



Stop Placement Guidelines

Effective January 2016

Updated: January 2022



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Introduction

This document guides the placement and design of bus stops, and provides criteria for their addition, consolidation, or elimination, within the Champaign-Urbana Mass Transit District (MTD) service area. These guidelines were developed by MTD to provide safe, accessible, and efficient service to the residents of Champaign, Urbana, Savoy, and to the University of Illinois at Urbana-Champaign.

These guidelines are intended for use by MTD staff, city planners, designers, traffic engineers, developers, and other public officials. Members of the public and MTD customers may also find these guidelines useful in understanding the decision-making process for designation of bus stops.

This information is not intended to serve as a rigid process on which to base a final decision, but rather as recommended criteria and general guidance for the placement and design of designated bus stops. High-level siting criteria should account for safety, socially equitable coverage, and operational efficiency. More granular design criteria should evaluate site specific constraints, applicable ordinances, conditions for passengers with a disability, and cost effectiveness. Local knowledge or extenuating circumstances may justify deviation from these guidelines.



Stop Spacing

The location and spacing of bus stops will always depend on individual circumstances; however, a certain set of criteria should serve as a basis when determining the best location for a bus stop.

Rural

1,500+ Feet

Regions defined by large lot zoning and very few inhabitants. These areas typically have a population density of 0-3 persons/acre.

Low Density Suburban

1,000-1,500 Feet

Typical low-density suburban areas are defined by land use patterns that consist of single-family housing subdivisions with few access points, commercial strip development set back from the street, and large regional employment campuses. These areas typically have a population density of 3-16 persons/acre and have fewer than seven dwelling units/acre.

General Urban

600-1,200 Feet

Land in this category usually falls on the border between an urban core and low-density suburban area. Street patterns may follow the grid network commonly found in urban centers but have the beginning signs of more suburban street patterns with curved roads and fewer access points to main collector streets and arterials. These areas typically have a population density of 10-20 persons/acre and have 7-18 dwelling units/acre.

Urban Core

500-750 Feet

The Urban Core includes the UIUC Campus and Downtown areas and is classified by very high-density employment and population. High rise office buildings, apartment buildings, and hotels frame this area. These areas typically have a population density of more than 20 persons/acre and more than 18 dwelling units/acre.



Operational Safety

At the core of its operations, MTD is committed to the safety of its passengers and of those with whom we share the road. MTD is committed to enabling its employees to do their jobs in the safest manner possible. Stop placement is an important component of this commitment.

The safety factors outlined below should be evaluated when considering stop placement, removal, and enhancement.

- Reduces conflict between passengers and operators. Makes service predictable and gives riders clear guidance on where they may or may not board the bus.
- Whenever possible, stops and surrounding areas should be well lit to promote visibility and provide a safe environment for passengers to wait.
- Where bike lanes are near stops, stops should be visible to cyclists and allow for bicycles to pass on the left of a stopped bus.

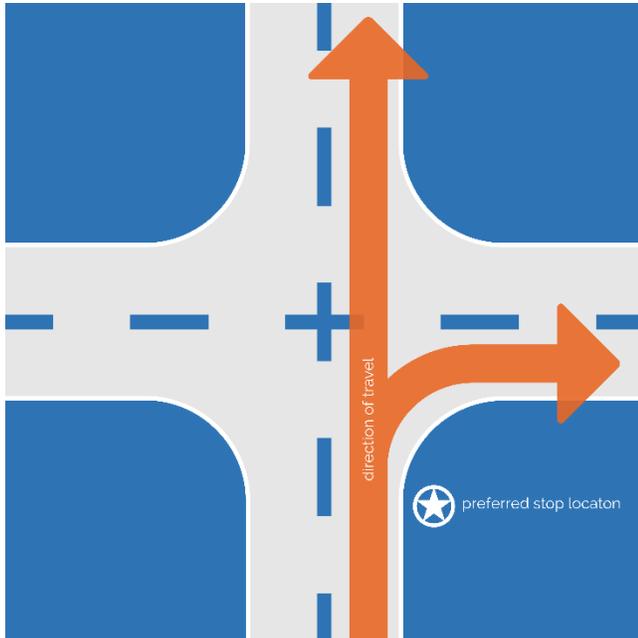
Accessibility

One of MTD's core values is to provide excellent public service. To act on this, MTD must ensure all members of the public can access its services. The following must be addressed when considering a stop change.

