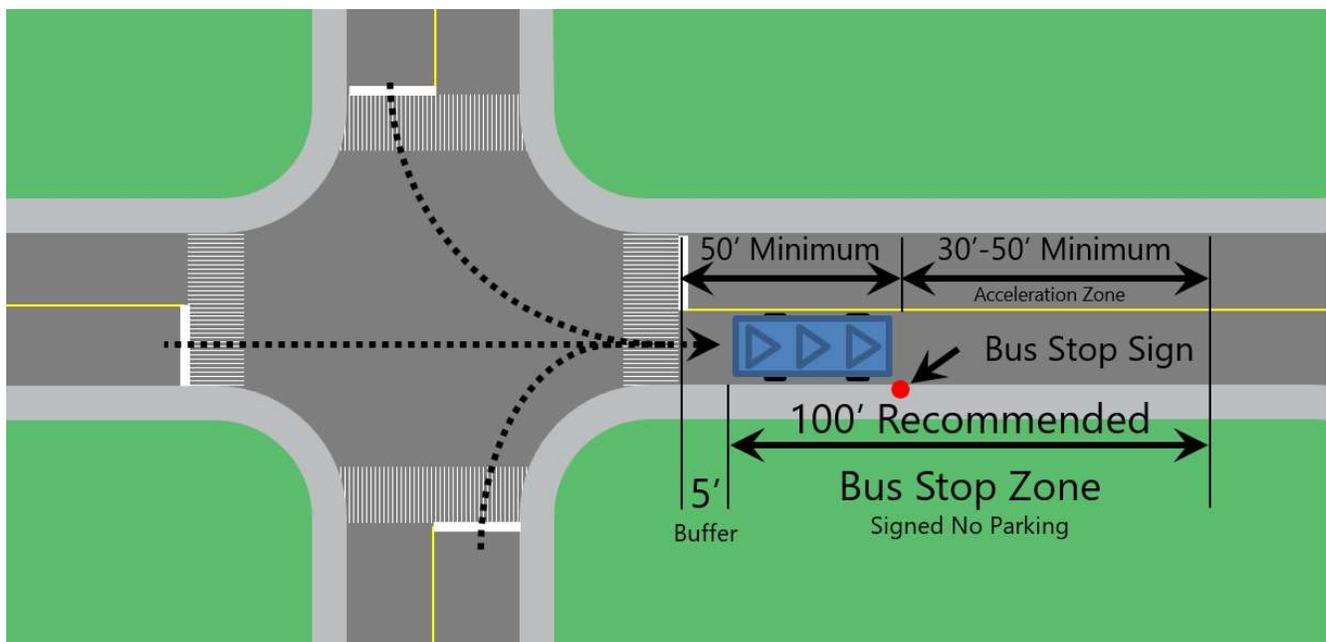
### Utilize Far-Side Bus Stops If:

- The nearside of the intersection is a right turn only lane
- The primary trip generator is far-side of the intersection
- Existing pedestrian facilities are greater and safer than on the near-side
- There is a high volume of right turns near-side of the intersection
- Vehicle traffic is heavier on the near-side of the intersection

### Specific Design Factors to Consider:

- Install a 100' bus stop zone with enforceable no parking signs
- Locate the bus stop at least 50' after the intersection to ensure the bus does not extend into the intersection and/or straddle the pedestrian crosswalk
- Provide a 5' buffer between the stopped bus and crosswalk/intersection
- Provide a 30' to 50' acceleration zone after the bus stop

Figure 3-3: Far-Side Bus Stop Design Considerations



## Mid-Block Stops

Mid-block bus stops are generally not preferred and should be avoided when possible. However, some situations may necessitate a mid-block stop; including major trip generators that are between intersections and locations that experience heavy traffic congestion around intersections. Use the following guidelines when deciding to place a near-side bus stop.

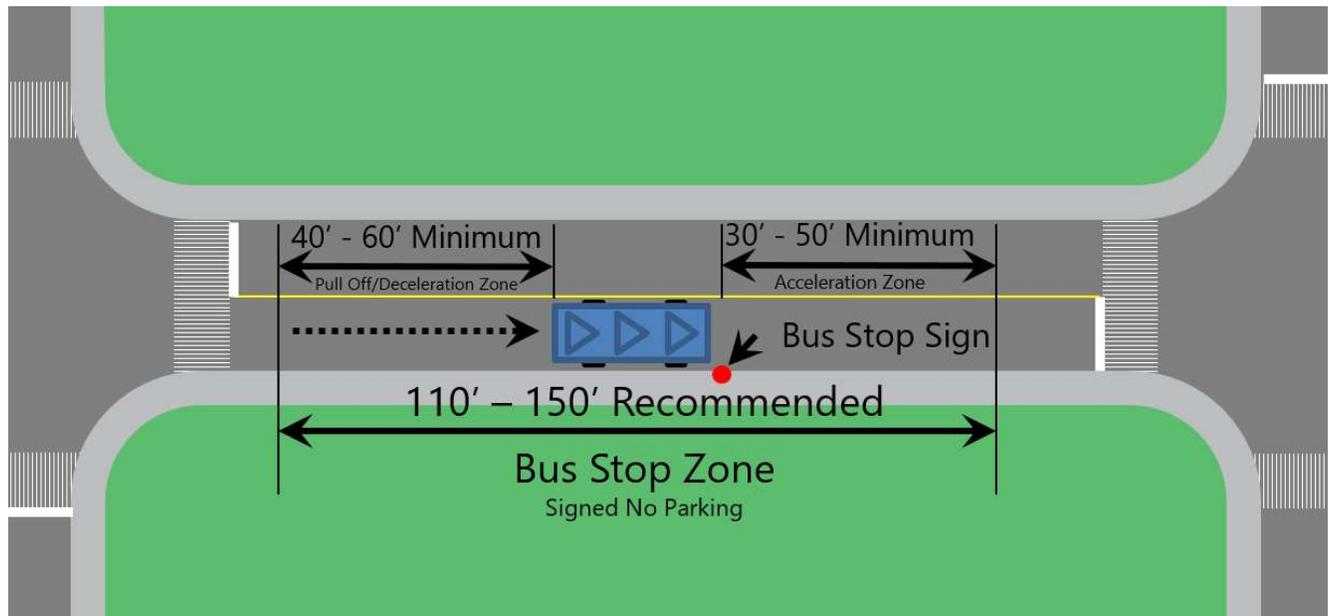
### Utilize Mid-Block Bus Stops If:

- The closest intersection is typically congested or has a complex alignment
- The primary trip generator is located mid-block
- Existing pedestrian facilities are greater and safer than at the intersection

### Specific Design Factors to Consider:

- Install a 110' to 150' bus stop zone with enforceable no parking signs
- Provide a 40' to 60' pull off/deceleration zone before the bus stop
- Provide a 30' to 50' acceleration zone after the bus stop

Figure 3-4: Mid-Block Bus Stop Design Considerations



## Bus Stop Spacing

The spacing of bus stops is an optimization matter that attempts to balance the needs of passengers and operators. A greater distance between bus stops presents a reduced number of potential occurrences of deceleration/acceleration and therefore has the possibility to reduce the overall operating time of the route enough to provide customers with a more rapid ride. The disadvantage to having a greater distance between bus stops is that some customers will be required to walk further to the nearest stop, and may find this inconvenience enough of a deterrent, or even a hardship, that prevents them from being able to ride.

