

Montgomery County
**Complete Streets Design
Guidelines**
and Roadway Functional Classification Study

Overview of Draft Guidelines
June 2020



Agenda

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



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
- Primary emphasis is on **county roads**, 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** ← We are here
- County Council Review
- Final Guidelines

Extensive Engagement

To date:

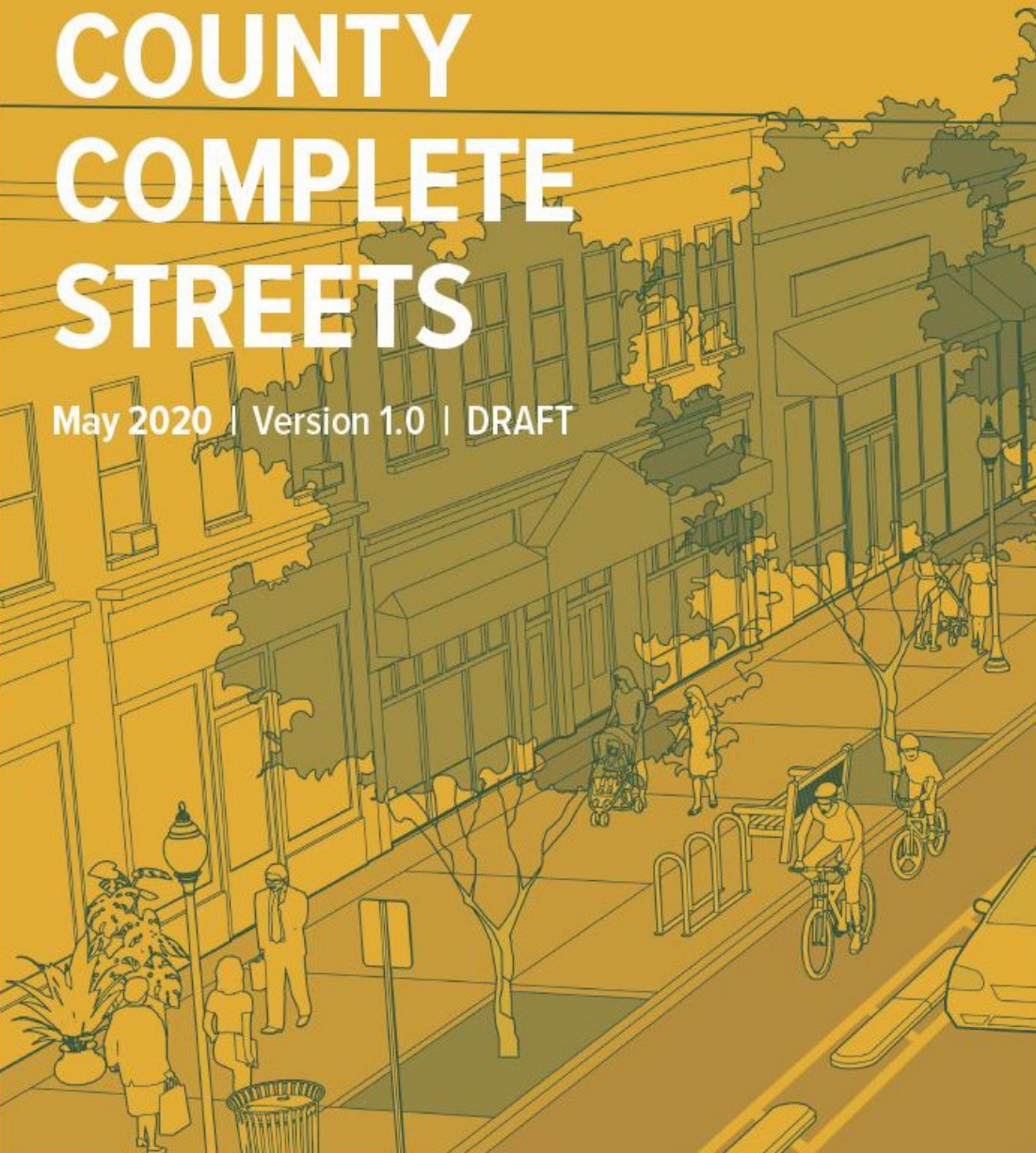
- 4 design workshops with M-NCPPC and MCDOT/DPS leadership
- Developer Open House (May 2019)
- 15+ review meetings with staff design working group
- 3 rounds of review of draft content
- Draft sent to SHA for review/comment

Next steps:

- Public Information Meeting – June 17 – virtual
- Developer/County Committees
- Public Hearing, Planning Board work sessions, T&E Review, Council Hearing

MONTGOMERY COUNTY COMPLETE STREETS

May 2020 | Version 1.0 | DRAFT



- 1 Vision
- 2 Street Types
- 3 Decision-Making Framework
- 4 Sidewalk Zone
- 5 Street Zone
- 6 Intersections
- 7 Green Streets
- 8 Bikeway
- 9 Speed Management
- 10 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.