- Stops should have a firm, stable surface for boarding and alighting.
- Pedestrian paths to the stop, and to nearby trip generators and transfer locations, should be accessible for those with a disability.
- Bus shelters should be large enough so that wheelchairs may turn around in them.

Stop Placement

Nearside Stop

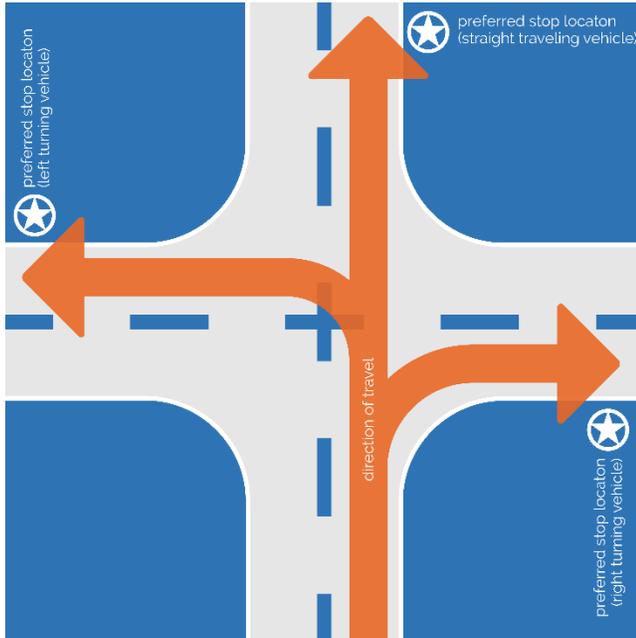


- Eliminates potential for double stopping at signalized intersections
- Allows closest crosswalk access to buses for passengers alighting via ramp
- Allows for boarding and alighting while bus is stopped at red light
- Provides the driver entire width of the intersection to pull away from curb and maneuver back into traffic
- Minimizes traffic interference on the far side of the intersection
- Buses enter intersection at lower speed, allowing more time to avoid collisions

Disadvantages

- Increases conflicts with right-turning vehicles
- Increases sight distance problems for crossing pedestrians
- Increases sight distance problems for other vehicles traveling in the same direction
- May congest traffic in the through-lane during peak traffic hours
- May encourage pedestrians to cross in front of the bus rather than behind the bus
- May stop at green light to board passengers and then sit at a red light

