FREDERICK COUNTY, MARYLAND

TRANSIT-FRIENDLY DESIGN GUIDELINES

UPDATED MARCH 2009

A Guide for Planners, Developers, Elected and Appointed Officials

TRANSIT-FRIENDLY DESIGN GUIDELINES

Updated March 2009
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INTRODUCTION

Rapid growth and development can create many challenges: traffic congestion, sprawl development and poor air quality are a few. These challenges, however, become surmountable when they are viewed as opportunities to find innovative ways to address growth-related transportation issues. The development of communities that are oriented to a variety of transportation modes is an innovative way to address growth issues, to support economic development, and to improve the community's quality of life.

Transit-friendly design (TFD) integrates elements of land use and transportation planning to promote higher-density, mixed-use development in an interconnected street network that is safe, accessible, and convenient for all users, including pedestrians of all ages and abilities, bicyclists, motorists, and transit vehicles.

TFD benefits the entire community. It encourages development in or adjacent to existing communities, which conserves undeveloped land and minimizes the cost of extending public services. TFD provides transportation options and improves access to employment, supporting economic development. It also reduces dependence on the private automobile, resulting in reduced traffic congestion, reduced fuel consumption, improved air quality, and a decrease in demand for new roads.

Source: AARP

This document was originally distributed in 2001, as Transit-Oriented Design Guidelines. It has been renamed Transit-*Friendly* Design Guidelines because often "transit-oriented" design refers to development which occurs specifically in areas immediately adjacent to or surrounding major transportation centers, whereas the purpose of this document is to encourage all development within TransIT's entire current and future service area to be designed with public transit, and the people who use it, in mind.

Goals

The goal of these guidelines is to provide information about the relationship between land use and travel behavior and the benefits of transit-friendly design, and to encourage the use of design elements that make commercial and residential developments more transit friendly. These guidelines should be used as a reference tool in the preparation and review of development plans, especially for development that will occur in the County's urbanized areas and other areas that will be served by public transportation. These guidelines should also be incorporated into regulatory documents, such as zoning ordinances, subdivision regulations, and design manuals.

Transit-friendly design will help to accomplish a number of goals and recommendations identified in the County's Transportation Development Plan (TDP), the City of Frederick's Comprehensive Plan, and the Countywide Comprehensive Plan, as well as various state and federal goals.

The TDP, which was updated in 1999 and 2007, includes the following recommendations:

- Extend transit services to serve new higher-density residential developments, major new employment areas, and major concentrations of medical offices, health facilities, nursing homes, and other similar destinations;

- Improve transit services to make them more convenient for work and school-related trips by providing more frequent services, and by minimizing on-board and wait times to the greatest extent possible;

- Provide a high-quality service and market the service so that it is an attractive alternative to persons with the choice of a private automobile, as well as those dependent on public transit;

- Encourage transit-friendly design for residential, commercial, and employment development that provides convenient access to transit for pedestrians and persons with disabilities; and

- Establish design standards and site plan review criteria for the County and the City of Frederick to ensure that new developments within the transit service area will accommodate transit vehicles.

The City of Frederick's Draft 2010 Comprehensive Plan includes the following goals:

- Conserve and enhance Frederick's natural environment;

- Incorporate green practices in all aspects of the City of Frederick;

- Work on a local and regional level to enhance all modes of transport in the transportation network;

- Enhance opportunities for people to live, work and participate fully in community life;

- Promote the redevelopment of lands with existing infrastructure and public services while supporting the maintenance and rehabilitation of existing residential, commercial, and industrial structures;

- Encourage land uses, densities and regulations that promote efficient development patterns and relatively low municipal and state governmental and utility costs;

- Support a vibrant downtown; and

- Interact with the region.

Frederick County identified the following goals in the 2009 Draft Countywide Comprehensive Plan:

- Plan a safe, coordinated and multi-modal transportation system on the basis of existing & future development needs, land uses and travel patterns;

- Integrate transit, pedestrian, bicycling and ADA-accessible facilities into the County's existing roadways and communities and the design of new roadways and communities; and

- Reduce the need for single-occupancy auto use through travel demand management and increasing the share of trips handled by bus, rail, ridesharing, bicycling, and walking.

The transit-friendly design guidelines also help to achieve the following state and federal goals:

- Maryland's smart growth initiatives, which "seek to improve quality of life for Maryland's citizens by promoting development policies that support existing communities and contain suburban sprawl";

- The goal of the 2002 Twenty-Year Bicycle and Pedestrian Access Master Plan for Maryland is "to be the best state in the nation for pedestrians and bicyclists";

- The 2009 Maryland Transportation Plan's goals for transportation planning in the State are as follows:

- Quality of Service: Enhance users' access to, and positive experience with, all MDOT transportation services;
- Safety and Security: Provide transportation assets that maximize personal safety and security in all situations;
- System Preservation and Performance: Protect Maryland's investment in its transportation system through strategies to preserve existing assets and maximizing the efficient use of resources and infrastructure;
- Environmental Stewardship: Develop transportation policies and initiatives that protect the natural community and historic resources of the State and encourage development in areas that are best able to support growth; and
- Connectivity to Daily Life: Support continued economic growth in the State through strategic investments in a balanced, multimodal transportation system.

- The USDOT/Federal Highway Administration's policy (endorsed in 2000) to require all road construction and improvement projects to begin by evaluating how the right-of-way serves *all* who use it, including bicyclists and pedestrians, and to incorporate bicycling and walking facilities into road projects unless exceptional circumstances exist.

Benefits of Transit-Friendly Design

Public transportation systems are not the only beneficiaries of transit-friendly design. TFD creates an environment that promotes transportation choices by providing safe and convenient access for pedestrians, bicyclists, motorists, and transit users. The availability of transportation options results in economic, environmental, and social impacts that benefit the entire community.

- Transit-friendly design provides the opportunity for people to choose among or to combine various transportation options, such as biking, walking, driving or using transit. TFD promotes connectivity between different transportation modes. It allows pedestrians and bicyclists to easily access public transportation and allows passengers to transfer easily between transit systems and rail systems.

- TFD benefits transit systems by increasing ridership, increasing operating efficiency, reducing operating costs, and improving safety and access for transit vehicles.

- TFD provides greater pedestrian access throughout a community, which creates safer conditions for all pedestrians, including those who use transit. In addition to improved pedestrian access, TFD also provides pedestrian amenities, such as landscaping, lighting, and attractive architectural features, which enhance community aesthetics and improve quality of life.

- TFD provides greater bicycle access throughout a community, which creates safer conditions for all cyclists, including those who use transit. In addition to improved bicycle access, TFD also provides cyclist amenities, such as secure bicycle parking, locker and shower facilities, lighting, on-street bicycle facilities, and off-street shared-use paths. Improved bicycle access allows the transit service areas to expand beyond those currently identified by pedestrian walking distance.

