Prince George's County
Department of
Public Works and Transportation

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URBAN Street Design STANDARDS

2023 Urban Street Design Standards

APPROVED Michael D. Johnson
By Michael D. Johnson, PE at 11:12 am, May 15, 2024

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Overview

This document presents Urban Street Design Standards for use in Prince George's Regional Transit Districts and Local Centers as required by Section 27-6206 of the Zoning Ordinance for an updated approval by the County Executive and Council. See the following website for locations of regional transit districts and local centers: PGAtlas.com, General Plan Center (2035) layer). The Urban Street Design Standards will also apply to any area as required by the County Council such as in a zoning map amendment for a Planned Development (PD) zone, in a master plan, or in a sector plan.

These standards were developed in 2017 and then updated in 2023 and 2024 by Prince George's Department of Public Works and Transportation (DPW&T) in collaboration with other departments that play a role in the planning, development, construction and maintenance of streets and adjacent land uses in the County.

Vision

Streets are the backbone of the urban environment and as such they must accommodate the needs of all users. Complete Streets is an approach to planning, designing and building streets that enables safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. Moreover, Complete Streets enhance safety (in both reality and perception) and provide a feeling of comfort, promote equity and sustainability, assist businesses and enable economic centers to thrive, and contribute to an overall sense of place, aesthetics and community. As designated Transit Districts and Local Centers in Prince George's County transform from suburban-style development with automobile-focused roadways to urban centers focused on increased transit, walking, rolling (e.g., wheelchairs, skates, scooters, strollers, etc.) and bicycling, well-balanced street design will be more important than ever. The urban standards presented here aim to ensure that applicable public streets including, publicly funded projects, are Complete Streets which are safe, comfortable, and inviting to all users. This codification of the Prince George's County Urban Street Design Standards, while directly applicable for County owned and maintained roadways, the intent is to also serve as a template for roadways owned and maintained by others (e.g., State, Municipal, etc.) in the County, as it is critical to promote optimally safe streets for all sections in order to provide a truly connective, consistent and synergistic roadway network.

While the County cannot impose or mandate the County's Urban Street Design Standards outside of the applicable public streets, it is imperative that and is particularly critical in activity areas that there is a safe, comprehensive, accessible and seamless multimodal network that creates holistic and systemic synergy creating a truly safe system. Therefore, while not beholden to the specific details for the County's Urban system, it is essential that other roadway owners design and incorporate typical sections that will dovetail and connect seamlessly and with the County sections so that there are no systemic weak links or contrasts of typicals so that there is a truly safe-system that enhances access, mobility, modal choice and safety for all.

Background and Supporting Documents

A number of County policies and principles support and drive the design intent of the Urban Street Design Standards.

In 2012, Prince George's County adopted a Complete and Green Streets Policy (CB-83-2012) that stated:

> *"...All planned County financed and approved road, sidewalk, trail and transit related construction and reconstruction projects shall include environmental site design and facilities for the combined use of motor, emergency and freight vehicles, transit, bicycles and pedestrians, except when cost shall be disproportionate to the projected need or when such facilities would be inappropriate due to the nature of the project, including the context and character of the surrounding built and natural environment of the neighborhood or area."*

In 2014, the Prince George's County Council approved Plan Prince George's 2035, the County's general plan for growth and development. Plan 2035 contains strategies to implement the County's vision for walkable, transit-oriented mixed-use development. The Urban Street Design Standards conform with these strategies.

In October 2015, the Prince George's County Council passed CB-86-2015 calling for the development of new urban street standards. In November 2016, the Council approved CR-085-2016, which contained specifications and standards for Regional Transit Districts and Local Centers. With this legislation, the County adopted "an urban street design policy and principles, consistent with the Council's 2014 approval of its most current general plan for the County, *Plan Prince George's 2035*." *Plan 2035* established the following important strategy, among others, to become more multimodal and better align transportation with the adjacent land use context:

> *"Design all capital road improvements and streetscape enhancements and all new development in the Regional Transit Districts, the Innovation Corridor, and Local Centers, to improve multimodal travel for pedestrians, cyclists, transit and other alternatives to the automobile. The primary transportation improvements in these areas should be focused on pedestrian and bicyclist facilities and public transit upgrades and retrofits."*

In 2019, the County adopted Vision Zero, a strategy to eliminate all traffic fatalities and severe injuries by 2040. Complete Streets and the Urban Street Design Standards support the County's Vision Zero policy to increase safe, healthy, equitable mobility for all including people who walk, bike, drive and use transit.

In 2022, the Prince George's County Council passed CB-68-2022 which updated the Zoning Ordinance. Related to this, in Section 27-6206 of the Prince George's County Code is a requirement that all streets constructed in the Transit-Oriented/Activity Center Base and Planned Development Zones be constructed to these Urban Street Design Standards.

In 2023, the Prince George's County Council passed CB-69-2023 which updated the Urban Street Design Standards and required the following:

> *"All planned County financed and approved road, sidewalk, trail and transit-related construction and reconstruction projects within Regional Transit Districts and Local Centers in the County shall be constructed pursuant to the adopted County Urban Street Design Standards and the applicable master, sector, or functional master plan."*

The Urban Street Design Standards presented here align DPW&T's design requirements with the intent of the policies and legislation above. They were developed based on best practices in the metropolitan DC region and across the nation.

Use of the Urban Street Design Standards

The Urban Street Design Standards are intended for use in designing new and retrofit streets in Regional Transit Districts and Local Centers, as established by *Plan Prince George's 2035.* Plan 2035 recommends that 75% of future residential growth and 70% of future job growth occur in the County's Regional Transit Districts and Local Centers. These centers are located primarily around Metro and Purple Line stations and are, or are intended to be redeveloped into, walkable, dense, urban neighborhoods.

Exceptions from the Urban Street Design Standards

Per CB-069-2023, the requirements of the County's Urban Street Design Standards may only be adjusted as is minimally necessary to address existing geotechnical, approved development or environmental constraints, and/or existing development, that inhibits construction of the Urban Street to its required buildout. In such cases, the Director may only authorize the following alternatives to the applicable required Urban Street Design Standards:

1. Reduction in number of travel lanes; and/or,
2. Reduction in width of travel lanes; and/or,
3. Reduction in width or elimination of median; and/or,
4. Reduction in width or elimination of center turn lane; and/or,
5. Replacement of an off-street bicycle facility with a barrier- or parking-separated on street facility; and/or,
6. Reduction in width or elimination of on-street parking.

Under no circumstances shall any bicycle, pedestrian, or transit facility or accommodation required by the Urban Street Design Standards be reduced or eliminated except as permitted by one of the specific Urban Street Design Standards or as authorized in six enumerated alternatives described above. If the Director determines that circumstances require modifications deviating from the standards and as identified six enumerated alternatives described above, the Director shall document their findings, to include analysis and justification for the modification or deviation. Any modifications determined to be required by the Director shall be published in an annual report to the County Council. The Director's findings and documentation shall explain how the facilities will achieve a 25-mph design speed (or lower), and how the facility will achieve future compliance with the applicable Urban Street Design Standard. Upon request, and in advance of the annual report to the County Council, the Director's findings shall be made available to the County Council, the Prince George's County Planning Board, and to the public. See Prince George's County Ordinance Sec. 23-146(d).

Development of the Urban Street Design Standards

To ensure the Urban Street Design Standards adequately address the concerns of multiple County departments and align with the complete streets policies cited above, for both the original development of the Urban Street Design Standards and then in the most recent update, DPW&T established a committee of representatives from various departments and external stakeholders to develop the Urban Street Design Standards. Consultants with expertise in developing Complete Streets design standards for jurisdictions in the DC region and throughout the U.S. provided assistance to the committee. Staff from the following departments participated in the committee:

- County Executive's Office (CEX)

- DPW&T (Office of the Director, Office of Engineering & Project Management, Office of Transportation, and Office of Highway Maintenance)
- Department of Permitting, Inspections & Enforcement
- Department of the Environment (DOE) (Stormwater Management Division)
- Maryland-National Capital Park and Planning Commission (M-NCPPC) (Transportation Planning and Community Planning)

The members of this committee held work sessions over a period of several months to arrive at consensus on key topics related to urban street design. The sessions also included facilitated discussions regarding how to best apply these practices in Prince George's Urban Street Design Standards. The work session discussion topics included:

- New urban street typologies to supplement suburban-style functional street classifications
- Street designs that achieve desired motor vehicle speeds (including sessions on target design speeds and appropriate travel lane widths)
- Designs that improve conditions for pedestrians, including intersection design to improve pedestrian safety and comfort (including a session on designing street corner radii to produce slower turning speeds)
- Street designs that facilitate stormwater management that maximize environmentally sensitive design
- Street designs that improve conditions for bicyclists

The committee agreed that, to better balance the needs of pedestrians, bicyclists, transit users and vehicles, it is critical to incorporate the following key elements into the Urban Street Design Standards:

- Slower motorized vehicle speeds
- Shorter pedestrian crossing distances
- Reduced curb radii
- Wider sidewalks
- More bicycle facilities
- Pedestrian amenities
- High quality bus stops
- Traffic calming
- Enhanced continuous lighting in identified safety corridors
- Enhanced landscaping (e.g., shaded walkways, tree coverage, median/sidewalk plantings)
- Crime Prevention Through Environmental Design (CPTED) Principles

Urban Street Typologies

Traditionally in Prince George's County, the functional classification of a particular roadway has determined the basic design of the street. Arterials, collectors and local streets have typically been designed to accommodate the anticipated volume of vehicle traffic and desired level of service with less attention paid to the land use context of the roadway. To facilitate a better balance between functional classification, adjacent land uses and the competing needs of various users of the transportation system, DPW&T and the steering committee agreed to establish new street typologies for urban streets, including:

- Mixed Use Boulevard (2, 3, and 4 lane options), and transit priority design standards
- Neighborhood Connector, and transit priority design standards
- Neighborhood Residential
- Industrial Road
- Shared Street
- Alley

The Countywide Master Plan of Transportation, as amended by area master and sector plans, identifies the specific recommended Urban Street type for all streets in the Regional Transit Districts and Local Centers. These standards contain design requirements and alternatives intended to implement recommended street types.

