

Montgomery County Complete Streets Design Guidelines and Roadway Functional Classification Study

Overview of Draft Guidelines

montgomeryplanning.org/planning/transportation/complete-streets/



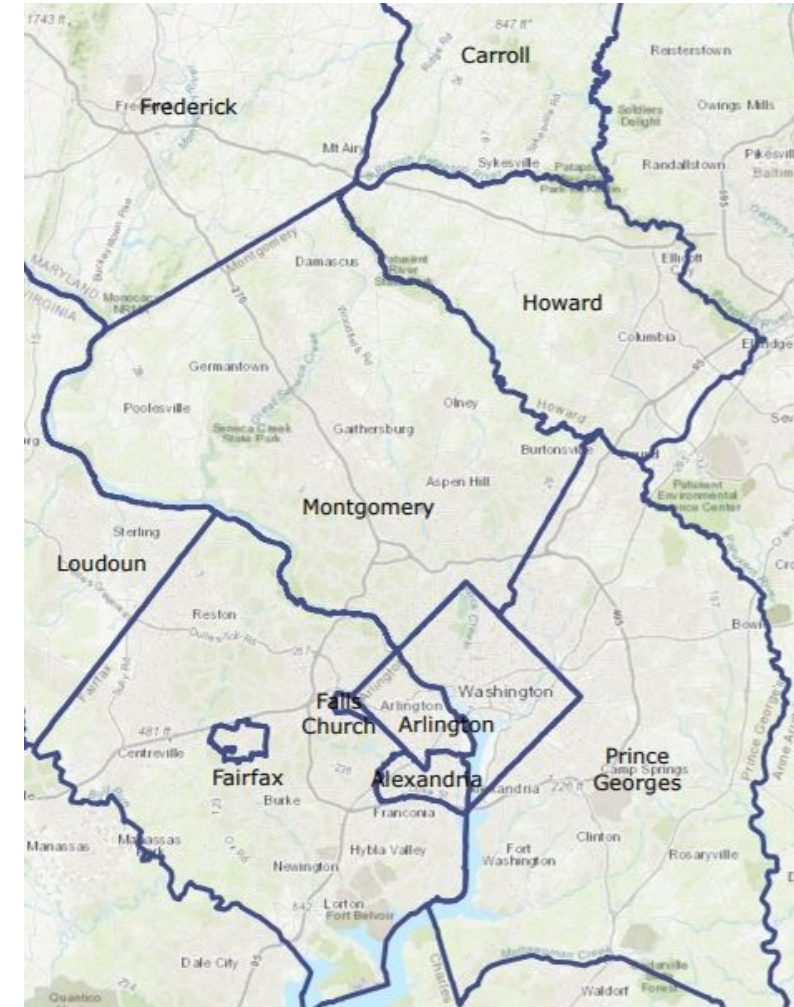
Agenda

- Background
- Process for Developing the Guide
- Overview of the Draft Guide
- Next Steps
- Questions



Montgomery County, Maryland

- Located in the Washington, DC Metropolitan Area
- First County in US to Adopt Vision Zero approach
- Over 1 million residents, 565,000 employment
- **Diverse County**, - diverse population, commitment to public transit and road safety, and range of urban/suburban/rural land use contexts
- **Project Sponsors from two separate agencies** -
 - **Montgomery County Department of Transportation** – executive branch agency reporting to the County Executive
 - **Montgomery Planning** - Department within the Maryland-National Capital Park and Planning Commission, a bi-county commission.



Purpose

To develop a comprehensive guide to street design in Montgomery County, with an emphasis on Complete Streets.





**VISION
ZERO**

**NO TRAFFIC DEATHS BY 2030
IN MONTGOMERY COUNTY**

The guide is a
critical component
of implementing the
County's Vision Zero
goal of eliminating
traffic deaths
by 2030

Context

- **Supplements** the Countywide Functional Master Plans, County Design Standards, Area Plans, and Bikeway Master Plan
- **Guides** design of capital improvement and development projects
- Primary emphasis is on **county streets**, though intended as advisory for state-owned roadways
- **Some changes** to Design Standards and County Code will be required for consistency with this new guidance
- **Who will use this guide?** County staff, developer/design consultants, the public

Process

- Background Research / Precedents
- Annotated Outline
- Guiding Principles
- Technical Work Sessions on Key Topics:
 - Street Types
 - Design Speed
 - Corner Radius, Lane Encroachment, Design Vehicle
 - Lane Widths, EMS Access
- Draft Guidelines
- Public/Planning Board Review
- County Council Review
- Final Guidelines
- Updates to County Code, Executive Regulations, Policies

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Extensive Engagement

To date:

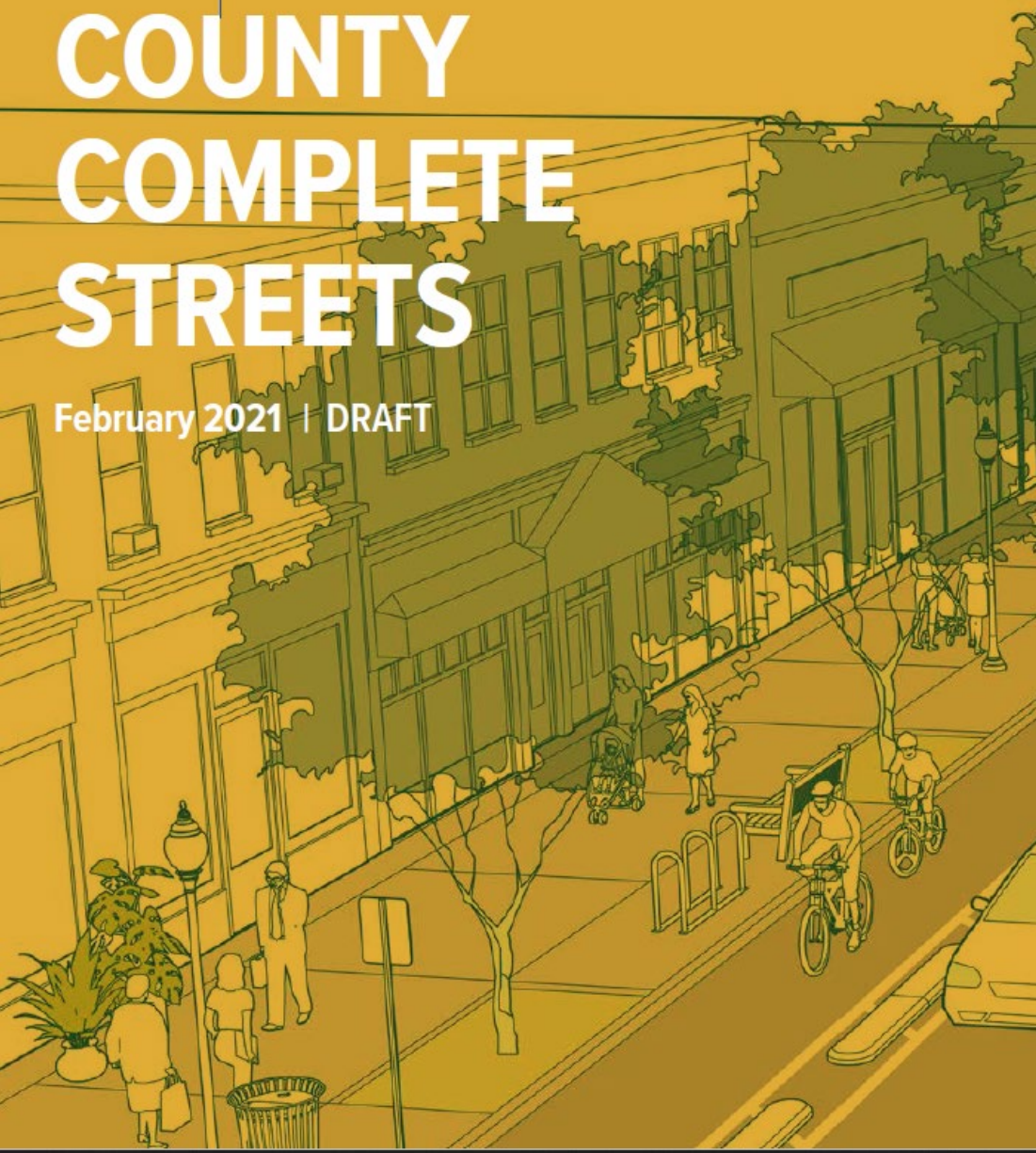
- 4 design workshops with M-NCPPC and MCDOT/DPS leadership
- Developer Open House (May 2019)
- 15+ review meetings with staff design working group
- 3 rounds of review of draft content
- Draft sent to MDOT SHA for review/comment
- Planning Board briefing – June 11, 2020
- Public Information Meeting – June 23, 2020
- Planning Board Public Hearing – July 23, 2020
- Planning Board comments incorporated into draft document – February 2021

Next steps:

- County Council Public Hearing
- Council Review (T&E Subcommittee)

MONTGOMERY COUNTY COMPLETE STREETS

February 2021 | DRAFT



- 1 Vision
- 2 Street Types
- 3 Active Zone
- 4 Street Zone
- 5 Bikeways
- 6 Intersections
- 7 Green Streets
- 8 Speed Management
- 9 Implementation

Chapter 1

Vision

Streets are vital to the quality of life for Montgomery County's residents, workers, businesses, and visitors. Montgomery County's Complete Streets Design Guide aims to **create great places** that are supported by safe and efficient transportation systems, which are **equitably shared among diverse communities**. The efficiency of these transportation systems will be enhanced by new guidance for designing **new streets and reconstructing or retrofitting existing streets** following the principles of **Safety, Sustainability** and **Vitality**.

Chapter 2

Street Types

Each new street type prioritizes users and various design elements based on the context and character of the street.

- Based on roadway function *and* built environment
- Changes along segments of a roadway
- Focus is on new roads and reconstruction

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.

Montgomery County Street Types

- Downtown Boulevard
- Downtown Street
- Boulevard
- Town Center Boulevard
- Town Center Street
- Neighborhood Connector
- Neighborhood Street
- Neighborhood Yield Street
- Industrial Street
- Country Connector
- Country Road
- Major Highway

Montgomery County Street Types

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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.