- TFD improves access to employment opportunities, housing, and goods and services for the general population. TFD provides significantly improved mobility for approximately 30% of the population considered to be transit-dependent, including individuals who are too young to drive, senior citizens, people with disabilities, households with no vehicles, and people with low incomes. This percentage is expected to increase with the aging of the baby-boomer population.

- TFD promotes a “complete” street network that is designed for all users and is interconnected and direct with multiple access-points. This reduces the operating cost of providing public services such as transit, school bus service, snow plowing, mail delivery, and trash removal.

- TFD can result in lower development costs by minimizing parking areas and setbacks, reducing the amount of property required for development, and reducing infrastructure costs. Initial planning and construction of sidewalks, bike lanes, transit amenities and safe pedestrian crossings is easier and less expensive than retrofitting later.

- The availability of multiple transportation modes can be an economic development marketing tool to attract employers and employees. Also, because TFD results in improved access to employment, businesses located in such developments benefit from a broader labor market and a larger customer base.

- The goals of Maryland's Smart Growth programs are to support and enhance existing communities, preserve natural and agricultural resources, and save taxpayer dollars by reducing the cost of unnecessary, new infrastructure. Transit-friendly design enhances and stabilizes existing communities by making transportation alternatives more accessible, convenient and efficient, which increases ridership and maximizes the public investment in transit. Public transit is an amenity which improves the community's quality of life and attracts residential and commercial developers, as well as new businesses.

Source: Frederick County Planning

ELEMENTS OF TRANSIT-FRIENDLY DESIGN

The four fundamental elements of transit-friendly design are pedestrian and bicycle accessibility, transit-friendly street networks, land use, and site design.

Pedestrian and Bicycle Accessibility

Pedestrian accessibility is one of the most important elements of transit-friendly design. Convenient and efficient pedestrian access promotes walking as a mode of transportation and ensures access to other forms of transportation, particularly transit. Safe, continuous, direct, and barrier-free pedestrian access ensures accessibility for the transit-dependent population and promotes transit as an alternative for people who choose not to drive.

Research shows that most people are willing to walk ¼ to ½ mile (or 10 minutes) to a bus stop. The number of transit trips decreases dramatically when the distance to the bus stop is greater than ¾ mile of a mile. Therefore, to encourage transit use, pedestrian access and amenities should be provided within a ¼ to ½ mile radius around bus stops.

Bicycle accessibility is also important. On-street bicycle lanes or shoulders and shared-use paths (paths designed to accommodate all users, including pedestrians and bicyclists) through new and existing neighborhoods provide a safe and convenient transportation option. Improved bicycle facilities also expand the distance passengers are willing to travel to a bus stop, since bicycles can travel three to four times the distance of pedestrians in the same time span.

Constructing streets that are designed to accommodate all users will ensure pedestrian and bicycle accessibility and connectivity between various modes of transportation.

Recommended design elements include the following:

- Streets designed to promote a sense of neighborhood intimacy, provide for safer pedestrian crossings, and encourage slower automobile speeds;

- Shorter block lengths, which result in more intersections and more opportunities for pedestrians to safely cross the street, which leads to more direct routing, increasing convenience for pedestrians;

- Safe pedestrian crossings that are well marked and well lit. Pedestrian safety elements, including actuated signalized crossing, medians or pedestrian refuge areas, flared sidewalks at intersections, and neckdowns/chokers, etc., should be considered where appropriate;

This intersection features a flared sidewalk – an extension of the sidewalk that effectively minimizes the distance a pedestrian must traverse to cross the street.

Source: Pedestrian and Bicycle Information Center, Image Library

- Street corners with reduced turning radii, which shorten the distance for pedestrians to cross and which compels motorists to slow down to negotiate the turn, making intersections safer for pedestrians;

- Sidewalks provided along all newly constructed streets and added to existing streets where gaps exist. Sidewalks should be well maintained, a minimum of five (5) feet wide with a minimum three (3) foot planting strip (wider along busy arterial streets) between the sidewalk and the curb for safety purposes;

- On-street bicycle lanes or shoulders adjacent to roadways and shared-use paths through new and existing neighborhoods, particularly in areas near major transit stops;

Source: Pedestrian and Bicycle Information Center, Image Library

- Adequate street lighting for safety and convenience;

- Landscaping and street trees for aesthetic purposes and to provide shade and increased comfort. Street trees improve safety and comfort to pedestrians by providing a physical barrier between pedestrians and the vehicles travelling alongside. Street trees also provide a psychological barrier for motorists by visually limiting street space and therefore, effectively calming traffic;

- Awnings and overhangs for weather protection and other architectural features for aesthetic purposes;

- Pedestrian benches and other amenities to generally improve the pedestrian environment; and

- Secure bicycle parking at major transit stops to encourage bicycling as a transportation option.

Source: Smart Growth Online

An example of transit-friendly design, including sidewalks, street trees, lights, and awnings.

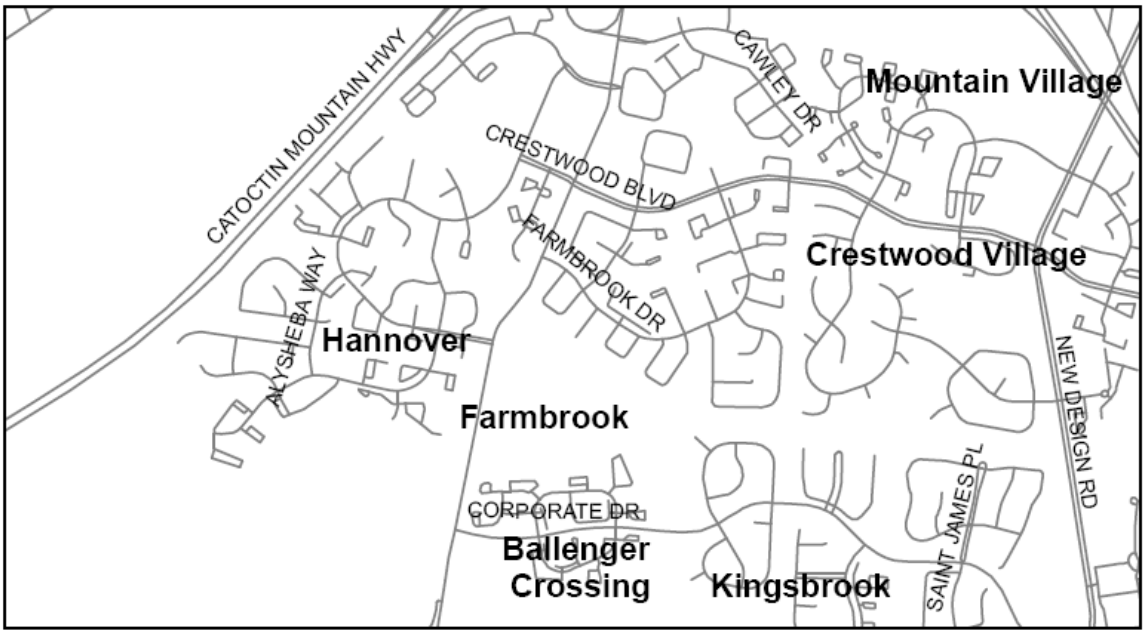
Transit-Friendly Street Network

A transit-friendly street network is interconnected and provides safe, direct, and convenient access to various uses or to transportation alternatives, such as transit stops.