The following section describes each of the new urban street types and provides an illustration of a typical cross-section established by the new street design standards. A summary table, with typical dimensions and other characteristics for each street type, is included at the end of this section. The Urban Street Design Standard details are presented in the next section of this document. The street typologies and standards reinforce the policies and principles in *Plan 2035* and various small area plans and are consistent with CB-86-2015, CR-085-2016, CR-067-2023, CR-068-2023, and CB-069-2023. The priority of modes from high to low:

1. Walking
2. Public Transit
3. Biking
4. Shared vehicles/Taxi
5. Single Occupant Vehicles

The typical cross-sections are to showcase the desired elements that need to be included in each type of urban streets. When the total available right-of-way varies from the one shown in the typical cross sections, the allocation of right-of-way among various desired elements should be based on the priority of different modes. The priority list can vary for different roadway classifications. They contain elements and dimensions that encourage multimodal use of the roadway: slower design speeds, fewer travel lanes, enhanced transit accommodations, wider sidewalks, greater bicycle accommodation and shorter crossing distances.

Notes:

A) These standards shall be incorporated into the existing Prince George's County Specifications and Standards for Roads and Bridges. In the interim, the Department of Permitting, Inspections and Enforcement (DPIE) can provide guidance with coordination, as appropriate with DPW&T.

B) Several of the street types that follow include multiple variations: Option A is the preferred scenario and the other options are provided as an alternative for retrofit conditions or other cases where right-of-way is particularly constrained.

C) In identifying the required lane configuration in the Urban Street Design Standards, please refer to the latest M-NCPPC Transportation Review Guidelines.

D) The latest Prince George's County Stormwater Management Design Manual must be adhered to.

E) Designers must ensure safe transitions into and out of areas where the Urban Street Design Standards govern.

Mixed-Use Boulevard

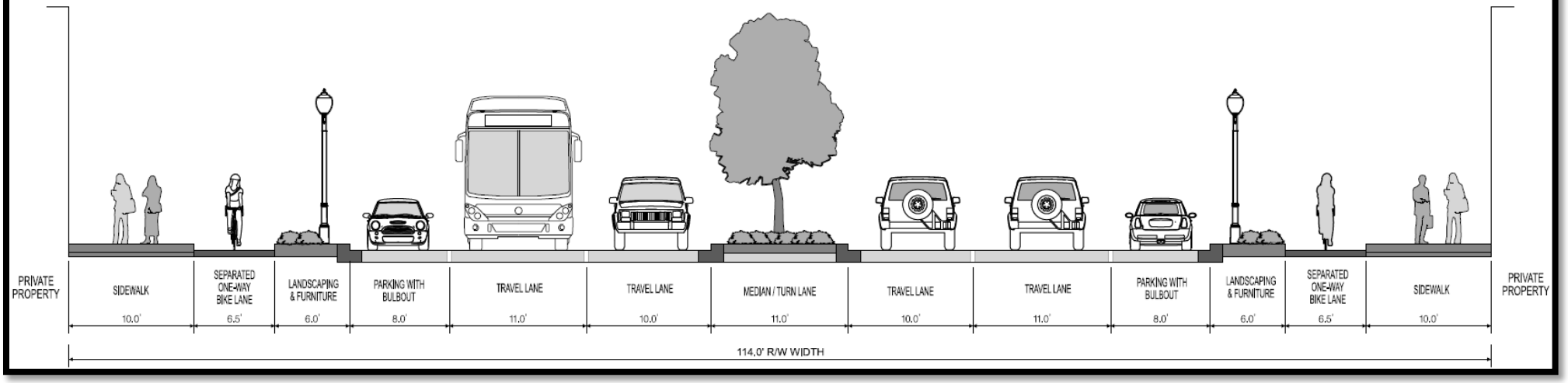
Mixed-Use Boulevards are significant roadways that travel through the heart of medium- to high-density mixed-use centers. Buildings along mixed-use boulevards are located close to the street. Mixed-use Boulevards experience heavy transit, pedestrian and bicycle activity and, as such, require slow vehicular speeds, wide sidewalks, and short crossings to ensure the safety of all users. Separated bike lanes, which are physically separated from adjacent travel lanes with a vertical element, are recommended on this type of roadway unless traffic volumes are fewer than 6,000 vehicles per day. Example cross sections are shown on the following pages and additional information is provided in the standard details.

Street Type	Description	Typical Features
Mixed Use Boulevard	• Buildings close to street • Mix of land uses • Medium- to high-density land use • High volumes of vehicles and transit • Medium to heavy pedestrian/bike activity • Intended Functional Operating Speed: Slow speeds (25 mph)	• 2-4 travel lanes • Median* • Sidewalks & bike facilities** • Street furniture & enhanced lighting • On-street parking

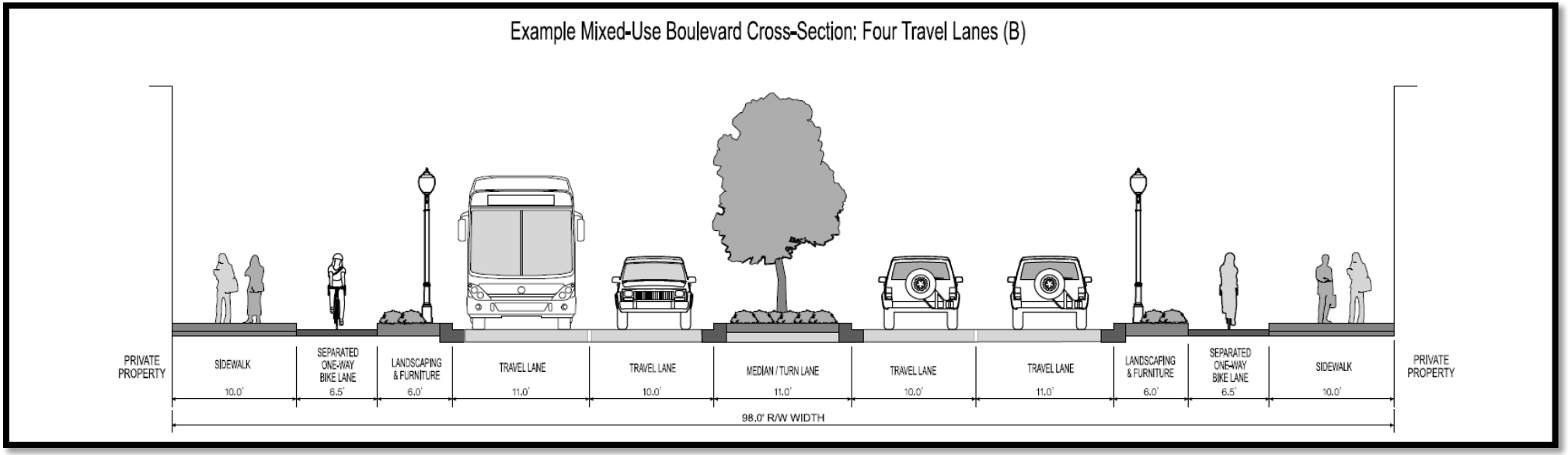
*For Mixed Use Blvd –Two Travel lanes (A&B), median may be eliminated. See details 100.20 & 100.21.

** For guidance on preferred bikeway type, refer to the latest FHWA Bikeway Selection Guide

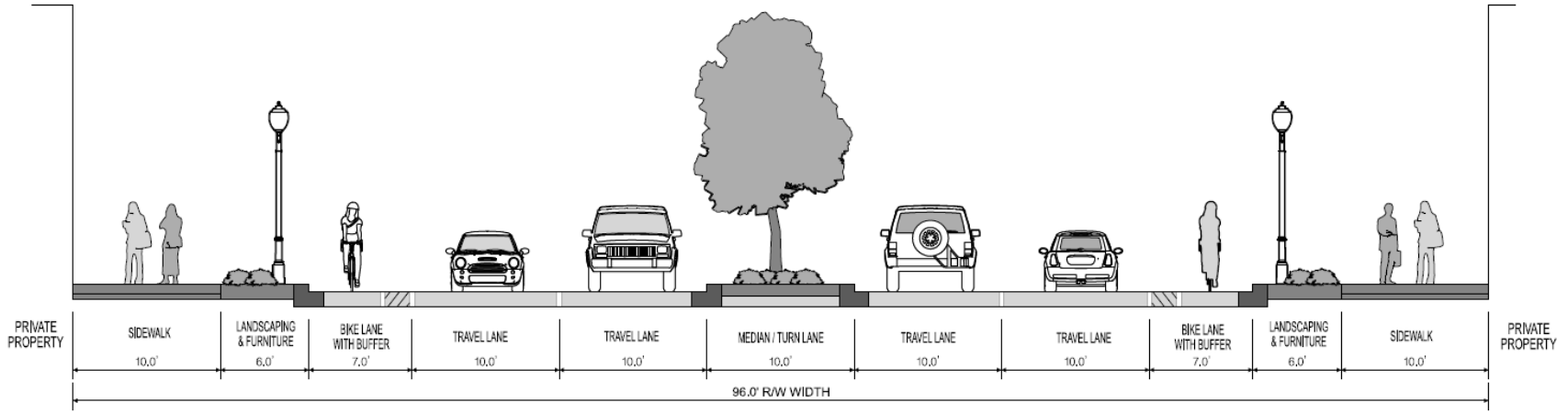
Example Mixed-Use Boulevard Cross-Section: Four Travel Lanes (A)