Farside Stop

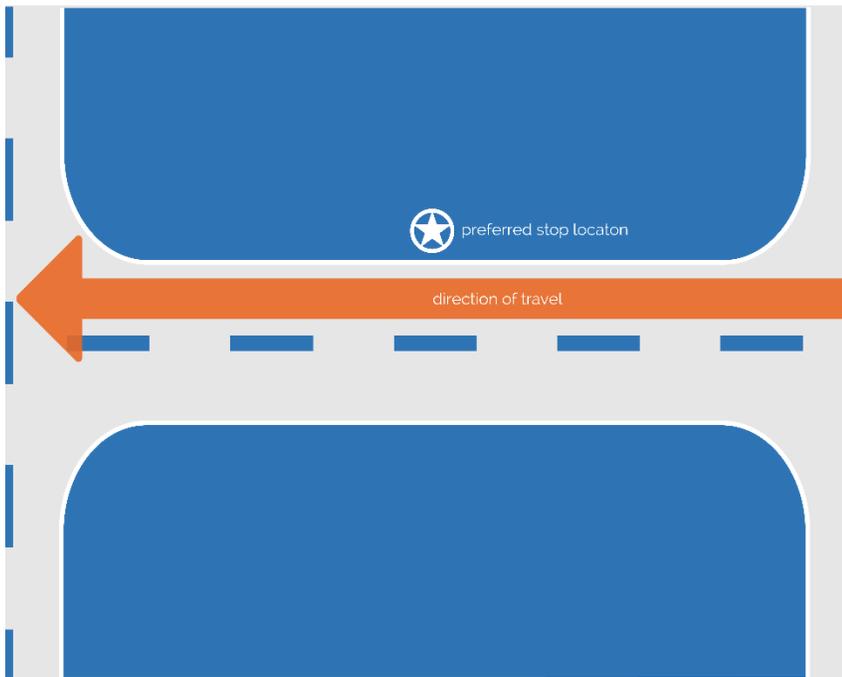


- Minimizes conflicts between right turning vehicles and buses
- Provides additional right turn capacity by making curb lane available to other traffic
- Minimizes sight distance problems on approaches to intersection
- Encourages pedestrians to cross behind the bus rather than in front of the bus
- Allows shorter deceleration distances as the bus can decelerate in the intersection
- Bus drivers can take advantage of gaps in traffic created at signalized intersections
- Can greatly improve travel times if coordinated with Traffic Signal Priority
- Eliminates buses sitting at green lights to board passengers

Disadvantages

- Traffic behind bus may queue into the intersection during passenger stops
- May obscure sight distance for crossing vehicles and pedestrians
- Can lead to buses stopping far side just after stopping for a red light
- May increase rear-end accidents due to motorists not expecting buses to stop immediately after a red light
- Buses enter intersection at higher rate of speed, decreasing time for corrective action to avoid potential collision

Midblock

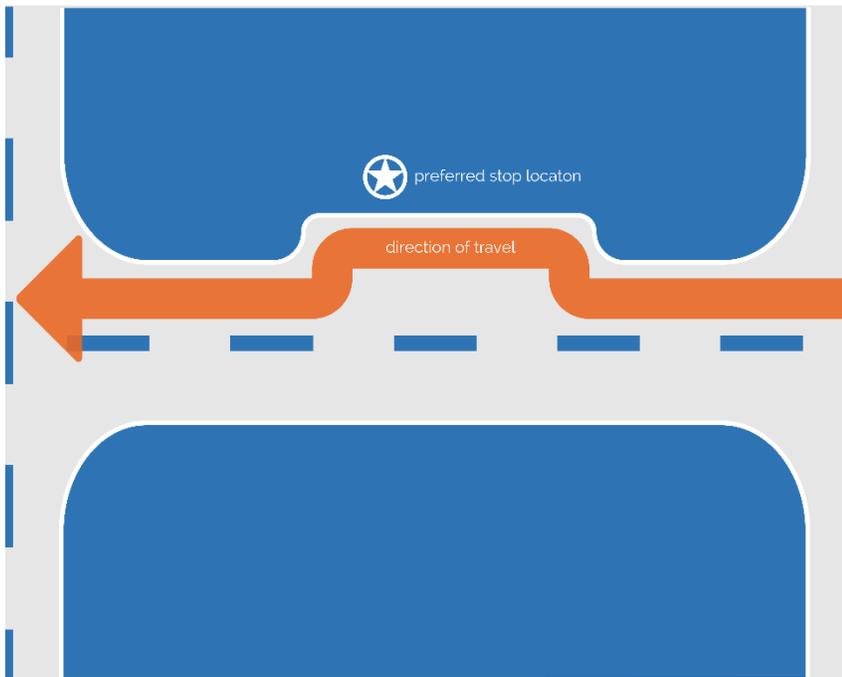


- Minimizes sight distance problems for both vehicles and pedestrians
- May result in waiting areas that experience less pedestrian congestion
- Allows multiple stops to be combined at a midpoint distance

Disadvantages

- Requires more distance for no-parking restrictions
- Encourages pedestrians to cross the street illegally at mid-block
- Increases walking distance for passengers crossing at intersections

Off Street



- Provides safe access to bus stop
- Can help generate additional ridership due to more customized service
- Provides a safe layover point for buses at the end of a line
- Lower chance of rear end collisions

Disadvantages

- Adds time to schedule to pull off of main roads to serve the bus stop
- May create conflicts with motorists and cyclists when merging back into traffic



Examples

The placement of a bus stop is influenced by several factors including safety, accessibility, and efficiency. The following chart lists different scenarios that may be encountered along a bus route and identifies a preferred stop placement. While these preferences account for a variety of issues, exceptions may be made. Each bus stop should be evaluated in the context of that stop alone and the determination shall be made based on that evaluation.