Most of the development that has occurred since the 1940's, however, assumed that the primary mode of transportation would be the private automobile. The typical street pattern used in residential developments included a spine arterial road intersected by few curvilinear local streets that terminate in dead ends and cul-de-sacs. Often, newly constructed streets in adjacent developments do not connect with existing streets, exacerbating the problem of disconnected streets.

This type of street pattern discourages through traffic but also results in a dependence on the use of automobiles, and it contributes to traffic congestion because most traffic is channeled onto few arterial streets. This development pattern reduces pedestrian access and is not conducive to efficient transit operation. Buses must be routed through individual neighborhoods, shopping centers, and employment centers; or there must be more stops along the spine road to adequately serve the area, adding considerable time and distance to the bus route. Furthermore, congested arterial streets frequently are not designed for pedestrians, creating an unsafe and harsh environment that further discourages walking, bicycling, and transit use.

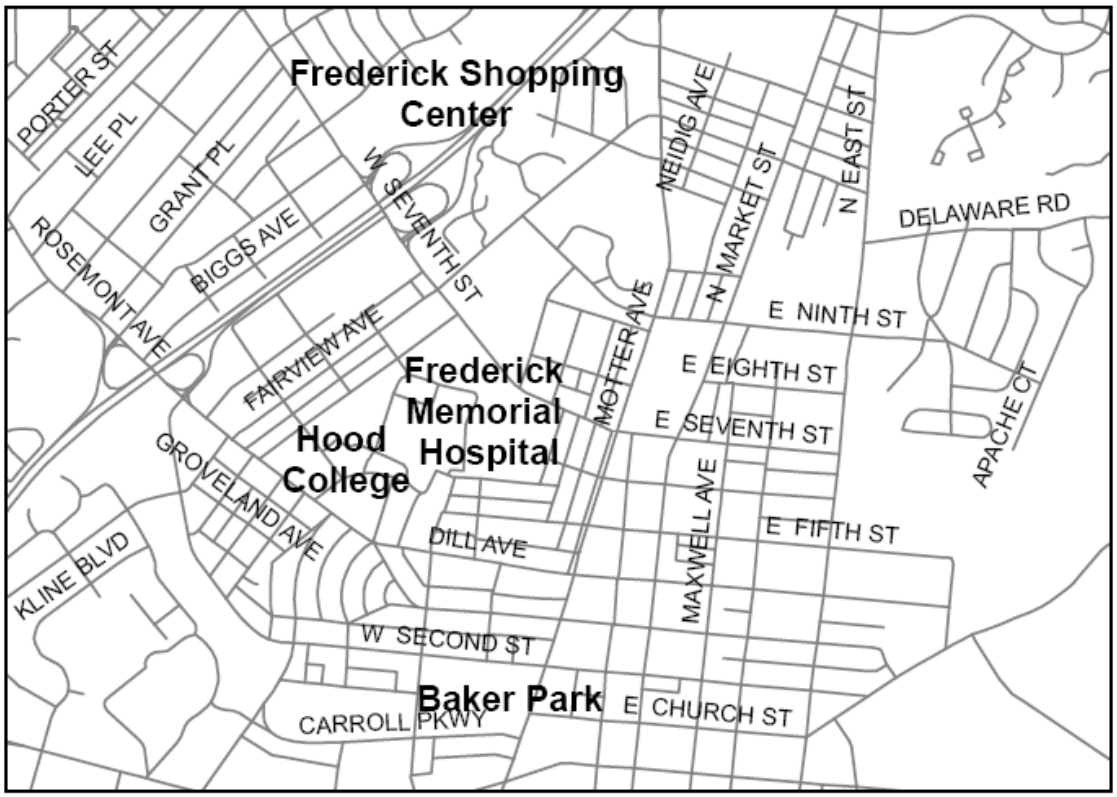
Figure 1
Disconnected Street Pattern



Source: TransIT Services of Frederick County

Transit-friendly street networks are interconnected street patterns that provide direct pedestrian access through neighborhoods to a centrally-located bus stop.
Street networks with characteristics of modern, curvilinear networks, as well as grid networks, may be considered transit friendly as long as shared use paths creating short, direct connections are provided.

Figure 2
Interconnected Street Network



Source: TransIT Services of Frederick County

Figure 2 is an example of a street network that provides several advantages for transit service. The interconnected street pattern provides multiple routes for pedestrians and direct access through the neighborhood to the bus stop, allowing a centrally-located bus stop to serve a greater area.

In commercial and employment areas, a transit-friendly street network could include service roads or public streets that run parallel to heavily traveled, high-speed, multi-lane arterials, providing a safe location for bus stops and convenient pedestrian access to businesses. Because of the safety hazards of locating bus stops on arterial roads, transit vehicles currently must enter shopping centers and business parks in order to serve them, which adds time and travel distance to the bus route, reducing operating efficiency and customer convenience.

Land Use

The two most critical land use issues in transit-friendly design are density and mixed-use developments.

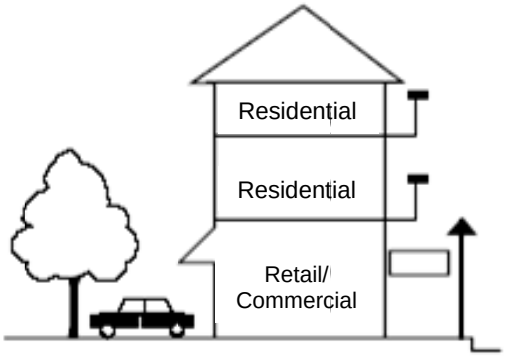
Density - Studies show that transit use increases with higher land use density. Higher density residential uses, such as multi-family developments, generate more transit ridership because the population of multi-family developments tends to have lower automobile ownership rates. Developing higher density uses along existing and planned transit routes not only ensures access to transit but is consistent with "smart growth," which encourages development where services already exist.