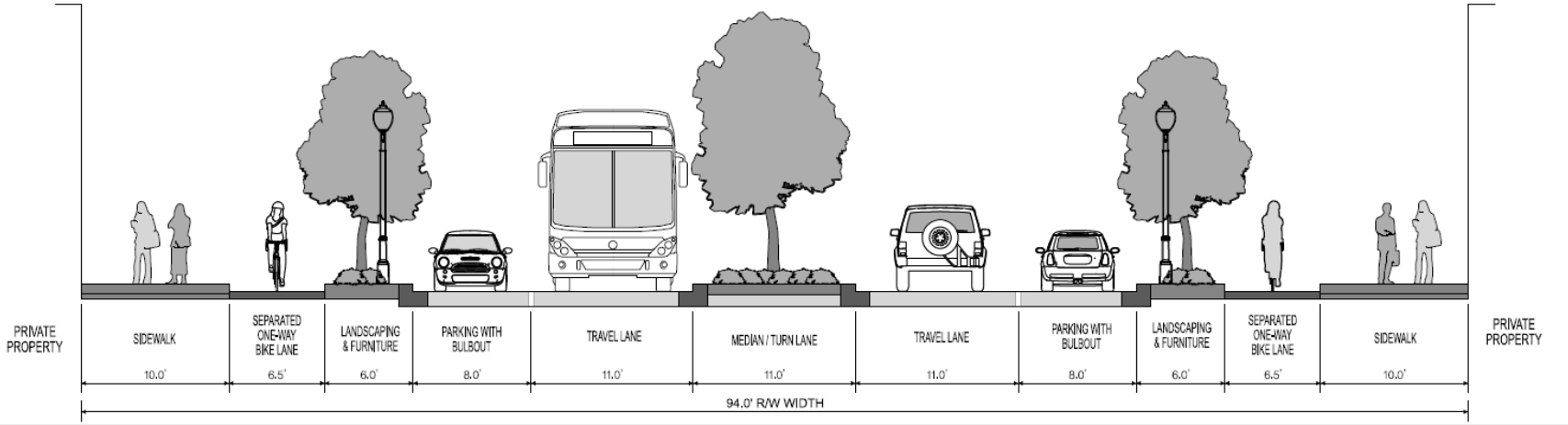
Example Mixed-Use Boulevard Cross-Section: Four Travel Lanes (B)



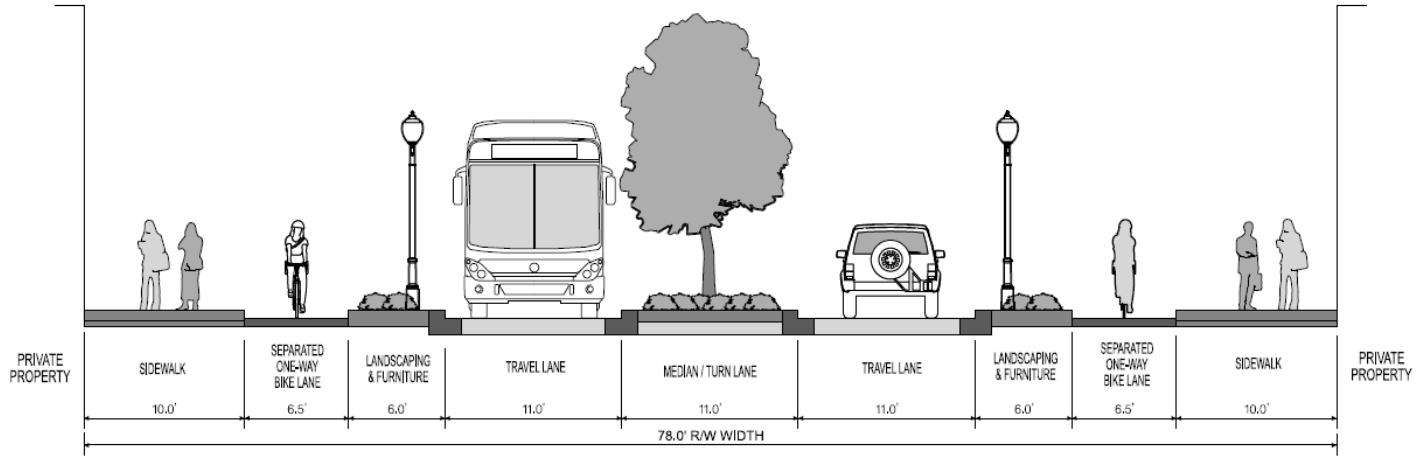
Example Mixed-Use Boulevard Cross-Section: Four Travel Lanes (C)



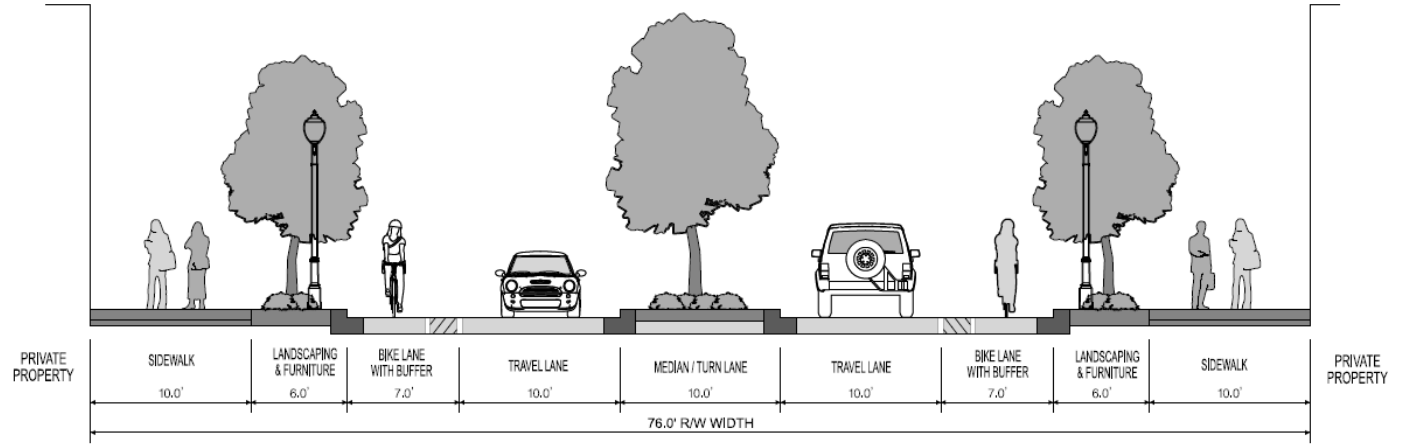
Example Mixed-Use Boulevard Cross-Section: Two Travel Lanes (A)



Example Mixed-Use Boulevard Cross-Section: Two Travel Lanes (B)



Example Mixed-Use Boulevard Cross-Section: TwoTravel Lanes (C)