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

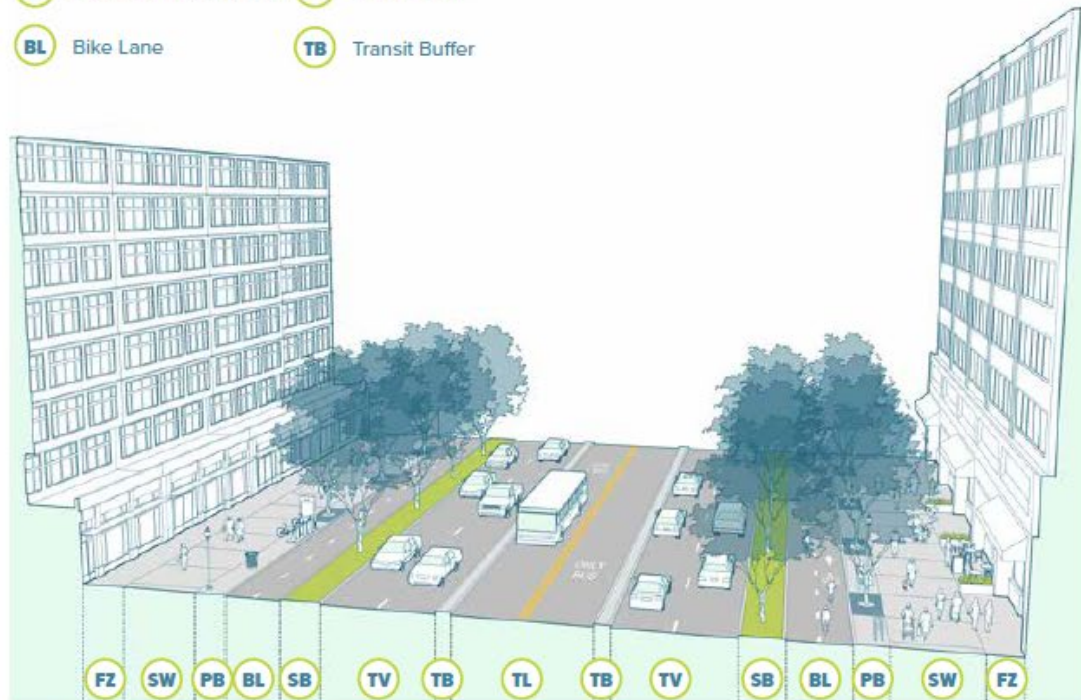


Figure 2-13. Downtown Boulevard

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

Downtown Boulevard Examples



Figure 2-14. Georgia Avenue (MD Route 97) in Downtown Wheaton



Figure 2-15. Rockville Pike (MD Route 355) near White Flint



Figure 2-16. Wisconsin Avenue in Downtown Bethesda

Downtown Boulevards – Street Design Parameters and Priorities

Below, Figure 2-17 presents a summary of Corridor Design Parameters to be used for Downtown Boulevards. Figure 2-18 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 2-17. 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.	246
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.	149
Maximum Spacing for Protected Crossings	400'	Site-specific needs and conditions will dictate actual implementation.	218
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.	218

Figure 2-18. 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.	151
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.	150
Left-Turn Lane	10' default, 9' min	M	Dimensions only apply if a left turn lane is provided.	147
Two-Way Left-Turn Lane	N/A	N/A	Two-Way Left-Turn Lanes are not appropriate along this street type.	147
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.	147

Figure 2-18 (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.	147
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.	139-141
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. Where on-street parking is present, a minimum 3' door swing zone is required between the face of curb and any adjacent pedestrian or bicycle facility.	110
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 at street level and 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.	185
Ped / Bike Buffer	6' default, 2' min	M	Provided only if a separated bike lane is provided.	167
Sidewalk	15' default, 10' min	H	Using the minimum dimension requires a waiver – consult MCDOT.	118
Frontage Zone	10' default, 0' min	M	Some or all of the frontage zone may occur on private property.	119
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'.	107

Downtown Boulevards – Street Design Features

Figure 2-19 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 2-19. Street Design Features for Downtown Boulevards

Legend	■ Required	▲ Recommended (Context-Sensitive)	○ Optional (Context-Sensitive)	✗ Not Permitted or N/A	Page Ref
	* Unless determined otherwise by Planning Board † Engineering judgement needed – see Chapter 6: Intersections for details ‡ Required at all intersections with existing or planned separated bike lanes, sidepaths, buffered bike lanes or conventional bike lanes. † Narrowing lanes down to default dimensions for street type				
ACTIVE ZONE	Trees/Landscaping in Buffer	■			234
	Green Infrastructure/Rain Gardens	■			239
	Seating	■			111
	Bicycle Parking	■			112
	Recycling/Trash Receptacles	▲			110
	Plazas/Parklets	▲			143
	Bikeshare Stations/Dockless Parking Hubs (if in bikeshare/dockless service area)	■			113
	Pedestrian-Scale Lighting	■			130
	Pedestrian/Bicycle Wayfinding	▲			121
	Sidewalk-Level Driveways	■			129
INTERSECTIONS	Roundabouts (Modern or Mini)	○ [†]			202
	Crossing Islands	▲			222
	Pedestrian Signals (when traffic signals are present) or Beacons	■			225
	Pedestrian Recall on Signals	▲			201
	Pedestrian Lighting (unless pedestrians are prohibited, e.g., some Major Highways)	■			131
	Protected Intersections, Bike Boxes, or Two-Stage Queue Boxes	– [‡]			206
	Bicycle Markings/Facilities (when bikeways are present)	■			208
	Lane Diet	▲ [‡]			251
SPEED MANAGEMENT	Road Diet (if volumes meet thresholds for road diet)	○			250
	Speed Humps/Cushions	○			252
	Speed Tables/Raised Crosswalks	○			253
	Raised Intersections	○			253
	Curb Extensions/Bulb Outs	▲			253
	Neckdowns/Chokers	▲			254
	Traffic Diverters	✗			149?
	Chicanes/Roadway Curvature	▲			254
	Textured Paving Treatment	○			256
	STREET ZONE	Green Infrastructure in Median (when median is present)	▲		
Street Trees/Landscaping in Median (when median is present)		■			138
Minimize/Consolidate Driveways		■			241
Undergrounding Utilities (Master Plan recommendations supersede this guidance)		■			236
Transit Shelters (where transit routes are present and boarding thresholds are met)		▲			213
Loading/Pick-up and Drop-off Zones		▲			145
Accessible Parking		▲			141
Carshare Parking		▲			142
E/V Charging Stations	▲			142	