Mixed-Use Development - Transit-friendly design promotes development that includes a mix of residential, commercial, and employment uses. These uses may be mixed within a single building or may be clustered in a group of several buildings.

The primary benefit of mixed-used developments is that the close proximity of residential, commercial and employment uses encourages alternative modes of transportation and reduces dependence on the automobile.

Figure 3

MIXED-USE DEVELOPMENT



This graphic depicts typical mixed-use development within a single building: the retail/commercial use is located on the first level, with residential uses on the upper levels. Also, the building is oriented to the street, with parking in the rear.

Source: Transit Friendly Design Guide, Calgary Transit; Burnaby Metrotown, Burnaby Planning Dept. (1977)

Site Design

Commercial and office developments are typically separated from the street by vast parking areas that offer poor pedestrian access and discourage transit use. Pedestrians perceive walking across large parking lots as unsafe and inconvenient. Furthermore, it is time consuming and inefficient for transit systems to drive through every strip mall and office park in order to stop at safe locations that are convenient for transit users.

Figure 4

TRANSIT-RELATED DEVELOPMENT

AUTOMOBILE-RELATED DEVELOPMENT

Source: Transit Friendly Design Guide, Calgary Transit; Adapted from Public Streets for Public Use, Portland's Arial Street Classificiation, Dottemer (1987)

Local zoning ordinances tend to require that shopping centers and office buildings have adequate parking to handle peak usage, which may only occur once or twice for a limited time throughout the year. A transit-friendly approach encourages parking maximums rather than parking minimums to limit the amount of parking for each use, so that parking provided is adequate to accommodate average demand. On-street parking should be allowed where practical to accommodate higher-than-average demand. Finally, encouraging shared parking among uses reduces the amount of parking area required, while providing plenty of parking around the clock. For example, in a mixed-use development that features shopping, office space, restaurants, and residential uses, the same parking spaces that are occupied during the day by office employees can be used in the evening by residents and patrons of the shopping center or restaurants.

To encourage transit use, entrances to commercial and office buildings, as well as multi-family residential developments, should be oriented toward the street to minimize the distance between the entrance and sidewalks or bus stops. Parking should be located to the sides and rear of the site. If parking must be located between the building and the street, sidewalks and pedestrian crossings connecting the entrance of the building to the street sidewalk should be provided.

Transit-friendly design encourages the use of the following elements:

- shared parking between adjoining uses;
- on-street parking where practical;
- minimum parking requirements that more closely match demand; and
- maximum parking limits.

The following figures are examples of typical shopping center and office park layouts and how they can be redesigned to be more transit friendly.

Figure 5
Typical Commercial Development

Source: Pedestrian and Bicycle Information Center, Image Library

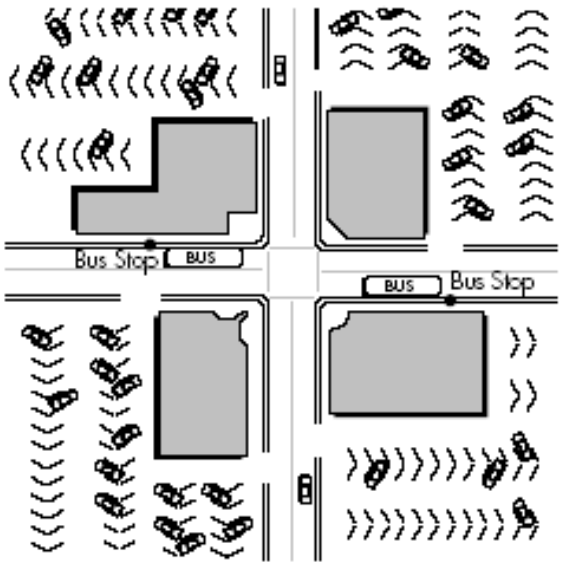
This is an example of typical commercial development featuring a large parking lot with no sidewalks between the street and the building entrance.

Figure 5.1
Typical Office Development

Typical office developments feature large parking areas between the street and the entrance without connecting sidewalks for safe pedestrian access.

Source: TransIT Services of Frederick County

Figure 5.2
Preferred Office Development



Transit-friendly office developments feature buildings oriented to the street. Parking is located to the rear of the buildings. Bus stops are located on the street in front of the buildings.

Source: Transit Friendly Design Guide, Calgary Transit; Adapted from Designing for Transit, Metropolitan Transit Development Board (1993)

TRANSIT ACCESS DESIGN STANDARDS

The Maryland Department of Transportation and the Maryland Transit Administration have established standards for the design of fixed-route bus stops, turnouts, and shelters, as well as turning radii at intersections. Transit access design standards were published in *Maryland Transit Guidelines* in May, 2002. Similar design standards should be incorporated into the appropriate local regulatory documents.

Design standards to ensure access by smaller vehicles used for paratransit services should also be considered. Facilities and developments that serve senior citizens and people with disabilities who may use paratransit services should be designed to include canopies or covered areas at entrances that are tall enough and wide enough to accommodate transit vehicles and to provide adequate weather protection for passenger loading. Parking areas should be designed so that smaller transit vehicles are able to enter and exit easily and quickly without having to back up and without impeding the normal traffic flow.

Vehicle Specifications

TransIT has a fleet of 30-foot buses, small (<24') buses, and minivans. All 30-foot buses and small buses used on Connector and shuttle routes are equipped with bike racks. The specifications/dimensions of these vehicles are noted in Figure 6. Turning radii standards provided in Appendix B are for buses up to 40 feet in length.

Figure 6
TransIT Vehicle Specifications

	Transit Bus	Shuttle Bus
Maximum Length	32'	24'
Maximum Width	102"	96"
Maximum Height	120"	115"
Weight (without passengers)	24,500 lbs.	10,500 lbs.
Turning Radius	33'7"	----

Source: TransIT Service of Frederick County

Bus Stops and Passenger Shelters

Bus stop and passenger shelter locations are based on the level of ridership activity at a given location. If the level of activity is high, or if the stop serves a major activity center, such as a hospital or community center, consideration should be given to installing a passenger shelter. New developments along existing or proposed transit routes should include appropriate locations for bus stops with paved passenger boarding areas and, in areas with high ridership, passenger shelters. At layover points or at stops with higher ridership activity, concrete bus pads should be incorporated into the design and construction of new streets. Bus pads should be a minimum of 8' x 35' and should include a 6" crusher run (CR-6) topped with 9" of reinforced concrete.

Bus stops should be located where it is safe and convenient for passengers to board. Spacing of bus stops depends on the density and characteristics of the area served. In high density areas, bus stops may be located as frequently as every quarter mile; while in suburban areas, bus stops may be located at half mile intervals.