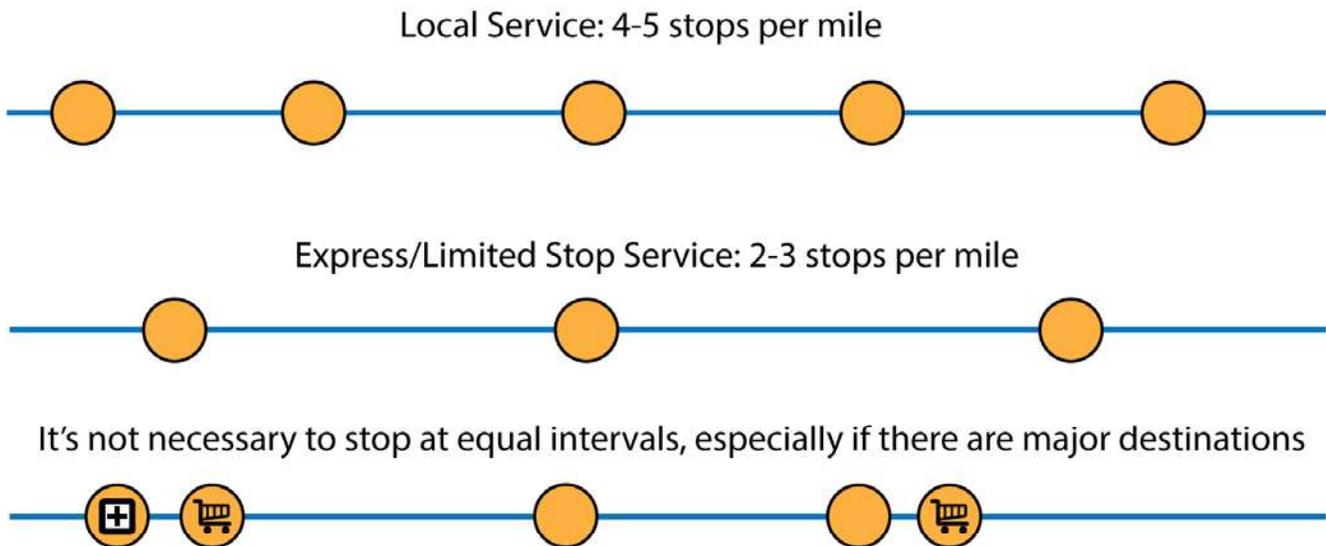
Ultimately, bus stops should be spaced closely enough that passengers can walk to them easily, but far enough apart to help buses decelerate less and move quicker.

Employing bus stop spacing guidelines is fairly common for transit systems and guidelines will vary from jurisdiction to jurisdiction. Agencies generally have their own guidelines that meet local and regional needs.

The following guidelines are recommended for service in the C-SMMPO region:

- **Local Bus Service** – 4 to 5 bus stops per mile maximum
- **Express/Limited Stop Service** – 2 to 3 bus stops per mile maximum

Figure 3-5: Bus Stop Spacing Guidelines



The recommended spacing guidelines are only a guide. The addition or elimination of bus stops should take into account existing transit needs, trip generators, land uses, and pedestrian infrastructure. All bus stops need to have adequate sidewalk connections and intersection crossings.

## On-Street Bus Stops

On-street bus stops are those where the bus stops in the travel lane, parking lane, or shoulder of the road. These types of bus stops are the most frequently used because of their operating efficiency. They provide easy access for bus operators and have minimal delays to service. In addition, these types of stops can be established, relocated, or eliminated with relative ease.

Although on-street bus stops are the most common and the easiest to establish, there are some site considerations when evaluating a location for an on-street stop. Some of these site considerations include:

- Posted speed limit should not exceed 45 mph
- Adequate street lighting at the location
- Proximity to controlled intersections
- Availability of pedestrian facilities (sidewalks, curb ramps, crosswalks, etc.)
- Adequate right-of-way for passenger amenities and wheelchair access

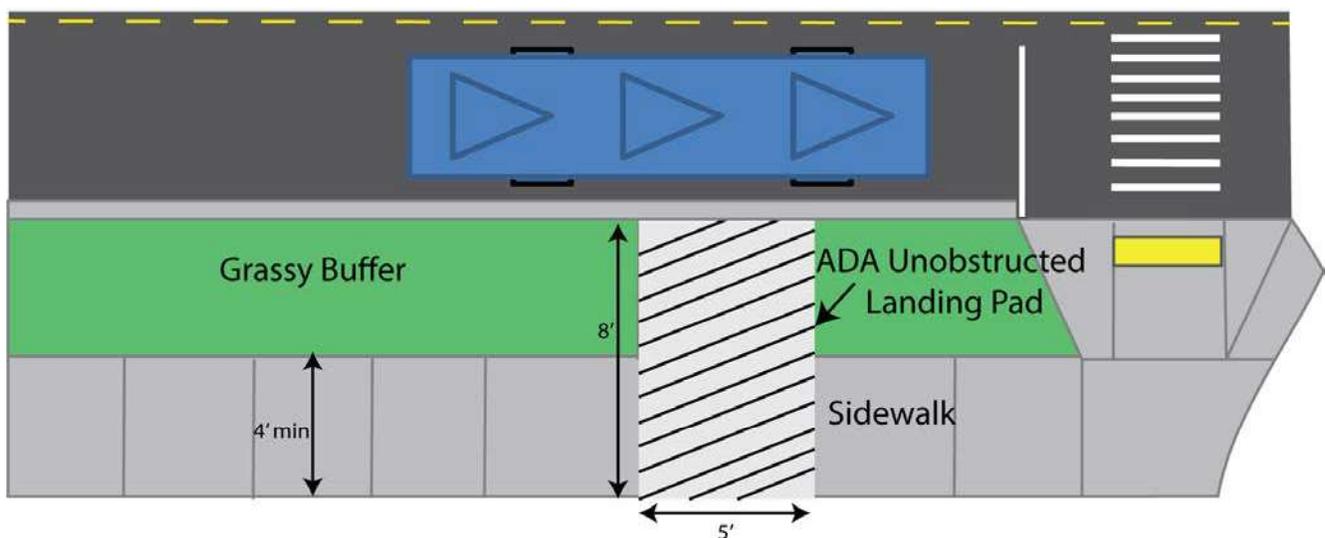
### Bus Stop in Travel Lane

Bus stops in a travel lane require minimal design and are the simplest of the three types of on-street bus stops to establish. Stops in the travel lane should be avoided at locations with high volumes of passenger activity where the bus may be stopped for significant periods of time.