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Special Streets

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



Street Zones

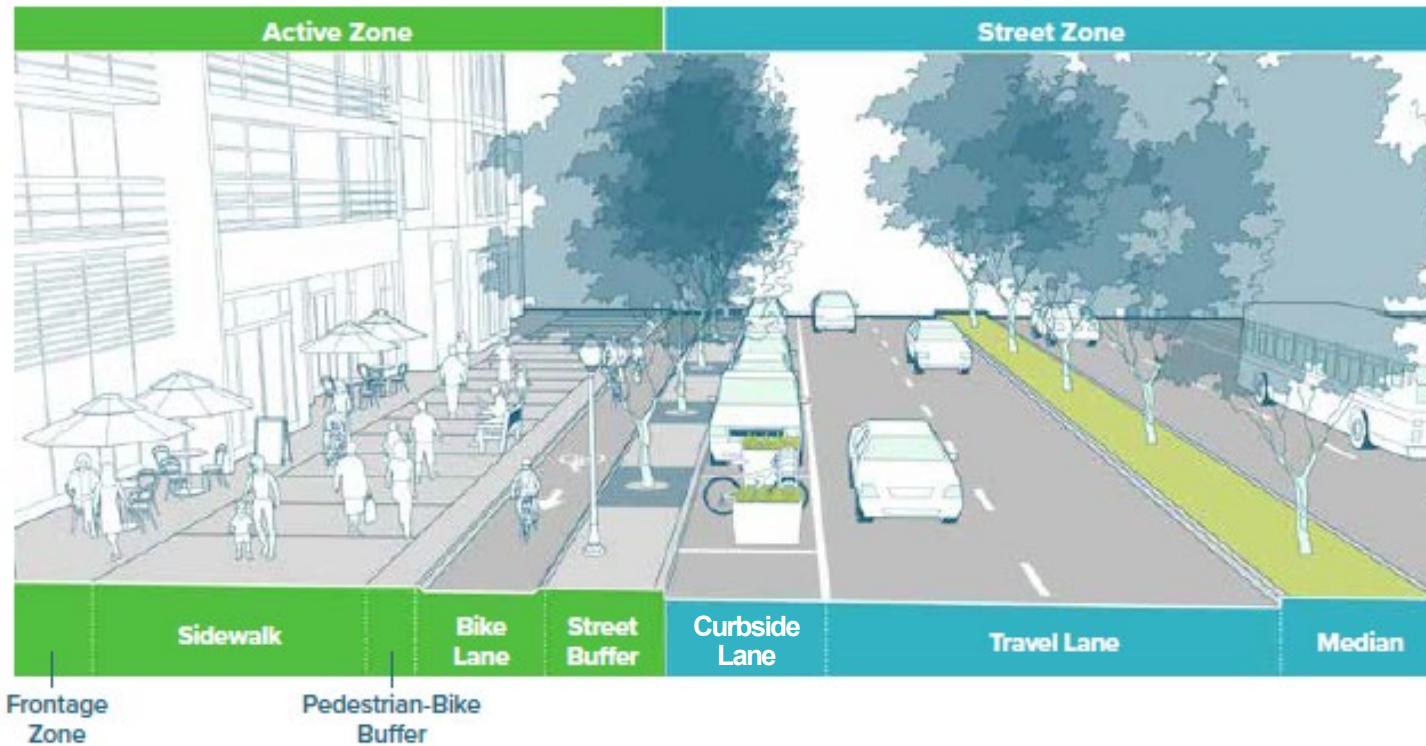


Figure 2-7. Zones Defined



Figure 2-8. Separated Bike Lane



Figure 2-9. Sidepath

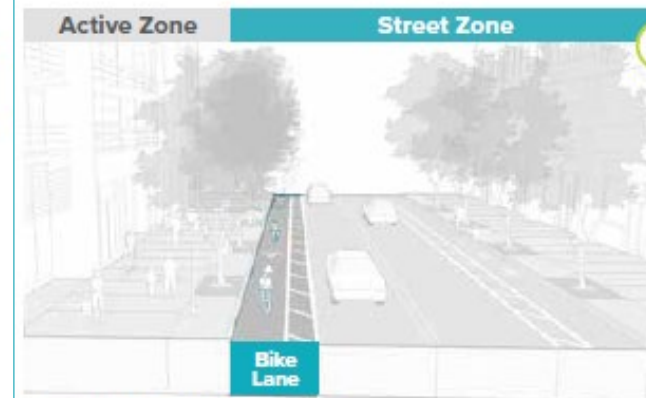


Figure 2-10. On-Street Bike Lane

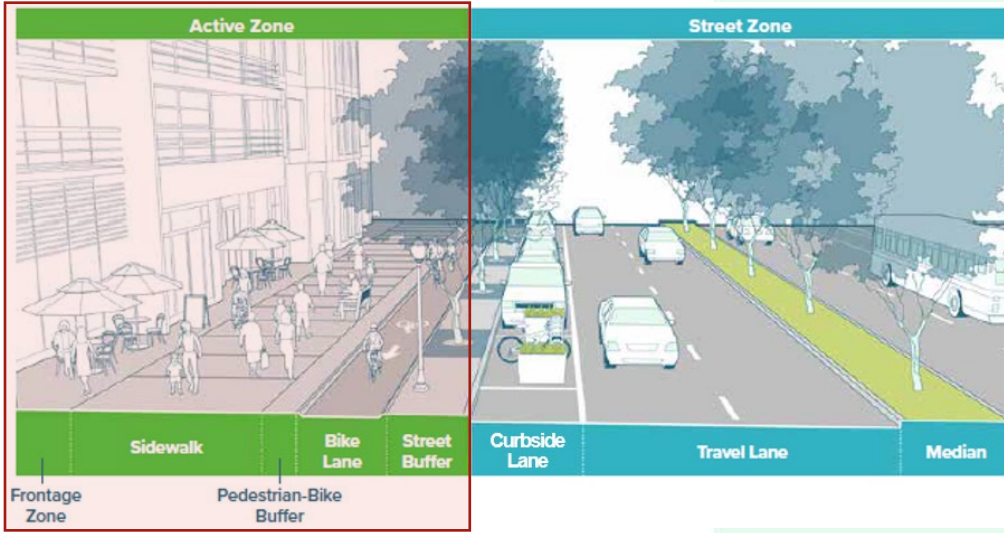
1 Separated bike lanes are in the Active Zone, separated from the sidewalk (pedestrian space) by a Pedestrian-Bike Buffer and from the Street Zone by a Street Buffer.

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.

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.

Chapter 3

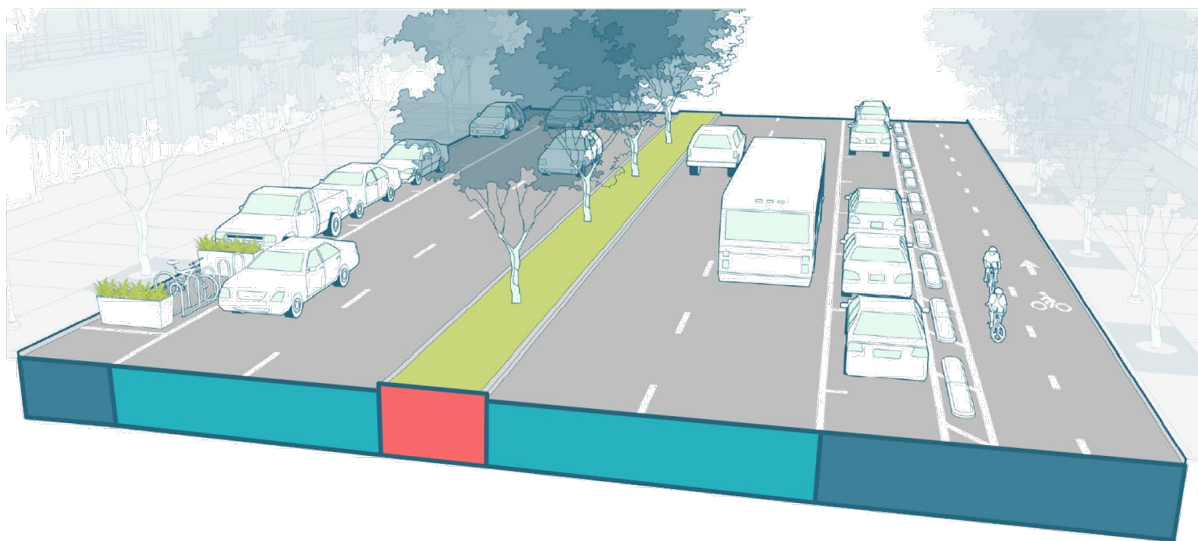
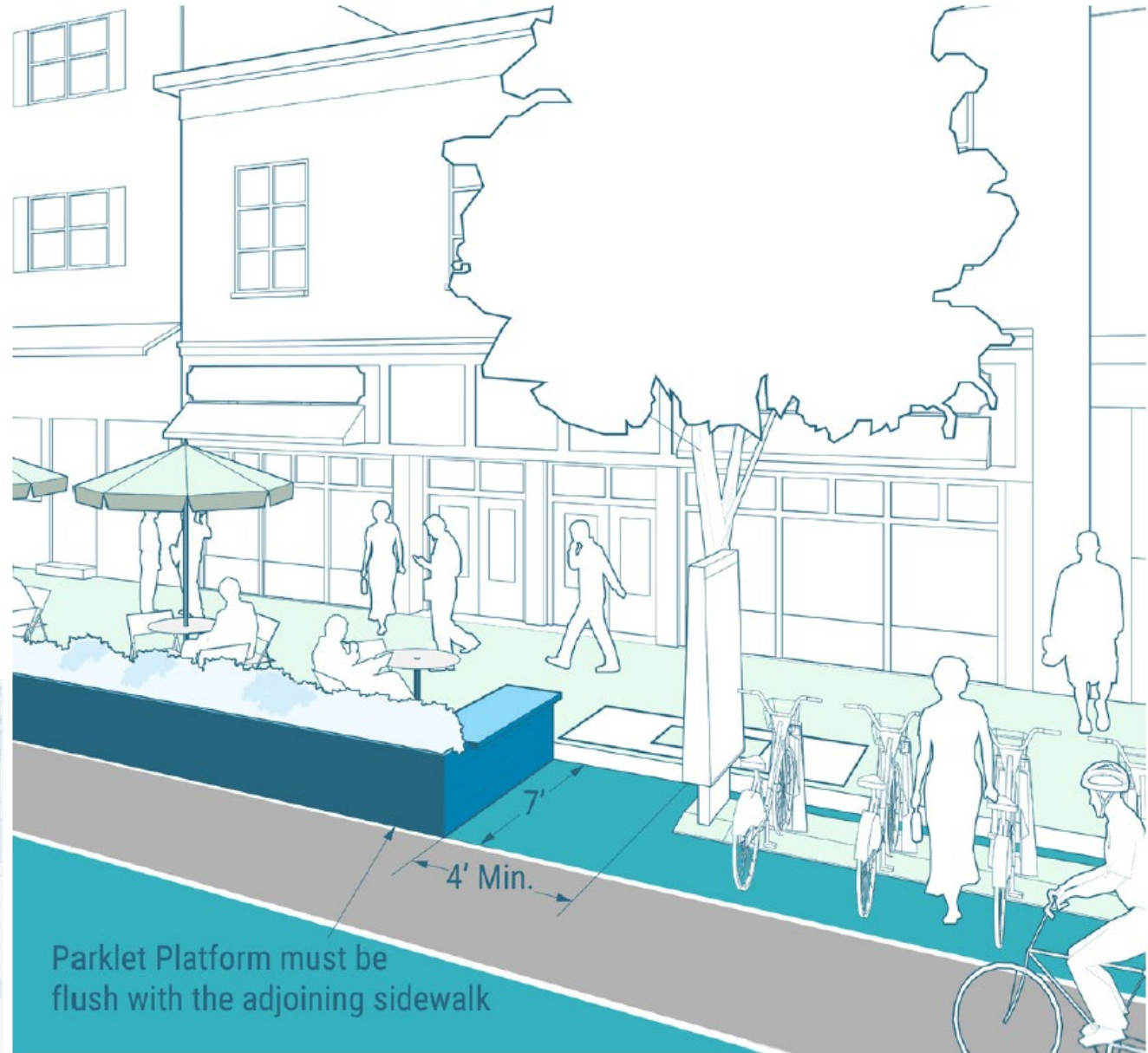
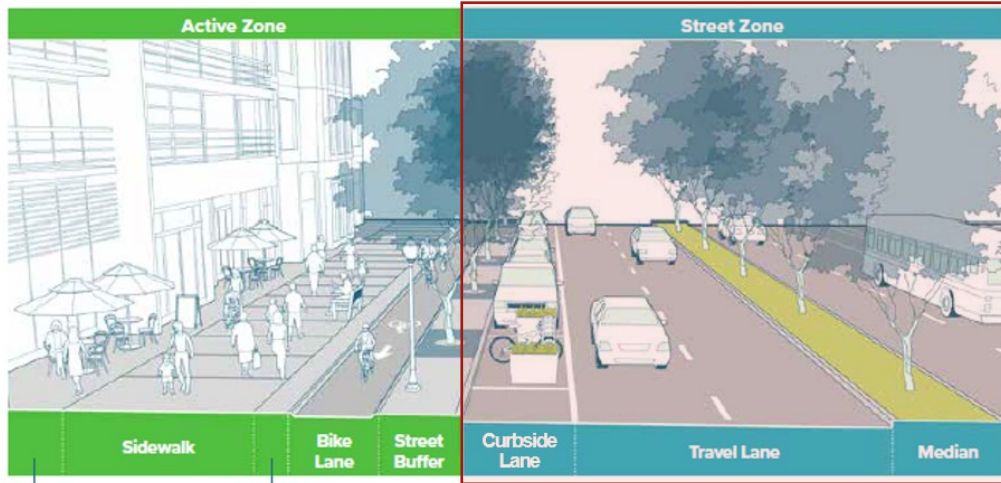
Active Zone



