MCPB
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Montgomery County Complete Streets Design Guidelines Revised Chapter 2

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RECOMMENDATION

Staff is seeking Planning Board approval on the Chapter 2 revision as discussed in Work Session #3 last fall and attached with this staff report (Attachment A). Staff and the consultant team are currently working on revisions to the entire document to incorporate Planning Board and public testimony received, which is expected to be complete by the end of January. A revised document will be forwarded to Planning Board members once complete. This revised document will then be submitted to the County Executive and County Council in February.

SUMMARY

Staff and the consultant team have incorporated comments received on Chapters 2 and 3 from the Planning Board and public testimony. Organization changes now underway to the entire Complete Streets document include the following:

Chapter 1 – inclusion of human/citizen context and other changes to address comments

Chapter 2 – presentation of guidelines by Street Type (this submission),

Former Chapter 3 – moved to appendix and revised to be consistent with revised Chapter 2

Chapter 3 – Active Zone – Chapter name change and other changes to address comments

Chapter 4 – Street Zone – Changes to address comments

Chapter 5 – Bicycles – Relocation in document and changes to address comments

Chapter 6 – Intersections – Changes to address comments

Chapter 7 – Green Streets – Changes to address comments

Chapter 8 – Speed Management – Changes to address comments

Chapter 9 - Implementation – Changes to address comments

ATTACHMENT

Attachment A: Revised Chapter 2


Calvert

Chapter 2:
Street Types

2.1 Overview

This chapter introduces Montgomery County's new street typology.

» Section 2.1 discusses the county's various land use contexts and explains how street types will be used to identify priorities and inform street design.

» Section 2.2 presents an overview of how the zones are defined.

» Section 2.3 presents the street design parameters to be used for each Street Type.

» Section 2.4 discusses street design in constrained rights of way and how prioritization will be used in this guide.

» Section 2.5 presents each street type and provides design guidelines.

» Section 2.6 discusses special street types also considered within this guidance.

A street typology is a commonly used method of categorizing streets based on their function and character. A Complete Street typology differs from the conventional approach to categorizing streets in two primary ways:

» Complete Street types reflect both the transportation function of a street for all travel modes and the surrounding land uses, to more holistically reflect the many functions of a street (e.g., property access, stormwater management, pedestrian and transit access, goods movement, vehicle throughput, and many others).

» Complete Street types may vary along a single street, changing based on the land use character of the surrounding area. For example, the street type for a road such as Georgia Avenue will change multiple times between the District of Columbia and Howard County based on the changing land use pattern. (See Figure 2-1).

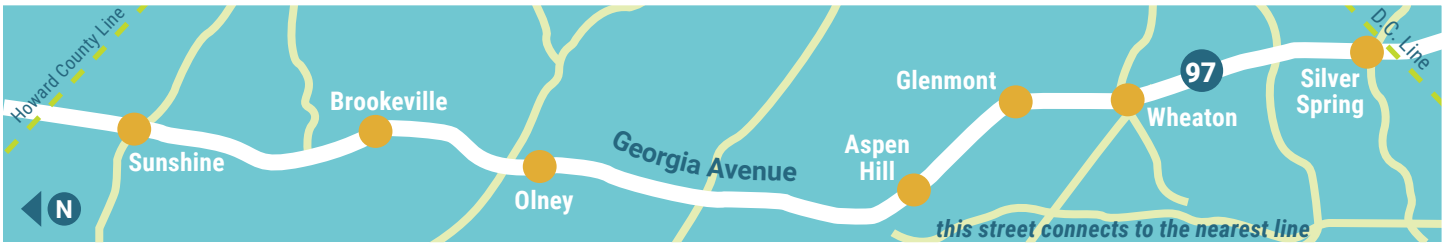

Figure 2-1. While the entirety of Georgia Avenue between Sunshine and Silver Spring is classified as an arterial per the Federal functional classification system, in the Complete Street guide Georgia Avenue will be classified with multiple street types reflecting its changing land use context and mix of users.

The Federal functional classification system promoted by the Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) Green Book[4] establishes a street hierarchy based on automotive mobility and property access. It sorts streets into three primary categories: Arterials, Collectors, and Local Streets. This traditional classification system is built almost exclusively around a vehicular perspective rather than the multimodal objectives of person throughput and goods movement. In Montgomery County, the Federal functional classification will still be used; however, the context-based street types presented in this guide will serve as an overlay and supplement to the Federal functional classifications.

Currently, Montgomery County has a road classification system distinct from FHWA's Highway Classification system. FHWA's system is also used by MDOT SHA. It is the intent after the approval of these guidelines that the existing county road classifications will be replaced with these new Complete Streets classifications as part of a comprehensive update to the Master Plan of Highways and Transitways.[5]

In Montgomery County, the Federal functional classification will still be used; however, the context-based street types presented in this guide will serve as an overlay and supplement to the Federal functional classifications.

4 https://store.transportation.org/item/collectiondetail/180?AspxAutoDetectCookieSupport=1

5 https://montgomeryplanning.org/planning/transportation/highway-planning/master-plan-of-highways-and-transitways/

Land Use Context

In order to develop street types that are context-sensitive, a definition of the area context is first needed based on the master plan vision, land use, and zoning. The following area type definitions have been developed:

Downtowns are envisioned as Montgomery County's highest intensity areas including central business districts and urban centers. They are envisioned to have dense, transit-oriented development and a walkable street grid (existing or planned). These areas are envisioned to share the following characteristics:

- Identified as central business districts
- Major employment centers
- Significant consolidated area of Commercial-Residential and Employment zoning designations
- Very high levels of existing or anticipated pedestrian and bicyclist activity and Non-Auto Driver Mode Share (NADMS) goals
- Very high levels of transit service
- Street grid with high levels of connectivity
- Continuous building frontage along streets, with minimal curb cuts
- Mostly below ground or structured parking

Figure 2-2. Grand Park Avenue in North Bethesda

Town Centers are similar to Downtowns but generally feature less intense development and cover a smaller geographic area. While the Town Center area type includes a mixture of uses, it is commonly envisioned as high-to-moderate intensity residential development, including multifamily buildings and townhouses, and retail (existing or planned). These areas are envisioned to generally share the following characteristics:

- Identified as a regional or neighborhood-serving retail nodes with housing and other uses
- Zoning includes Commercial Residential, Commercial Residential Town, Commercial Residential Neighborhood, Residential Multi-Unit and lower intensity Employment zoning designations[6]
- Medium to high levels of pedestrian and bicyclist activity and NADMS goals
- Medium levels of existing or planned transit service
- A street grid that ties into the surrounding streets
- Continuous building frontage along streets, with some curb cuts
- A mixture of structured and underground parking as well as surface lots

The Suburban area type is envisioned as low-to-moderate intensity residential development. These areas are envisioned to generally share the following characteristics:

- Consolidated area of single-unit residential development
- Zoning includes Residential detached, Residential Multi-Unit and Residential-Townhouse designations[6]
- May include isolated retail establishments
- Medium to low levels of pedestrian and bicyclist activity
- Medium to low levels of transit service, except along transit corridors
- A low-intensity grid network or a pattern of cul-de-sacs
- Buildings front the streets but may be set back, curb cuts may exist to access individual addresses
- Structured parking is encouraged, but mostly surface parked

Figure 2-3. Century Boulevard in Germantown

Figure 2-4. MD Route 355 near Cider Mill

The Industrial area type is a unique area where employment and industrial uses are the primary activities. These areas often have higher densities of development but maintain lower to moderate levels of bicycle and pedestrian activity. The Industrial area type has the following characteristics:

- Medium intensity development, primarily focused around warehousing, light manufacturing, trucking, and equipment repair
- Small amounts of residential and retail may be allowed, but is not the norm
- Zoning includes Industrial designations zones[6]
- Low to moderate levels of pedestrian and bicycle activity
- Moderate levels of transit service
- Traditionally wider streets that accommodate high levels of truck traffic
- Many existing curb-cuts along the street edge

» **The Country area** type comprises the least dense portions of the county, with land uses of low intensity residential and agriculture. The Country area shares many of the following characteristics:

- Low intensity large-lot single family dwellings, forests, or agricultural uses
- Uses may also infrequently include institutional uses or small-scale commercial uses
- Little to no availability of public water or sewer infrastructure
- Zoning includes various residential, rural residential and residential detached zones[6]
- Low levels of pedestrian and bicycle activity
- Low levels of transit service
- Little or no grid pattern to streets, rather the development pattern is concentrated along existing roadways or short cul-de-sacs
- Many buildings have little to no direct relationship to the street frontage

Figure 2-5. Gaither Road near Gaithersburg

Figure 2-6. Barnesville Road in Boyds

6 https://montgomeryplanning.org/development/zoning/

How Street Types are Used to Inform Street Design

The street types presented here were developed to help guide future street construction and reconstruction projects based on the planned vision for the roadway. They are intended to help guide *future* street designs and roadway projects. These street types will ultimately be applied to streets in the county through master plans, including an update to the Master Plan of Highways and Transitways[5] and area master plans.[7] When a road is resurfaced or reconstructed, or when new roads are built, the street type designation will inform design characteristics including design speed, lane widths, protected crossing spacing, appropriate bikeway types, and more. A Complete Streets approach does not require that transit and/or bicycling are prioritized on every street. Specific accommodations for these modes will be determined in the county's master plans; however, a Complete Streets approach will result in a transportation network that is safe and convenient for all users, regardless of mode. Subsequent chapters of this guide offer additional guidance on how different elements of the public realm such as roadways, sidewalks, intersections, and curbside uses should function on each street type.

Implementation of the Complete Streets Design Guide will require a comprehensive update to the Master Plan of Highways and Transitways (MPOHT). All roads now in the MPOHT would need to be re-evaluated using the new Street Types presented in the Complete Streets Design Guide. Proposed re-classifications would be recommended and presented to the public and the Planning Board though a detailed public involvement process. This guide alone will not initiate changes to existing right of way widths. Finalized recommendations would then undergo County Council review and approval. Once approved and adopted, county agencies, including the Montgomery County Planning Department, would modify existing review and design policy and standards using the Complete Streets Design Guide.

Other county documents, including County Code Chapter 49 and Chapter 50, the Zoning Code, and others will need to be revised to comply with this guidance.

Montgomery County's Street Types

- Downtown Boulevards
- Downtown Street
- Boulevards
- Town Center Boulevards
- Town Center Streets
- Neighborhood Connectors
- Neighborhood Streets
- Neighborhood Yield Streets
- Industrial Streets
- Country Connectors
- Country Roads
- Major Highways

Special Street Types

In addition to the primary street types listed above, this guide also addresses a few additional street types that occur less frequently under special circumstances:

- Alleys
- Rustic Roads / Exceptional Rustic Roads
- Shared Streets

7 https://montgomeryplanning.org/planning/master-plan-list/

2.2 Zones Defined

For all zones defined, it is critical to understand some basic definitions, as they will be used in this and later chapters in this document. As shown in Figure 2-7, the street Right of Way will be composed of two zones, the Street Zone and the Active Zone.

The **Street Zone** contains all uses that are typically between the curbs or edges of pavement, including travel lanes, transitway lanes, a median, on-street parking, and on-street bike lanes. More descriptions of each of the sub-zones and allowable standards are provided in Chapter 3: Street Zone.

The **Active Zone** is so-named as it contains all active transportation uses (pedestrians and usually bicyclists) and includes a maintenance buffer, a frontage zone, sidewalks or sidepaths, separated bike lanes, and several types of buffers. More descriptions of each of the sub-zones and allowable standards are provided in Chapter 4: Active Zone.

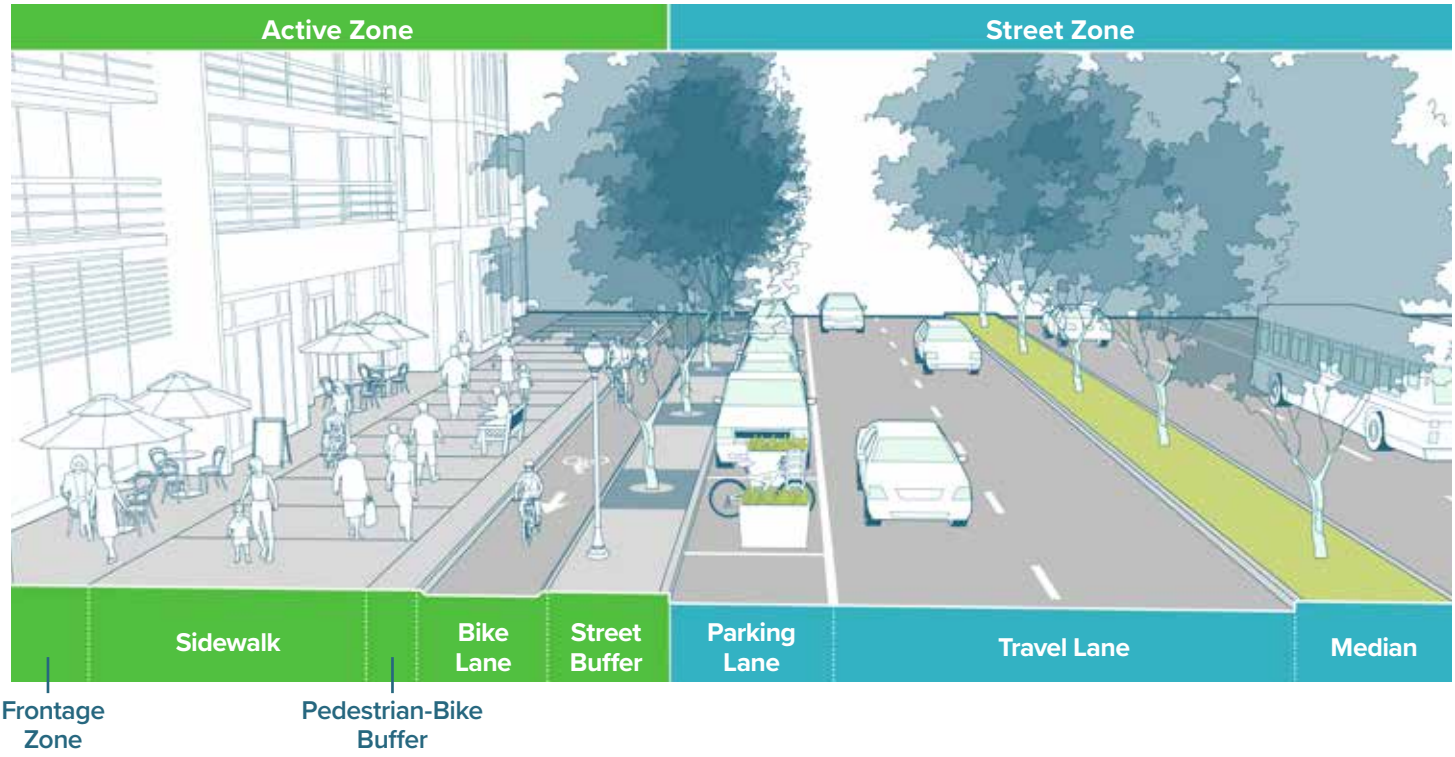

Figure 2-7. Zones Defined

Vehicular travel always occurs in the Street Zone and pedestrian travel almost always takes place in the Active Zone (except at crossings and on Shared Streets, as described later in this Chapter). However, bicycles may be located in either the Street Zone or the Active Zone as shown in the following examples:

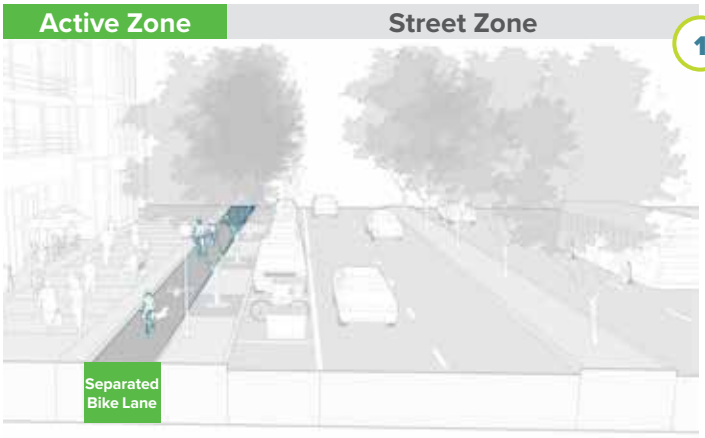

Figure 2-8. Separated Bike Lane

1 **Separated bike lanes** are in the Active Zone, separated from the sidewalk (pedestrian space) by a Pedestrian-Bike Buffer and from the Street Zone by a Street Buffer.