#### Specific Design Factors to Consider:

- Ensure an ADA compliant landing pad connects to the curb and the pedestrian network
- Avoid this design at locations with high ridership and/or heavy traffic

Figure 3-6: Design Considerations for Bus Stops in Travel Lanes



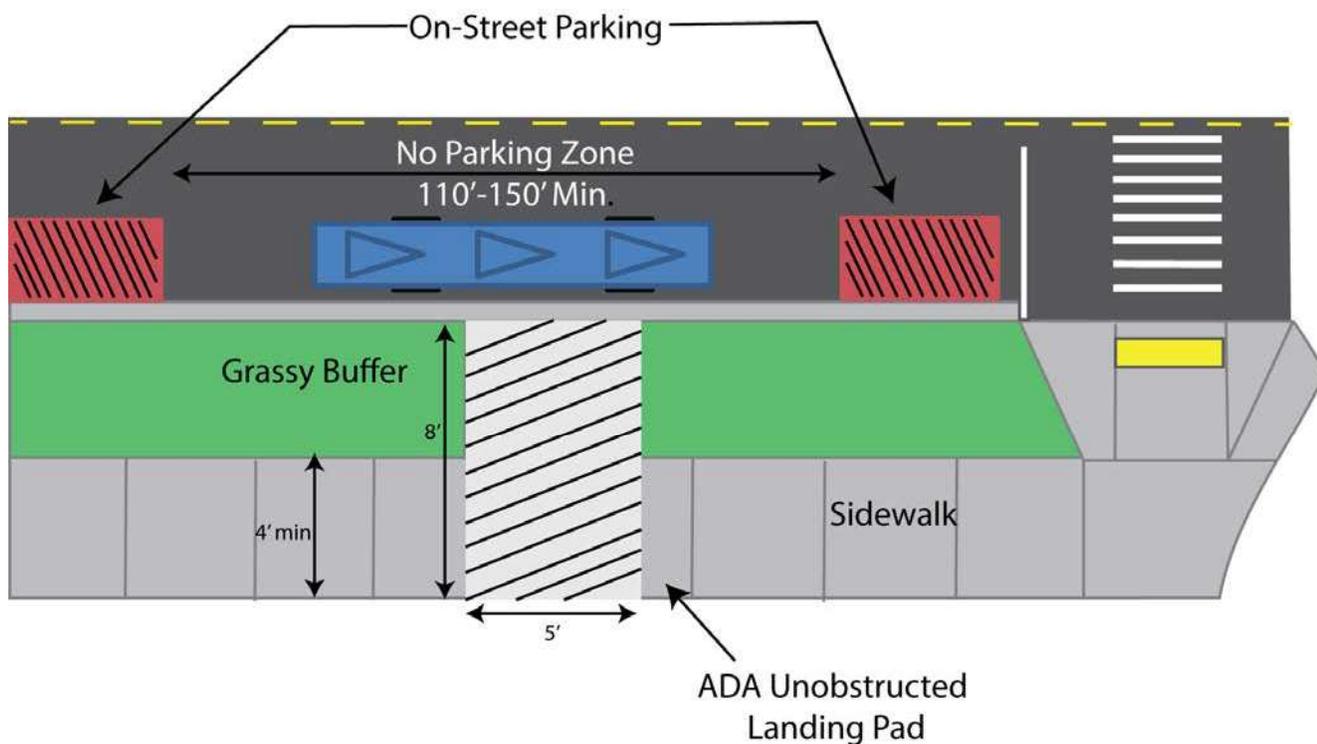
## Bus Stop in Parking Lane

When establishing a bus stop in a parking lane or zone, it is crucial to designate and sign the bus stop area as a no parking zone. The no parking zone needs to include adequate space to accommodate the bus as well as acceleration and deceleration areas. If parked cars block bus access to the curb it may render the bus stop inaccessible and unusable for wheelchair-bound passengers. An alternative to the parking lane would be a curb bulb which would mitigate the issue of illegally parked cars and reduce the space needed for acceleration and deceleration areas.

### Specific Design Factors to Consider:

- Ensure adequate space for a no parking zone of 110' to 150'
- Ensure an ADA compliant landing pad connects to the curb and the pedestrian network
- Buses may have difficulty pulling back into traffic in congested areas
- Illegally parked cars may render the bus stop inaccessible