Street Type	Maintenance Buffer	Frontage Zone	Sidewalk/Sidepath	Street Buffer
Downtown Boulevard	0'	10' default; 0' min	15' default; 10' min	8' default; 6' min
Downtown Street	0'	10' default; 0' min	10' default; 8' min	6'; 11' if shared w/ street parking
Boulevard	2'	7' default; 0' min	11' default/8' min	8' default; 6' min
Town Center Boulevard	0'	7' default; 0' min	10' default; 8' min	8' default; 6' min

Chapter 4

Street Zone



Lane Widths

Street Type	Left Turn Lane (if required)	Two Way Left Turn Lane ³	Inside Travel Lane ¹	Outside Travel Lane (against curb or parking) ²	Shoulder
Downtown Boulevard	10' default, 9' min	N/A	10'	11'	N/A
Downtown Street	10' default, 9' min	10'	10'	10.5'	N/A
Boulevard	10'	N/A	10'	11'	N/A
Town Center Boulevard	10'	N/A	10'	11'	N/A
Town Center Street	10'	10'	10'	11'	N/A
Neighborhood Connector	10'	10'	10'	10.5'	N/A
Neighborhood Street	N/A	N/A	10'	10.5'	N/A
Neighborhood Yield Street	N/A	N/A	N/A	12'	N/A
Industrial Street	11'	11'	11'	11'	N/A
Country Connector	11'	N/A	11'	11'	6'
Country Road	10'	N/A	11'	11'	5'
Major Highway	11'	N/A	11'	12'	8'

1. Includes lane against the centerline on undivided roads. All lane widths in chart are for typical tangent (straight) sections.
2. If the outside lane is adjacent to a bike lane, the total width (travel lane + bike lane) should be no less than 16'. These dimensions also serve as guidance for right turn lanes, where needed. Gutter pan is included in parking lane dimensions. If there is no parking lane, gutter pan is included in outside travel lane width.
3. Provided for existing conditions conformity and only for retrofits of four-lane roads to three lanes using a road diet as an allowable treatment. Not encouraged for new roads or reconstruction/widening.
4. On median-divided roadways, the minimum curb-to-curb pavement width is 20'.

Figure 4-14. Lane width dimensions by street type

Prioritization

LEGEND

H = highest priority

M = medium priority

L = lowest priority

+Priorities apply only to streets where Dedicated Transitways are identified in a Master Plan.

* Because a sidepath is the default bicycle/pedestrian facility, the Bikeway may often be accounted for as part of the Sidewalk / Sidepath.

	Downtown Boulevard	Downtown Street	Boulevard	Town Center Boulevard	Town Center Street	Neighborhood Connector	Neighborhood Street	Neighborhood Yield Street	Industrial Street	Country Connector	Country Road	Major Highway
Median	M	L	M	M	L	L	L	N/A	L	L	L	H
Travel Lane Width	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
On-Street Parking	L	M	L	M	L	L	L	H	M	N/A	N/A	N/A
Dedicated Transitway+	M	M	M	M	M	N/A	N/A	N/A	M	N/A	N/A	M
Shoulder	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M	H	H
Street Buffer	H	H	H	H	H	H	M	M	M	H	M	H
Bikeway	H	H	H	H	H	M	M	N/A	M	M*	M*	M*
Ped / Bike Buffer	M	M	M	M	M	M	M	N/A	M	M	N/A	H*
Sidewalk / Sidepath	H	H	H	H	H	H	H	H	H	H*	H*	M*
Frontage Zone	M	M	L	M	M	N/A	N/A	N/A	L	N/A	N/A	N/A
Maintenance Buffer	N/A	N/A	L	N/A	N/A	L	L	L	L	L	L	N/A

Figure A-2. Priorities in constrained rights of way

Chapter 5

Bikeways

Design Guidance

- Trails
- Separated Bikeways
- Striped Bikeways
- Bikeable Shoulders
- Shared Roads
- Breezeway Network

Other Considerations

- Shy Zones
- Bicycle Ramps
- Floating Bus Stops
- Green Paint
- Interaction with parking, ADA spaces, and Pickup / Drop-offs

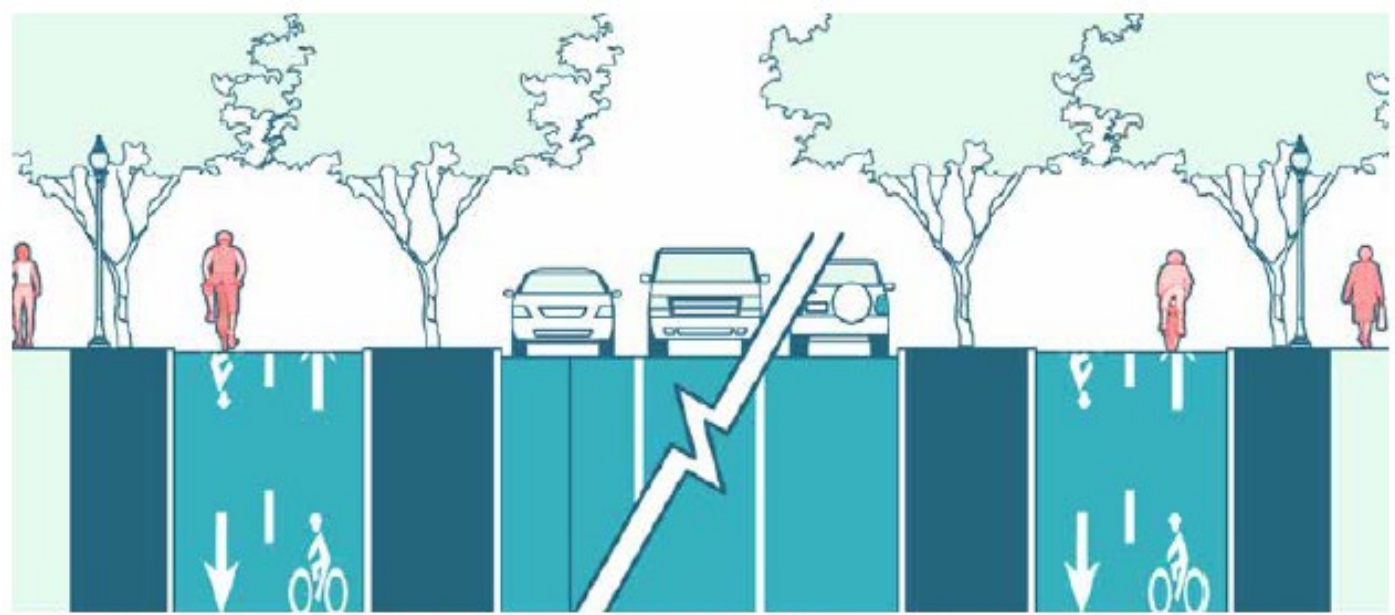


Figure 5-9. Two-way Separated Bike Lane, Both Sides, Permanent Condition: Downtown Boulevard and Town Center Boulevard

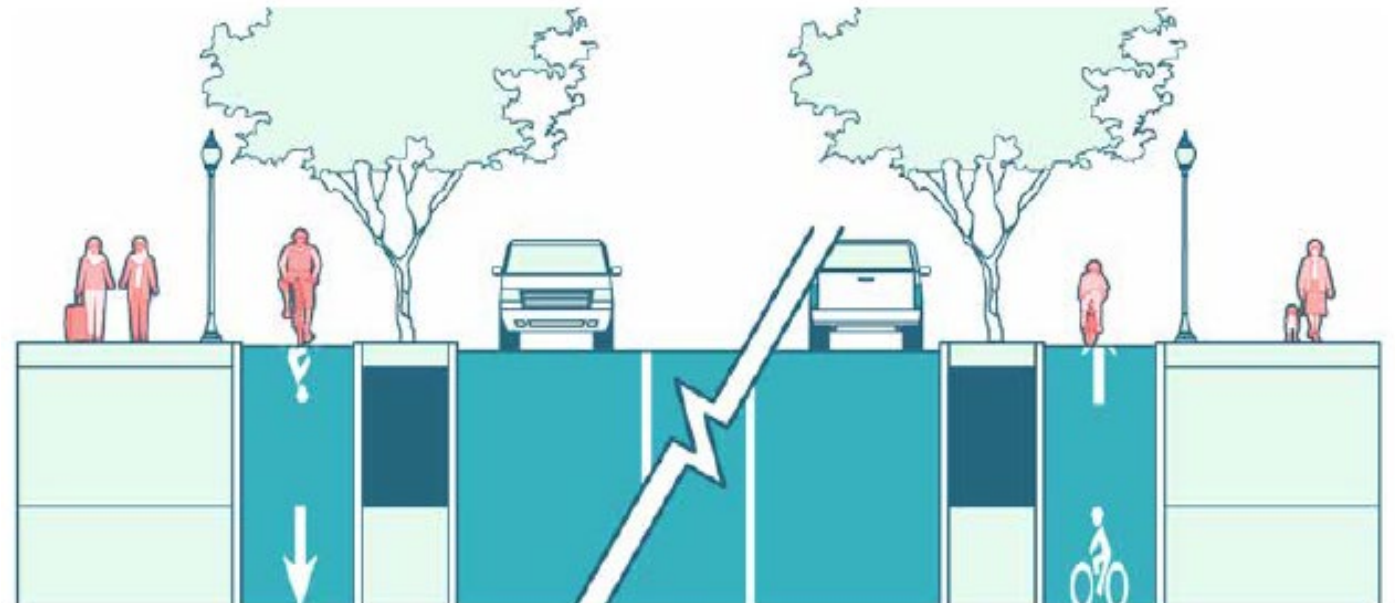


Figure 5-10. One-way Separated Bike Lane, Tree Separated, Permanent Condition: Downtown Street, Town Center Street, Industrial Street