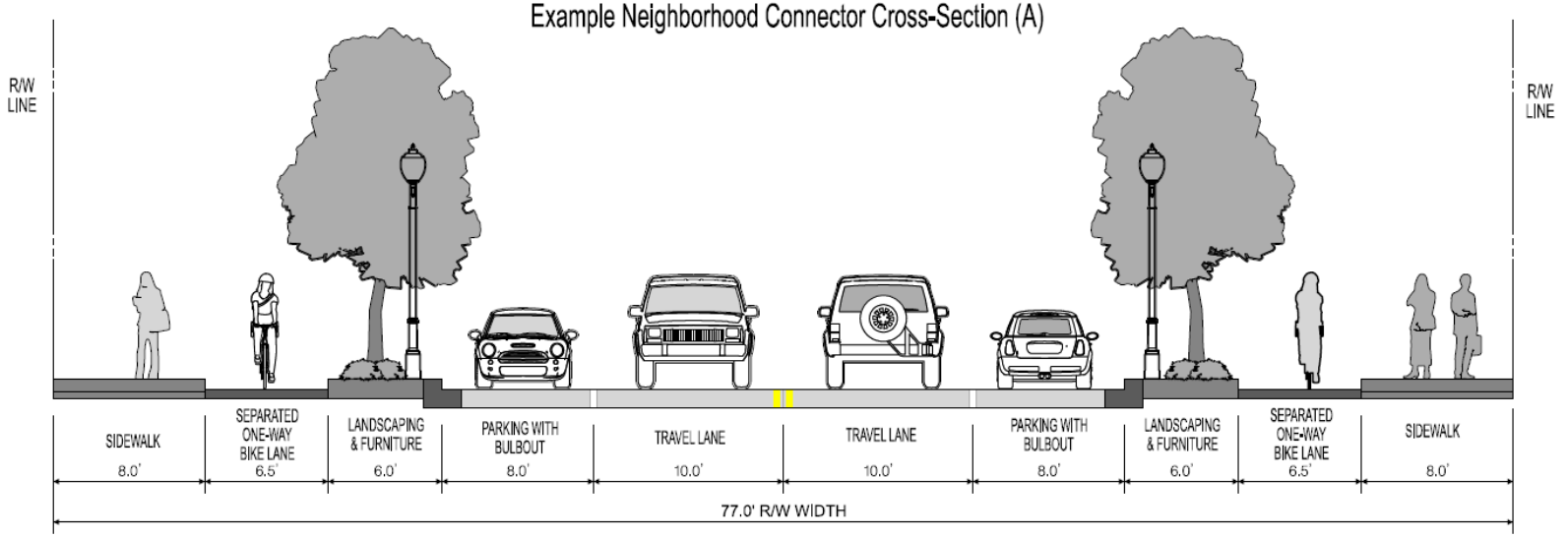


Neighborhood Connector

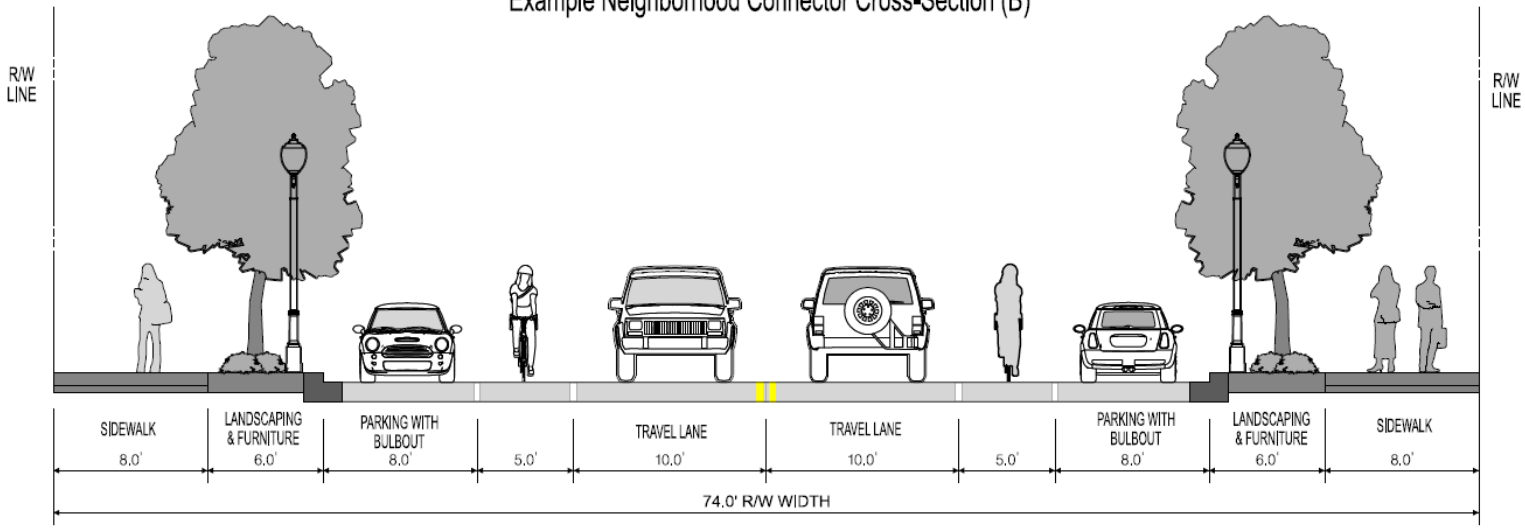
Neighborhood Connectors link multiple neighborhoods and provide important walking and bicycling routes between them. Neighborhood Connectors typically have continuous development which may be small- and medium-sized businesses and/or residential; however, the scale of development is less intense than that of the Mixed Use Boulevards. If the neighborhood connector serves as a "main street" destination, it will often have outdoor events and dining along the street edge. These streets encourage bicycle and pedestrian activity and require slow speeds. Major bus routes may occur on these streets. Sidewalk widths will vary depending on the scale of the adjacent residential development. An example cross-section is shown below and additional options are provided in the standard details.

Street Type	Description	Typical Features
Neighborhood Connector	• Connect multiple neighborhoods • Medium-to-high density land uses • Buildings close to street • May feature mixed land uses or be mostly residential with occasional businesses • Heavy pedestrian/bike activity; Provide continuous walking and bicycling routes • Some are major bus routes • Intended Functional Operating Speed: (20-25 mph)	• 2 travel lanes • Bike facilities • Sidewalks • Lighting • Enhanced streetscape • In mixed-use/retail areas, space for street furniture, outdoor events & dining • On-street parking

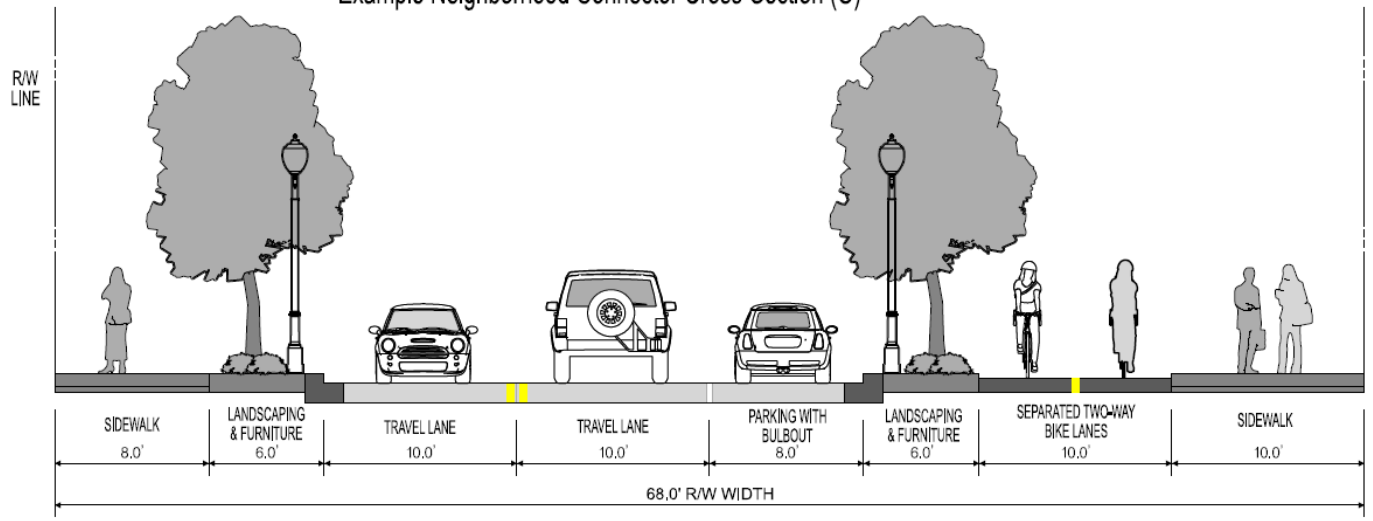
Example Neighborhood Connector Cross-Section (A)



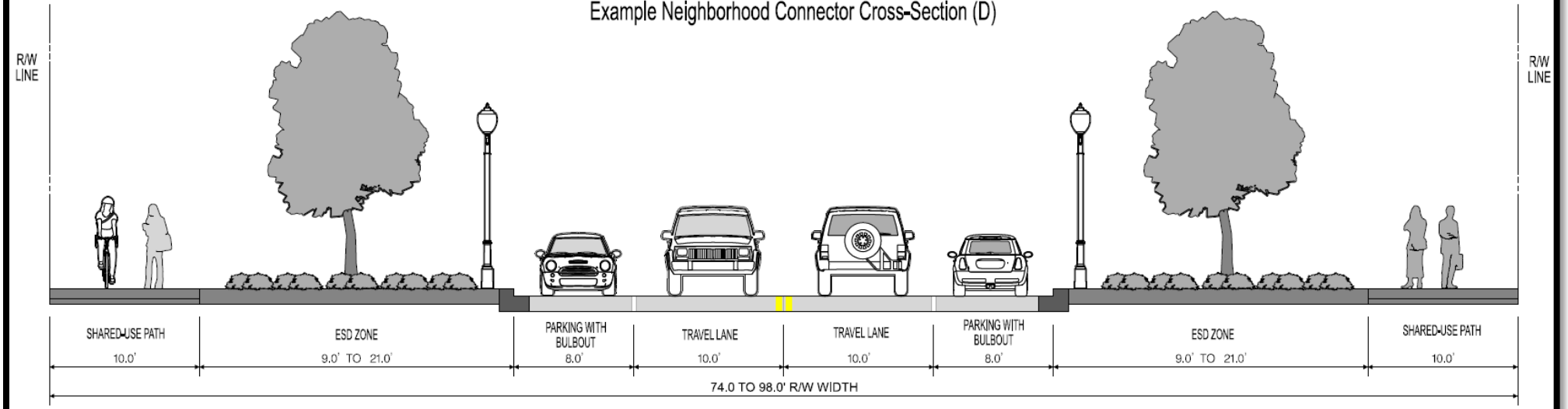
Example Neighborhood Connector Cross-Section (B)