Figure 3-7: Design Considerations for Bus Stops in Parking Lanes



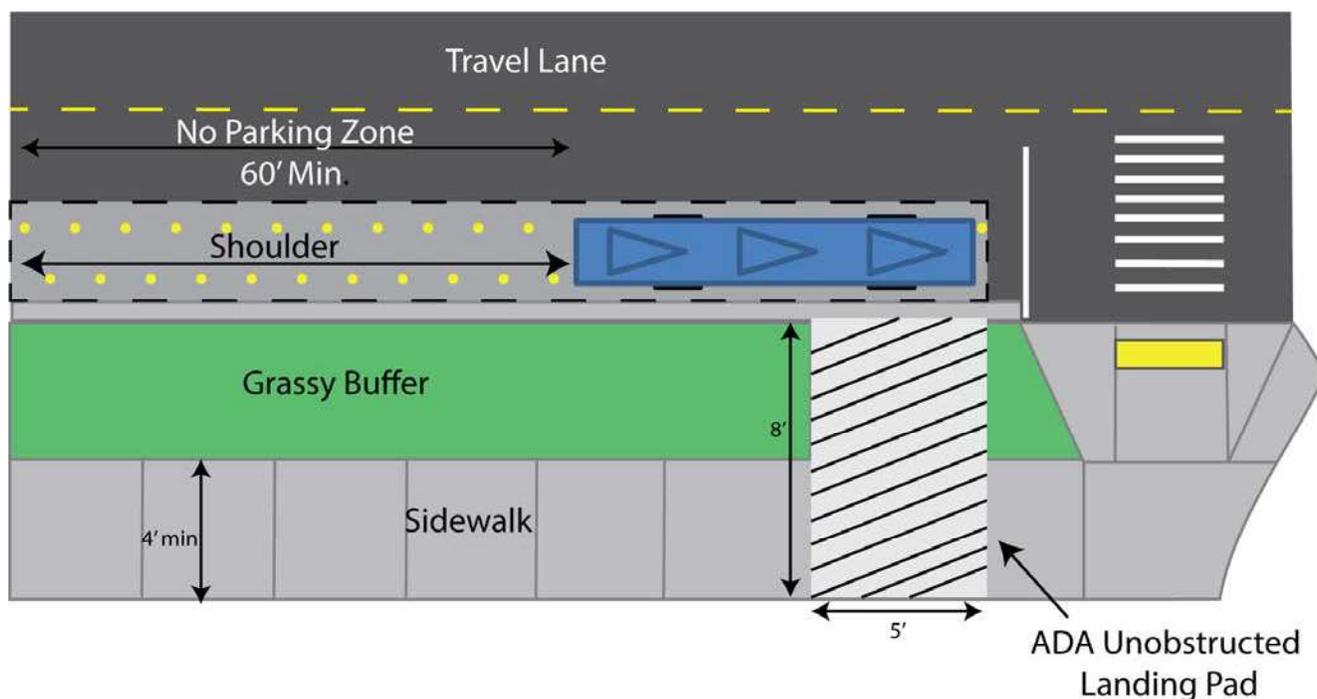
## Bus Stop on Shoulder

Similar to bus stops in parking lanes, a no parking zone would need to be designated and signed along the road's shoulder. The no parking zone should also allow adequate space for the bus in addition to acceleration and deceleration areas. It is recommended that there be at least 60' signed as no parking behind a stopped bus.

### Specific Design Factors to Consider:

- Ensure adequate space for a no parking zone of 100' with 60' behind a stopped bus
- Ensure an ADA compliant landing pad connects to the curb and the pedestrian network
- Buses may have difficulty pulling back into traffic in congested areas
- Illegally parked cars may render the bus stop inaccessible

Figure 3-8: Design Considerations for Bus Stops on the Road Shoulder



## Curb Bulb

Sometimes referred to as curb extensions, sidewalk extensions, or bulb-outs, curb bulbs are used at locations with curbside parking. A portion of the sidewalk extends out to the travel lane, thus allowing most of the curbside parking to remain while providing a connection between the travel lane and the sidewalk. Curb bulbs maximize the amount of on-street parking around bus stops while minimizing needed curb clearances.

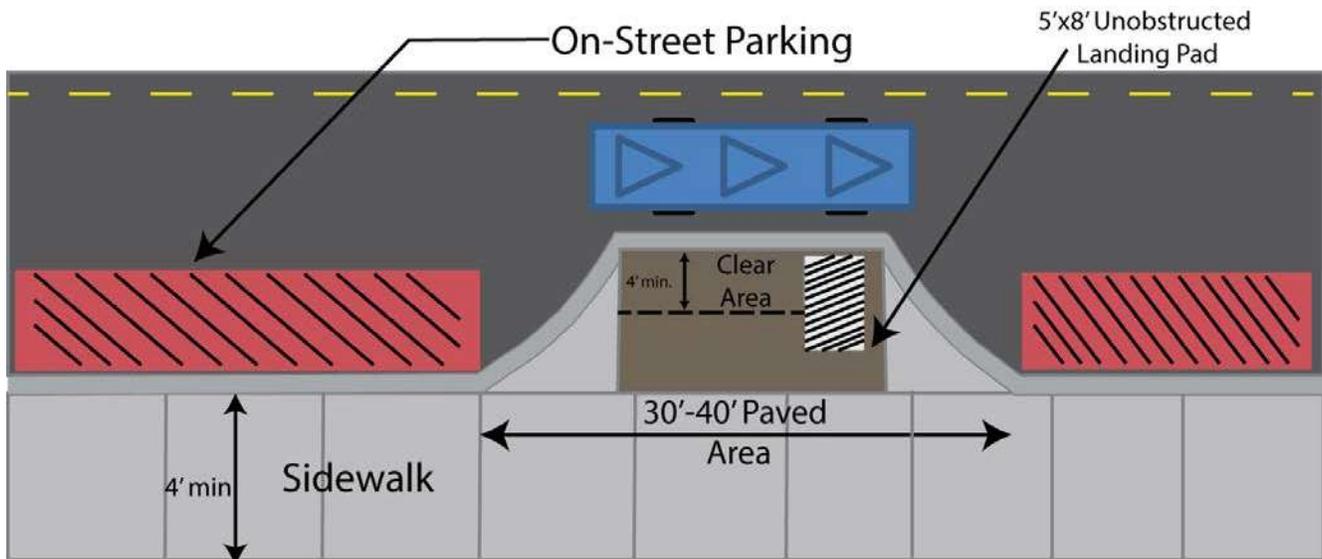
### Utilize Curb Bulbs If:

- Parking is critical in the bus stop area
- Limited curb clearance in the bus stop area
- Buses experience delays in re-entering the traffic lane
- Where there are no restrictions on parking

### Specific Design Factors to Consider:

- Requires a 30' to 40' paved area parallel to the travel lane
- An ADA compliant landing pad should fit fully within the curb bulb itself
- A 4' clear area must be maintained near the travel lane

Figure 3-9: Design Considerations for Curb Bulb Bus Stops



## Bus Bay

Bus bays allow buses to pick up and drop off passengers outside of the travel lane. As a result, this allows traffic to flow unobstructed while the bus is stopped. While there are various types of bus bays, parallel bus bays are most common outside of designated transfer centers. Parallel bus bays are constructed as an inset into the curb. Parallel bus bays can be closed or open; where closed bus bays have tapered ends for acceleration and deceleration and open bus bays have one end tapered and one end that continues as a through lane.