Bikeway Guidance

Street Type	Street Buffer*	Default Bikeway Types and Widths*
Downtown Boulevard	8' default, 6' min	Two-Way SBL on both sides of street. (each SBL: 11' default; 8' min)
Downtown Street	6' default; 3' min; 11' if this space is shared with on-street parking	One-way SBL: (6.5' default; 5' min)
Boulevard	8' default, 6' min	Sidepaths on both sides of the street. (each sidepath: 11' default; 8' min)
Town Center Boulevard	8' default, 6' min	Two-Way SBL on both sides of street. (each SBL: 11' default; 8' min)
Town Center Street	6' default; 3' min	One-way SBL: (6.5' default; 5' min)
Neighborhood Connector	6' default; 3' min	Sidepath on one side of the street: (10' default; 8' min, or Bike Lanes: 5'-6')
Neighborhood Street	6' default; 3' min	Neighborhood Greenway, Shared Lanes, or Advisory Bike Lanes (for design guidance, see Bicycle Facility Design Toolkit)
Neighborhood Yield Street	6' default; 3' min	N/A
Industrial Street	6' default; 3' min	One-way SBL: (6.5' default; 5' min), or Sidepath on one side of the street: (10' default; 8' min)
Country Connector	10' (if sidewalk or sidepath is provided)	Bikeable Shoulders: (10'), or Sidepath on one side of the street: (10' default; 8' min)
Country Road	8' default, 6' min	Bikeable Shoulders: (8'), or Sidepath on one side of the street: (10' default; 8' min)
Major Highway	As wide as feasible (10' minimum)	Sidepath on both sides of street. (each sidepath: 11' default; 8' min)

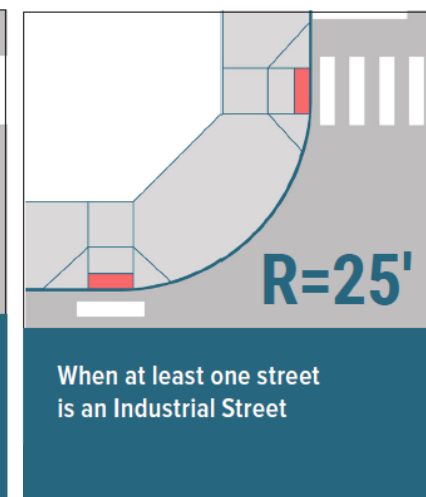
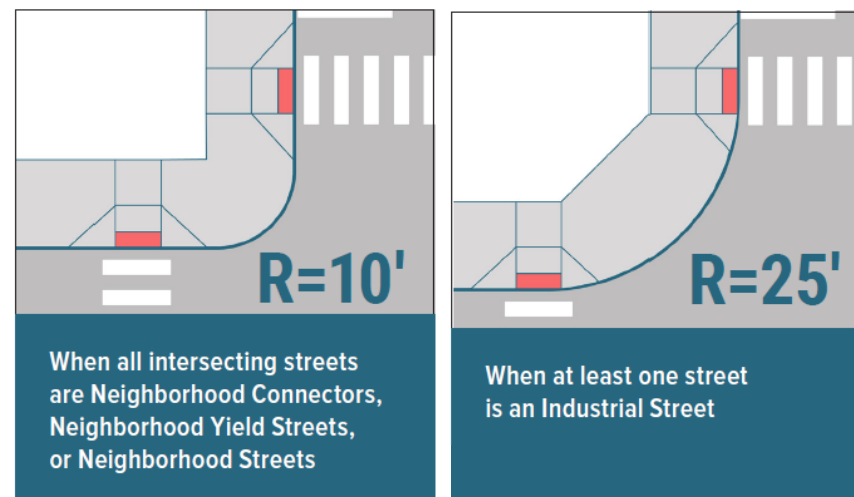
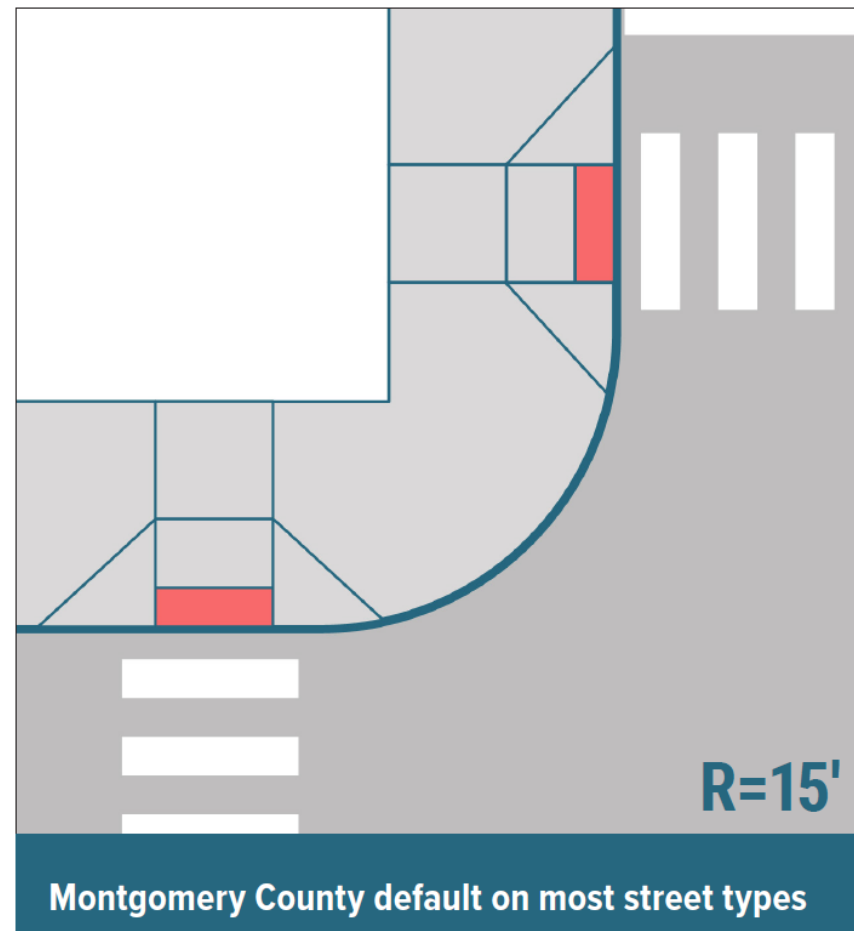
- + If on-street parking is part of the buffer zone and abuts the Pedestrian Clear Zone, a minimum 2' offset is required between the face of curb and the Pedestrian Clear Zone, and a minimum of 5' clear zone is required outside of the door swing zone of a parked car, to maintain accessibility.
- * This is for non-master planned streets only. If the Bicycle Master Plan recommends something different for a specific street, that supersedes this guidance. SBL = Separated Bike Lane. Street buffer widths are not included in these dimensions (see below). If the bikeway is adjacent to the curb, the dimensions include the gutter pan. For corridors that are designated as Breezeways in the Bicycle Master Plan, see additional guidance in that document.

Figure 8-25: Guidance on appropriate bikeway by street type

Chapter 6

Intersections

- Access Management
- Geometric Design Guidance
- Design Vehicles vs Control Vehicles
- Encroachment
- Mitigating Conflicts
- Intersection Features
- Roundabouts and Mini Roundabouts
- Curb Ramps
- Bikeways at Intersections
- Transit at Intersections
- Pedestrian Design Elements
- Channelized Right Turn Lanes



Chapter 6

Intersections

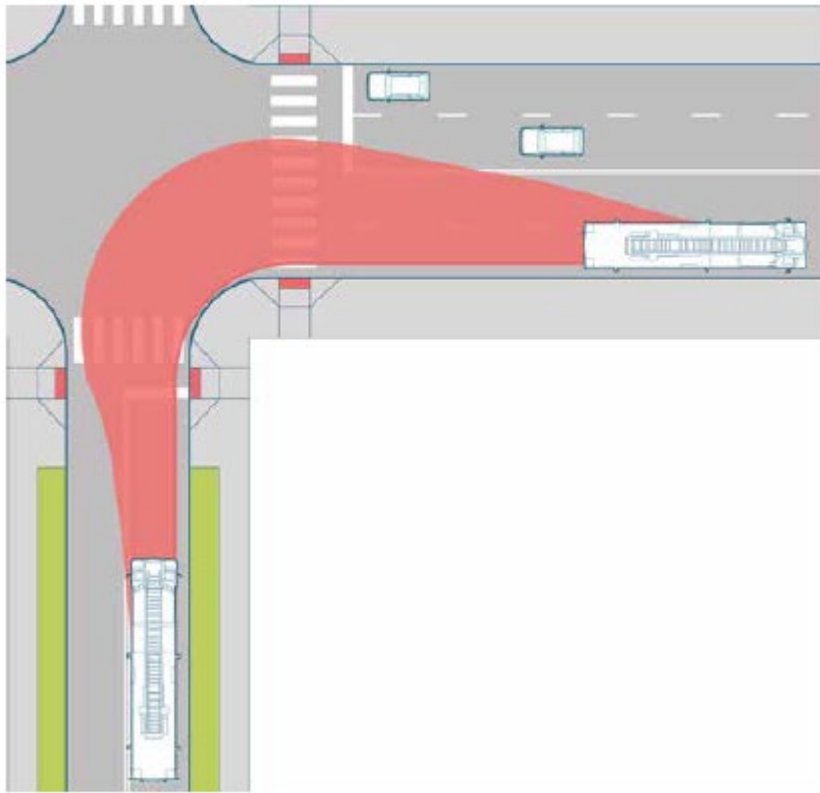
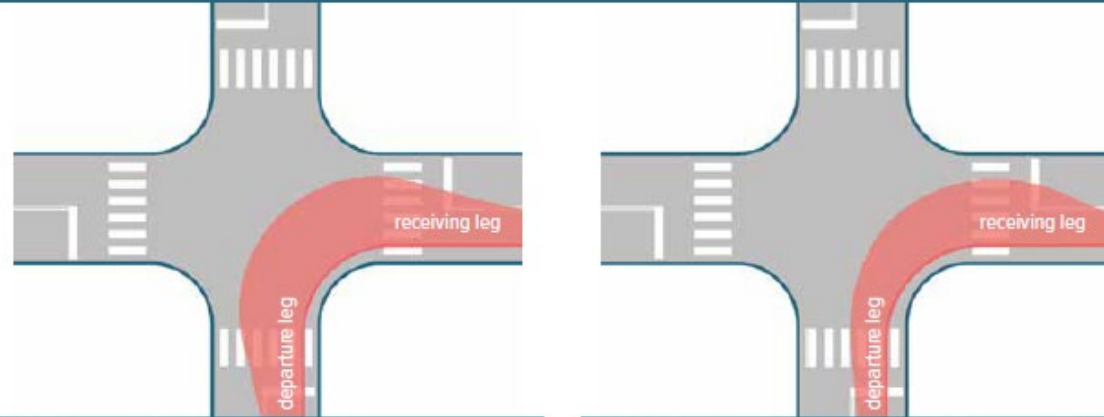