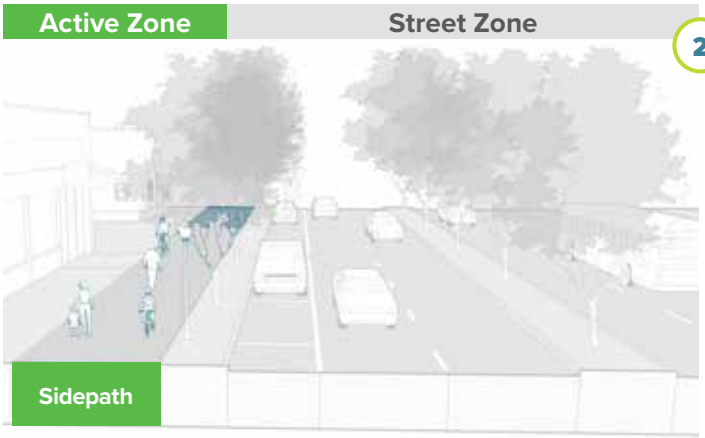

Figure 2-9. Sidepath

2 **Sidepaths** (which are shared by people bicycling and walking) are in the Active Zone, separated from the adjoining land uses by a Maintenance Buffer and from the Street Zone by a Street Buffer.

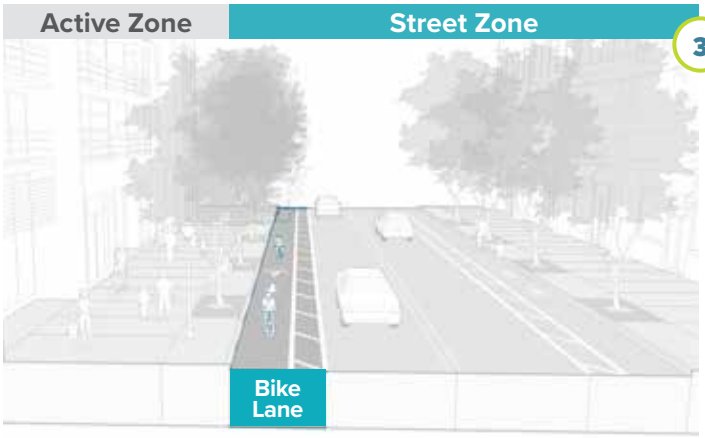

Figure 2-10. On-Street Bike Lane

3 **On-Street bike lanes or bikeable shoulders** are in the Street Zone, located adjacent to travel lanes or, in some instances, between on-street parking and the curb. The bike lanes can be buffered, conventional, or advisory bike lanes.

More descriptions on the design of bikeways are provided in Chapter 5: Bikeways.

2.3 Street Design Parameters

Figure 2-11 is meant as a quick reference for the design guidance that is explained throughout the rest of this guide. This guidance provides a starting point for design decisions on new roads that, when used alongside functional and area master plans, gives designers guidance on the key elements of street design that are essential to delivering safe Complete Streets. If guidance in this document conflicts with approved streetscape standards and/or design guidance: contact the M-NCPPC or MCDOT for clarification. Master planned right of way is determined by the Master Plan of Highways and Transitways[8] and is the minimum width required, not including additional needs such as those at intersections or in the vicinity of transit stations.

» All roads should meet AASHTO standards, recognizing that AASHTO allows for flexibility; see FHWA Achieving Multimodal Networks[9] and NACTO Street Design Guides[10].

» Reference the Montgomery County Fire Code[11] and Montgomery County Fire and Emergency Access Performance-Based Design Guidance[12] for details on required clear widths.

» Targets for speeds, maximum spacing for protected pedestrian crossings, minimum spacing for signalized intersections, and other items in this document are instructive for new developments and can provide a guide for stand-alone Capital Improvements Projects that retrofit existing or create new infrastructure.

» All figures are provided as a starting point for discussion. If more than 8 percent of vehicles are large trucks or other heavy vehicles, or if other special local circumstances apply, different dimensions may be appropriate. Consult with MCDOT.

» Master Plans and approved streetscape guidelines may supersede this document.

Note: For intersection guidance presented in this document, if the intersecting streets are different street types (e.g., at the intersection of a Boulevard and a Town Center Boulevard), use the guidance for the street type with the higher design speed.

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8 https://montgomeryplanning.org/planning/transportation/highway-planning/master-plan-of-highways-and-transitways/

9 https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/

10 https://nacto.org/publication/urban-street-design-guide/

11 https://www.montgomerycountymd.gov/DPS/Codes/FPCC-Codes-Index.html

12 https://montgomeryplanning.org/planning/functional-planning/fire-department-access-performance-based-design-guide/

Figure 2-11. Design Elements for Street Types

Item	Note
Target Speed (MPH)	Target Speeds are the desired operating speed for a roadway facility. These speeds are based on safe operations, and are tailored to the functionality and context of the roadway. Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles are considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of "urban districts" as defined in the law.[13]
Maximum # of Vehicle Through Lanes	This provides guidance primarily for the development of master plans or for non-master planned roads in considering their number of travel lanes.
Maximum Spacing for Protected Crossings	These target distances are intended to ensure that protected pedestrian crossings are located at reasonable intervals.
Generally Accepted Minimum Spacing for Signalized Intersections	These target distances are intended to maintain operations at a level that promotes safe movement by all travel modes.
Center Median	Located at the center of the roadway and often landscaped, these may include left-turn lanes within them or may be replaced by Dedicated Transitways.
Dedicated Transitway	The presence of a Dedicated Transitway is determined in the Master Plan of Highways and Transitways.
Left Turn Lane	These are vehicular travel lanes used specifically to turn left, and may be co-located within the Center Median.
2-Way Left Turn Lane	These lanes allow both directions of traffic to use the same lane for left-turns.
Inside Travel Lane	These are the travel lanes that are not along the outside curb or edge of pavement.
Outside Travel Lane	In general: this is the rightmost vehicular travel lane in each direction. These include the lane along the outside curb, edge of pavement, or alongside outside parking lanes or on-street bikeways.
Parking Lane	Parking Lanes are used for on-street parking.
Shoulder	Shoulders provide a buffer from the edge of the road, and may also serve to provide bicycle accommodations as well as parking.
Street Buffer	The Street Buffer is the space that separates the Street Zone from the Bikeway (if provided) or Sidewalk / Sidepath. It will often include things like landscaping, utility poles, benches, and parking meters.
Bikeway	The default bikeway types for each street type apply to streets without master planned bikeways. For corridors designated as Breezeways, see additional guidance in the Bicycle Master Plan.
Pedestrian-Bike (a.k.a. Ped/Bike) Buffer	When the Bikeway consists of separated bike lanes, the Ped/Bike Buffer provides horizontal separation between the Bikeway and the Sidewalk. The buffer is not required on all streets and could be a design feature such as a row of bricks, small plantings, or a row of trees.
Sidewalk / Sidepath	The Sidewalk and Sidepath are areas where pedestrians are generally going to be traveling, and Sidepaths are specifically designed to also enable bicycle use. This element is intended to be free of obstructions and promote ease of navigation.
Frontage Zone	Frontage Zones promote the interaction of adjacent land uses (such as buildings) with the Sidewalk / Sidepath. They are not required on all streets.
Maintenance Buffer Zone	Maintenance Buffers allow for the upkeep of the public right-of-way, particularly adjacent Sidewalks / Sidepaths.

13 https://law.justia.com/codes/maryland/2018/transportation/title-21/subtitle-8/section-21-803/

2.4 Street Design in Constrained Rights of Way

In places with constrained rights of way, it is not always feasible to include every desired design element or preferred width in the street cross section. The most common examples of constrained rights of way are historic districts, environmental areas (special protection areas, steep slopes, critical habitat, wetland, floodplain), bridges, other major structures, or constraints established by master plans. In areas like these, some cross section elements may be eliminated, and some may be reduced to minimum dimensions. While there may be trade-offs between different design elements or travel modes, the street design should always encourage active transportation options such as bicycling and walking.

Guidance is provided in this document (by street type) on whether specific street design features are desired or appropriate. The letters in the table designate street design elements as High (H), Medium (M), or Low (L) priority. Designations are relative to other street elements (i.e., a low priority does not mean the element is not important to include when feasible).

The guidance on priorities is intended as a starting point for conversations between roadway designers and the community as part of individual corridor or street design efforts. Ultimate dimensions are context-specific and will be finalized through a case-by-case review and design process.

Design guidance presented in master plans for specific streets may supersede the information presented here. Elements may potentially be completely eliminated if not defined as required by the guidance in subsequent sections or by master plans, with any such eliminations being similarly considered based on each element's priority.

2.5 Montgomery County Street Types

This section contains detailed information on street design parameters and guidance for each street type. The content describes the ***future*** conditions that are envisioned for each street type in Montgomery County.

The following information is provided for each street type:

1. A street type description and highlight of key distinguishing characteristics.
2. A cross-section graphic showing an example of a typical section. The graphics present desired, future conditions and planned land uses from master plans, not present-day conditions. Not all allowable street elements are shown.
3. Corridor examples within Montgomery County of where this new street type is likely to occur.
4. Detailed figures providing design guidance for corridor design parameters, cross section design parameters, and street design features.

The street types and associated design guidance presented in this section will inform future design decisions made as part of capital projects, redevelopment, and resurfacing.

A. Downtown Boulevards

These are Montgomery County's highest intensity streets – with a bustling mix of vehicle traffic, dense development, walking, bicycling, and transit. Downtown Boulevards are located in central business districts and urban centers. Buildings are located close to the street and offer a blend of places to live, work, shop, and visit. Because Downtown Boulevards carry significant vehicle traffic that operates in potential conflict with high numbers of pedestrians and bicyclists, reducing vehicle speeds is essential to safety. Downtown Boulevards are typically located in areas that have specific design requirements for finishes, materials, furnishings, and lighting. Achieving slower speeds will also require a transition area or zone that extends into adjacent Boulevards.

Key Features:

- **Development intensity**: High-intensity, mixed-use development
- **Pedestrian and bicycle activity**: High
- **Vehicle activity**: High
- **Transit service**: Frequent
- **On-street parking**: Provided in some locations, where feasible
- **Other key features**: Street furniture, street trees, wayfinding, and other streetscape features

FZ Frontage Zone
SW Sidewalk
PB Pedestrian-Bike Buffer
BL Bike Lane
SB Street Buffer
TV Travel Lane
TL Transit Lane
TB Transit Buffer

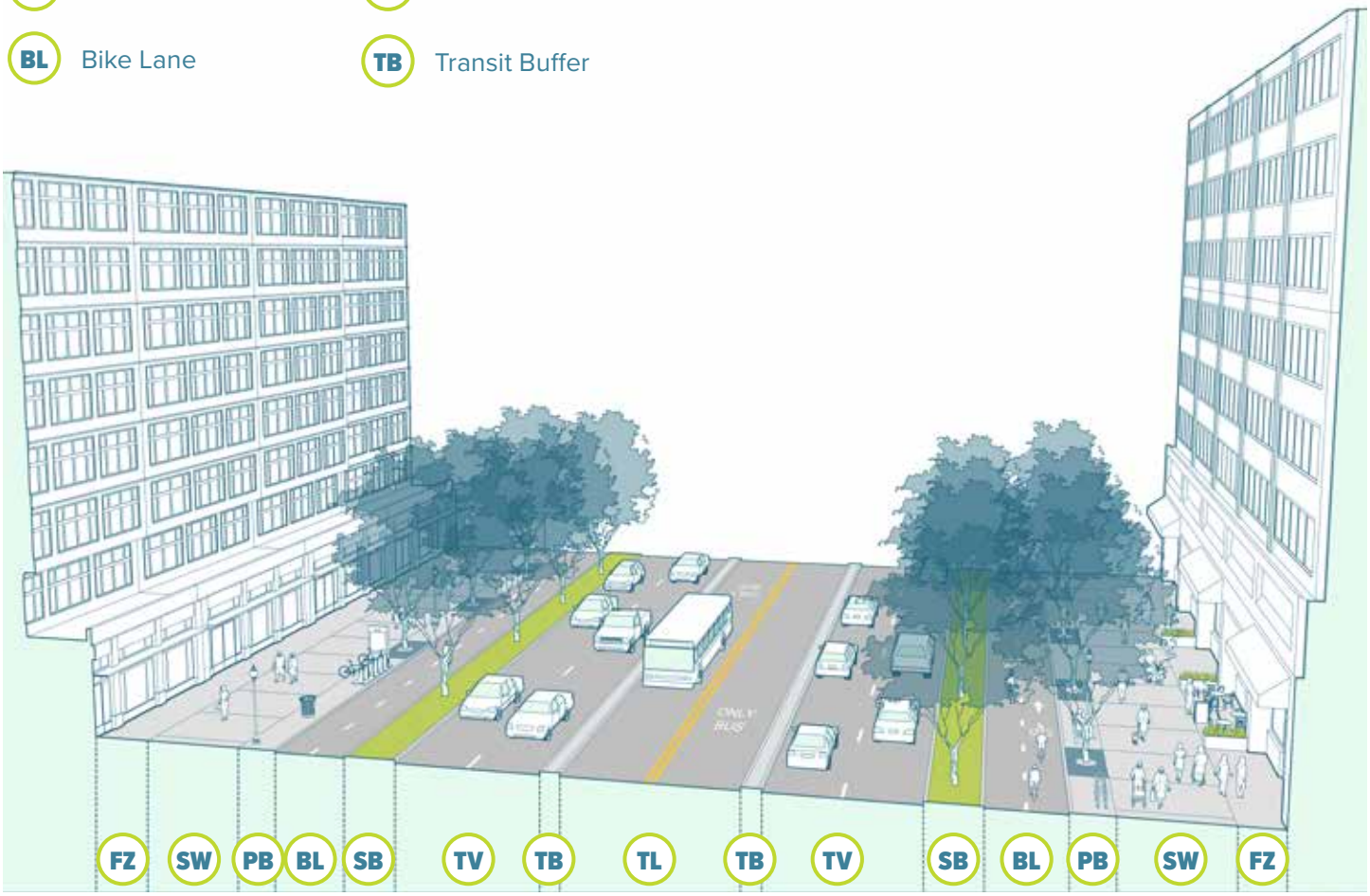

Figure 2-12. DowntownBoulevard

Downtown Boulevard Examples

Figure 2-13. Georgia Avenue (MD Route 97) in Downtown Wheaton

Figure 2-14. Rockville Pike (MD Route 355) near White Flint

Figure 2-15. Wisconsin Avenue in Downtown Bethesda

Downtown Boulevards – Street Design Parameters and Priorities

Below, Figure 2-16 presents a summary of Corridor Design Parameters to be used for Downtown Boulevards. Figure 2-17 presents a summary of Cross Section Design Parameters to be used for Downtown Boulevards. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-16. Corridor Design Parameters for Downtown Boulevards