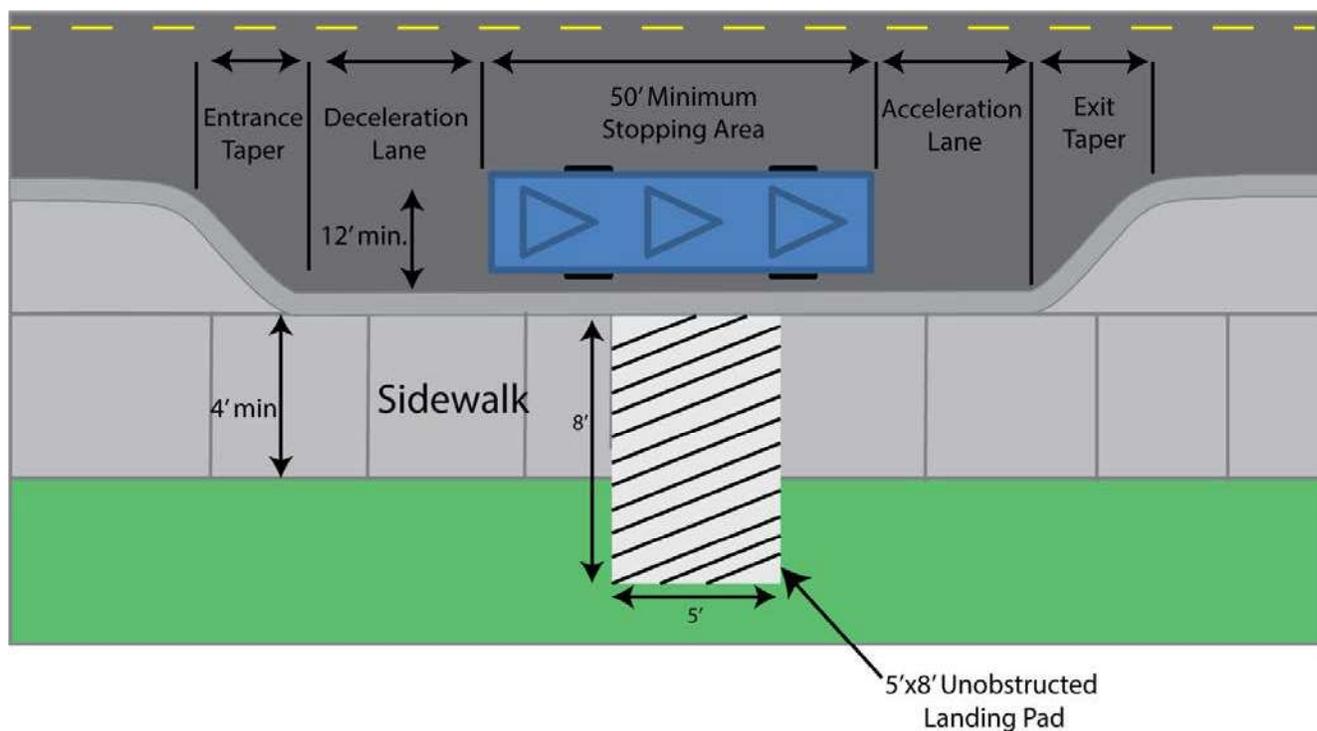
### Utilize Bus Bays If:

- Traffic speeds exceed 45 mph
- Average peak-period dwell time exceeds 30 seconds per bus
- Buses are expected to lay over
- Multiple buses serve the stop at the same time
- History of vehicles colliding into the rear of the bus

### Specific Design Factors to Consider:

- Ensure adequate space for acceleration and deceleration areas (see Table 3-2)
- Ensure an ADA compliant landing pad connects to the curb and the pedestrian network
- Buses may have difficulty pulling back into traffic in congested areas

Figure 3-10: Design Considerations for Bus Bay Bus Stops



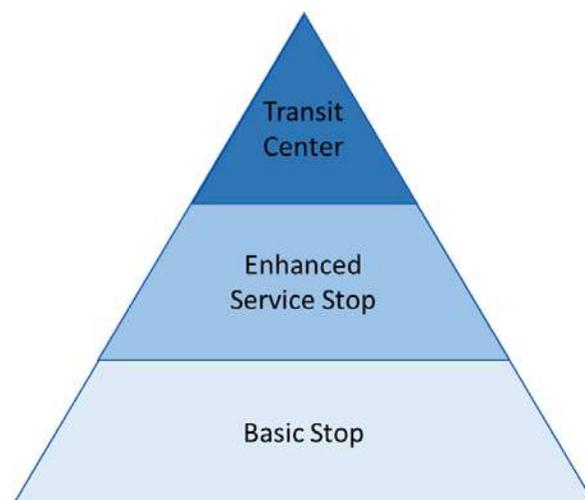
**Table 3-2: Recommended Bus Bay Acceleration and Deceleration Lane Dimensions**

Travel Lane Speed (mph)	Deceleration Lane Length (feet)	Acceleration Lane Length (feet)	Total Bus Bay Length with 40ft Minimum Stopping Area (feet)
35	184	250	474
40	265	400	705
45	360	700	1,100
50	470	975	1,485
55	595	1,400	2,035
60	735	1,900	2,675

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

## BUS STOP HIERARCHY

Following the completion of the C-SMMPO field survey, it was determined that there were very few amenities or improvements at bus stops within the study area. Only 4 of the stops surveyed had any signage, and most did not have ADA compliant landing pads, sidewalks, or curb ramps. The need for improvements at most stops has necessitated the drafting of a bus stop hierarchy (see Figure 3-II) and associated guidelines that prioritize the stops by the level of service and destinations served to ensure a responsible and systematic use of planning funds (see Table 3-3). In order to accomplish this, bus stops were divided into three different bus stop categories:



**Figure 3-II: Bus Stop Hierarchy**

- **Transit Center** – Allows transfers between routes and to other transportation services
- **Enhanced Service Stop** – Serves major trip generators
- **Basic Stop** – Catch all, typically serves lower density areas

While specific guidelines have been crafted for each classification of bus stops, the resources available for providing and improving passenger facilities are limited and require a data-based prioritization process to determine what and where improvements will be made. Other prioritization factors to consider are:

- Total daily boardings
- Number of routes serving the stop
- Special populations served by the stop
- Potential for stop sponsorship

**Table 3-3: Bus Stop Hierarchy And Bus Stop Elements**

<b>Bus Stop Element/ Passenger Amenity</b>	<b>Basic Stop</b>	<b>Enhanced Stop</b>	<b>Transit Center</b>
Bus Stop Sign	✓	✓	✓
ADA 5'x8' Landing Pad	✓	✓	✓
Sidewalk	✓	✓	✓
Lighting	Evening Service	✓	✓
Bench/Seating	Site Specific	✓	✓
Trash Can	Site Specific	✓	✓
Information Case	Site Specific	✓	✓
Shelter	25+ Boardings Per Day	25+ Boardings Per Day	✓
System Map and Schedules	Contingent on Shelter	Contingent on Shelter	✓
Bus Bay (Pull Off)			✓
Real-Time Arrival Display			✓

## Basic Stops

A basic bus stop is simple in design, but should always provide a safe and accessible pedestrian connection (sidewalks, crosswalks, curb ramps, etc.), an ADA compliant 5' by 8' landing pad, and bus stop signage. Of the III observed stops in the C-SMMPO, 69 (62.2%) were categorized as basic bus stops.

Heavy ridership or proximity to unique locations may necessitate additional passenger amenities including seating, trash cans, information cases, and shelters.

Basic bus stops are typically found in low-density areas including single-family residential, offices, smaller retail centers, and others.