Figure 6-9. Graphic of allowable control vehicle encroachment at intersection

Type A Streets: Neighborhood Connectors, Neighborhood Streets, Neighborhood Yield Streets, Country Connectors, Country Roads

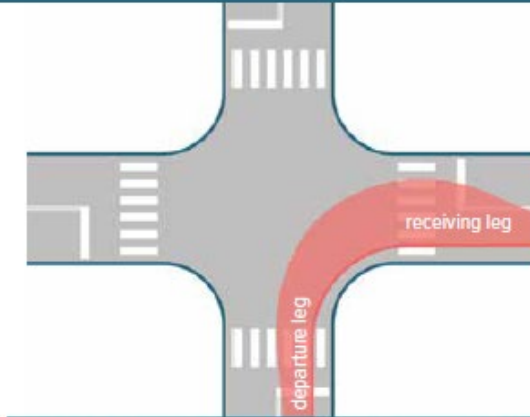
Type B Streets: Downtown Boulevards, Downtown Streets, Boulevards, Town Center Boulevards, Town Center Streets, Industrial Streets



Full Encroachment (2-lane roads)

Vehicles encroach upon opposing lane in both the departure and receiving leg of the intersection. Allowable:

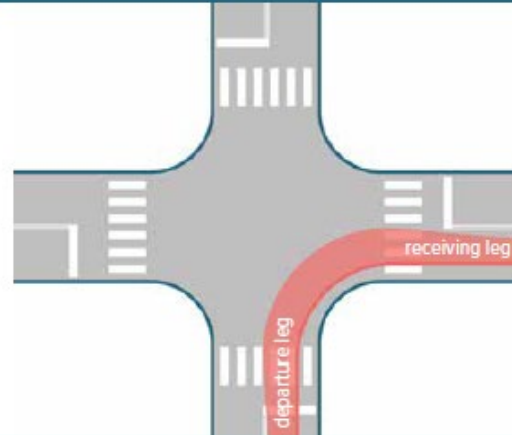
- By large vehicles (e.g., school bus, transit bus) where all intersecting streets are Type A streets



Receiving Lane Encroachment (2-lane roads)

Vehicles encroach upon opposing lanes in receiving leg only. Allowable:

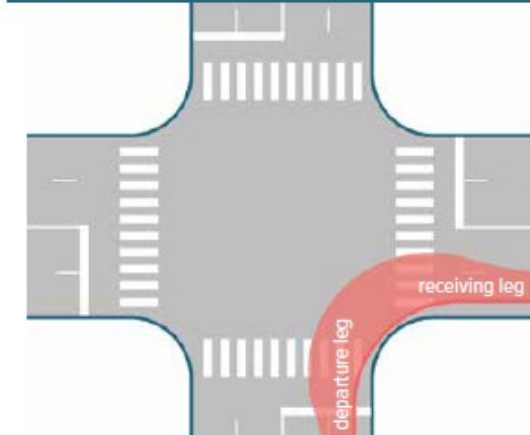
- By large vehicles where the receiving leg is a Type A street and the departure leg is a Type B Street



No Encroachment (2-lane roads)

Required for a typical passenger vehicle on all street types

- Desired by larger vehicles where all legs are Type B streets (except control vehicle – see next section)



Multilane Roads

Vehicles encroach upon non-opposing (same direction) lanes of both the departure and receiving leg of the intersection. Allowable by larger vehicles on all applicable street types.

Figure 6-8. Explanation of vehicle encroachment

Protected Crossings and Signals

Street Type	Maximum Protected Crossing Spacing*	Generally Accepted Minimum Signal Spacing**
Downtown Boulevard	400'	400'
Downtown Street	400'	400'
Boulevard	800' - 1600'	1300'
Town Center Boulevard	600'	600'
Town Center Street	400'	400'
Neighborhood Connector	600'-1200'	1300'
Neighborhood Street	N/A	N/A
Neighborhood Yield Street	N/A	N/A
Industrial Street	800'	800'
Country Connector	1300'-2700'	2700'
Country Road	1300'-2700'	2700'
Major Highway	1300'	2700'

* On streets with operating speeds of 30 mph or higher, "protected" crossings include full signal, HAWK, all-way stop control, or grade-separated crossing. Figures are targets — engineering judgement is needed to determine the ultimate placement and spacing between signals, with a focus on sight lines. Where ranges are provided, the lower end of the range is recommended in commercial areas, on BRT corridors, and near schools (or similar destinations).

** Refers to a full signalized intersection or roundabout. Engineering judgement is needed to determine the ultimate placement and spacing between signals.

Figure 6-29. Pedestrian crossing distance and intersection spacing by street type

Chapter 7

Green Streets



Urban Forestry

- Tree/Plant Selection
- Tree Spacing and Clearances
- Street Trees and Landscaping
- Soil Panels and Structural Soil
- Tree and Landscape Maintenance



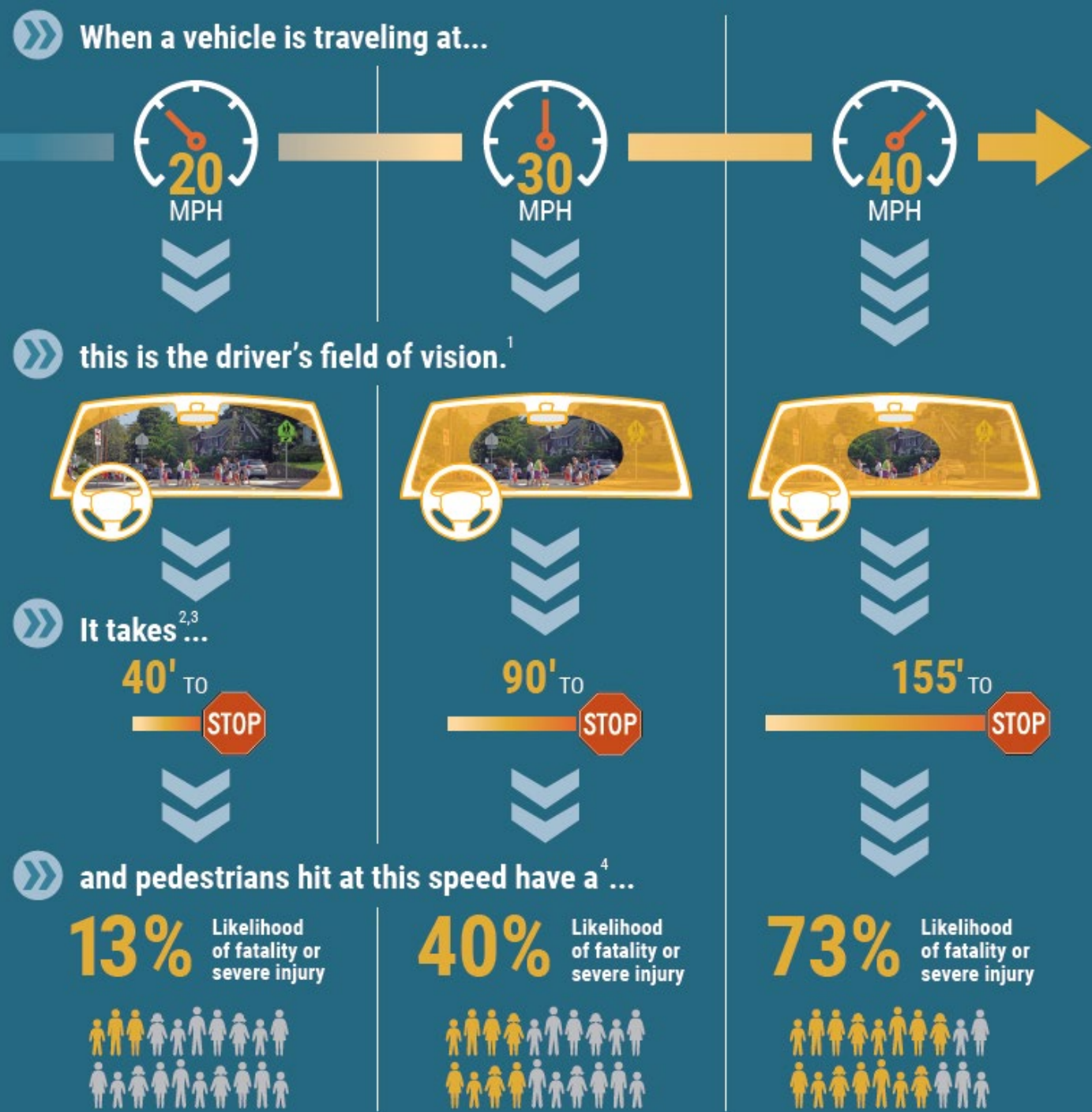
Stormwater Management

- Opportunities and Constraints
- Incorporating BMPs into Street Design
- Maintenance