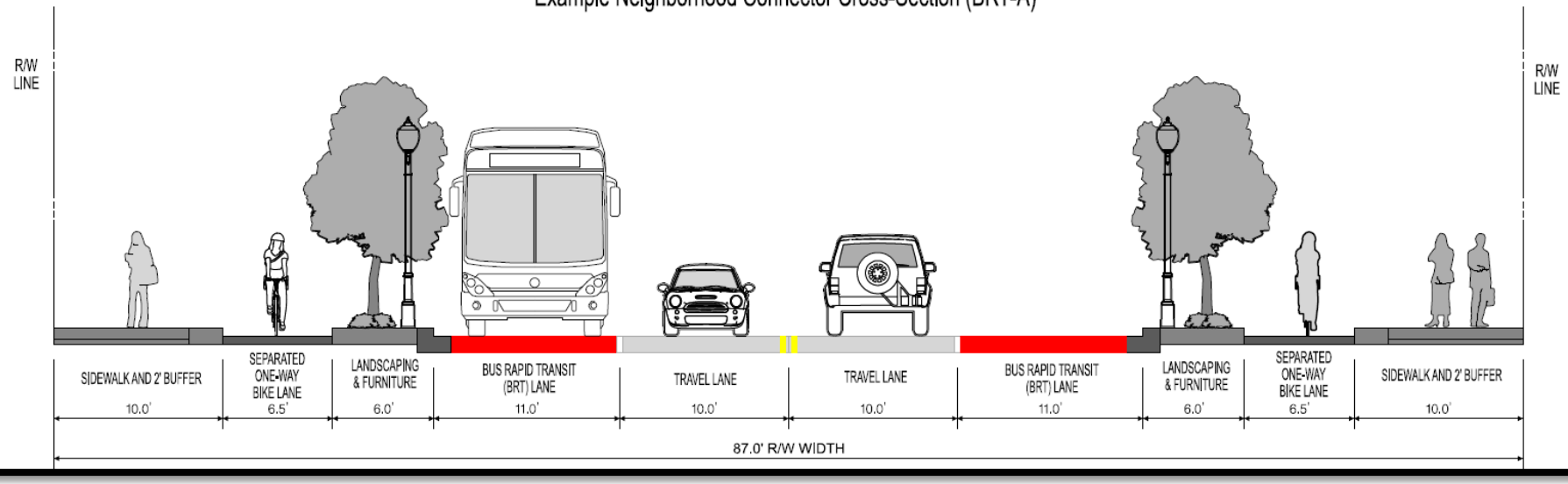
Example Neighborhood Connector Cross-Section (C)



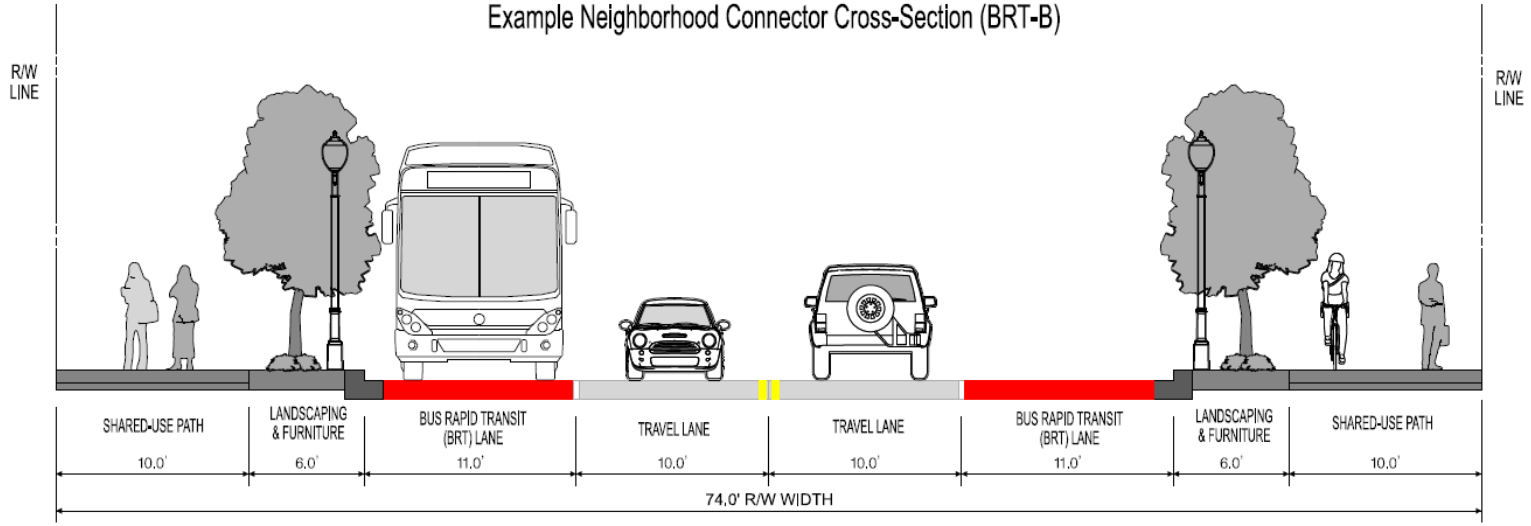
Example Neighborhood Connector Cross-Section (D)



Example Neighborhood Connector Cross-Section (BRT-A)



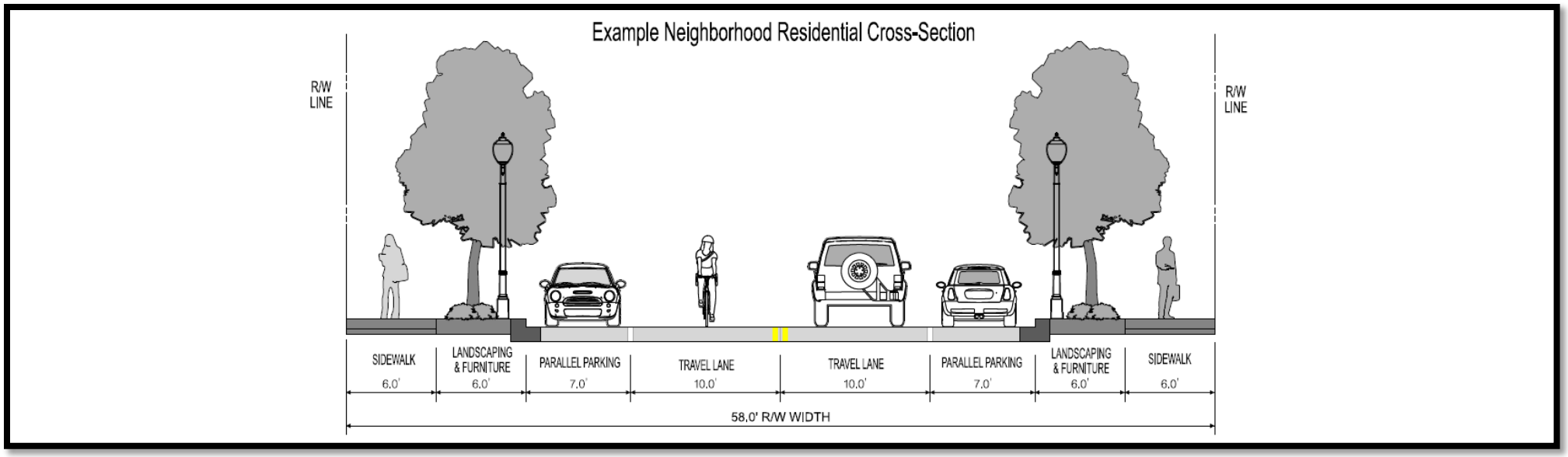
Example Neighborhood Connector Cross-Section (BRT-B)



Neighborhood Residential

Neighborhood Residential Streets have low traffic volumes and provide access to single family and multi-family housing. Despite lower volumes of pedestrians than along Mixed Use Boulevards and Neighborhood Connectors, sidewalks are also important along these streets. Due to the low traffic volumes, bicyclists often share the roadway with motorists. On-street parking is provided, although in some locations it may be consolidated to one side of the roadway. An example cross-section is shown below and additional information is provided in the standard details.

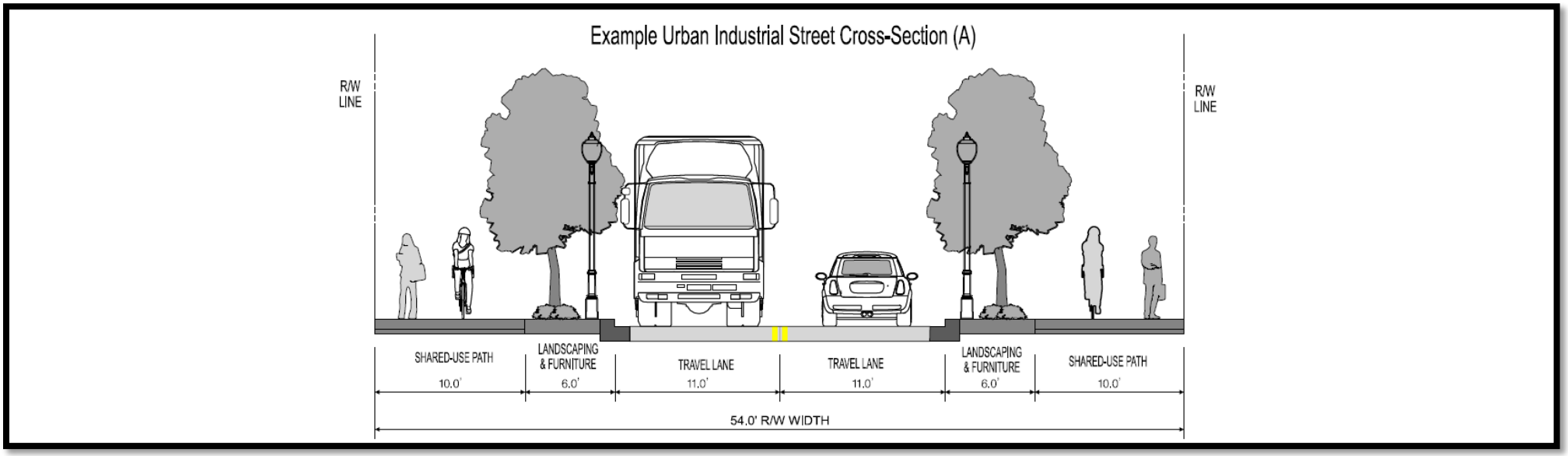
Street Type	Description	Typical Features
Neighborhood Residential	• Provide immediate access to single-family and multi-family residences • Focus on pedestrian safety and well defined walking paths • Bicyclists typically share the roadway or in unseparated bike lanes • Intended Functional Operating Speed: Slow speeds (20 mph) • All Ages and Abilities Bicycling Environment • Bicycle Boulevard	• 2 travel lanes • Sidewalks • Street trees • Lighting