Figure 3-12: Basic Bus Stop Examples



From left: HG Trueman & Southern Connector Blvd, Thunderbird Dr. & Buckskin Trail, MD 235 & MD 245, Willows & S Shangri La

## Enhanced Bus Stop

An enhanced bus stop is any stop that services a major trip generator or important location within the community. An enhanced stop should feature everything found a basic stop plus seating, a trash can, and an information case. Shelters and other amenities could also be added, but they should be based on the number of boardings per day.

The observed enhanced stops were mostly located in and around shopping centers and community centers in Lexington Park and California. Of the III observed stops, 40 (36%) were considered to be enhanced bus stops.

Figure 3-13: Enhanced Bus Stop Examples



From left: California Walmart, Laurel Glen Shopping Center, MD 235 & MD 245, Bean Medical Center

## Transit Centers

Transit centers are the most important bus stops within a transit system. They typically exhibit high ridership activity and allow passengers to transfer to other routes or other transportation services. These can include defined transfer centers, park-&-ride lots, and major stops at hospitals or shopping centers. In the C-SMMPO area, two stops met these criteria; including the Tulagi Place Park-&-Ride and the Calvert Library Southern Branch. Tulagi Place is one of the main transfer locations for STS and the Calvert Library is the transfer point between CCPT and STS.

Figure 3-14: Transit Center Examples



Tulagi Place P&R & Calvert Library Southern Branch

## Bus Stop Elements

To ensure that improvements made to stops are both effective and ADA-compliant, it is important to ensure that each suggested improvement is well-defined. The following section provides ADA-compliant examples of bus stop signs, landing pads, shelters, and curb ramps.

### Bus Stop Signs

A clear, informative, and ADA compliant bus stop sign is a necessary component of a good bus stop. As previously discussed in Tech Memo 2, very few stops in the MPO have any bus stop signage and the signage that exists could be improved by including more information about the stop. A good bus stop sign includes:

- Logo of each transit provider that stops there
- Contact information (phone number, website)
- Route information
- Stop ID (an assigned number to help organize any necessary repairs)
- ADA compliant dimensions
  - Height of at least 80" OR;
  - Protrusion of less than 4"

The figures below are examples of what an informative and ADA-compliant bus stop sign can look like.

Figure 3-15: CCPT and STS Bus Stop Sign Examples



The above signs are noticeable, informative, and clearly branded. Having clear bus stop signs helps increase ridership by giving the system an always visible presence in its service area.

## Landing Pads

Many stops within the C-SMMPO do not have sidewalks around the stop location, and for those that do, most lack an ADA compliant landing pad. An ADA compliant landing pad needs:

- Flat, even surface.
- Connect the sidewalk to the curb
- At least 5' wide
- At least 8' deep

The following graphics offer a birds-eye view of two ADA compliant bus stops with landing pads, one where the sidewalk has a buffer and the other where it doesn't.

Figure 3-16: Compliant Landing Pad with Sidewalk Buffer

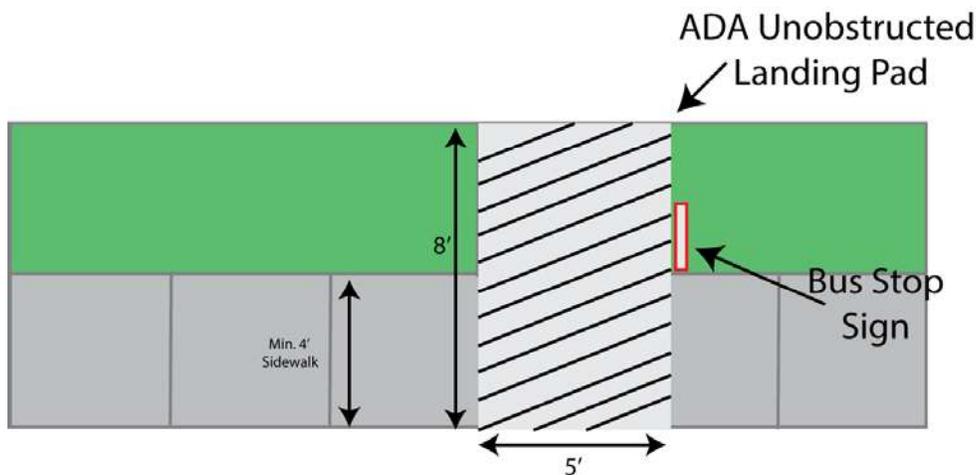
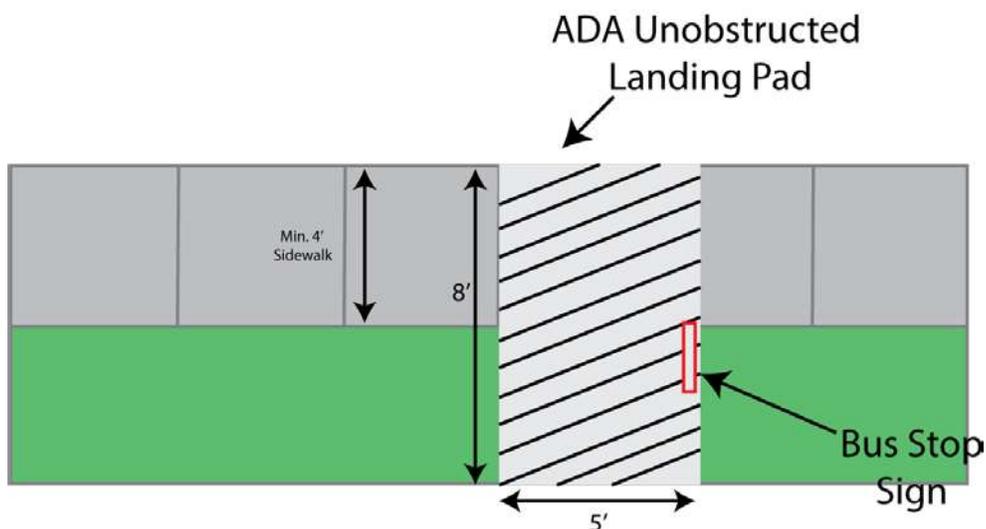