Scenario	Preferred Placement
Non-signalized intersection where bus stops in travel lane	Nearside
Signalized intersection where bus stops in travel lane (with TSP)	Farside
Signalized intersection where bus stops in travel lane (without TSP)	Nearside
Intersection where bus turns	Farside
Intersection with heavy right turn traffic	Farside
Complex intersection with multi-phase signals and dedicated right turn lanes	Farside
Two or more consecutive stops have signals	Alternating, first nearside, then farside
There is obvious heavy single-direction transfer activity	One farside, one nearside
Blocks are too long to meet preferred spacing distances	Midblock
Major traffic generators not located or accessible at intersections	Midblock
Midblock pedestrian crossing with signage, striping, and/or signal	Midblock, after crossing
Transit center	Off-street
Major transit generator that cannot adequately be served by an on-street stop	Off-street



Operational Considerations

Several operational considerations must be considered when placing or improving stops. Outlined below are several factors that should be considered.

- Trees and bushes should be well trimmed to provide a clear view of traffic conditions and to allow vehicle operators an unobstructed view of passengers waiting at the stop.
- Signage should be placed no less than two feet from the curb to allow clearance for large vehicles. Signs should not protrude more than four inches over pedestrian paths such as sidewalks.
- Clearance for vehicle to be safely curbed.

Stop Amenities

Bus stops serve as the front door to any transit system; they play an important role in the perception that the community has toward MTD. Passengers consider time spent waiting for the bus to be more difficult to tolerate than time spent on a moving vehicle. Bus stop amenities provide an opportunity to make that time spent waiting more comfortable.

Boarding points at locations where designated stops are implemented must at a minimum have an easily identifiable, up to date, bus stop sign. The sign will contain the stop name, SMS code, and routes that serve the boarding point.

Stops with high ridership, older adults, or those with a disability, may warrant additional amenities. The following typologies highlight amenities that could be expected at various ridership thresholds. These typologies are suggestions only. It may not be possible to provide all amenities at each stop.