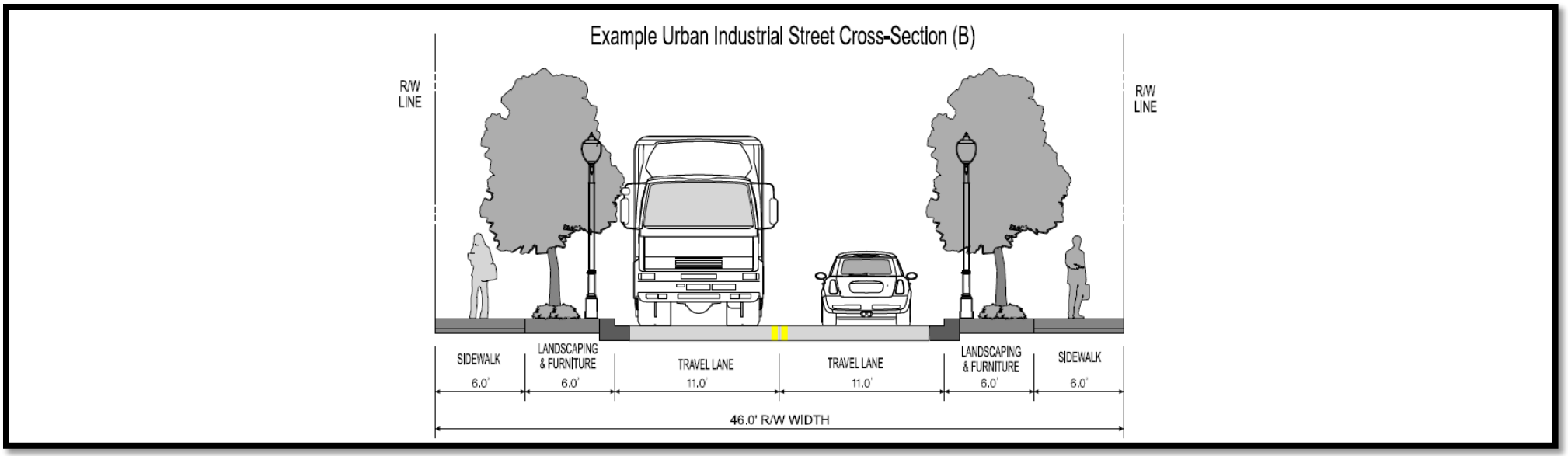


Industrial Street

Industrial Streets are fairly limited in the Regional Transit Districts and Local Centers areas, however they do exist. These streets have primarily industrial land uses. It is important to design for moderate to high volumes of trucks while still accommodating some bicyclist and pedestrian use.

Street Type	Description	Typical Features
Industrial Street	• Serve industrial areas • Carry moderate to high volumes of trucks of all sizes • Fewer bicyclists and pedestrians, but often they must pass through	• 2 Travel lanes • Adequate street width and turning radii to accommodate trucks • Lighting and Sidewalks

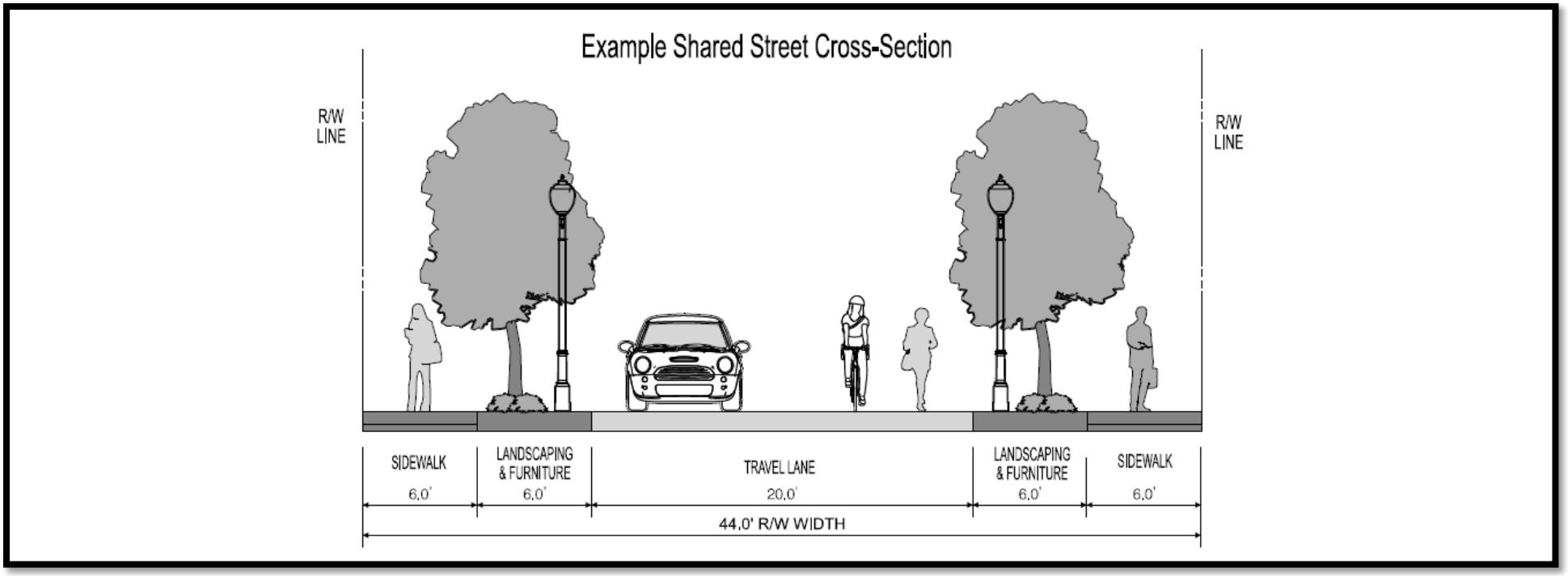



Example Urban Industrial Street Cross-Section (B)
R/W LINE
R/W LINE
SIDEWALK
6.0'
LANDSCAPING & FURNITURE
6.0'
TRAVEL LANE
11.0'
TRAVEL LANE
11.0'
LANDSCAPING & FURNITURE
6.0'
SIDEWALK
6.0'
46.0' R/W WIDTH

Shared Street

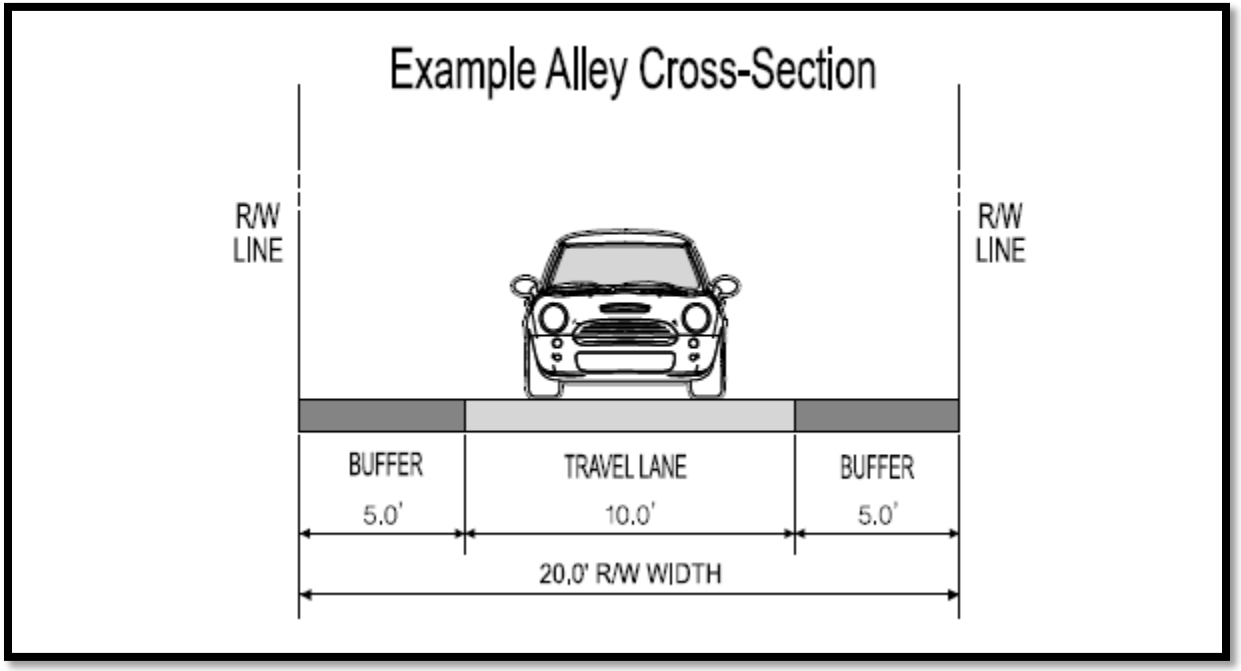
A Shared Street is a unique, curbless, single surface street that can be shared by users of all modes because it is designed for extremely slow speeds (generally no more than 10 mph). The adjacent land uses are mixed and pedestrians are the dominant mode along such streets.