Figure 3-17: Compliant Landing Pad without Sidewalk Buffer



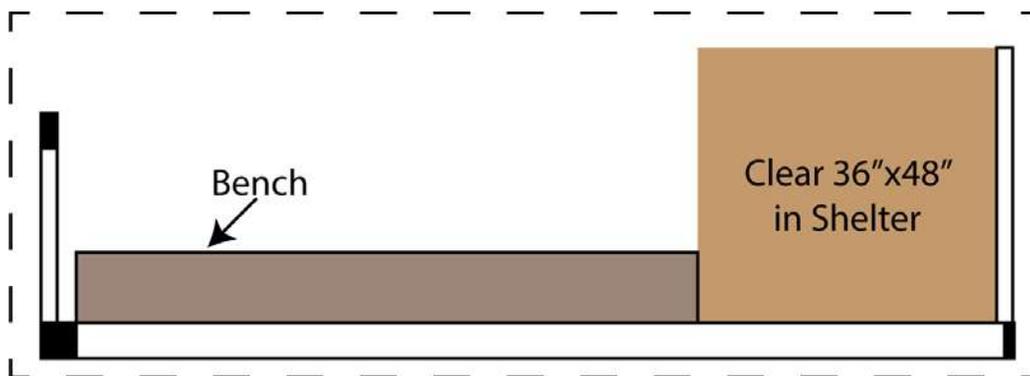
## Shelters

Passenger shelters can help protect riders from the sun and inclement weather. There were very few shelters located in the C-SMMPO. Each of the two identified transit centers was recommended to install an ADA compliant shelter if it did not already have one. An accessible, well-designed passenger shelter includes:

- Clear area 36" wide by 48" deep completely within the shelter
- Entrance to be a minimum of 36" wide, though an open-faced shelter is preferred
- Adequate maneuvering space outside of the shelter entrance
- Clear, unobstructed path to shelter entrance
- Should not obstruct ADA landing pad
- Should not obstruct the sidewalk
- Unobstructed access to customer information (route maps, schedules, fare information)

The below graphic is an example of an ADA-compliant shelter, with the proper interior space and a place for passengers to sit while waiting for the bus.

Figure 3-18: ADA Compliant Shelter Example



## Benches

Since both CCPT and STS operate smaller transit systems that operate on longer headways, an intelligently installed and compliant bench can assist passengers waiting for a bus. A properly installed bench must:

- Not be installed within the 5'x8' landing pad
- Not obstruct sidewalk access
- Not obstruct access to any customer information

Most benches currently within the C-SMMPO are at shopping centers and other community centers, but a ridership assessment could demonstrate that benches may be necessary at roadside stops.

## IMPROVEMENT GUIDELINES

The following section will outline an improvement process for each bus stop category to ensure continuous assessment, maintenance, and improvement of stops. Categorizing bus stops can help focus planning efforts, but it is important to note that each stop is unique. Land use, ridership, and pedestrian walkways can influence decision-making even if the stop is within the same category. For example, a basic stop on Three Notch Road may be easier to improve than a basic stop in front of a single-family home in Chesapeake Ranch Estates. Due to these differences, prioritization hierarchies were created for each category in addition to the improvement guidelines. The following section details both the improvement guidelines and stop prioritizations for basic bus stops, enhanced bus stops, and transit centers.

### Basic Bus Stops

#### *Improvement Guidelines*

Basic bus stops are those that have very limited improvements or amenities. During the field survey, many basic bus stops were hard to identify or survey because there was no signage to indicate where they actually stopped. No basic bus stop had any signage to pinpoint where a bus should stop or a passenger should wait, making sign installation the most pertinent improvement. The recommendations shown in Figure 3-19 should be applied to all basic bus stops.

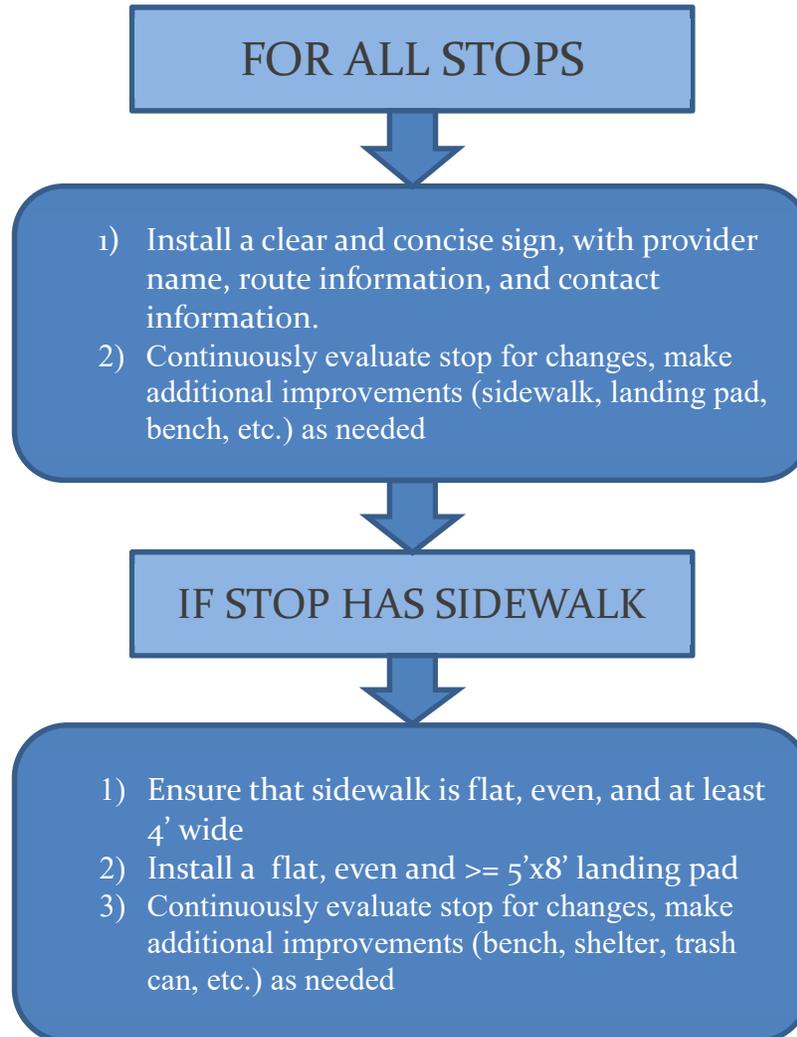
#### *Stop Prioritization*

As the largest and least-improved group, basic bus stops have the most complex prioritization guidelines. Though all stops have been recommended to install signs, stops with a daily average ridership greater than five should be the first to become signed stops. It also may be more cumbersome to install a sign at certain stops, especially those located within Chesapeake Ranch Estates and other residential areas, due to privacy and zoning concerns. The signage hierarchy for basic bus stops is as follows;

1. All stops with average daily ridership > 5
2. All stops that are not within a Residential-Single Family zone
3. The remaining stops

After putting signs at the stops, the process to ensure ADA compliance should begin. As these improvements (landing pad, curb ramp, sidewalk) are being made, the same organizational hierarchy should be utilized, factoring the associated improvement costs into the prioritization of certain stops. Stops with higher ridership and cheaper improvement costs should be the first to receive any necessary improvements to reach ADA compliance.