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	25 mph	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of "urban districts" as defined in the law.	207
Maximum # of Vehicle Through Lanes	6 lanes	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	400'	Site-specific needs and conditions will dictate actual implementation.	148
Generally Accepted Minimum Spacing for Signalized Intersections	400'	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-17. Cross Section Design Parameters and Prioritization for Downtown Boulevards

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Recommended 6'-16'	M	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. If the street is planned for a median transitway: transit lane dimensions supersede. Consult MCDOT for detailed info.	107
Dedicated Transitway	Transitway lanes: 13' default, 12' min Transitway buffer: 6' default, 2' min	M	The presence of a dedicated transitway is determined in the Master Plan of Highways and Transitways. If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations, intersections & other crossing points, and along horizontal curves.	106
Left-Turn Lane	10' default, 9' min	M	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	103
Inside Travel Lane	10'	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-17 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	11’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	L	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	8’ default, 6’ min	H	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street-level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Two-way SBL on both sides of street. Each SBL: 11’ default, 8’ min	H	SBL = Separated Bike Lane. Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidewalk	15’ default, 10’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	10’ default, 0’ min	M	Some or all of the frontage zone may occur on private property.	75
Maintenance Buffer	0’	N/A	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line, a maintenance buffer is required even if this table shows a dimension of 0’.	63

Downtown Boulevards – Street Design Features

Figure 2-18 provides a summary of Downtown Boulevard street design features in four different categories and identifies what features are required, recommended, optional, and not permitted. The only design feature specifically not permitted for Downtown Boulevard are traffic diverters.

Figure 2-18. Street Design Features for Downtown Boulevards

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		■	166
	Green Infrastructure/Rain Gardens		■	171
	Seating		■	67
	Bicycle Parking		■	68
	Recycling/Trash Receptacles		▲	73
	Plazas/Parklets		▲	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		■	69
	Pedestrian-Scale Lighting		■	86
	Pedestrian/Bicycle Wayfinding		▲	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		▲	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		▲	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		O	212
	Speed Tables/Raised Crosswalks		O	213
	Raised Intersections		O	213
	Curb Extensions/Bulb Outs		▲	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		▲	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		■	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		■	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		▲	100
	Accessible Parking		▲	97
	Carshare Parking		▲	101
	E/V Charging Stations		▲	98

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B. Downtown Streets

Downtown Streets are also found in bustling, mixed-use and commercial areas; however, the building heights tend to be lower than on Downtown Boulevards. Downtown Streets are often the side streets in busy commercial areas that connect to Downtown Boulevards. Because of the density of shops and other destinations located on these streets, pedestrian and bicycle volumes are high. Buildings are oriented close to the street, and on-street parking is currently common. Downtown Streets are typically located in areas that have specific design requirements for finishes, materials, furnishings and lighting.

- **FZ** Frontage Zone
- **SW** Sidewalk
- **PB** Pedestrian-Bike Buffer
- **BL** Bike Lane
- **SB** Street Buffer
- **P** Parking Lane
- **TV** Travel Lane

Key Features:

- **Development intensity**: Moderate- or high-intensity, mixed-use development
- **Pedestrian and bicycle activity**: High
- **Vehicle activity**: Moderate
- **Transit service**: Moderate or frequent
- **On-street parking:** Provided on some block faces
- **Other key features**: Loading zones for deliveries, street trees, street furniture, wayfinding, and other streetscape features

Figure 2-19. Downtown Street

Downtown Street Examples

Figure 2-20. Fenton Street in Downtown Silver Spring

Figure 2-21. Nicholson Lane in White Flint

Figure 2-22. Grandview Avenue in Downtown Wheaton

Downtown Streets – Street Design Parameters and Priorities

Below, Figure 2-23 presents a summary of Corridor Design Parameters to be used for Downtown Streets. Figure 2-24 presents a summary of Cross Section Design Parameters to be used for Downtown Streets. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-23. Corridor Design Parameters for Downtown Streets

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	20 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of "urban districts" as defined in the law.	207
Maximum # of Vehicle Through Lanes	4	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	400'	Site-specific needs and conditions will dictate actual implementation.	148
Generally Accepted Minimum Spacing for Signalized Intersections	400'	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-24. Cross Section Design Features for Downtown Streets

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Optional 6'-10'	L	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. If the street is planned for a median transitway: transit lane dimensions supersede. Consult MCDOT for detailed info.	107
Dedicated Transitway	Transitway lanes: 13' default, 12' min Transitway buffer: 6' default, 2' min	M	The presence of a dedicated transitway is determined in the Master Plan of Highways and Transitways. If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations, intersections & other crossing points, and along horizontal curves.	106
Left-Turn Lane	10' default, 9' min	M	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	10'	N/A	Only appropriate under limited circumstances.	103
Inside Travel Lane	10'	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-24 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	10.5’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	M	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	6’ (11’ if shared w/ street parking)	H	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	One-way SBL: 6.5’ default, 5’ min	H	SBL = Separated Bike Lane. Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidewalk	10’ default, 8’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	10’ default, 0’ min	M	Some or all of the frontage zone may occur on private property.	75
Maintenance Buffer	0’	N/A	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line, a maintenance buffer is required even if this table shows a dimension of 0’.	63

Downtown Streets – Prioritizing Street Design Features

Figure 2-25 provides a summary of Downtown Street design features in four different categories and identifies what features are required, recommended, optional, and not permitted. The only design feature specifically not permitted for Downtown Streets are traffic diverters.

Figure 2-25. Street Design Features for Downtown Streets

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		■	166
	Green Infrastructure/Rain Gardens		■	171
	Seating		■	67
	Bicycle Parking		■	68
	Recycling/Trash Receptacles		▲	73
	Plazas/Parklets		▲	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		■	69
	Pedestrian-Scale Lighting		■	86
	Pedestrian/Bicycle Wayfinding		▲	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		▲	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		▲	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		O	212
	Speed Tables/Raised Crosswalks		▲	213
	Raised Intersections		▲	213
	Curb Extensions/Bulb Outs		▲	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		■	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		■	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		▲	100
	Accessible Parking		▲	97
	Carshare Parking		▲	101
	E/V Charging Stations		▲	98

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C. Boulevards

Boulevards are critical roadways that typically connect employment and entertainment centers, civic, commercial, and institutional land uses and may also provide cross-county and regional connections. Some buildings are positioned close to the street, while others are set back. These streets are currently dominated by motor vehicle traffic and have less pedestrian and bicycle activity compared to Downtown Streets and Downtown Boulevards; however, much of the walking on these streets is to access frequent transit service. Street design for Boulevards emphasizes safety for pedestrians and bicyclists by managing vehicle speeds, improving access management, and providing comfortable and continuous sidewalks and bikeways, frequent opportunities for pedestrians and bicyclists to safely cross the street, and separation from high speeds and volumes of traffic.

Key Features:

- **Development intensity**: Moderate to low-intensity mixed-use, retail, or residential development
- **Pedestrian and bicycle activity**: Moderate
- **Vehicle activity**: Moderate to high volume of personal vehicles
- **Transit service**: Frequent
- **On-street parking**: Uncommon, though provided in some instances
- **Other key features**: Infrequent driveways, street trees

MB Maintenance Buffer
SP Sidepath
SB Street Buffer
TV Travel Lane
TB Transit Buffer
TL Transit Lane
FZ Frontage Zone

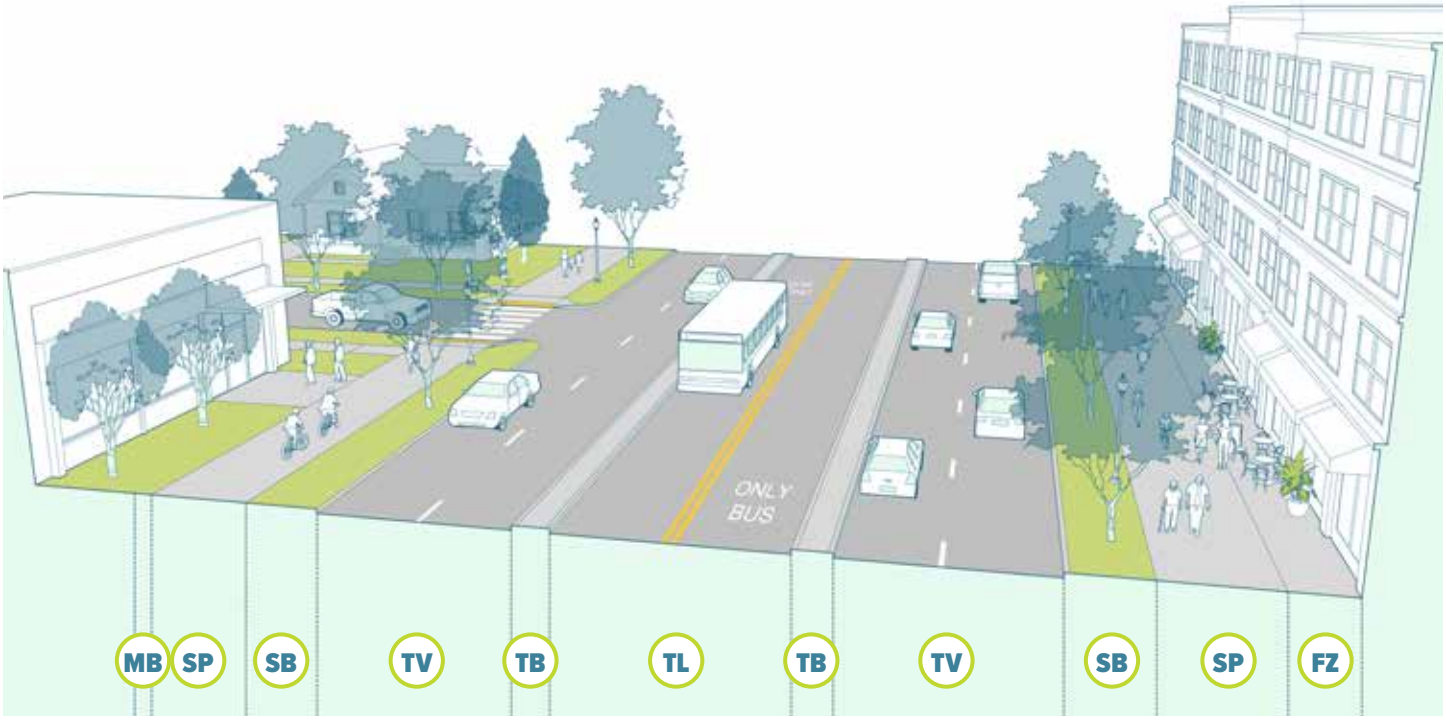

Figure 2-26. Boulevard

Boulevard Examples

Figure 2-27. Observation Drive between Germantown Road and Woodcutter Drive

Figure 2-28. East-West Highway (MD Route 410) between Montgomery Avenue and Rosemary Hills Drive

Figure 2-29. Randolph Road between Colie Drive and Georgia Avenue

Boulevards – Street Design Parameters and Priorities

Figure 2-30 presents a summary of Corridor Design Parameters to be used for Boulevards. Figure 2-31 presents a summary of Cross Section Design Parameters to be used for Boulevards. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-30. Corridor Design Parameters for Boulevards

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	35 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of “urban districts” as defined in the law.	207
Maximum # of Vehicle Through Lanes	6	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	800’-1600’	Site-specific needs and conditions will dictate actual implementation. On streets with operating speeds of 30 mph or more, “protected” crossings include: Traffic/ pedestrian signal or HAWK, all-way stop control, or grade-separated crossing.	148
Generally Accepted Minimum Spacing for Signalized Intersections	1300’	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	p148

Figure 2-31. Cross Section Design Parameters for Boulevards

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Recommended 6’-16’	M	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. If the street is planned for a median transitway: transit lane dimensions supersede. Consult MCDOT for detailed info.	107
Dedicated Transitway	Transitway lanes: 13’ default, 12’ min Transitway buffer: 6’ default, 2’ min	M	The presence of a dedicated transitway is determined in the Master Plan of Highways and Transitways. If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations, intersections & other crossing points, and along horizontal curves.	106
Left-Turn Lane	10’	N/A	Dimensions only apply if a left turn lane is provided.	103
2-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	103
Inside Travel Lane	10’	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-31 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	11’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	L	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	8’ default, 6’ min Open Section: 15’ default, 9’ min (see p84)	H	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Sidepaths on both side of the street: 11’ default, 8’ min	H	SBL = Separated Bike Lane. Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidepath	11’ default, 8’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	7’ default, 0’ min	L	Some or all of the frontage zone may occur on private property.	75
Maintenance Buffer	2’	L	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line, a maintenance buffer is required even if this table shows a dimension of 0’.	63

Boulevards – Prioritizing Street Design Features

Figure 2-32 provides a summary of Boulevard design features in four different categories and identifies what features are required, recommended, optional, and not permitted. The design features specifically not permitted for Boulevards are speed humps/cushions, speed tables/raised crosswalks, raised intersections, and traffic diverters.