Street Type	Description	Typical Features
Shared Street	• Multiple land uses • Single grade or surface shared by all modes • Extremely low speeds (10 mph or less) • All Ages and Abilities Bicycling Environment	• Unique paving • Street furniture • Lighting



Alley

Alleys have an important function in urban areas including deliveries and trash removal. They can also contribute to pedestrian and bicyclist connectivity. They are designed for extremely slow speeds, single vehicle travel and must accommodate room for other objects in the right of way such as trash receptacles.



Summary of Urban Street Design Standards

The following table summarizes the key design elements and street dimensions for the county's urban street design standards. County streets within designated Regional Transit Districts, Local Centers, and Planned Development zones may only be constructed to these standards; no other standards shall be used in the design or construction of such streets. These design elements and standards may be applied elsewhere in the County.

Urban Street Type	Right-of-Way	Median / Turn Lane	Intended Functional Operating Speed (mph)	Maximum Travel Lanes	On-Street Parking	Sidewalk[2]	Shared-Use Path[10]	Bike Facility[9]
Mixed-Use Boulevard: Four Travel Lanes (A)	114'	11'	25	4	8'	10'	None	6.5' separated one-way bike lane
Mixed-Use Boulevard: Four Travel Lanes (B)	98'	11'	25	4	None	10'	None	6.5' separated one-way bike lane
Mixed-Use Boulevard: Four Travel Lanes (C)	96'	10'	25	4	None	10'	None	5' on-road buffered bike lane
Mixed-Use Boulevard: Two Travel Lanes (A)	94'	11'	25	2	8'	10'	None	6.5' separated one-way bike lane
Mixed-Use Boulevard: Two Travel Lanes (B)	78'	11'	25	2	None	10'	None	6.5' separated one-way bike lane
Mixed-Use Boulevard: Two Travel Lanes (C)	76'	10'	25	2	None	10'	None	5' on-road buffered bike lane
Neighborhood Connector (A)	77'	None	20-25	2	8'	8'	None	6.5' separated one-way bike lane
Neighborhood Connector (B)	74'	None	20-25	2	8'	8'	None	5' on-road bike lane
Neighborhood Connector (C)	68'	None	20-25	2	8' (0')	10' (8')	None	10' separated two-way bike lanes
Neighborhood Connector (D)	74' to 98'	None	20-25	2	8'	None	10'	Shared-use path
Neighborhood Connector (BRT-A)	87'	None	20-25	2	None	10	None	6.5' separated one-way bike lane
Neighborhood Connector (BRT-B)	74'	None	20-25	2	None	None	10'	Shared-use path
Neighborhood Residential	58'	None	20	2	7'	6'	None	Shared lane marking / signs
Urban Industrial Street (A)	54'	None	20	2	None	None	10'	Shared-use path
Urban Industrial Street (B)	46'	None	20	2	None	6'	None	None
Shared Street	44'	None	10	2	None	6'	None	None
Alley	20'	None	10	1	None	None	None	None

1) Street tree planting areas will be provided to the specifications of Sections 27-4204(b)(1)(C) or 27-4303 of the Zoning Ordinance. Where multiple zones exist along a block, the most expansive street tree planting areas required shall be provided. Landscaping and Furniture zones and parking bulb outs can be used to accommodate SWM facilities, as appropriate. Additionally, the Urban Street Design Standards encourages the use of Crime Prevention Through Environmental Design (CPTED) principles when practical.
2) Sidewalks will be provided to the specifications of Sections 27-4204(b)(1)(C) or 27-4303 of the Zoning Ordinance. Where multiple zones exist along a block, the widest sidewalk required shall be provided.
3) All intersections shall have a 15' turning radius. Larger effective turning radii can be used to accommodate larger vehicles in combination with 15' actual turning radii. 15' turning radii for urban streets (maximum), 25' turning radii for bus and truck routes (maximum), Use effective turning radii & mitigate to accommodate large vehicles.

4) All vehicle travel lanes should be 10' wide except along designated bus routes, where 11' lanes are acceptable. Outside lanes may be expanded to 12' on those blocks containing driveways to loading dock ramps. Lane width restrictions do not apply to Industrial Streets.
5) Slip lanes are prohibited except as outlined in the procedures contained in Section 23-146(d) of the Prince George's County Code. For convenience, these are restated in the above section entitled "Exception from the Urban Street Design Standards".
6) Multiple left turn lanes are strongly discouraged.
7) 11' transit-priority lanes are strongly encouraged on streets with multiple bus routes; along these streets, a four-lane Mixed Use Boulevard design with outside transit priority lanes may be used, where the outside lane is 11' wide, contains red transit priority paint markings, appropriate signage, and may include transit priority signals.
8) Mixed-Use Boulevards designed to ultimately support four travel lanes should be limited to two travel lanes in initial operation to limit vehicular speeds to achieve a 25-mph design speed. The additional horizontal area where the third and fourth lanes would ultimately be can be reserved for on-street parking, transit priority measures, green space, or other non-automobile use.
9) On-road buffered bike lanes will require a physical separation component for the buffer. Striping is not sufficient.
10) Shared-use path is not permitted in lieu of a sidewalk in the RTO Zones, the LTO Core Zone, the TAC Core Zone, or the NAC Zone pursuant to Section 27-4204(b)(1)(C) because a sidewalk with a minimum pedestrian clearance zone is required.
11) The incorporation of a concrete bus shelter pad in conformance with DPW&T Standard Detail No. 300.24 is possible with most sections displayed above but will require modifications within the area the bus shelter is proposed to allow this facility improvement, while still maintaining pedestrian and bicycle facility access.
12) Coordination with DPW&T's Office of Transportation and WMATA is necessary when the proposed roadway will accommodate bus transit routes.

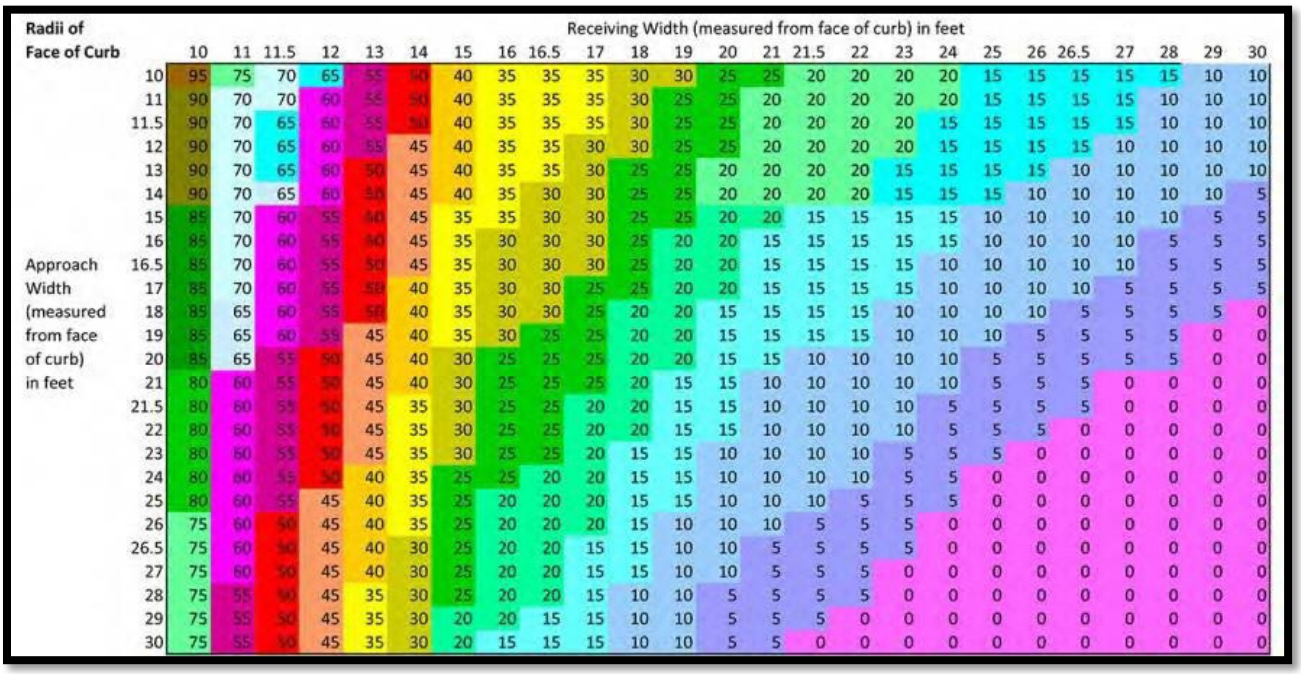
Appendix: Additional Design Considerations Related to Urban Street Design