Figure 3-19: Basic Bus Stop Improvement Guidelines

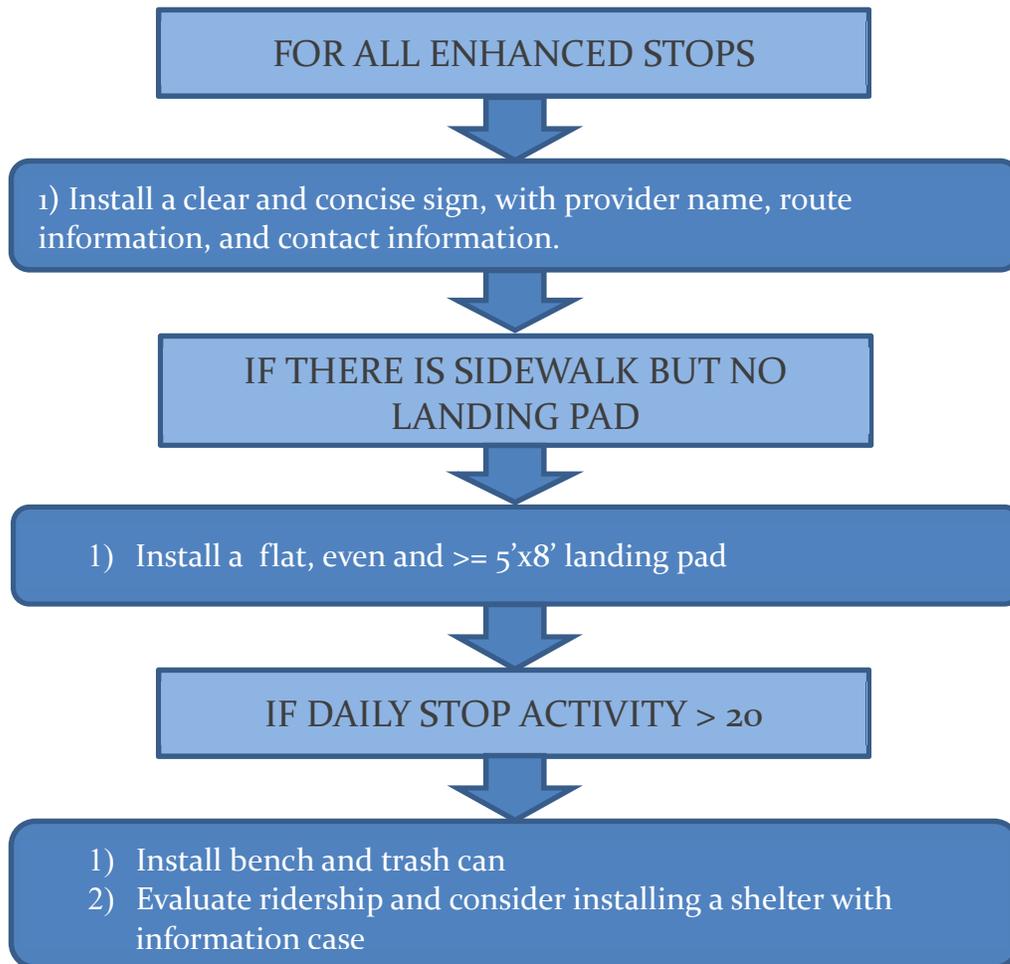


## Enhanced Service Stops

### ***Improvement Guidelines***

Enhanced service stops have limited improvements but serve origins and destinations that produce higher ridership, like shopping centers, high-density housing, human service agencies, and community centers. Many of these stops already have sidewalks, but almost all of them lack a designated landing pad or bus stop sign. Installing a branded bus shelter would also be recommended for enhanced bus stops that have higher on/off counts and ridership activity. Enhanced service stop improvements should be guided in the following manner:

Figure 3-20: Enhanced Bus Stop Improvement Guidelines



### Stop Prioritization

The enhanced service stops within the service area are located at libraries, shopping centers, multi-unit housing, and other important trip generators. All enhanced service stops within the MPO have been recommended to be converted into signed stops. The enhanced stops with the largest ridership should be the first to receive new signs. As with transit centers and basic stops, installing signage is the most important improvement to make, and should be the first priority when making improvements. The improvement prioritization for enhanced service stops is as follows;

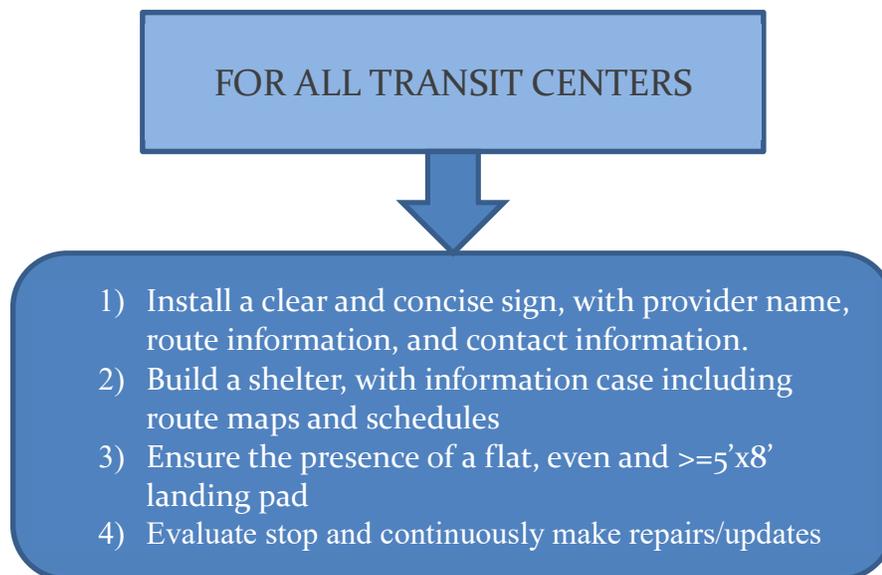
1. All stops with average daily ridership > 20
2. The remaining stops

## Transit Center

### Improvement Guidelines

Transit centers are the most important origins and destinations for riders. They include transfer centers (Tulagi Place Park & Ride) and important community centers (Calvert Southern Library Branch). Half of the transit centers in the MPO did not have any signage, and others lacked proper curb ramp connections or detectable warnings. The following steps should be taken to update and assess the transit centers throughout the MPO.

Figure 3-21: Transit Center Improvement Guidelines



### Stop Prioritization

The first improvement to the MPO's transit centers should be the installation of a sign at the Calvert Southern Library Branch. Once completed, the other improvements (shelters, sidewalks, landing pads, curb ramps) can begin. If an enhanced service or basic bus stop is reclassified as a transit center, these stops should receive the necessary improvements to become a high-functioning and ADA compliant transit center.