Chapter 8 Speed Management

- Design Speed, Target Speed, and Posted Speed
- Strategies for Achieving Target Speed
- Retrofitting Arterials for Lower Speed



Target Speeds

Street Type	Target Speed (mph)
Downtown Boulevard	25
Downtown Street	20
Boulevard	35
Town Center Boulevard*	30
Town Center Street	25
Neighborhood Connector	25
Neighborhood Street	20
Neighborhood Yield Street	20
Industrial Street	25
Country Connector	40
Country Road	20 - 35
Major Highway	45 - 55

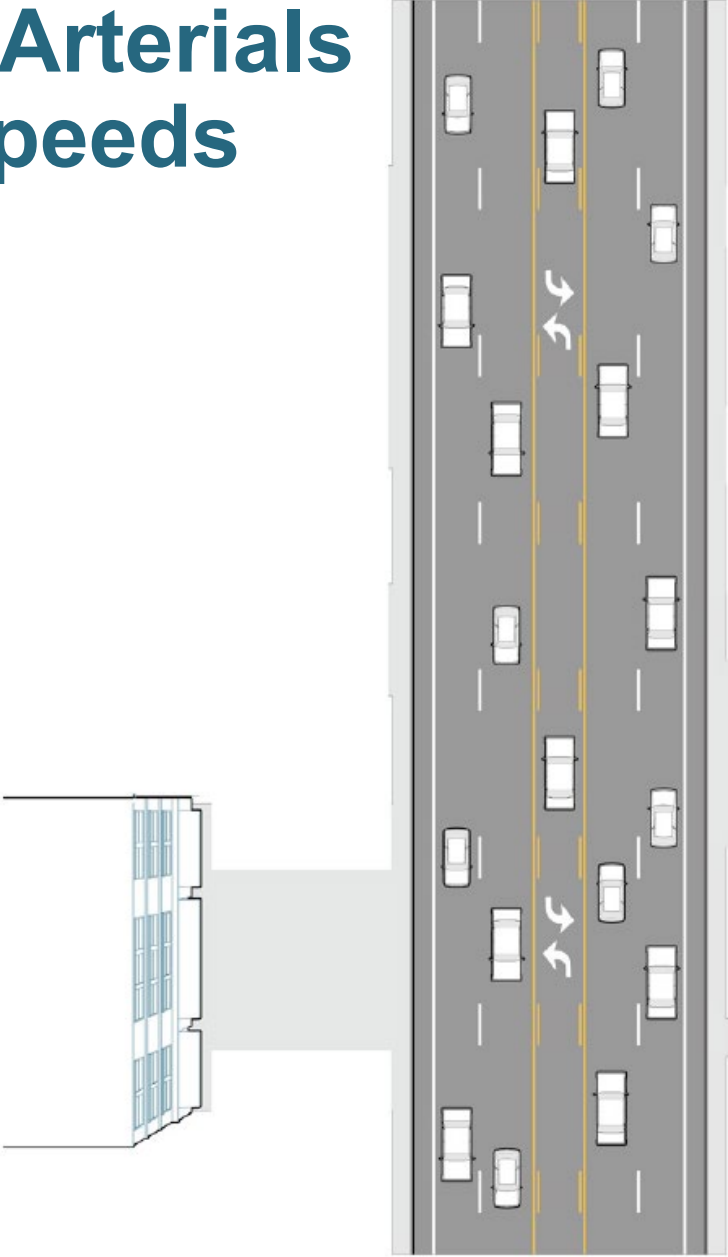
* In Urban Areas, streets that are already 25 MPH will retain that target/posted speed.

Speed Management

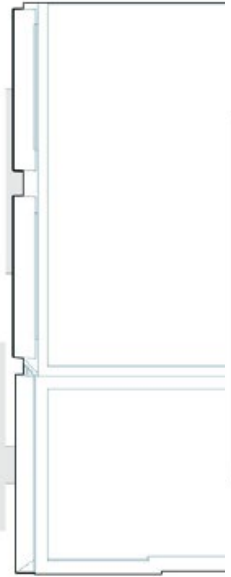
		Legend	Downtown Boulevard	Downtown Street	Boulevard	Town Center Boulevard	Town Center Street	Neighborhood Connector	Neighborhood Street	Neighborhood Yield Street	Industrial Street	Country Connector	Country Road	Major Highway	Page Reference
ROAD NARROWING	Road Diet (if volumes meet thresholds for road diet)	Required	Optional	Optional	Optional	Optional	Optional	Not Permitted	Not Permitted	Not Permitted	Optional	Optional	Optional	Optional	210
	Lane Diet	Recommended						Recommended							211
VERTICAL MEASURES	Speed Humps/Cushions	Optional	Optional	Not Permitted	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Not Permitted	Not Permitted	Not Permitted	212
	Speed Tables/Raised Crosswalks	Optional	Recommended	Not Permitted	Optional	Recommended	Optional	Optional	Optional	Optional	Optional	Not Permitted	Not Permitted	Not Permitted	213
	Raised Intersections	Optional	Recommended	Not Permitted	Optional	Recommended	Optional	Optional	Optional	Optional	Optional	Not Permitted	Not Permitted	Not Permitted	213
HORIZONTAL MEASURES	Curb Extensions/Bulb Outs	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Optional	Optional	Recommended	Optional	Optional	Optional	Optional	213
	Neckdowns/Chokers	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Optional	Optional	Optional	214
	Roundabouts	Optional							Optional						(engineering judgement needed, see Section 6.9)
	Crossing Islands	Recommended	Recommended	Recommended	Recommended	Recommended	Recommended	Optional	Optional	Recommended	Optional	Optional	Optional	Recommended	152
	Traffic Diverters	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Optional	Optional	Optional	Optional	Not Permitted	Not Permitted	Not Permitted
Chicanes/Roadway Curvature	Recommended	Optional	Optional	Recommended	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Not Permitted	214
SURFACE	Textured Paving Treatment	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Not Permitted	Not Permitted	Not Permitted	216
ENCLOSURE	Sense of Enclosure (e.g., via street trees, landscaping, buildings, medians, etc.)	Required	Required	Required	Required	Required	Required	Required	Required	Required	Required	Optional	Optional	Optional	107