Figure 2-32. Street Design Features for for Boulevards

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		■	166
	Green Infrastructure/Rain Gardens		■	171
	Seating		O	67
	Bicycle Parking		O	68
	Recycling/Trash Receptacles		O	73
	Plazas/Parklets		O	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		O	69
	Pedestrian-Scale Lighting		■	86
	Pedestrian/Bicycle Wayfinding		▲	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		▲	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		▲	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		x	212
	Speed Tables/Raised Crosswalks		x	213
	Raised Intersections		x	213
	Curb Extensions/Bulb Outs		▲	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		■	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		O	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		O	100
	Accessible Parking		O	97
	Carshare Parking		O	101
	E/V Charging Stations		O	98

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D. Town Center Boulevards

Town Center Boulevards are located in smaller activity centers. Whereas Downtown Boulevards are compact places with continuous building frontages along the street, Town Center Boulevards are more likely to have some buildings close and others set back from the street behind lawns or planted areas. Development density will be more varied, ranging from high- to medium-intensity. Town Center Boulevards will typically transition to Boulevards on both ends, and may occur when a Boulevard enters a Bicycle and Pedestrian Priority Area (BiPPA). For this reason, street design should include elements that slow vehicle traffic, facilitate safe crossings and transit access for pedestrians, and provide visual cues to drivers that more pedestrian and bicyclists may be present. Achieving slower speeds will also require a transition period that extends into Boulevards.

Key Features:

- **Development intensity**: Moderate- to high-intensity, mixed-use or multifamily residential development
- **Pedestrian and bicycle activity**: High to moderate
- **Vehicle activity**: Moderate to high volumes of personal vehicles
- **Transit service**: Frequent
- **On-street parking:** Varies/ provided in some instances
- **Other key features**: Moderate frequency of driveways, street trees

FZ Frontage Zone
SW Sidewalk
PB Pedestrian-Bike Buffer
BL Bike Lane
P Parking Lane
TV Travel Lane
M Median
SB Street Buffer

Figure 2-33. Town Center Boulevard

Town Center Boulevard Examples

Figure 2-34. Connecticut Avenue in Aspen Hill

Figure 2-35. Veirs Mill Road (MD Route 586) between Havard Street and Connecticut Avenue

Figure 2-36. River Road in Westbard

Town Center Boulevards – Street Design Parameters and Priorities

Figure 2-37 presents a summary of Corridor Design Parameters to be used for Town Center Boulevards. Figure 2-38 presents a summary of Cross Section Design Parameters to be used for Town Center Boulevards. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-37. Corridor Design Parameters for Town Center Boulevards

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	30 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of "urban districts" as defined in the law.	207
Maximum # of Vehicle Through Lanes	6	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	600'	Site-specific needs and conditions will dictate actual implementation. On streets with operating speeds of 30 mph or more, "protected" crossings include: Traffic/ pedestrian signal or HAWK, all-way stop control, or grade-separated crossing.	148
Generally Accepted Minimum Spacing for Signalized Intersections	600'	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-38. Cross Section Design Features and Prioritization for Town Center Boulevards

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Recommended 6'-16'	M	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. If the street is planned for a median transitway: transit lane dimensions supersede. Consult MCDOT for detailed info.	107
Dedicated Transitway	Transitway lanes: 13' default, 12' min Transitway buffer: 6' default, 2' min	M	The presence of a dedicated transitway is determined in the Master Plan of Highways and Transitways. If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations, intersections & other crossing points, and along horizontal curves.	106
Left-Turn Lane	10'	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	103
Inside Travel Lane	10'	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-38 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	11’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	M	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	8’ default, 6’ min	H	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Two-way SBL on both sides of street. Each SBL: 11’ default, 8’ min	H	SBL = Separated Bike Lane. Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidewalk / Sidepath	10’ default, 8’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	7’ default, 0’ min	M	Some or all of the frontage zone may occur on private property.	75
Maintenance Buffer	0’	N/A	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line, a maintenance buffer is required even if this table shows a dimension of 0’.	63

Town Center Boulevards – Prioritizing Street Design Features

Figure 2-39 provides a summary of Town Center Boulevard design features in four different categories and identifies what features are required, recommended, optional, and not permitted. The only design feature specifically not permitted for Town Center Boulevard are traffic diverters.

Figure 2-39. Street Design Features for Town Center Boulevards

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		■	166
	Green Infrastructure/Rain Gardens		■	171
	Seating		■	67
	Bicycle Parking		■	68
	Recycling/Trash Receptacles		▲	73
	Plazas/Parklets		O	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		▲	69
	Pedestrian-Scale Lighting		■	86
	Pedestrian/Bicycle Wayfinding		▲	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		▲	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		▲	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		O	212
	Speed Tables/Raised Crosswalks		O	213
	Raised Intersections		O	213
	Curb Extensions/Bulb Outs		▲	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		▲	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		■	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		■*	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		▲	100
	Accessible Parking		O	97
	Carshare Parking		▲	101
	E/V Charging Stations		O	98

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E. Town Center Streets

Town Center Streets are located in areas that have or are planned to have small- and medium-sized businesses, restaurants, civic buildings, or residences. Regardless of location or density, buildings are generally located close to the street. These streets have significant pedestrian and bicycle activity and typically offer on-street parallel parking. They almost always have enhanced streetscapes; however, sidewalk widths may vary. The design of Town Center Streets should focus on retaining and reinforcing the character of the neighborhood. The design should help create or enhance an inviting and enjoyable pedestrian experience and provide flexible spaces for outdoor events and dining and support the generally mixed-use character of the street.

- **FZ** Frontage Zone
- **SW** Sidewalk
- **PB** Pedestrian-Bike Buffer
- **BL** Bike Lane
- **SB** Street Buffer
- **P** Parking Lane
- **TV** Travel Lane

Key Features:

- **Development intensity**: Moderate-intensity development featuring mostly small businesses and occasionally residential
- **Pedestrian and bicycle activity**: Moderate to high
- **Vehicle activity**: Moderate volume of personal vehicles
- **Transit service**: Moderate
- **On-street parking**: Typically provided on many/most block faces
- **Other key features**: Loading zones for deliveries, street trees, street furniture, wayfinding, and other streetscape features

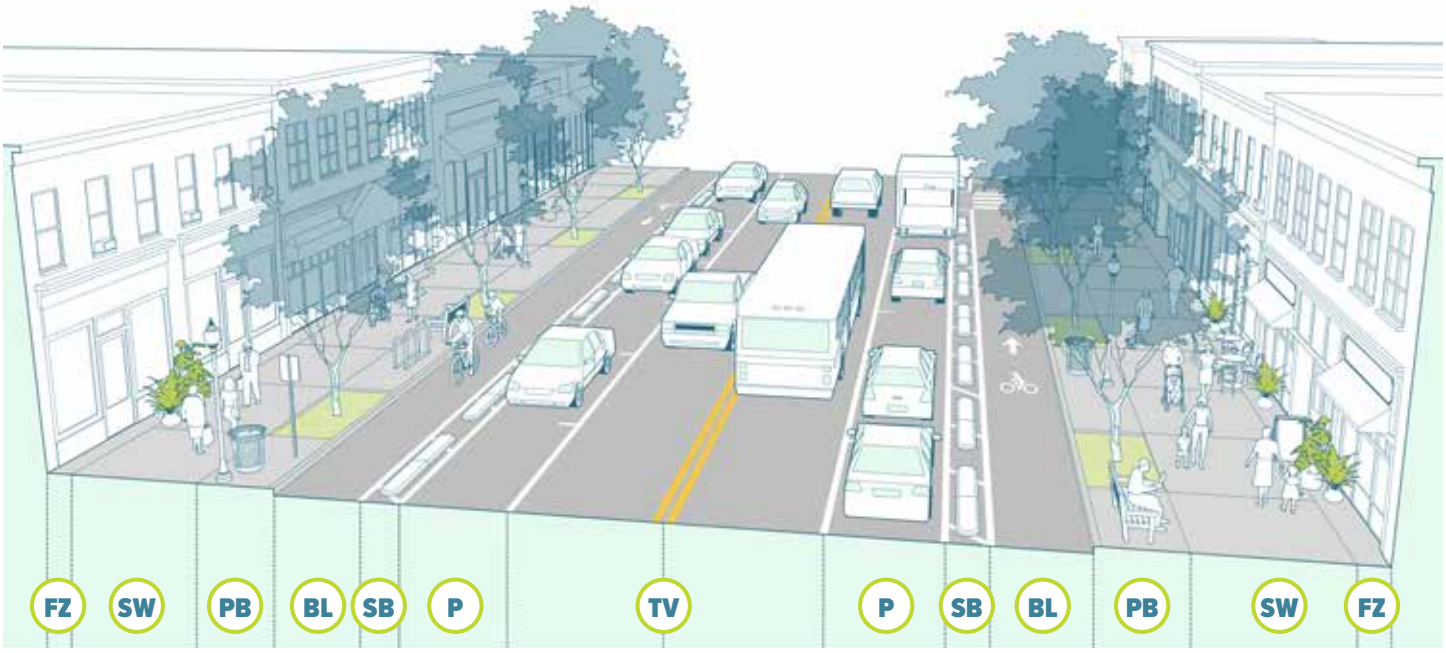

Figure 2-40. Town Center Street

Town Center Street Examples

Figure 2-41. Carroll Avenue in Downtown Takoma Park

Figure 2-42. Century Boulevard in Germantown

Figure 2-43. Tuckerman Lane near Grosvenor Metro Station

Town Center Streets – Street Design Parameters and Priorities

Figure 2-44 presents a summary of Corridor Design Parameters to be used for Town Center Streets. Figure 2-45 presents a summary of Cross Section Design Parameters to be used for Town Center Streets. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-44. Corridor Design Parameters for Town Center Streets

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	25 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of "urban districts" as defined in the law.	207
Maximum # of Vehicle Through Lanes	2	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	400'	Site-specific needs and conditions will dictate actual implementation.	148
Generally Accepted Minimum Spacing for Signalized Intersections	400'	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-45. Cross Section Design Parameters and Prioritization for Town Center Streets

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Optional 6'-10'	L	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. If the street is planned for a median transitway: transit lane dimensions supersede. Consult MCDOT for detailed info.	107
Dedicated Transitway	Transitway lanes: 13' default, 12' min Transitway buffer: 6' default, 2' min	M	The presence of a dedicated transitway is determined in the Master Plan of Highways and Transitways. If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations, intersections & other crossing points, and along horizontal curves.	106
Left-Turn Lane	10'	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	10'	N/A	Only appropriate under limited circumstances.	103
Inside Travel Lane	10'	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-45 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	11’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	L	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	6’	H	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	One-way SBL: 6.5 default; 5’ min	H	SBL = Separated Bike Lane. Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidewalk / Sidepath	10’ default, 8’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	7’ default, 0’ min	M	Some or all of the frontage zone may occur on private property.	75
Maintenance Buffer	0’	N/A	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required even if this table shows a dimension of 0’,	63

Town Center Streets – Prioritizing Street Design Features

Figure 2-46 provides a summary of Town Center Street design features in four different categories and identifies what features are required, recommended, optional, and not permitted. The only design feature specifically not permitted for Town Center Streets are traffic diverters.

Figure 2-46. Street Design Features for Town Center Streets

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		■	166
	Green Infrastructure/Rain Gardens		■	171
	Seating		■	67
	Bicycle Parking		■	68
	Recycling/Trash Receptacles		▲	73
	Plazas/Parklets		▲	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		▲	69
	Pedestrian-Scale Lighting		■	86
	Pedestrian/Bicycle Wayfinding		▲	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		▲	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		O	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		O	212
	Speed Tables/Raised Crosswalks		▲	213
	Raised Intersections		▲	213
	Curb Extensions/Bulb Outs		▲	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		■	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		■*	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		▲	100
	Accessible Parking		▲	97
	Carshare Parking		▲	101
	E/V Charging Stations		▲	98

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F. Neighborhood Connectors

Neighborhood Connectors are residential through streets. While the land uses are predominately medium- or low-intensity residential development, some businesses may be present. Development is typically set back from the street. These streets have longer block lengths and often serve longer-distance travel compared to Neighborhood Streets and Neighborhood Yield Streets. Neighborhood Connectors are important connections for motor vehicles, but also have a strong need to accommodate and encourage pedestrian and bicycle activity. These streets often have bus stops and are key routes in the transit network. Street design for Neighborhood Connectors should focus on reducing vehicle speeds, implementing safe crossings, and providing street lighting, sidewalks and bikeways.

Key Features:

- **Development intensity**: Moderate- to low-intensity development, primarily residential
- **Pedestrian and bicycle activity**: Moderate
- **Vehicle activity**: Moderate volume of personal vehicles
- **Transit service**: Moderate to frequent
- **On-street parking**: Provided in some locations, where feasible
- **Other key features**: Moderate frequency of driveways, street trees

MB Maintenance Buffer

SP Sidepath

SB Street Buffer

TV Travel Lane

SW Sidewalk

Figure 2-47. Neighborhood Connector

Neighborhood Connector Examples

Figure 2-48. Dale Drive between Georgia Avenue and Colesville Road

Figure 2-49. Watkins Mill Road between Frederick Avenue and Blunt Road

Figure 2-50. Arcola Avenue between Georgia Avenue and University Boulevard

Neighborhood Connectors – Street Design Parameters and Priorities

Figure 2-51 presents a summary of Corridor Design Parameters to be used for Neighborhood Connectors. Figure 2-52 presents a summary of Cross Section Design Parameters to be used for Neighborhood Connectors. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-51. Corridor Design Parameters for Neighborhood Connectors

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	25 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of "urban districts" as defined in the law.	207
Maximum # of Vehicle Through Lanes	2	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	600'-1200'	Site-specific needs and conditions will dictate actual implementation.	148
Generally Accepted Minimum Spacing for Signalized Intersections	1300'	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-52. Cross Section Design Parameters and Prioritization for Neighborhood Connectors

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Optional 6'-16'	L	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. Consult MCDOT for detailed info.	107
Dedicated Transitway	N/A	N/A	Dedicated Transitways are not expected along this street type.	106
Left-Turn Lane	10'	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	10'	N/A	Only appropriate under limited circumstances.	103
Inside Travel Lane	10'	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-52 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	10.5	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16'. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8'	L	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	6' Open Section: 15' default, 9' min (see p84)	H	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3' only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3' offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5' clear Sidewalk or 8' clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Sidepath on one side of the street: 10' default, 8' min or Bike Lanes 6' default, 5' min	H	Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6' default, 2' min	M	Provided only if a separated bike lane is provided.	182
Sidewalk / Sidepath	Sidewalk: 6' min Sidepath: 10' default, 8' min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	0'	M	Frontage Zones are not required along this street type.	75
Maintenance Buffer	2'	N/A	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required, except that a Maintenance Buffer is not required if there is no Sidewalk / Sidepath and the outermost zone is the Street Buffer.	63

Neighborhood Connectors – Prioritizing Street Design Features

Figure 2-53 provides a summary of Neighborhood Connector design features in four different categories and identifies what features are required, recommended, optional, and not permitted. The only design features specifically not permitted for Neighborhood Connectors are traffic diverters. Road diets are labeled as "not applicable" because the target maximum number of travel lanes is two.