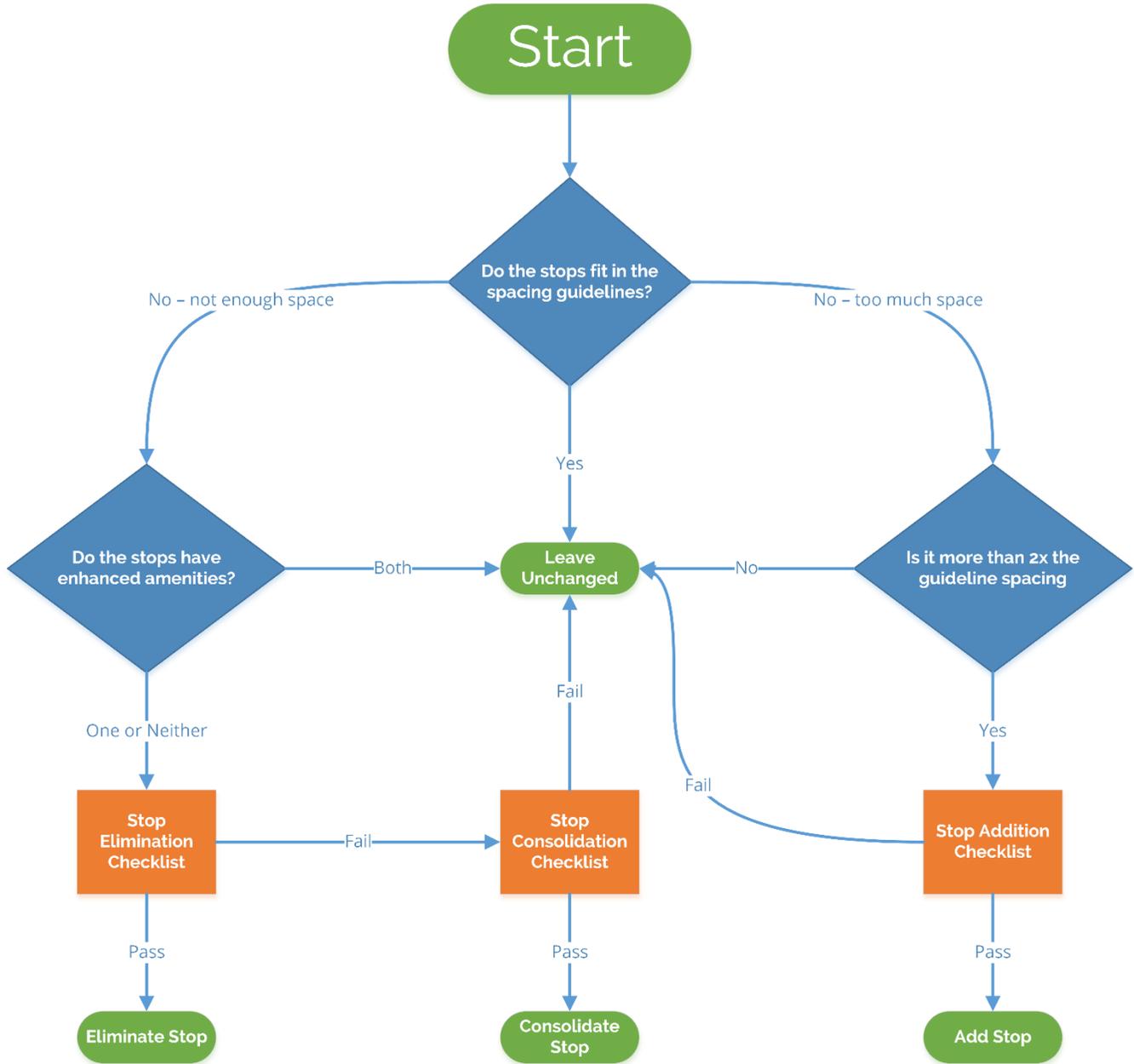


Stop Type	Ridership (Daily Boardings/ Alightings)
Typical	< 50
Typical + Shelter	51-150
Enhanced	151-800
Premium	800+

Amenity	Typical	Typical + Shelter	Enhanced	Premium
Transit Sign	Required	Required	Required	Required
Sidewalk Platform	Recommended	Required	Required	Required
Level Boarding + Walking Strip	Optional	Recommended	Required	Required
Shelter		Required	Required	Required
Lighting	Recommended	Required	Required	Required
Waste Receptacle		Optional	Recommended	Required
Additional Seating			Optional	Recommended
Route Announced at Stop		Optional	Optional	Recommended
LED Departure Board			Recommended	Recommended
STOPwatch Kiosk			Recommended	Required
Security Cameras			Recommended	Required
Warming Space				Optional
Covered Platform				Optional

Stop Modification Decision Criteria

The following decision criteria will be used to evaluate the placement of two adjacent service stops. Checklists can be found in [Appendix A](#). Stop consolidation or elimination should also consider the Accessibility Checklist before any action is taken.





Ongoing Evaluation

MTD continuously monitors its ridership trends and route performance to identify opportunities for improvement and enhancement. As the community changes and evolves there will be a need to continue evaluating stop placement and enhancement. These evaluations will be performed on an ongoing basis to ensure that resources are being allocated appropriately. Criteria for evaluation include but are not limited to:

- Ridership trends
- Connections to other MTD services
- Changes to area trip generators
- Population shifts and demographic changes
- Pedestrian routes to stops
- Current District boundaries
- Opportunities for cost sharing
- Availability of funding
- Schedule adherence



Appendix A

Stop Elimination Checklist

When a bus stop is being evaluated for removal, all of the following conditions should be met. If any conditions are not met this stop may not be a good candidate for elimination and further evaluation may be required:

Criteria to Eliminate Stop	
Adjacent stops (without being altered) adhere to stop spacing guidelines	
Adjacent stops are able to absorb additional ridership	
Removal of this stop will not degrade ADA compliance in the area	
Removal of this stop will not violate Title VI obligations	
Removal of stops will impact fewer than 100 riders or 10% of the entire route's daily ridership (using the lesser of the two values)	
The elimination of this stop will not remove service to existing community resources (e.g. school, hospital, senior center, recreation center, public service provider, etc.)	