Bus stops at large commercial and office developments should be centrally located or located on streets, rather than within the developments, to maximize the use of the stop and to minimize vehicle travel times and distances. Also, locating bus stops on the street rather than in parking areas minimizes interaction between transit vehicles, other motorists, and pedestrians.

Figure 7
Bus Stop Example

This on-street bus stop across from a major retail center features a bus pull-off, a passenger shelter, sidewalks connecting the shelter to the pedestrian crosswalk, and a pedestrian refuge.

Source: TransIT Services of Frederick County

Passenger shelters should also be located at stops with higher ridership activity to protect passengers from inclement weather and to provide them with a safe place to wait for the bus. Shelters should be placed so that pedestrian and vehicular sight distance is not impaired and so that passengers within the shelter are able to see and be seen by approaching buses. Shelters should be enclosed on three sides and should be positioned at least five feet from the curb, but near enough to provide quick access to the bus door. The open side of the shelter should be oriented toward the street. Additionally, passenger shelters must be handicapped accessible and should be installed on a concrete pad. Walkways connecting the sidewalk, shelter, and street should be provided. To give TransIT a more visible identity, it is recommended that the passenger shelters have a unique design that is reflective of local architecture.

Additional amenities that may be provided in and near bus stops and passenger shelters are landscaping, public telephones, mail boxes, newspaper vending boxes, lighting, seating, and trash receptacles. Business and residential associations are encouraged to "adopt" shelters by providing and maintaining the shelter and passenger amenities, such as the landscaping and trash receptacles. Well-maintained bus stops and passenger shelters encourage transit use and enhance the aesthetics of the surrounding area.

Figure 7.1 Bus Stop Layout

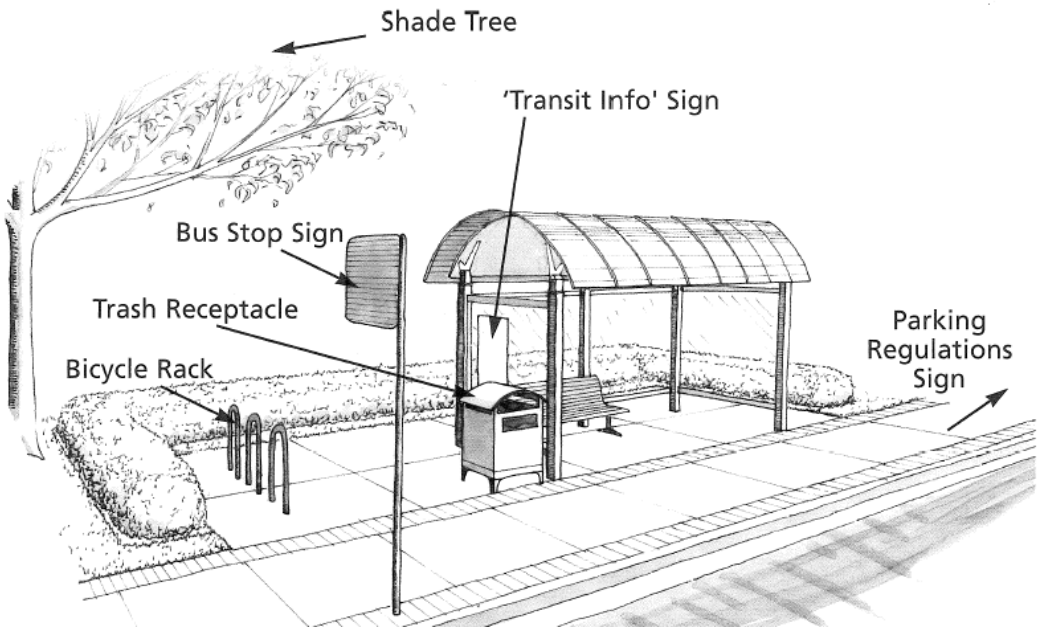
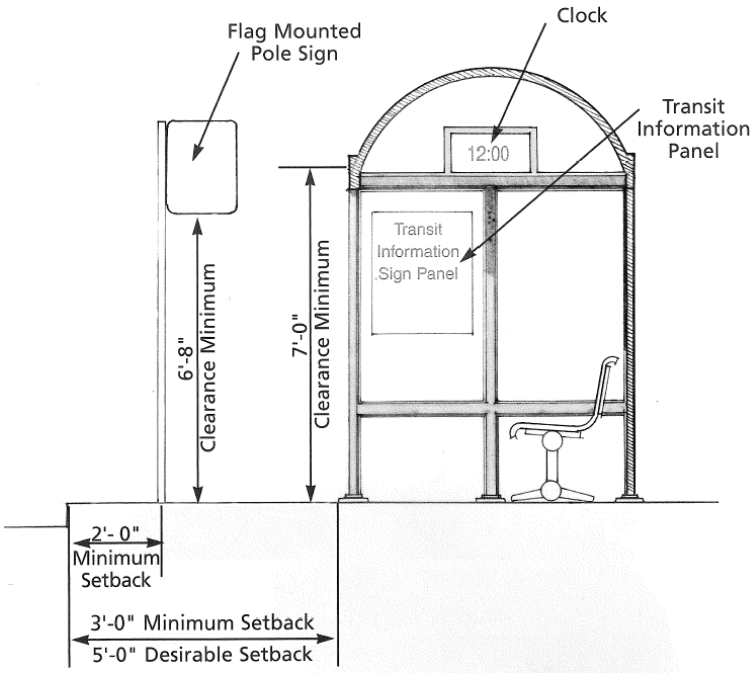


Figure 7.2 Bus Stop Cross Section



Source: Maryland Transit Guidelines, MTA

IMPLEMENTATION OF TRANSIT-FRIENDLY DESIGN STANDARDS

Guidelines encourage transit-friendly planning and development, but local governments have the legal authority and the regulatory instruments to require transit-friendly design by adopting and implementing transit-friendly design standards.

Effective transit-friendly design standards are implemented through comprehensive plan policies, inclusion in development regulations, and through consideration during the development review process. Transit-friendly design standards are recommended in the Frederick County Comprehensive Plan and the Transportation Development Plan. However, to compel developers to use TFD, the goals and recommendations of these plans must be translated into the development regulations of the zoning ordinance, subdivision regulations, and the design manuals.

The following elements of design are examples of those currently regulated by zoning ordinance, subdivision regulations, adequate public facilities ordinance and design manuals. These elements should be reviewed and revised to accommodate transit-friendly design.