Figure 2-53. Street Design Features for Neighborhood Connectors

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	■	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer			■	166
	Green Infrastructure/Rain Gardens			O	171
	Seating			O	67
	Bicycle Parking			O	68
	Recycling/Trash Receptacles			O	73
	Plazas/Parklets			O	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)			▲	69
	Pedestrian-Scale Lighting			▲	86
	Pedestrian/Bicycle Wayfinding			■	77
	Sidewalk-Level Driveways				85
INTERSECTIONS	Roundabouts (Modern or Mini)			O[1]	132
	Crossing Islands			■	152
	Pedestrian Signals (when traffic signals are present) or Beacons			O	149
	Pedestrian Recall on Signals			■	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)				86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes			■[2]	136
	Bicycle Markings/Facilities (when bikeways are present)				138
SPEED MANAGEMENT	Lane Diet			▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)			O	210
	Speed Humps/Cushions			O	212
	Speed Tables/Raised Crosswalks			O	213
	Raised Intersections			▲	213
	Curb Extensions/Bulb Outs			▲	213
	Neckdowns/Chokers			x	214
	Traffic Diverters			O	209
	Chicanes/Roadway Curvature			O	214
	Textured Paving Treatment			▲	216
STREET ZONE	Green Infrastructure in Median (when median is present)			■	171
	Street Trees/Landscaping in Median (when median is present)			▲	166
	Minimize/Consolidate Driveways			O	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)			▲	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)			O	82
	Loading/Pick-up and Drop-off Zones			O	100
	Accessible Parking			O	97
	Carshare Parking			O	101
	E/V Charging Stations				98

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G. Neighborhood Streets

Neighborhood Streets serve predominantly residential areas with low volumes of motor vehicle traffic. Pedestrian and bicycle activity are common along these streets. Neighborhood streets should have sidewalks on both sides of the street, though in retrofit applications, a sidewalk on one side of the street may be an interim objective in existing neighborhoods with limited right-of-way. Most, but not all, Neighborhood Streets in Montgomery County offer on-street parking. Design for Neighborhood Streets should focus on encouraging slow speeds, pedestrian safety, healthy street trees, and well-defined routes to nearby parks, transit, and schools.

- **MB** Maintenance Buffer
- **SW** Sidewalk
- **SB** Street Buffer
- **P** Parking Lane
- **TV** Travel Lane

Key Features:

- **Development intensity**: Moderate- to low-intensity residential development
- **Pedestrian and bicycle activity**: Moderate
- **Vehicle activity**: Low volumes of personal vehicles
- **Transit service:** Typically, limited or none
- **On-street parking**: Varies/ context-dependent
- **Other key features**: Frequent curb cuts/driveways, street trees

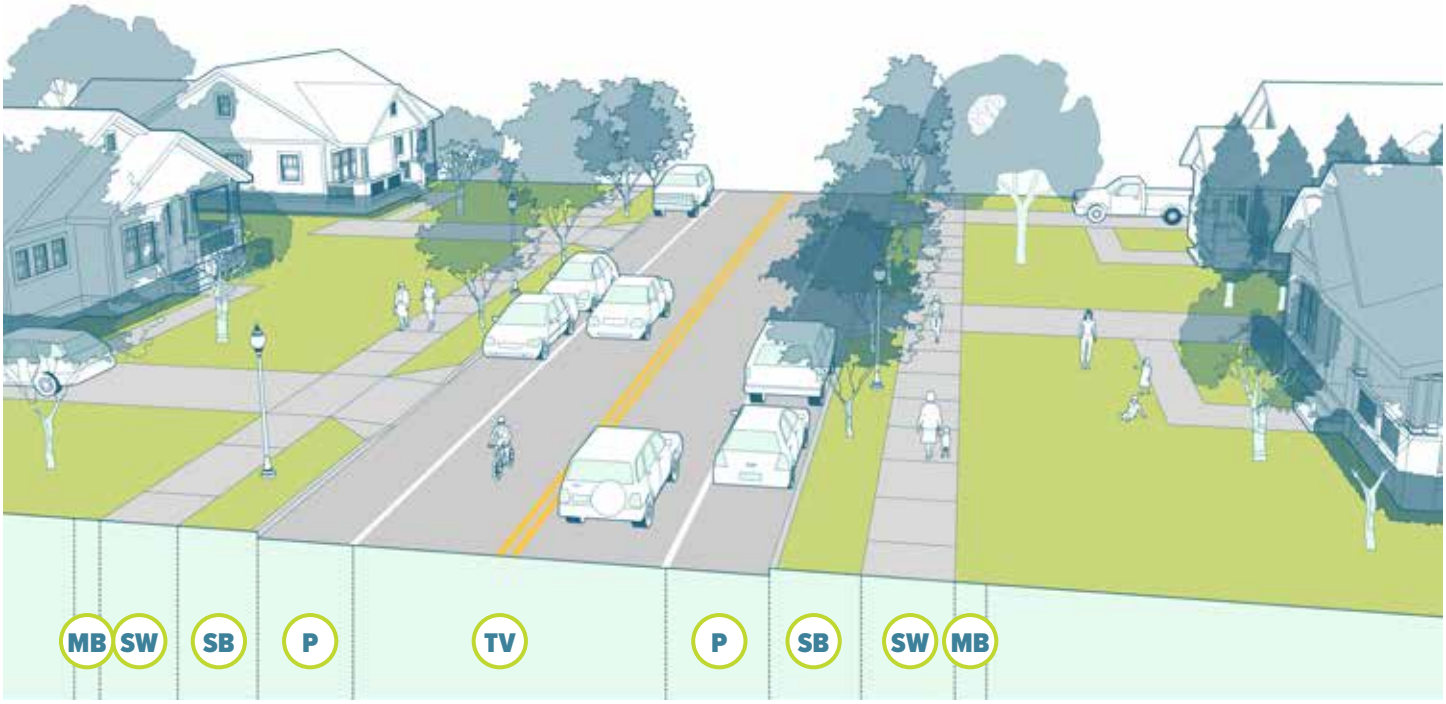

Figure 2-54. Neighborhood Street

Neighborhood Street Examples

Figure 2-55. Wexhall Drive in Fairland

Figure 2-56. Queen Mary Drive in Olney

Figure 2-57. Rolling Green Way in North Potomac

Neighborhood Streets – Street Design Parameters and Priorities

Figure 2-58 presents a summary of Corridor Design Parameters to be used for Neighborhood Streets. Figure 2-59 presents a summary of Cross Section Design Parameters to be used for Neighborhood Streets. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-58. Corridor Design Parameters for Neighborhood Streets

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	20 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of “urban districts” as defined in the law.	207
Maximum # of Vehicle Through Lanes	2	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	N/A	Site-specific needs and conditions will dictate actual implementation.	148
Generally Accepted Minimum Spacing for Signalized Intersections	N/A	Signal spacing not generally a significant issue for this street type.	148

Figure 2-59. Cross Section Design Parameters and Prioritization for Neighborhood Streets

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Optional 6’-10’	L	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. Consult MCDOT for detailed info.	107
Dedicated Transitway	N/A	N/A	Dedicated Transitways are not expected along this street type.	106
Left-Turn Lane	N/A	N/A	Left-turn lanes generally are not applicable along this street type.	103
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	103
Inside Travel Lane	10’	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-59 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	10.5’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	L	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	6’ Open Section: 15’ default, 9’ min (see p84)	M	If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Neighborhood Greenway, Shared Lanes, or Advisory Bike Lanes (for design guidance see Bicycle Facility Design Toolkit)	M	Default bikeway types apply to streets without master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidewalk / Sidepath	6’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	0’ min	N/A	Frontage Zones are not required along this street type.	75
Maintenance Buffer	2’	L	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required, except that a Maintenance Buffer is not required if there is no Sidewalk / Sidepath and the outermost zone is the Street Buffer.	63

Neighborhood Streets – Prioritizing Street Design Features

Figure 2-60 provides a summary of Neighborhood Street design features in four different categories and identifies what features are required, recommended, optional, and not permitted. Road diets are listed as "not applicable" because the target minimum number of travel lanes is two.

Figure 2-60. Street Design Features for Neighborhood Streets

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		■	166
	Green Infrastructure/Rain Gardens		■	171
	Seating		O	67
	Bicycle Parking		O	68
	Recycling/Trash Receptacles		O	73
	Plazas/Parklets		O	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		O	69
	Pedestrian-Scale Lighting		▲	86
	Pedestrian/Bicycle Wayfinding		O	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		O	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		O	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		x	210
	Speed Humps/Cushions		O	212
	Speed Tables/Raised Crosswalks		O	213
	Raised Intersections		O	213
	Curb Extensions/Bulb Outs		O	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		O	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		O	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		O	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		O	82
	Loading/Pick-up and Drop-off Zones		O	100
	Accessible Parking		O	97
	Carshare Parking		O	101
	E/V Charging Stations		O	98

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H. Neighborhood Yield Streets

Neighborhood Yield Streets are similar to other local streets except that they feature a single, narrow travel lane that requires oncoming vehicles to yield to one another in order to pass. Older neighborhoods with narrow rights of way often feature this type of street, though they can be designed as part of newer communities, too. Neighborhood Yield Streets are inviting places for people of all ages and abilities to walk and bike, making them an important connection to parks, schools, and neighborhood shops. They may host informal gatherings (i.e., block parties) or children playing in the street. As a result, this street design only works in places with low vehicle volumes and speeds. On-street parking is provided on one or both sides of the street. It is important that there are either frequent driveways or low parking utilization (40-60 percent or less is common[14]), to ensure that there will be places for motor vehicles to pull over and allow oncoming traffic to pass. It may be necessary to implement alternating or "checkered" parking to ensure that opportunities to yield/pass are convenient. Adequate space for fire and emergency services vehicle operations must be maintained. For additional information, consult the Montgomery County Performance Based Design Guidance for Life Safety Access.[15] Pedestrian and bicycle activity is common along these streets. The design should be intuitive for drivers to navigate without the risk of head-on crashes and should prioritize slow speeds and pedestrian safety. These streets feature sidewalks on both sides of the street, though in retrofit conditions, some Neighborhood Yield Streets may only have sidewalks on one side.

Key Features:

- **Development intensity**: Low-intensity residential development
- **Pedestrian and bicycle activity**: Moderate
- **Vehicle activity**: Low vehicle traffic and speeds
- **Transit service**: None
- **On-street parking**: Present on one or both sides of the street
- **Other key features**: Frequent curb cuts/driveways, street trees

MB Maintenance Buffer

SW Sidewalk

SB Street Buffer

TV Travel Lane

Figure 2-61. Neighborhood Yield Street

14 https://nacto.org/publication/urban-street-design-guide/streets/yield-street/

15 https://montgomeryplanning.org/planning/functional-planning/fire-department-access-performance-based-design-guide/

Neighborhood Yield Street Examples

Figure 2-62. Sanford Road in Forest Glen

Figure 2-63. Allegheny Avenue in Takoma Park

Figure 2-64. Mansfield Road in Silver Spring

Neighborhood Yield Streets – Street Design Parameters and Priorities

Figure 2-65 presents a summary of Corridor Design Parameters to be used for Neighborhood Yield Streets. Figure 2-66 presents a summary of Cross Section Design Parameters to be used for Neighborhood Yield Streets. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-65. Corridor Design Parameters for Neighborhood Yield Streets

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	20 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of “urban districts” as defined in the law.	207
Maximum # of Vehicle Through Lanes	1	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	N/A	Site-specific needs and conditions will dictate actual implementation.	148
Generally Accepted Minimum Spacing for Signalized Intersections	N/A	Signal spacing not generally a significant issue for this street type.	148

Figure 2-66. Cross Section Design Parameters and Prioritization for Neighborhood Yield Streets

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	N/A	N/A	Medians are not applicable along this street type.	107
Dedicated Transitway	N/A	N/A	Dedicated Transitways are not expected along this street type.	106
Left-Turn Lane	N/A	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not applicable along this street type.	103

Figure 2-66 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Travel Lane	12’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	H	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	6’ Open Section: 15’ default, 9’ min (see p84)	M	If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	N/A	N/A	Bikeways are not generally considered along this street type, unless otherwise specified in the Bicycle Master Plan.	201
Ped / Bike Buffer	N/A	N/A	Ped / Bike Buffers are unlikely to be needed along Neighborhood Yield Streets, unless otherwise identified in the Bicycle Master Plan.	182
Sidewalk / Sidepath	6’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	0’	N/A	Frontage Zones are not required along this street type.	75
Maintenance Buffer	2’	L	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required, except that a Maintenance Buffer is not required if there is no Sidewalk / Sidepath and the outermost zone is the Street Buffer.	63

Neighborhood Yield Streets – Prioritizing Street Design Features

Figure 2-67 provides a summary of Neighborhood Yield Street design features in four different categories and identifies what features are required, recommended, optional, and not permitted. The design features that are not applicable to Neighborhood Yield Street are road diets, green infrastructure in median, and street trees/landscaping in median.

Figure 2-67. Street Design Features for Neighborhood Yield Streets

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		■	166
	Green Infrastructure/Rain Gardens		■	171
	Seating		O	67
	Bicycle Parking		O	68
	Recycling/Trash Receptacles		O	73
	Plazas/Parklets		O	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		O	69
	Pedestrian-Scale Lighting		▲	86
	Pedestrian/Bicycle Wayfinding		O	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		O	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		O	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		x	210
	Speed Humps/Cushions		O	212
	Speed Tables/Raised Crosswalks		O	213
	Raised Intersections		O	213
	Curb Extensions/Bulb Outs		O	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		O	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		x	171
	Street Trees/Landscaping in Median (when median is present)		x	166
	Minimize/Consolidate Driveways		O	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		O	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		O	82
	Loading/Pick-up and Drop-off Zones		O	100
	Accessible Parking		O	97
	Carshare Parking		O	101
	E/V Charging Stations		O	98

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I. Industrial Streets

These streets serve industrial corridors and are built to accommodate commercial trucks in addition to passenger vehicles, bicyclists, and pedestrians. While there may be fewer pedestrians and bicyclists in these locations, these streets may also serve as destinations for maker space, retail, or other public-serving uses that may attract foot or bicycle traffic. Safe, continuous connections for all modes at intersections should be provided. The design of Industrial Streets should focus on accommodating truck traffic and providing adequate lane width and turning radii, while also accommodating pedestrians, bicyclists, and street trees.