Please note that the following would not automatically disqualify a stop from being eliminated, but require further consideration:

- How would the removal of this stop change pedestrian routes to nearby destinations?
- Does the removal of this stop disproportionately increase low-income passengers' walking distance to nearby destinations?
- Is the stop in a neighborhood with a significant racial/ethnic-minority population?
- Would a bus still be required to stop at this location (i.e. this stop is located at a stop sign)?



Stop Consolidation Checklist

When two bus stops are being evaluated for consolidation, all of the following conditions should be met. If any conditions are not met these stops may not be good candidates for consolidation and further evaluation may be required:

Criteria to Consolidate Stops	
The consolidated stop location has adequate pedestrian access (e.g. sidewalk connections or pedestrian crossings)	
The consolidated stop adheres to stop spacing guidelines	
The new stop can handle the predicted ridership from the consolidated stops	
The new stop meets ADA guidelines or can be reasonably modified to meet ADA guidelines (see Accessibility Checklist)	
Consolidation of these stops will not violate Title VI obligations	
Neither stop considered for consolidation is a transfer stop, or transfer opportunities are available at the consolidated location or at an adjacent stop	
The stops being consolidated impact less than 20% of the entire route's daily ridership	
Neither of the stops being proposed for consolidation directly serve existing community resources (e.g. school, hospital, senior center, recreation center, public service provider, etc.)	
The new stop location will not negatively impact vehicle run times	

Please note that the following would not automatically disqualify stops from being consolidated, but require further consideration:

- Will a new location better or equally serve existing passengers and expected passengers from the nearby stops?
- Will the new stop location minimize the distance to nearby activity generators?



Stop Addition Checklist

When a request for a bus stop is received, all the following conditions should be met. If any conditions are not met this location may not be a good candidate for a stop and further evaluation may be required:

Criteria to Add Stops	
The stop spacing between existing stops adheres to stop spacing guidelines	
The proposed stop meets ADA guidelines or can be reasonably modified to meet ADA guidelines (see Accessibility Checklist)	
The proposed stop will not negatively impact vehicle runtimes	
There are ridership generators (commercial or residential) in the corridor being evaluated	

Please note that the following scenarios may justify the addition of a stop, even if all the above criteria are not met:

- Will this stop serve a community resource (e.g. school, hospital, senior center, recreation center, or public service provider)?
- Is there a new development or activity generator in the vicinity of the requested stop?
- Will this stop serve a new service area that did not previously exist?
- Will adding a stop benefit a historically disadvantaged or low-income population?
- Does the addition of a stop improve pedestrian routes from transit to nearby destinations?



Accessibility Checklist

Any stop change should consider accessibility for passengers with a disability. Stop changes should comply with the following table to the extent construction specifications are within the District’s control. If any conditions are not met, this location may not be a good candidate for a stop and further evaluation may be required:

ADA Stop Requirements	
A firm stable surface that is accessible from sidewalks extends 8 feet perpendicular from the roadway edge and 5 feet parallel to it .	
The slope perpendicular to the roadway should not rise more than 1 inch in height over 48 inches in length .	
Always on District property, and when possible elsewhere, pedestrian paths to the stop are 3-foot wide firm and stable surfaces without obstructions (width may decrease to 32 inches at points , like doorways)	
Signs with a lower edge below 80 inches from the walkway surface should not protrude more than 4 inches onto the pedestrian path	
At stops served by multiple routes, the route should be announced	
For shelters, each doorway is 42 inches wide and there are 48 inches from and between each doorway to the rear wall , allowing for 180 ° turns in wheelchairs . There is at least 30 inches by 48 inches of clear floor space.	

Also consider the following when changing stops:

- If the area lacks accessible routes to the stop, who are the relevant parties to engage to enable access? When and how could these routes be made accessible?
- Is there an activity generator especially used by passengers with disabilities in the vicinity of the stop?
- Are there street crossings, curb ramps, and truncated domes on curb ramps, Kassel curbs, or pedestrian islands? Are there protrusions such as trees, bushes or furniture?
- If modifying or adding pedestrian paths , account for requirements in *ADA Standards, Chapter 4: Accessible Routes* , published by the U.S. Access Board .
- Is there street lighting ? Is the bus stop sign visible and legible at night?