Turning Radius

The Urban Street Design Standards recommend a maximum turning radius at intersection corners to reduce vehicles speeds and crash severity while improving pedestrian visibility and limiting crossing distances at intersections. Intersection design standards are adopted into these standards based on NACTO intersection design guidance from the NACTO Urban Street Design Guide and the NACTO Don't Give Up on the Intersection guidance. The turning radius should be designed for each intersection considering access for emergency vehicles, large trucks, transit vehicles, and school buses as appropriate. Large vehicles may present challenges related to small turning radii, particularly on narrow cross-sections (e.g. the Mixed Use Boulevard B street type.) Restrictions to parking and encroachment into adjacent and oncoming travel lanes should be considered to accommodate infrequent large vehicles turning movements. Designing roadways for large vehicles creates an undesirable environment for pedestrians and bicyclists. The needs of all users, especially the most vulnerable, must be balanced. The designer should consider the trade-offs and design decisions that can be utilized to limit turning radii, i.e. permitting on-coming lane encroachment for infrequent large vehicles, utilizing mountable curbs, limited use of curb extensions, etc. Slip lanes are prohibited except as outlined in the procedures as outlined in Page 5 of this manual under the section entitled "Exceptions from the Urban Street Design Standards". Multiple left turn lanes are strongly discouraged.

The table below can be used as a resource by designers making decisions about corner radii. The table is applicable to right turns which are typically the critical movement on two-way streets. The X axis is the available width for the turning vehicle on the receiving street and the Y axis is the available width on the approaching street. Both widths are measured from the face of the curb to the outer limits of the available area that can be used or encroached within for the swept path of the design vehicle as it turns. The figures indicate an appropriate minimum turning radius using a WB-40 design vehicle (which is slightly larger than a standard transit bus). The WB-40 is a commonly used design vehicle for most situations in cities. For streets with on-street parking, the radius provided using the chart will represent the effective radius, not the actual radius. The chart can still be used but, instead of the available space beginning at the face of the curb, it would start at the edge of the parking aisle.

This chart is not applicable to skewed intersections and when there is a desire to use compound curves instead of a simple radii. Similarly, streets in industrial areas or with significant bus activity may require a particularly tailored approach, for example using a different design vehicle if trucks typically exceed the size of the WB-40, modifying the placement of stop bars, or adjusting the assumptions about encroachment. While this table does not provide definitive turning radii that are applicable to all conditions, it can be a useful tool that informs the design process.



Radii of Face of Curb	Receiving Width (measured from face of curb) in feet																									
	10	11	11.5	12	13	14	15	16	16.5	17	18	19	20	21	21.5	22	23	24	25	26	26.5	27	28	29	30
10	95	75	70	65	55	50	40	35	35	35	30	30	25	25	20	20	20	20	15	15	15	15	15	10	10
11	90	70	70	60	55	50	40	35	35	35	30	25	25	20	20	20	20	20	15	15	15	15	10	10	10
11.5	90	70	65	60	55	50	40	35	35	35	30	25	25	20	20	20	20	15	15	15	15	15	10	10	10
12	90	70	65	60	55	45	40	35	35	30	30	25	25	20	20	20	20	15	15	15	15	10	10	10	10
13	90	70	65	60	50	45	40	35	35	30	25	25	20	20	20	20	15	15	15	15	10	10	10	10	10
14	90	70	65	60	50	45	40	35	30	30	25	25	20	20	20	20	15	15	15	10	10	10	10	10	5
15	85	70	60	55	50	45	35	35	30	30	25	25	20	20	15	15	15	15	10	10	10	10	10	5	5
16	85	70	60	55	50	45	35	30	30	30	25	20	20	15	15	15	15	15	10	10	10	10	5	5	5
16.5	85	70	60	55	50	45	35	30	30	30	25	20	20	15	15	15	15	10	10	10	10	10	5	5	5
17	85	70	60	55	50	40	35	30	30	25	25	20	20	15	15	15	15	10	10	10	10	5	5	5	5
18	85	65	60	55	50	40	35	30	30	25	20	20	15	15	15	15	10	10	10	10	5	5	5	5	0
19	85	65	60	55	45	40	35	30	25	25	20	20	15	15	15	15	10	10	10	5	5	5	5	0	0
20	85	65	55	50	45	40	30	25	25	25	20	20	15	15	10	10	10	10	5	5	5	5	5	0	0
21	80	60	55	50	45	40	30	25	25	25	20	15	15	10	10	10	10	10	5	5	5	0	0	0	0
21.5	80	60	55	50	45	35	30	25	25	20	20	15	15	10	10	10	10	5	5	5	5	0	0	0	0
22	80	60	55	50	45	35	30	25	25	20	20	15	15	10	10	10	10	5	5	5	0	0	0	0	0
23	80	60	55	50	45	35	30	25	25	20	15	15	10	10	10	10	5	5	5	0	0	0	0	0	0
24	80	60	55	50	40	35	25	25	20	20	15	15	10	10	10	10	5	5	5	0	0	0	0	0	0
25	80	60	55	45	40	35	25	20	20	20	15	15	10	10	10	5	5	5	0	0	0	0	0	0	0
26	75	60	50	45	40	35	25	20	20	20	15	10	10	10	5	5	5	0	0	0	0	0	0	0	0
26.5	75	60	50	45	40	30	25	20	20	15	15	10	10	5	5	5	5	0	0	0	0	0	0	0	0
27	75	60	50	45	40	30	25	20	20	15	15	10	10	5	5	5	0	0	0	0	0	0	0	0	0
28	75	55	50	45	35	30	25	20	20	15	10	10	5	5	5	5	0	0	0	0	0	0	0	0	0
29	75	55	50	45	35	30	20	20	15	15	10	10	5	5	5	0	0	0	0	0	0	0	0	0	0
30	75	55	50	45	35	30	20	15	15	15	10	10	5	5	0	0	0	0	0	0	0	0	0	0	0

Approach Width (measured from face of curb) in feet

Figure 1. Turning Radius Design Resource (compiled from ITE Turning Vehicle Template, 2000)

Designing Bike Lanes at Intersections

Bike lanes are intended to encourage bicyclists to ride on the roadway in a position and manner that makes them most visible to motorists entering or exiting the roadway and that is consistent with legal and effective operation of a vehicle. Good intersection design indicates to bicyclists and motorists how they should traverse the intersection; as such, all bike lanes at intersections should provide clear and logical direction to all users. These principles also hold true for separated bike lanes at intersections. For additional guidance on bike lane designs at intersections, consult the AASHTO Guide for the Development of Bicycle Facilities, the NACTO Urban Bikeway Design Guide, and the Manual on Uniform Traffic Control Devices (MUTCD). For more information on separated bike lane design at intersections, consult the FHWA Separated Bike Lane Planning and Design Guide and the MassDOT Separated Bike Lane Planning & Design Guide.

Fire Code Compliance

The Fire Safety Law of Prince George's County (Prince George's County Code of Ordinances – Subtitle 11), as supplemented by the National Fire Protection Association (NFPA) model codes or standard promulgations, provides the design requirements for public and private street design. Street clear widths are an important design consideration related to fire department access. Consistent with the NFPA, public roadways must provide a 20' clear width to accommodate access for fire apparatus. This clear width is accommodated on all street types in the Prince George's County Urban Street Standards except for the Mixed Use Boulevard (A) with two travel lanes. The previous exception would only provide 18' of clear width and only 10' in areas where parking is allowed. To remedy this, it is advised that sufficient alternative measures should be designed into the median and roadway of any permitted road to allow for 20' of width. These measures could include no parking 50' from hydrants, mountable curbs and reinforced medians in areas where parking is allowed, no parking where median features prevent apparatus from crossing over, etc.

Other Design Resources

There are a variety of valuable references and resources that designers should use in conjunction with the Prince George's County Urban Street Design Standards. The following is a list of some key reference materials:

- 2050 Maryland Statewide Bicycle & Pedestrian Master Plan
- AASHTO A Policy on Geometric Design of Highways and Streets (AASHTO Green Book)
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- AASHTO Guide for the Development of Bicycle Facilities
- AASHTO Roadside Design Guide
- FHWA Bikeway Selection Guide
- FHWA Crosswalk Marking Selection Guide
- FHWA Flexibility in Highway Design
- FHWA Separated Bike Lane Planning and Design Guide
- Highway Capacity Manual: A Guide for Multimodal Mobility Analysis
- Maryland Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)
- MDOT Level of Traffic Stress (LTS) Methodology
- MDOT SHA Access Manual
- MDOT SHA Roundabout Design Guidelines
- NACTO City Limits: Setting Safe Speed Limits on Urban Streets
- NACTO Designing for All Ages & Abilities: Contextual Guidance for High-Comfort Bicycle Facilities
- NACTO Don't Give Up on the Intersection
- NACTO Urban Street Design Guide
- NACTO Urban Bikeway Design Guide
- NACTO Transit Street Design Guide
- NCHRP Report 672 – Roundabouts: An Informational Guide
- NCHRP Report 766 – Recommended Bicycle Lane Widths for Various Roadway Characteristics
- NCHRP Report 1043 – Guide for Roundabouts

Note: The most recent version of the above publications is to be used.