- **MB** Maintenance Buffer
- **SW** Sidewalk
- **SB** Street Buffer
- **P** Parking Lane
- **TV** Travel Lane
- **SP** Sidepath

Key Features:

- **Development intensity**: Moderate to low-intensity industrial or light industrial uses
- **Pedestrian and bicycle activity**: Moderate
- **Vehicle activity**: Moderate personal vehicle volumes, large/heavy vehicles are common
- **Transit service**: Moderate
- **On-street parking**: Common, including for trucks
- **Other key features**: Street trees

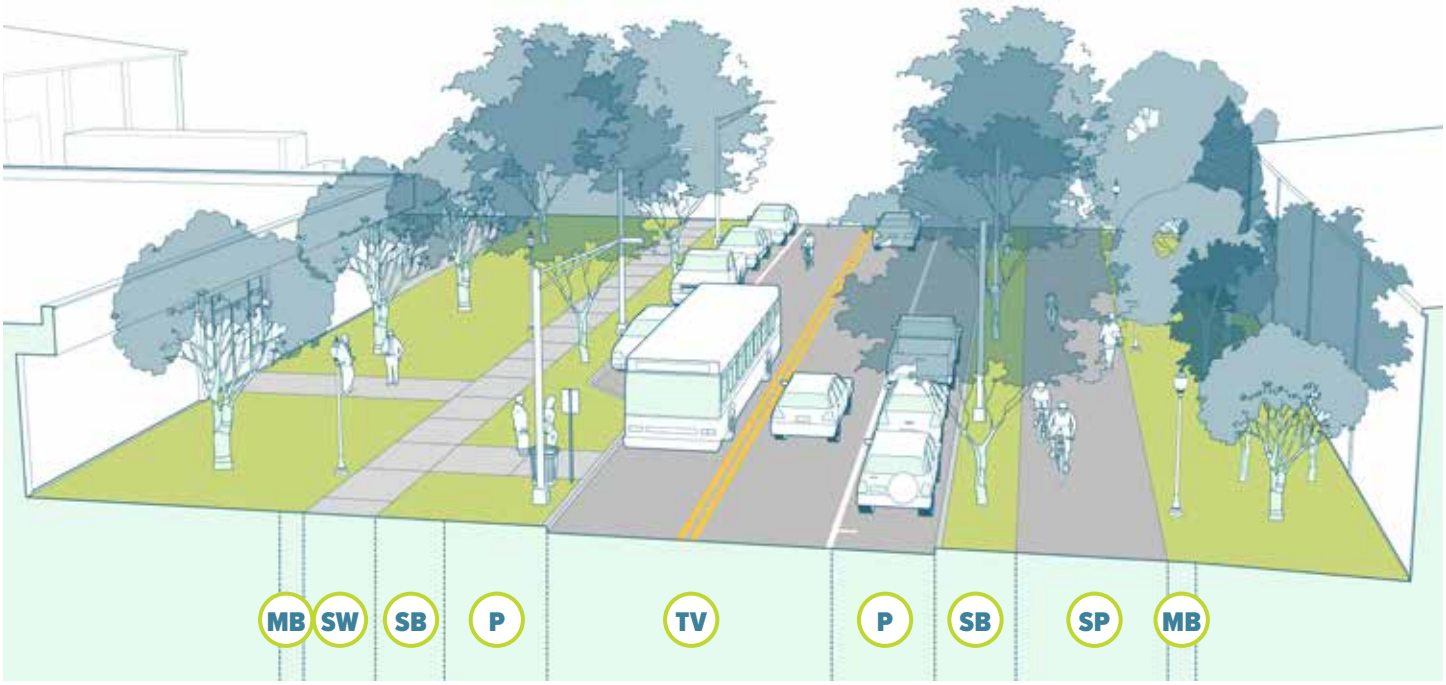

Figure 2-68. Industrial Street

Industrial Street Examples

Figure 2-69. Brookville Road in Lyttonsville

Figure 2-70. Wilkins Avenue in Twinbrook

Figure 2-71. Gaither Road near Gaithersburg

Industrial Streets – Street Design Parameters and Priorities

Figure 2-72 presents a summary of Corridor Design Parameters to be used for Industrial Streets. Figure 2-73 presents a summary of Cross Section Design Parameters to be used for Industrial Streets. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-72. Corridor Design Parameters for Industrial Streets

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	25 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of "urban districts" as defined in the law.	207
Maximum # of Vehicle Through Lanes	4	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	800'	Site-specific needs and conditions will dictate actual implementation.	148
Generally Accepted Minimum Spacing for Signalized Intersections	800'	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-73. Cross Section Design Parameters and Prioritization for Industrial Streets

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Optional 6'-17'	L	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. If the street is planned for a median transitway: transit lane dimensions supersede. Consult MCDOT for detailed info.	107
Dedicated Transitway	Transitway lanes: 13' default, 12' min Transitway buffer: 6' default, 2' min	M	The presence of a dedicated transitway is determined in the Master Plan of Highways and Transitways. If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations, intersections & other crossing points, and along horizontal curves.	106
Left-Turn Lane	11'	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	11'	N/A	Only appropriate under limited circumstances.	103
Inside Travel Lane	11'	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-73 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	11’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Parking Lane	8’	M	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	95-99
Active Zone				
Street Buffer	6’ Open Section: 15’ default, 9’ min (see p84)	M	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	One-way SBL: 6.5’ default, 5’ min or Sidepath on one side of the street: 10’ default, 8’ min	M	SBL = Separated Bike Lane. Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidewalk / Sidepath	Sidewalk: 6’ min Sidepath: 10’ default, 8’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	6’ default, 0’ min	L	Some or all of the frontage zone may occur on private property.	75
Maintenance Buffer	2’	L	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required, except that a Maintenance Buffer is not required if there is no Sidewalk / Sidepath and the outermost zone is the Street Buffer. Not required if a minimum 2’ Frontage Zone is provided.	63

Industrial Streets – Prioritizing Street Design Features

Figure 2-74 provides a summary of Industrial Street design features in four different categories and identifies what features are required, recommended, optional, and not permitted.

Figure 2-74. Street Design Features for Industrial Streets

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		▲	166
	Green Infrastructure/Rain Gardens		▲	171
	Seating		O	67
	Bicycle Parking		▲	68
	Recycling/Trash Receptacles		▲	73
	Plazas/Parklets		O	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		O	69
	Pedestrian-Scale Lighting		O	86
	Pedestrian/Bicycle Wayfinding		▲	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		▲	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		O	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		O	212
	Speed Tables/Raised Crosswalks		O	213
	Raised Intersections		O	213
	Curb Extensions/Bulb Outs		▲	213
	Neckdowns/Chokers		▲	214
	Traffic Diverters		O	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		O	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		■	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		O	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		O	100
	Accessible Parking		O	97
	Carshare Parking		O	101
	E/V Charging Stations		O	98

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J. Country Connectors

These roads provide important connections through low-density rural areas of Montgomery County. They are surrounded by very low-scale development set back from the road, or undeveloped/agricultural areas. Country Connectors are generally designed with shoulders and roadside ditches. As important through-routes in the county, the design of Country Connectors will emphasize safe and efficient vehicle throughput. Some pedestrian and bicycle traffic may be present (these roads are often popular recreational bicycling routes). Due to higher speed vehicle traffic, designs should provide ample separation from vehicle traffic for pedestrians and bicyclists.

Key Features:

- **Development intensity**: Low-intensity or no development
- **Pedestrian and bicycle activity**: Moderate to low
- **Vehicle activity**: Moderate to high volume of personal vehicles
- **Transit service**: Moderate to infrequent
- **On-street parking**: Typically not present
- **Other key features**: Infrequent driveways, street trees

S Shoulder

TV Travel Lane

SB Street Buffer

SP Sidepath

MB Maintenance Buffer

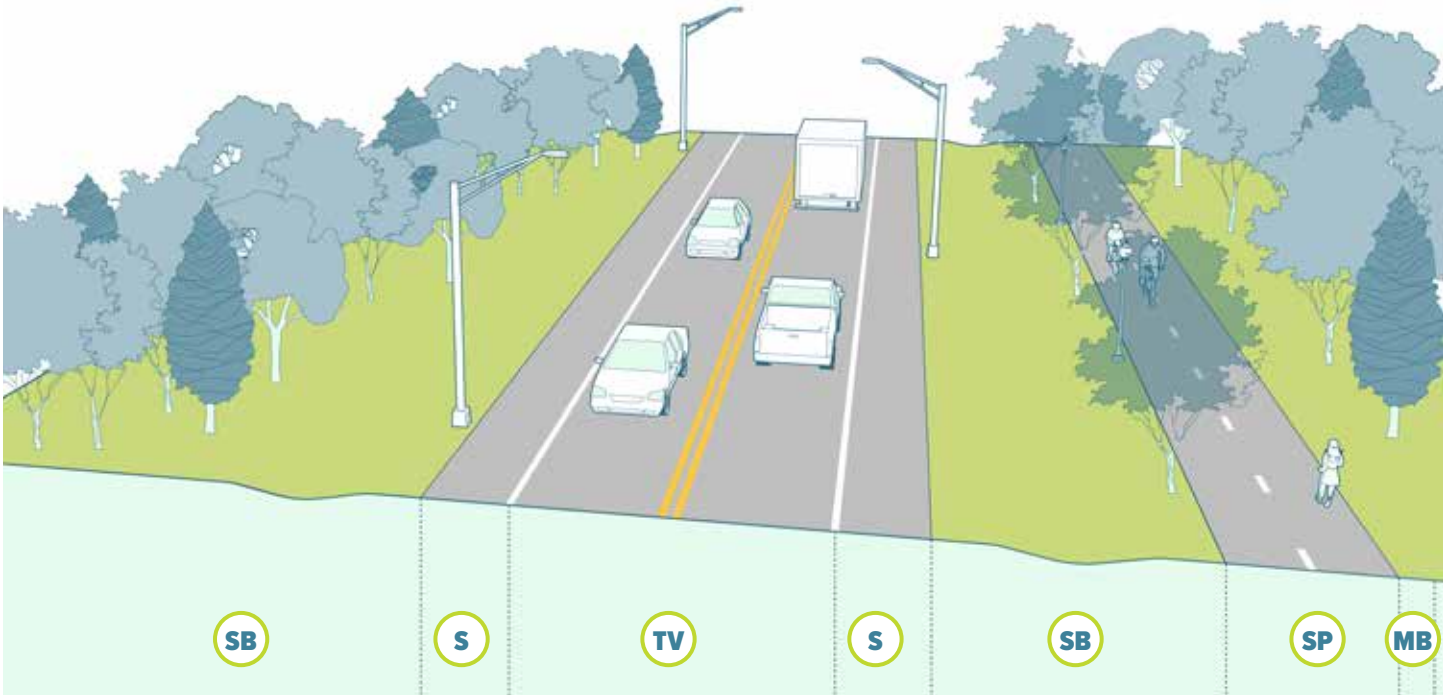

Figure 2-75. Country Connector

Country Connector Examples

Figure 2-76. River Road between Esworthy Road and Seneca Road

Figure 2-77. Germantown Road (MD Route 118) between Germantown Park Drive and Darnestown Road

Figure 2-78. New Hampshire Avenue / Damascus Road (MD 650) between Ashton and Damascus

Country Connectors – Street Design Parameters and Priorities

Figure 2-79 presents a summary of Corridor Design Parameters to be used for Country Connectors. Figure 2-80 presents a summary of Cross Section Design Parameters to be used for Country Connectors. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-79. Corridor Design Parameters for Country Connectors

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	40 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of “urban districts” as defined in the law.	207
Maximum # of Vehicle Through Lanes	4	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	1300’-2700’	Site-specific needs and conditions will dictate actual implementation. On streets with operating speeds of 30 mph or more, “protected” crossings include: Traffic/ pedestrian signal or HAWK, all-way stop control, or grade-separated crossing.	148
Generally Accepted Minimum Spacing for Signalized Intersections	2700’	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-80. Cross Section Design Parameters and Prioritization for Country Connectors

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Optional 6’-17’	L	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. Consult MCDOT for detailed info.	107
Dedicated Transitway	N/A	N/A	Dedicated Transitways are not expected along this street type.	106
Left-Turn Lane	11’	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	103
Inside Travel Lane	11’	N/A	Use the Outside Travel Lane dimension if there is only one lane per direction. This includes the lane against the centerline on undivided roads. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-80 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	11’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane. If there is one lane in a direction on a Country facility, the Lane Width + Shoulder shall be at least 16’	103
Shoulder	6’	M	Dimensions only apply if a shoulder is necessary.	108
Active Zone				
Street Buffer	10’ (if sidewalk / sidepath are provided) Open Section: 15’ default, 10’ min (see p84)	H	Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Bikeable Shoulders: 10’ default, 5’ min or Sidepath on one side of the street: 10’ default, 8’ min	M	SBL = Separated Bike Lane. Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	M	Provided only if a separated bike lane is provided.	182
Sidewalk / Sidepath	Sidewalk: 6’ min Sidepath: 10’ default, 8’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	0’	N/A	Frontage Zones are not required along this street type.	75
Maintenance Buffer	2’	L	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required, except that a Maintenance Buffer is not required if there is no Sidewalk / Sidepath and the outermost zone is the Street Buffer.	63

Country Connectors – Prioritizing Street Design Features

Figure 2-81 provides a summary of Country Connector design features in four different categories and identifies what features are required, recommended, optional, and not permitted. Pedestrian recall on signals, accessible parking, carshare parking, and E/V charging stations are not applicable to Country Connectors.

Figure 2-81. Street Design Features for Country Connectors

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		▲	166
	Green Infrastructure/Rain Gardens		▲	171
	Seating		O	67
	Bicycle Parking		O	68
	Recycling/Trash Receptacles		O	73
	Plazas/Parklets		O	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		O	69
	Pedestrian-Scale Lighting		O	86
	Pedestrian/Bicycle Wayfinding		O	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		O	152
	Pedestrian Signals (when traffic signals are present) or Beacons		▲	149
	Pedestrian Recall on Signals		x	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		x	212
	Speed Tables/Raised Crosswalks		x	213
	Raised Intersections		x	213
	Curb Extensions/Bulb Outs		O	213
	Neckdowns/Chokers		O	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		x	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		▲	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		O	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		O	100
	Accessible Parking		x	97
	Carshare Parking		x	101
	E/V Charging Stations		x	98

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K. Country Roads

Country Roads occur in low-density areas of the county. Compared to Country Connectors, Country Roads feature more development activity (most often large lot single-family residential), more frequent driveways, and lower vehicle speeds. Designs should prioritize safe access for vehicles passing through and turning in/out of driveways, as well as separation from vehicle traffic for pedestrians and bicyclists. Country Roads may or may not have curbs.