Figure 8-3. Appropriate speed management measures by street type

Retrofitting Arterials for Lower Speeds



Existing

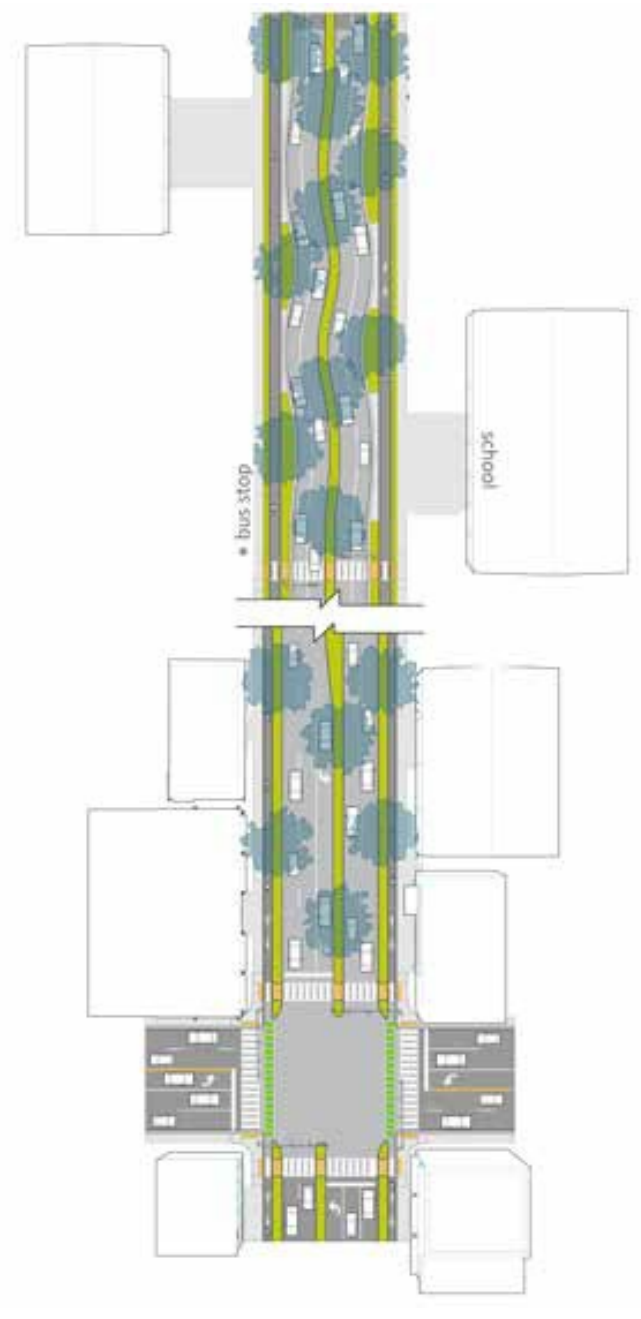


Proposed

Retrofitting Arterials for Lower Speeds

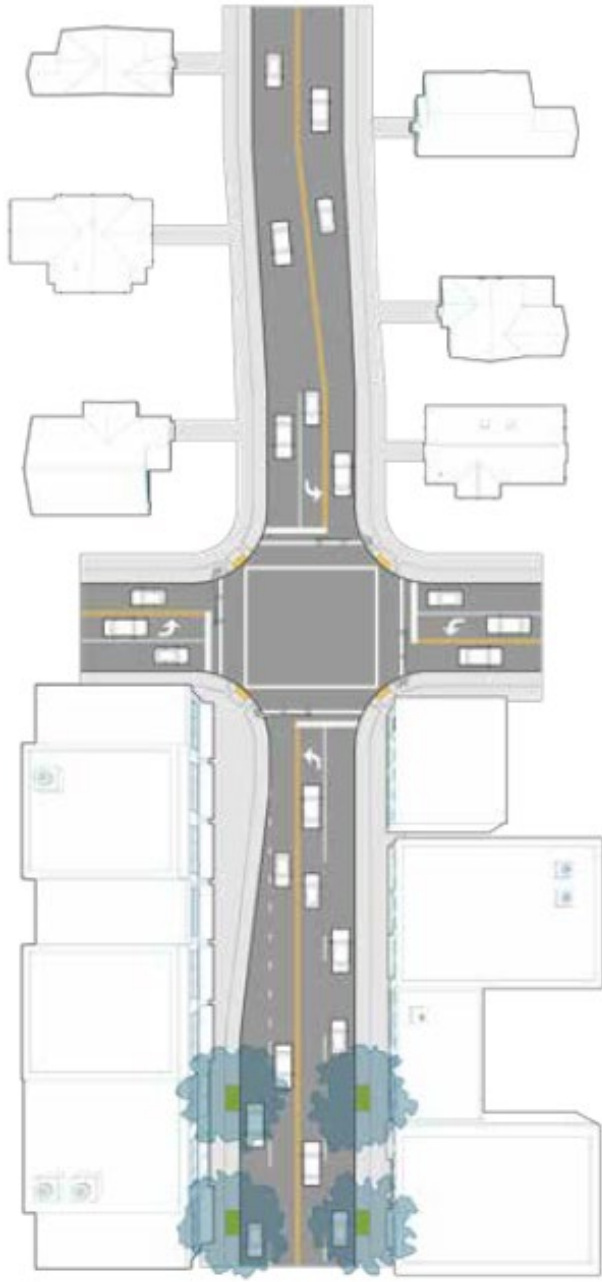


Existing

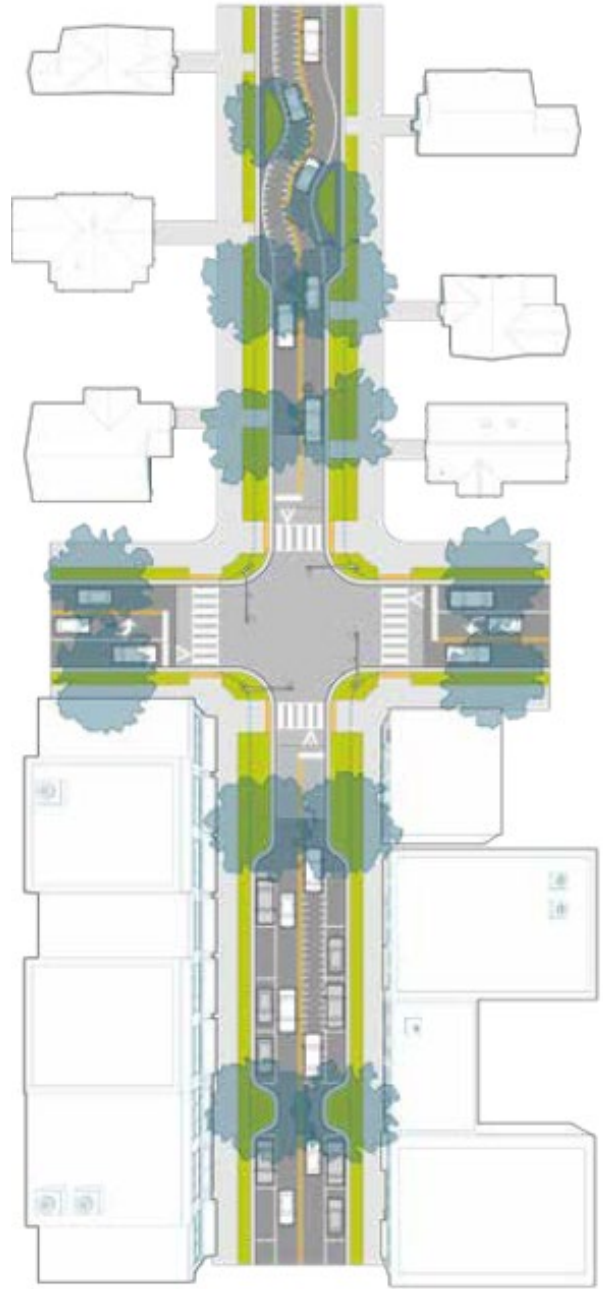


Proposed

Retrofitting Arterials for Lower Speeds



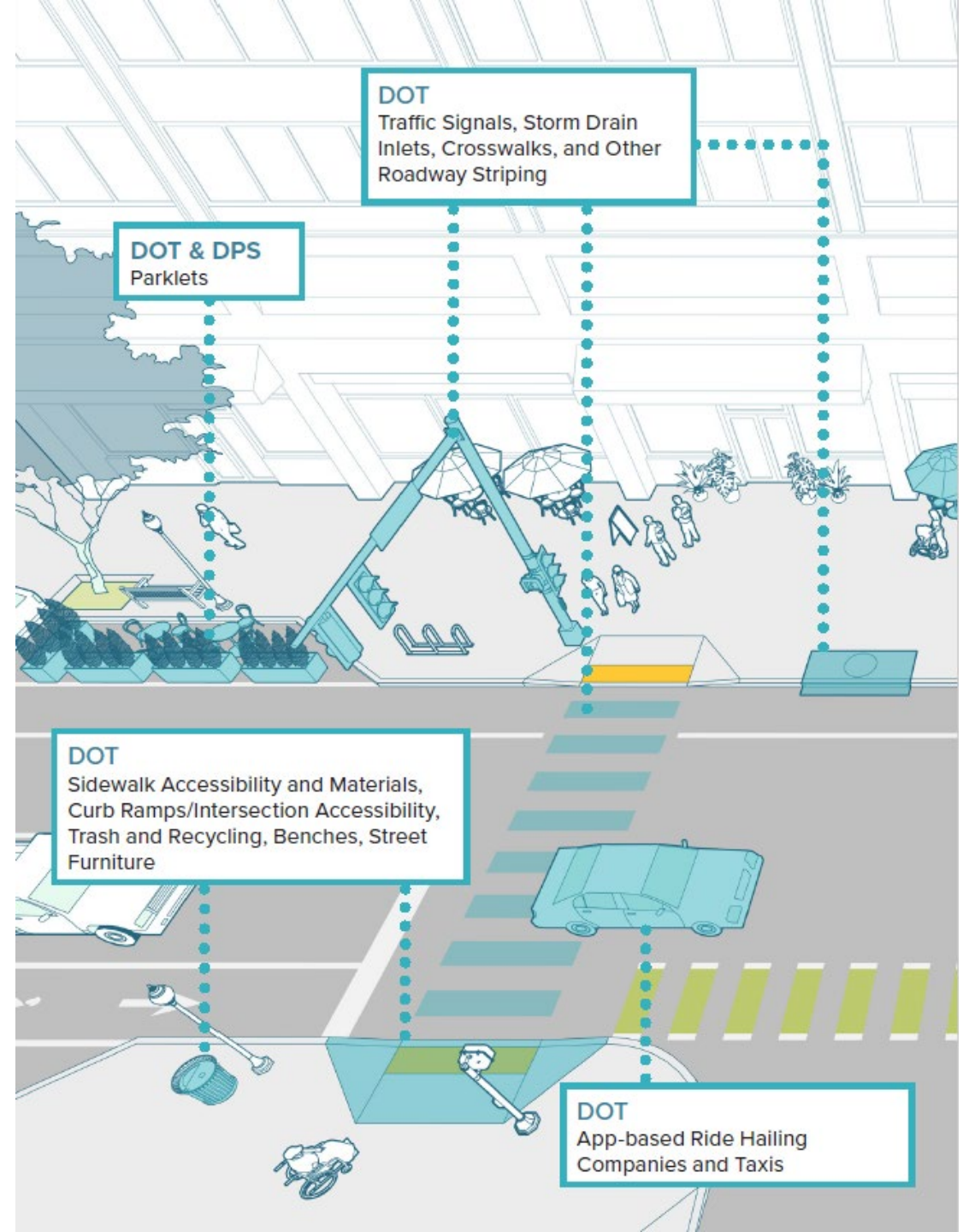
Existing



Proposed

Chapter 9 Implementation

- Agency Responsibilities on Streets
- Project Development Process
- Permits and Approvals
- Design Exceptions



PUBLIC SECTOR ROAD PROJECTS



Master Plan of Highways and Transitways

- Classifies each street based on traffic volume and function
- Establishes minimum master-planned right-of-way
- Identifies transit priority streets
- Identifies planned Bus Rapid Transit (BRT) station locations
- Recommends number of lanes and target speed



Master Plans and Sector Plans

- Defines land use and urban form
- May include local streetscape guidelines



Bicycle Master Plan

- Recommends bikeways for specific roads



Review and Briefings

- Review from the Montgomery County Council Transportation, Infrastructure, Energy and Environment (T&E) Committee
- Briefing with the Montgomery County Planning Board

← *ITERATIVE PROCESS* →



Facility Planning / 35% Design at DOT

- Identify stakeholders and review agencies
- Collect background traffic and environmental data
- Public outreach, in the form of community meetings and written feedback
- Develop concept plans, DOT selects a preferred option to move forward
- Detailed surveying and site investigation (soil conditions, environmental impacts, noise impacts)
- Detailed engineering (horizontal and vertical alignment, right-of-way requirements, structures, intersection design, Stormwater Management Concept approval)
- Construction sequencing, costs, and scheduling
- **35% design is enough detail to provide an accurate cost estimate and schedule and allows the project to receive final design and construction funding**

Next Steps

Current project:

- Changes to County Code and Executive Regulations

Future efforts:

- County Council review – Summer/Fall 2021
- Update to Functional Master Plan of Highways and Transitways
- Ongoing updates – **this is a living document**

The Complete Streets Design Guideline is hosted jointly on both our websites:

Planning - <https://montgomeryplanning.org/planning/transportation/complete-streets/>

MCDOT - <https://www.montgomerycountymd.gov/dot-dte/projects/CSDG/index.html>

Questions?



Steve Aldrich

Montgomery Planning

(301) 495-4528

Stephen.Aldrich@MontgomeryPlanning.org

Andrew Bossi

MCDOT

(240) 777-7200

Andrew.Bossi@montgomerycountymd.gov

Dan Sheridan

MCDOT

(240) 777-7283

Daniel.Sheridan@montgomerycountymd.gov