Figure 8
Elements of Design

- Densities
- Setbacks
- Clustering
- Mixed-Use Developments
- Sidewalks
- Other pedestrian/bicycle access
- Other pedestrian/bicycle amenities
- Street landscaping
- Street lighting
- ADA Accessibility
- Parking
- Parking lot landscaping
- Parking lot lighting
- Alleys
- Cul-de-sacs
- Dead-end streets
- Entrance design/turning radii
- Lane widths
- Roadway paving/grades
- Intersection design

Until transit-friendly design is integrated into the City and County's development policies, the Transit Accessibility Checklist (Appendix A) should be utilized by local developers, development review planners, and appointed and elected officials to determine whether proposed developments are transit friendly.

STATUS REPORT AND ACTION PLAN

These guidelines have been reviewed and approved by the Transportation Services Advisory Council of Frederick County (TSAC) and referred to the Frederick County and City of Frederick Planning Offices for action.

- TSAC will seek endorsement of this document from the Frederick County Planning Commission. TSAC recommends that transit-friendly design standards be developed for incorporation into the Frederick County Zoning Ordinance, which is currently being revised.

- TSAC will encourage the City of Frederick Planning Commission to include transit-friendly design into the revision of the City's Land Management Code, which is currently underway.

- TSAC recommends that other applicable County, City and local municipal development regulations, such as subdivision regulations and design manuals, are revised to incorporate transit-friendly design standards. In 2007, the City of Brunswick was the first municipality in Frederick County to adopt transit-friendly design standards as ordinances in the City's Design Manual.

- TSAC recommends the City of Frederick and Frederick County consider including public transportation improvements, such as bus stops, shelters, passenger amenities and commuter parking in APFO requirements. Also, the City and County should consider establishing a mechanism to accept developer contributions for public transportation improvements, in order to supplement other government or private funding sources.

- TSAC recommends that the City and County transportation planning and development review staff review site development plans for transit accessibility.

- TSAC recommends TransIT staff meet with City and County development review planners and the development community to support the use of this document as a reference tool in the preparation and review of development plans until these guidelines have been incorporated into development policy.

CONCLUSION

Continued growth and development will bring challenges to Frederick County that can be addressed through a shift in focus from automobile-oriented development to transit-friendly development in the County's urbanized areas and other areas that will be served by public transportation. Transit-friendly design will provide access to a variety of transportation modes and will ensure that community transportation and other public services can be provided in an efficient manner by minimizing travel times and miles.

Transit-friendly design embraces the concepts of "smart growth" and traditional neighborhood design. TFD benefits the entire community through fundamental elements of design that can be included in existing development regulations and adopted as development policy. Implementation of TFD through revision of existing development policy is an innovative and pro-active measure that can be used to overcome the challenges presented by growth and development and to improve the quality of life for all citizens of Frederick County.

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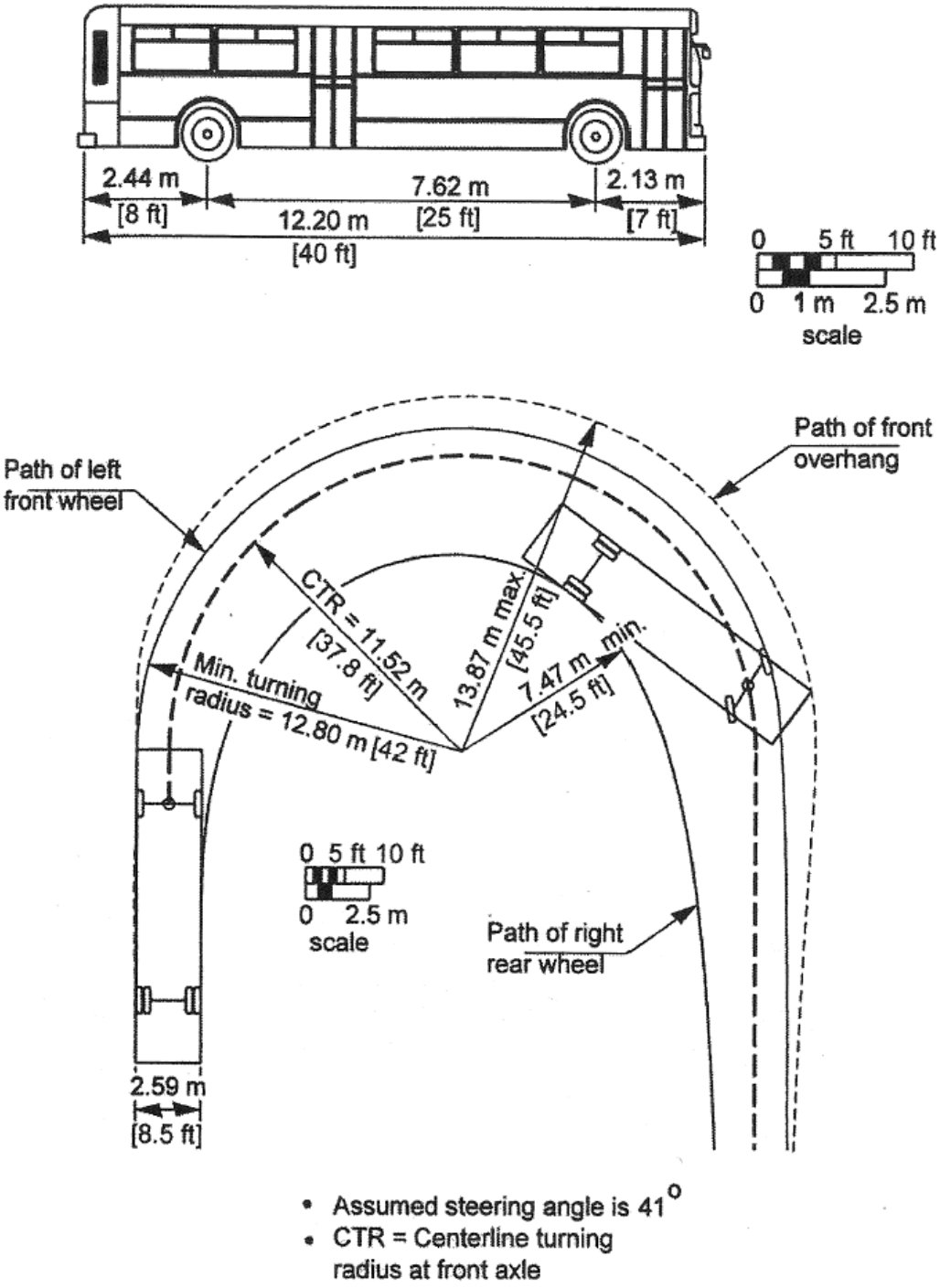
APPENDIX A – Transit Accessibility Checklist