- **S** Shoulder
- **TV** Travel Lane
- **SB** Street Buffer
- **SP** Sidepath
- **MB** Maintenance Buffer

Key Features:

- **Development intensity**: Low-intensity residential development or no development
- **Pedestrian and bicycle activity**: Moderate to low
- **Vehicle activity**: Moderate to high volume of personal vehicles
- **Transit service**: Moderate to Infrequent
- **On-street parking**: Typically not present
- **Other key features**: Moderate frequency of driveways/curb cuts, street trees

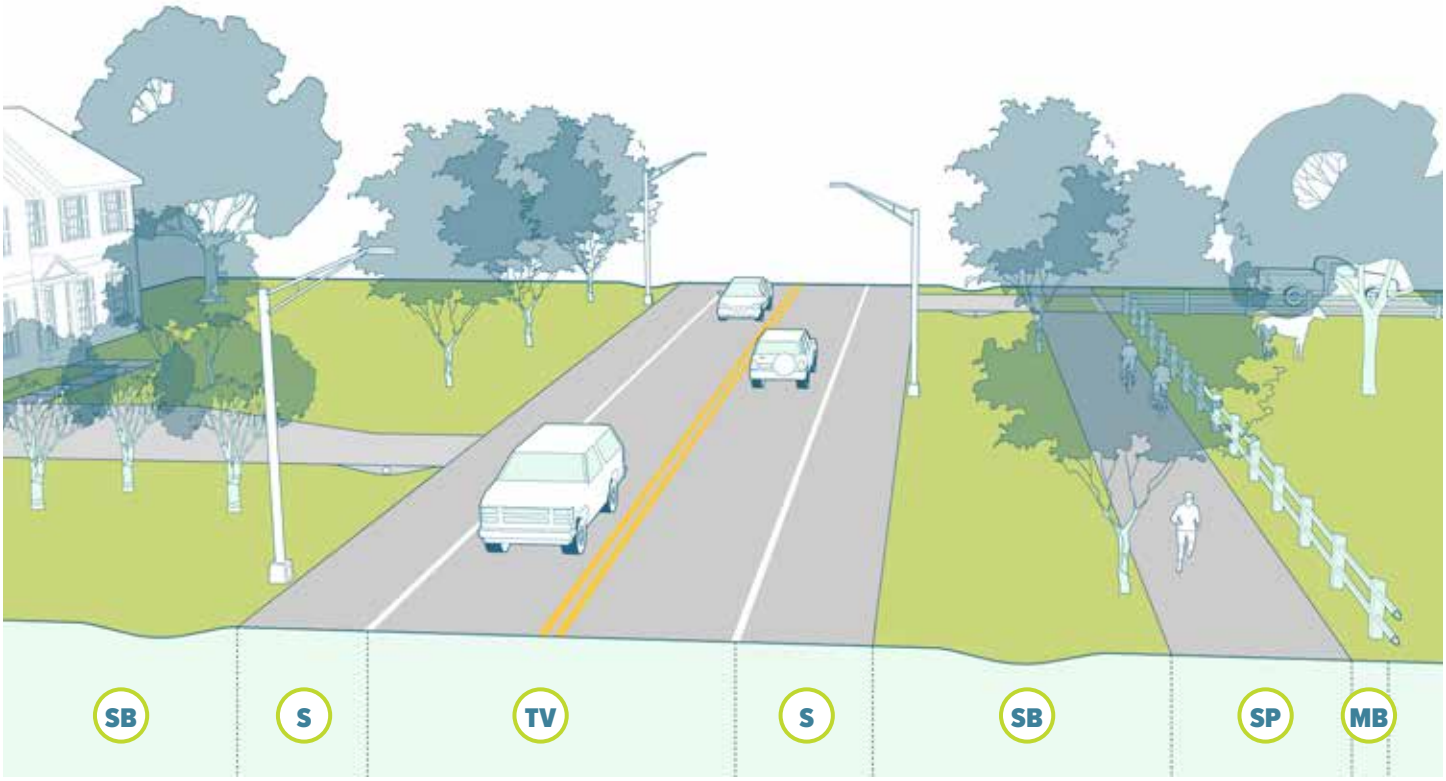

Figure 2-82. Country Road

Country Road Examples

Figure 2-83. Esworthy Road from River Road to Seneca Road

Figure 2-84. Bethesda Church Road from Clarksburg Road to the Frederick County Line

Figure 2-85. Long Corner Road north of MD Route 108

Country Roads – Street Design Parameters and Priorities

Figure 2-86 presents a summary of Corridor Design Parameters to be used for Country Roads. Figure 2-87 presents a summary of Cross Section Design Parameters to be used for Country Roads. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-86. Corridor Design Parameters for Country Roads

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	35 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of “urban districts” as defined in the law.	207
Maximum # of Vehicle Through Lanes	2	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	1300’-2700’	Site-specific needs and conditions will dictate actual implementation. On streets with operating speeds of 30 mph or more, “protected” crossings include: Traffic/ pedestrian signal or HAWK, all-way stop control, or grade-separated crossing.	148
Generally Accepted Minimum Spacing for Signalized Intersections	2700’	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-87. Cross Section Design Parameters and Prioritization for Country Roads

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Optional 6’-16’	L	The dimensions shown apply only if a median is provided. Medians may be wider than dimensions provided in some circumstances. The median may be replaced or widened to include left turn lanes at intersections. Consult MCDOT for detailed info.	107
Dedicated Transitway	N/A	N/A	Dedicated Transitways are not expected along this street type.	106
Left-Turn Lane	10’	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	103

Figure 2-87 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Travel Lane	11’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane. If there is one lane in a direction on a Country facility, the Lane Width + Shoulder shall be at least 16’	103
Shoulder	5’	H	Dimensions only apply if a shoulder is necessary.	108
Active Zone				
Street Buffer	8’ default, 6’ min (if sidewalk / sidepath are provided) Open Section: 15’ default, 9’ min (see p84)	M	In constrained environments, the default Street Buffer width is a higher priority than the default Bikeway width. Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Bikeable Shoulders: 8’ default, 5’ min or Sidepath on one side of the street: 10’ default, 8’ min	M	Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	N/A	N/A	Ped / Bike Buffers are unlikely to be needed along Country Roads, unless otherwise identified in the Bicycle Master Plan.	182
Sidewalk / Sidepath	Sidewalk: 6’ min Sidepath: 10’ default, 8’ min	H	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	0’	N/A	Frontage Zones are not required along this street type.	75
Maintenance Buffer	2’	L	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required, except that a Maintenance Buffer is not required if there is no Sidewalk / Sidepath and the outermost zone is the Street Buffer.	63

Country Roads – Prioritizing Street Design Features

Figure 2-88 provides a summary of Country Road design features in four different categories and identifies what features are required, recommended, optional, and not permitted.

Figure 2-88. Street Design Features for Country Roads

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		▲	166
	Green Infrastructure/Rain Gardens		▲	171
	Seating		x	67
	Bicycle Parking		x	68
	Recycling/Trash Receptacles		x	73
	Plazas/Parklets		x	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		x	69
	Pedestrian-Scale Lighting		O	86
	Pedestrian/Bicycle Wayfinding		O	77
	Sidewalk-Level Driveways		■	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		O	152
	Pedestrian Signals (when traffic signals are present) or Beacons		▲	149
	Pedestrian Recall on Signals		x	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		x	212
	Speed Tables/Raised Crosswalks		x	213
	Raised Intersections		x	213
	Curb Extensions/Bulb Outs		O	213
	Neckdowns/Chokers		O	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		O	214
	Textured Paving Treatment		x	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		▲	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		O	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		▲	82
	Loading/Pick-up and Drop-off Zones		O	100
	Accessible Parking		x	97
	Carshare Parking		x	101
	E/V Charging Stations		x	98

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L. Major Highways

Major Highways are limited/controlled access roads that are primarily designed for vehicle safety and mobility. Transit and heavy vehicles are common and pedestrian and bicycle activity is often low (and in some cases, not permitted). However, pedestrian and bicycle access is essential, whether for the accommodation of safe bicycle and pedestrian crossings, or when transit stops are provided on the Major Highway. Some Major Highways include dedicated transit lanes - see the Master Plan of Highways and Transitways. If the Major Highway is master-planned as a critical bicycle or pedestrian connection, separated facilities are needed. Due to high vehicle speeds, significant separation from traffic is needed for pedestrians and bicyclists. On roads with wider medians, street trees in the median (outside clear zone requirements) should be provided where feasible.

Key Features:

- **Development intensity**: None or low-intensity development set back from the road
- **Pedestrian and bicycle activity**: Low
- **Vehicle activity**: High volume of personal vehicles, large/heavy vehicles are common
- **Transit service**: Moderate to frequent
- **On-street parking:** None
- **Other key features**: Limited/ Controlled Access, prioritizes long-distance travel

S Shoulder

TV Travel Lane

M Median

SB Street Buffer

SP Sidepath

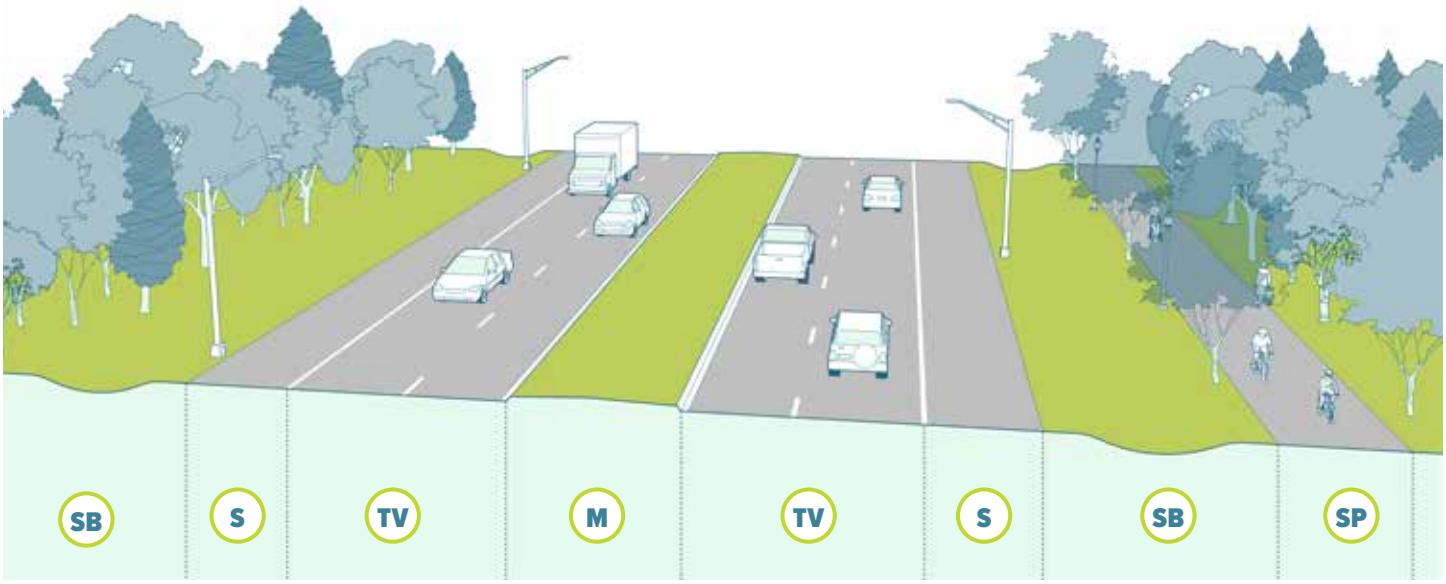

Figure 2-89. Major Highway

Major Highway Examples

Figure 2-90. Sam Eig Highway near Washingtonian Boulevard

Figure 2-91. Great Seneca Highway from Longdraft Road to Mateny Road

Figure 2-92. Columbia Pike (US Route 29) from Prelude Drive to the Howard County Line

Major Highways – Street Design Parameters and Priorities

Figure 2-93 presents a summary of Corridor Design Parameters to be used for Major Highways. Figure 2-94 presents a summary of Cross Section Design Parameters to be used for Major Highways. For ease of reference, a page reference column is provided to orient the user where each subject is covered in more detail.