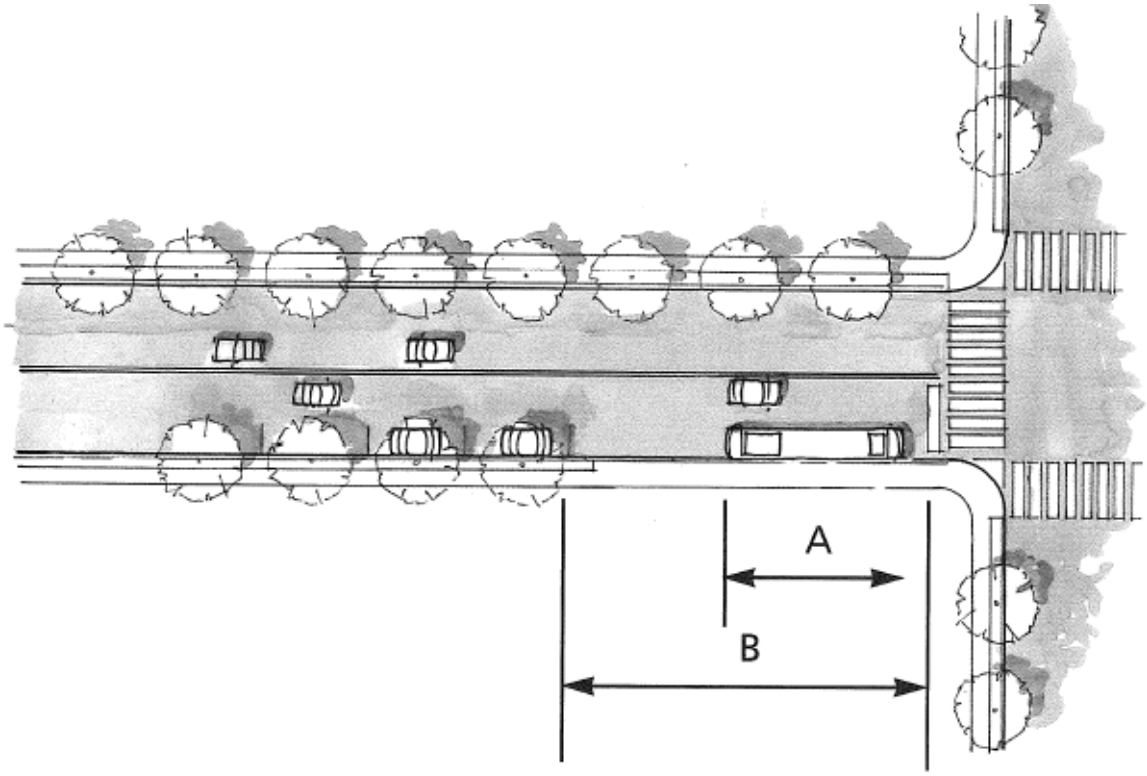
1. Is the proposed development located within the current or planned transit service area?	Yes	No
2. Is the proposed development expected to generate enough ridership activity to warrant transit service?	Yes	No
3. Is the development designed so that efficient transit service can be provided (for example, buildings are oriented toward the street with parking areas located to the side and/or rear)?	Yes	No
4. Is the development located on or accessible to a major roadway?	Yes	No
5. If the proposed development is located on a major roadway, would a bus turnout be appropriate?	Yes	No
6. Is a bus pad planned for bus layover points or bus turnout?	Yes	No
7. Are the intersections, entrance radii, and lane widths adequate to accommodate buses?	Yes	No
8. Is the street network inter-connected, providing direct and convenient pedestrian access through the development?	Yes	No
9. Are convenient pedestrian paths proposed between buildings and transit stops?	Yes	No
10. Are the proposed pedestrian paths direct, well lit, wheelchair accessible, and paved?	Yes	No
11. Are there safe, paved, well lit, accessible areas for bus stops?	Yes	No
12. Are the bus stops centrally-located to serve as much of the development as possible?	Yes	No
13. Is the proposed development expected to generate enough ridership activity to warrant a passenger shelter?	Yes	No
14. Does the proposed passenger shelter meet safety and accessibility standards?	Yes	No
15. Does the proposed passenger shelter provide passenger amenities?	Yes	No
16. Have provisions been made to maintain the shelter and the surrounding area?	Yes	No
17. If the development is in a commercial or industrial area, would a commuter parking lot be appropriate?	Yes	No

APPENDIX B – 40’ Bus Turning Template



Source: Maryland Transit Guidelines, MTA

APPENDIX C – Nearside Bus Stop

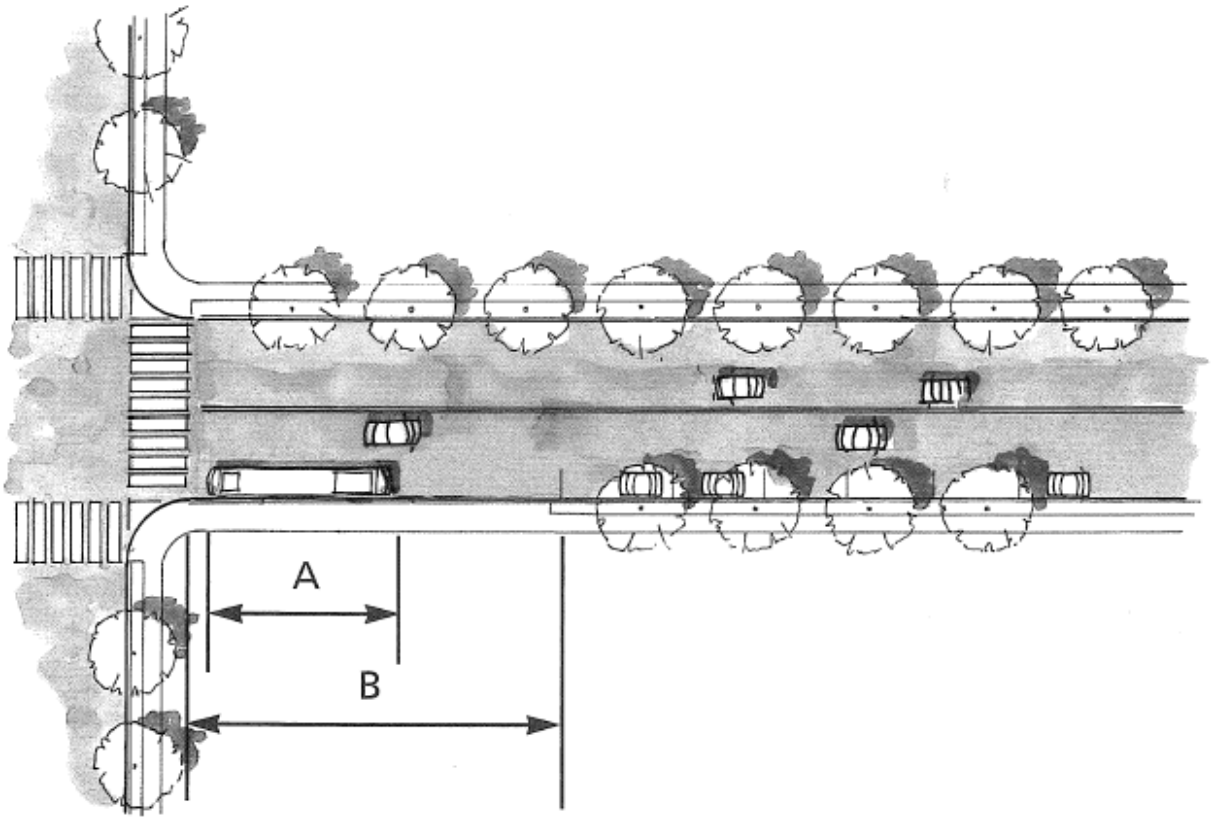


Nearside Bus Stop - Bus Stop Length Recommendations

Posted Speed Limit (mph)	**A** Bus Length (feet)	**B** Total Stop Length (feet)
30 or Less	Less than 30	100
	30 to 45	110
	60	130
Over 30	Less than 30	120
	30 to 45	130
	60	150

Source: Maryland Transit Guidelines

APPENDIX D – Farside Bus Stop

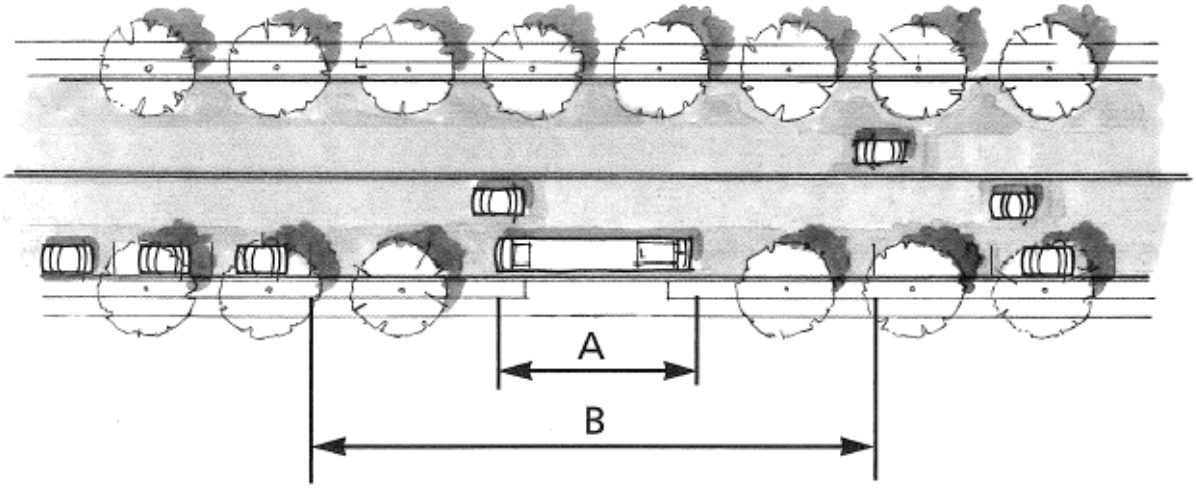


Farside Bus Stop - Bus Stop Length Recommendations

Posted Speed Limit (mph)	**A** Bus Length (feet)	**B** Total Stop Length (feet)
30 or Less	Less than 30	80
	30 to 45	90
	60	110
Over 30	Less than 30	120
	30 to 45	130
	60	150

Source: Maryland Transit Guidelines

APPENDIX E – Midblock Bus Stop

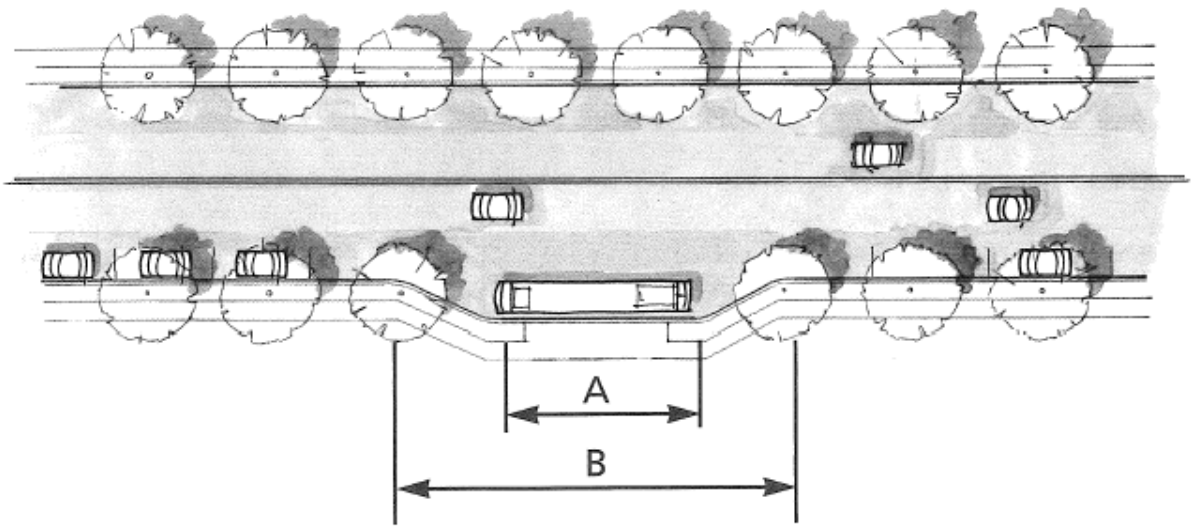


Midblock Bus Stop - Bus Stop Length Recommendations

Posted Speed Limit (mph)	**A** Bus Length (feet)	**B** Total Stop Length (feet)
30 or Less	Less than 30	140
	30 to 45	150
	60	170
Over 30	Less than 30	240
	30 to 45	250
	60	270

Source: Maryland Transit Guidelines

APPENDIX F – Pull-Off Bus Stop



Pull-Off Bus Stop - Bus Stop Length Recommendations

Posted Speed Limit (mph)	**A** Bus Length (feet)	**B** Total Stop Length (feet)
30 or Less	Less than 30	140 (50 + 40 + 50)
	30 to 45	150 (50 + 50 + 50)
	60	170 (50 + 70 + 50)
Over 30	Less than 30	240 (100 + 40 + 100)
	30 to 45	250 (100 + 50 + 100)
	60	270 (100 + 70 + 100)

Source: Maryland Transit Guidelines