Figure 2-93. Corridor Design Parameters for Major Highways

Design Parameter	Design Guidance	Notes	Page Ref
Target Speed	45-55 MPH	Presence, proximity, and volume of pedestrians, bicyclists, passenger vehicles, transit vehicles, and commercial vehicles shall be considered when determining an appropriate target speed. State law requires a minimum posted speed of 25 mph outside of “urban districts” as defined in the law.	207
Maximum # of Vehicle Through Lanes	N/A	See Master Plan of Highways and Transitways for number of travel lanes on specific streets, which supersedes this guidance. These are primarily for new roads and when considering road diets.	105
Maximum Spacing for Protected Crossings	1300’	Site-specific needs and conditions will dictate actual implementation. On streets with operating speeds of 30 mph or more, “protected” crossings include: Traffic/ pedestrian signal or HAWK, all-way stop control, or grade-separated crossing. Where ranges are provided, the lower end of the range is recommended in commercial areas, on BRT corridors, in BiPPAs, and near schools (or similar destinations).	148
Generally Accepted Minimum Spacing for Signalized Intersections	2700’	Refers to a full signalized intersection or roundabout. These targets are intended to maintain operations at a level that promotes safe movement by all travel modes. Site-specific needs and conditions, as determined through the regulatory approval process or capital project review, will dictate actual implementation.	148

Figure 2-94. Cross Section Design Parameters and Prioritization for Major Highways

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Center Median	Required 6’-17’	H	Medians may be wider than dimensions provided in some circumstances. The median may be widened to include left turn lanes at intersections. If the street is planned for a median transitway: transit lane dimensions supersede. Consult MCDOT for detailed info.	107
Dedicated Transitway	Transitway lanes: 13’ default, 12’ min Transitway buffer: 6’ default, 2’ min	M	The presence of a dedicated transitway is determined in the Master Plan of Highways and Transitways. If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations, intersections & other crossing points, and along horizontal curves.	106
Left-Turn Lane	11’	N/A	Dimensions only apply if a left turn lane is provided.	103
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	103
Inside Travel Lane	11’	N/A	This includes the lane against the centerline on undivided roads. Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book.	103

Figure 2-94 (continued)

Design Parameter	Design Guidance	Priority	Notes	Page Ref
Street Zone				
Outside Travel Lane	12’	N/A	Lane width dimensions are intended for typical tangent (straight) sections. Segments with vertical or horizontal curves may require wider pavements per Section 3.3.10 of the AASHTO Green Book. If the outside lane is adjacent to a striped bike lane, the total width (travel lane + bike lane) should be no less than 16’. Guidance also applies to right turn lanes, where needed. Gutter pan is included in parking lane dimensions (below); however, if there is no parking lane, gutter pan is included in these dimensions for the outside travel lane.	103
Shoulder	8’	H	Presumes parallel parking. Gutter pan is included in parking lane dimensions. If there is no parking lane, the gutter pan is already included in the Outside Travel Lane width.	108
Active Zone				
Street Buffer	As wide as feasible (10’ min) Open Section: 15’ default, 10’ min (see p84)	H	Where a lane within the Street Zone is converted to a street level separated bike lane, the Street Buffer may be reduced to 3’ only when implemented by MCDOT as an interim bikeway. If on-street parking is part of the Street Buffer zone and abuts the Sidewalk / Sidepath, a minimum 3’ offset is required between the face of curb and the Sidewalk / Sidepath, and a minimum 5’ clear Sidewalk or 8’ clear Sidepath is required outside of the door swing zone of a parked car, to maintain accessibility.	66
Bikeway	Sidepath on both sides of street: 11’ default, 8’ min	M	Default bikeway types apply to streets without master planned bikeways. The widths apply to master planned and non-master planned bikeways. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. Dimensions do not include the street buffer or pedestrian/bicycle buffer (see below). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways: the Priority is always High & see additional requirements in the Bicycle Master Plan.	201
Ped / Bike Buffer	6’ default, 2’ min	H	Provided only if a separated bike lane is provided.	182
Sidepath	11’ default, 8’ min	M	Using the minimum dimension requires a waiver – consult MCDOT.	74
Frontage Zone	N/A	N/A	Frontage Zones are not required along this street type.	75
Maintenance Buffer	N/A	N/A	Structures not part of the roadway design shall not occur in the public ROW. If there is a structure abutting the property line: a maintenance buffer is required even if this table shows a dimension of N/A, unless there is no Sidewalk / Sidepath and the outermost zone is the Street Buffer.	63

Major Highways – Prioritizing Street Design Features

Figure 2-95 provides a summary of Major Highway design features in four different categories and identifies what features are required, recommended, optional, and not permitted.

Figure 2-95. Street Design Features for Major Highways

Legend	■ Required ▲ Recommended (Context-Sensitive) O Optional (Context-Sensitive) x Not Permitted or N/A	* Unless determined otherwise by Planning Board [1] Engineering judgement needed – see Chapter 6: Intersections for details	[2] Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. [3] Narrowing lanes down to default dimensions for street type	Page Ref
SIDEWALK ZONE	Trees/Landscaping in Buffer		▲	166
	Green Infrastructure/Rain Gardens		▲	171
	Seating		x	67
	Bicycle Parking		x	68
	Recycling/Trash Receptacles		x	73
	Plazas/Parklets		x	99
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)		x	69
	Pedestrian-Scale Lighting		O	86
	Pedestrian/Bicycle Wayfinding		O	77
	Sidewalk-Level Driveways		x	85
INTERSECTIONS	Roundabouts (Modern or Mini)		O[1]	132
	Crossing Islands		▲	152
	Pedestrian Signals (when traffic signals are present) or Beacons		■	149
	Pedestrian Recall on Signals		x	155
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)		■	86
	Protected Intersections, Bike Boxes, Two-Stage Queue Boxes		–[2]	136
	Bicycle Markings/Facilities (when bikeways are present)		■	138
SPEED MANAGEMENT	Lane Diet		▲[3]	211
	Road Diet (if volumes meet thresholds for road diet)		O	210
	Speed Humps/Cushions		x	212
	Speed Tables/Raised Crosswalks		x	213
	Raised Intersections		x	213
	Curb Extensions/Bulb Outs		O	213
	Neckdowns/Chokers		O	214
	Traffic Diverters		x	209
	Chicanes/Roadway Curvature		x	214
	Textured Paving Treatment		x	216
STREET ZONE	Green Infrastructure in Median (when median is present)		▲	171
	Street Trees/Landscaping in Median (when median is present)		■	166
	Minimize/Consolidate Driveways		O	119
	Undergrounding Utilities (Master Plan recommendations supersede this guidance)		O	108
	Transit Shelters (where transit routes are present and boarding thresholds are met)		O	82
	Loading/Pick-up and Drop-off Zones		x	100
	Accessible Parking		x	97
	Carshare Parking		x	101
	E/V Charging Stations		x	98

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2.6 Special Street Types

Each of the subsequent chapters in this document present design guidance for the primary street types outlined in the prior section. However, there a few additional street types that occur less frequently and under special circumstances: Alleys, Rustic Roads/Exceptional Rustic Roads, and Commercial/Residential Shared Streets. Design guidance for these special street types is provided below.

Alleys

While alleys primarily have a service function—for trash collection, deliveries, etc.—they can also support placemaking and bicycle and pedestrian connectivity in downtowns like Silver Spring, or Wheaton. Residential alleys also provide secondary access to homes for residents and fire/EMS vehicles. Design guidance:

» The total pavement width of a one-way alley should be a minimum of 16 feet, whereas the minimum total width for a two-way alley is 20 feet. Adequate clear width must be provided for site access.

» Alleys should be properly drained with either center or side drainage. “Green alley” treatments that increase permeability may be desirable, including as previous pavement or rain gardens at the edge of the pedestrian path.[16]

» In locations where alleys are adjacent to active commercial strips or parks, they may be activated with café seating, placemaking, murals, or other amenities. These features should not compromise the service function of the alley. For more information, consult Section 4.3, Sidewalk Cafés.

» To maximize safety, pedestrian-scale lighting and sight lines around obstructions are important considerations.

» Particularly on Downtown Boulevards, Downtown Streets, Town Center Boulevards, and Town Center Streets, design should encourage deliveries and loading/unloading in service alleys, to avoid double parking on fronting streets, or obstructing of bicycle or travel lanes.

Figure 2-96. Alley in Silver Spring

At intersections of alleys and other streets, careful attention to sight lines, corner radii, and visibility for drivers and pedestrians are essential. Designs should emphasize “crawl” speeds (5 mph) and address sight lines through building design, curbside management, and the design of street buffers. Mirrors are a retrofit solution that are not desired as part of new construction.

16 NACTO Urban Street Design Guide, 2016.

Rustic Roads / Exceptional Rustic Roads

Montgomery County's Rustic Roads Program preserves as "rustic roads" those historic and scenic roads that reflect the agricultural character and rural origins of the county. The Rustic Roads program is governed by the Montgomery County Code, Chapter 49, Article 8,[17] which includes criteria that roads must meet for classification as Rustic or Exceptional Rustic Roads. The Program is overseen by the Rustic Roads Advisory Committee.

If a road is designated as a Rustic Road or Exceptional Rustic Road, certain physical features of the road must be retained, and special right-of-way maintenance procedures may apply. Under Montgomery County Code, Chapter 50, Article 2[18] during the subdivision process, the Planning Board must not require improvements that are contrary to the rustic roads law or regulations, and the Board may waive or substitute alternative requirements that are consistent with the rustic roads law.

Roads are added and removed from the Rustic Roads Program through local master plan amendments as well as through amendments to the Rustic Roads Functional Master Plan.[19]

The requirements for Rustic Roads and Exceptional Rustic Roads supersede the information presented in this guide. For more information and for a current list of Montgomery County's Rustic and Exceptional Rustic Roads, visit montgomeryplanning.org/rusticroads.

Figure 2-97. Martinsburg Road in Dickerson

17 https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md/0-0-0-22828#rid-0-0-0-68053

18 https://codelibrary.amlegal.com/codes/montgomerycounty/latest/montgomeryco_md/0-0-0-105854#rid-0-0-0-106123

19 montgomeryplanning.org/rusticroads

Residential and Commercial Shared Streets

Shared Streets typically provide a space that is shared by people using all modes of travel. The design encourages extremely low vehicle speeds and volumes. Shared Streets are often curbless, providing pedestrians with freedom of movement and creating optimal spaces for special events. They can support a variety of land uses, including commercial, entertainment, dining, and residences. Shared Streets should include strategically defined edges and zones, and unique paving materials where feasible. Design considerations include:

» Vehicle operating speeds should not exceed 15 mph.

» Designs should allow for flexibility, so that streets can be easily closed to automobile traffic for events and reconfigured to support a wide range of social and cultural functions.

» Durable materials and an established maintenance regime that includes regular street cleanings, replacement of lost or damaged site furnishings and streetscape elements (including tactile warning strips), maintenance of plantings and trees, and snow plowing/removal are key, as these streets often feature non-standard materials and treatments.

» Streetscape elements must facilitate navigation by pedestrians with vision disabilities, as shared streets allow free-form movement through all spaces for pedestrians and bicyclists. Tactile surfaces should indicate pedestrian-only zones and safe crossings. For more information, see *FHWA Accessible Shared Streets: Notable Practices and Considerations for Accommodating Pedestrians with Vision Disabilities*.[20]

Figure 2-98. A shared street at The Wharf in Washington, DC

A shared street should be comprised of the following zones:

» A **Frontage Zone**, which is the interface between building faces and the shared street. For additional guidance, consult Section 4.5: Frontage Zone.

» A **Comfort Zone**, which provides a continuous, clearly defined, obstacle-free pedestrian area. The comfort zone should be at least 6 feet wide and should provide connections to all important destinations along the street. The comfort zone can be defined with contrasting materials, colors, or detectable changes in texture.

» A **Furniture Zone** can contain tables, chairs, or other amenities. For additional information on how to design this area, consult Chapter 4: Sidewalk Zone.

20 https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/accessible_shared_streets/fhwahep17096.pdf

» A **Shared Zone**, where users of all modes can expect to encounter one another. These use treatments such as a flush level (curbless) design or colored/patterned pavement, which can help communicate pedestrian priority. A centrally located shared zone may be the most intuitive location for users. The edges of the shared zone should be apparent and detectable by pedestrians with vision disabilities. Edges can be defined by furniture, plantings, or streetscape elements, or with detectable edge treatments.

Crossings should be located at the entry/exit points of the shared street, as well as mid-block if the shared street is more than 600 feet long. White crosswalk markings that meet Maryland Manual of Uniform Traffic Control Devices (MdMUTCD)[21] standards should be used. Directional indicators can also be employed to enable pedestrians with vision disabilities to more easily locate crossings. Detectable warning surfaces should be used to indicate the boundary of the shared zone at designated crossings.

Gateways should clearly define the shared street's entry and exit points. Distinctive treatments, such as changes in surfacing, raised crossings, trees, or landscaping should make it obvious to drivers and pedestrians that they are entering a shared street where modes interact, yet pedestrians have the right-of-way everywhere. Planters or other moveable elements that are used to temporarily block entry/exit points for certain uses or times of day are allowable if they do not block crosswalks or pedestrian Comfort Zones.

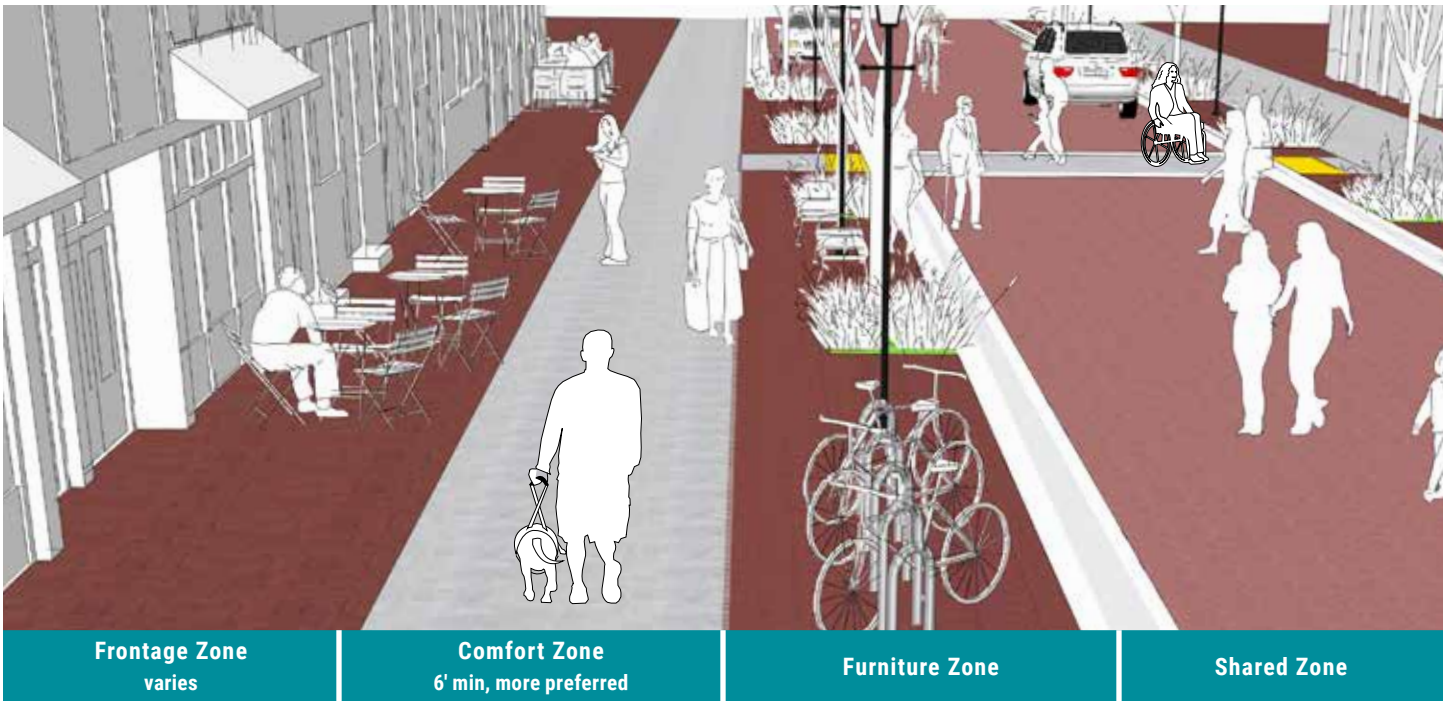

Figure 2-99. Shared street zones (Source: FHWA Accessible Shared Streets Guide)

21 https://www.roads.maryland.gov/mdotsha/pages/index.aspx?PageId=835