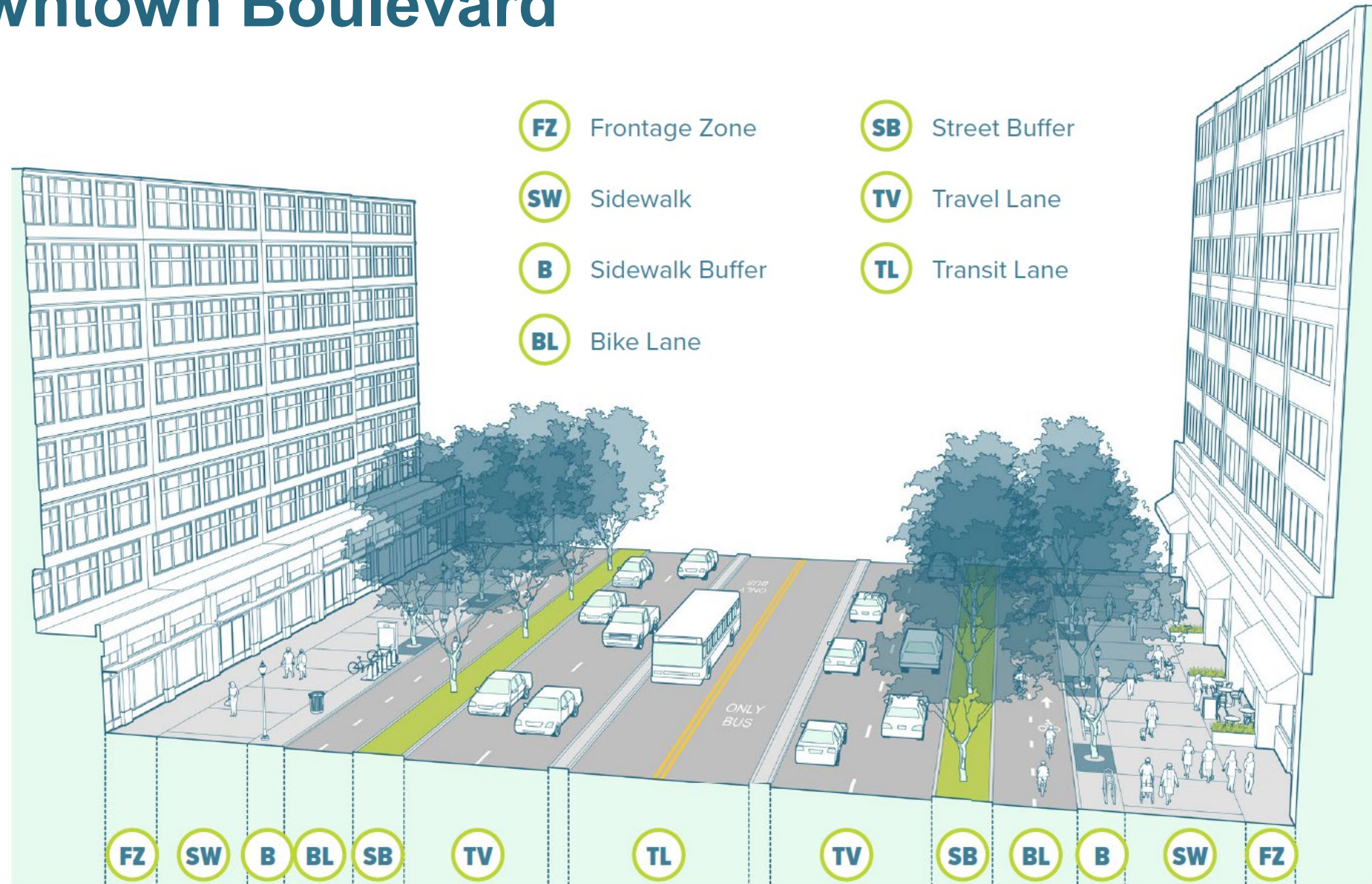
Montgomery County Street Types

- 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

Example: Downtown Boulevard

Key Features:

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



Special Streets

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



Street Types linked to guidance on:

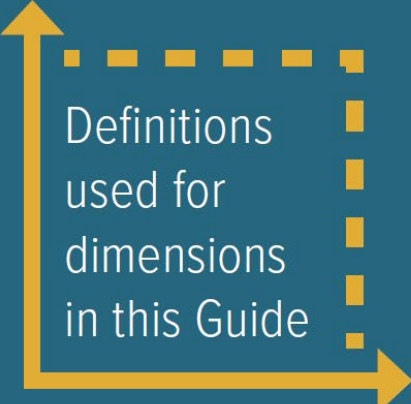
- Target speed
- # of vehicle lanes
- Protected crossing spacing
- Signalized intersection spacing
- Vehicle lane widths
- Median
- Bikeway width / type
- Street buffer width
- Ped Clear Zone width
- Frontage Zone width
- Maintenance Zone
- Priority features in constrained ROWs
- Other street design elements (e.g., bike parking, crossing islands, raised intersections, carshare parking, etc.)

Chapter 3

Decision-Making Framework



This chapter is intended to serve as a **quick, one-stop reference** for the topics that are explained in greater detail in subsequent chapters.



Definitions
used for
dimensions
in this Guide

Default: the standard dimension that is expected in most cases. If it is not used, designers must provide evidence to prove that it is infeasible.

Preferred: the desired dimension, where feasible.

Minimum: nothing lower than this dimension will be accepted, except in very rare circumstances via a formal exception.

Figure 3.2 (excerpt)

		Page Reference	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
Outside Travel Lane (against curb or parking)	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 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.	105	11'	10.5'	11'	11'	11'	10.5'	10.5'	12'	11'	11'	11'	12'
Dedicated Transitway	The presence of a dedicated transitway is determined in the Countywide Master Plan for Transitways and Highways . If these dimensions vary from those provided in a specific Transitway planning process, those dimensions supersede this document. Dimensions may vary at stations or intersections.	108	Transitway lanes: 13' preferred, 12' min Transitway buffer: 6' preferred, 2' min											
Parking Lane	Gutter pan is included in parking lane dimensions. If there is no parking lane, gutter pan is included in outside travel lane width.	95-99	8'	8'	8'	8'	8'	8'	8'	8'	8'	N/A	N/A	N/A
Shoulder	Dimensions only apply if a shoulder is required.	105	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6'	4'	8'
Default Bikeways Types and Widths	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. SBL = Separated Bike Lane. Dimensions do not include the street buffer (see below) or sidewalk buffer (ranges from 0'-6', see Section 6.2). If bikeway is adjacent to the curb, dimensions include the gutter pan. For corridors designated as Breezeways, see additional guidance in the Bicycle Master Plan .	195	Two-Way SBL on both sides of street. Each SBL: 11' default; 8' min	One-way SBL: 6.5' default; 5' min	Sidepaths on both sides of the street. Each sidepath: 11' default; 8' min	Two-Way SBL on both sides of street. Each SBL: 11' default; 8' min	One-way SBL: 6.5' default; 5' min	Sidepath on one side of the street: 10' default; 8' min or Bike Lanes: 5'-6'	Neighborhood Greenway; Shared Lanes; or Advisory Bike Lanes (for design guidance, see Bicycle Facility Design Toolkit)	N/A	One-way SBL: 6.5' default; 5' min or Sidepath on one side of the street: 10' default; 8' min	Bikeable Shoulders: 10' or Sidepath on one side of the street: 10' default; 8' min	Bikeable Shoulders: 8' or Sidepath on one side of the street: 10' default; 8' min	Sidepath on both sides of street. Each sidepath: 11' default; 8' min
Street Buffer	The street buffer is the space between the travel or parking lanes and the bikeway or sidewalk. 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.	66	8' default, 6' min	6'; 11' if shared w/ street parking	8' default, 6' min	8' default, 6' min	6'	6'	6'	6'	6'	10' (if sidewalk /sidepath are provided)	8' default, 6' min	As wide as feasible (10' min)

Chapter 4 Sidewalk Zone

- Street Buffer Zone
- Pedestrian Clear Zone
- Frontage Zone
- Signage
- Transit Stops
- Open Section Roadways
- Driveways
- Street Lighting
- Maintenance Responsibilities

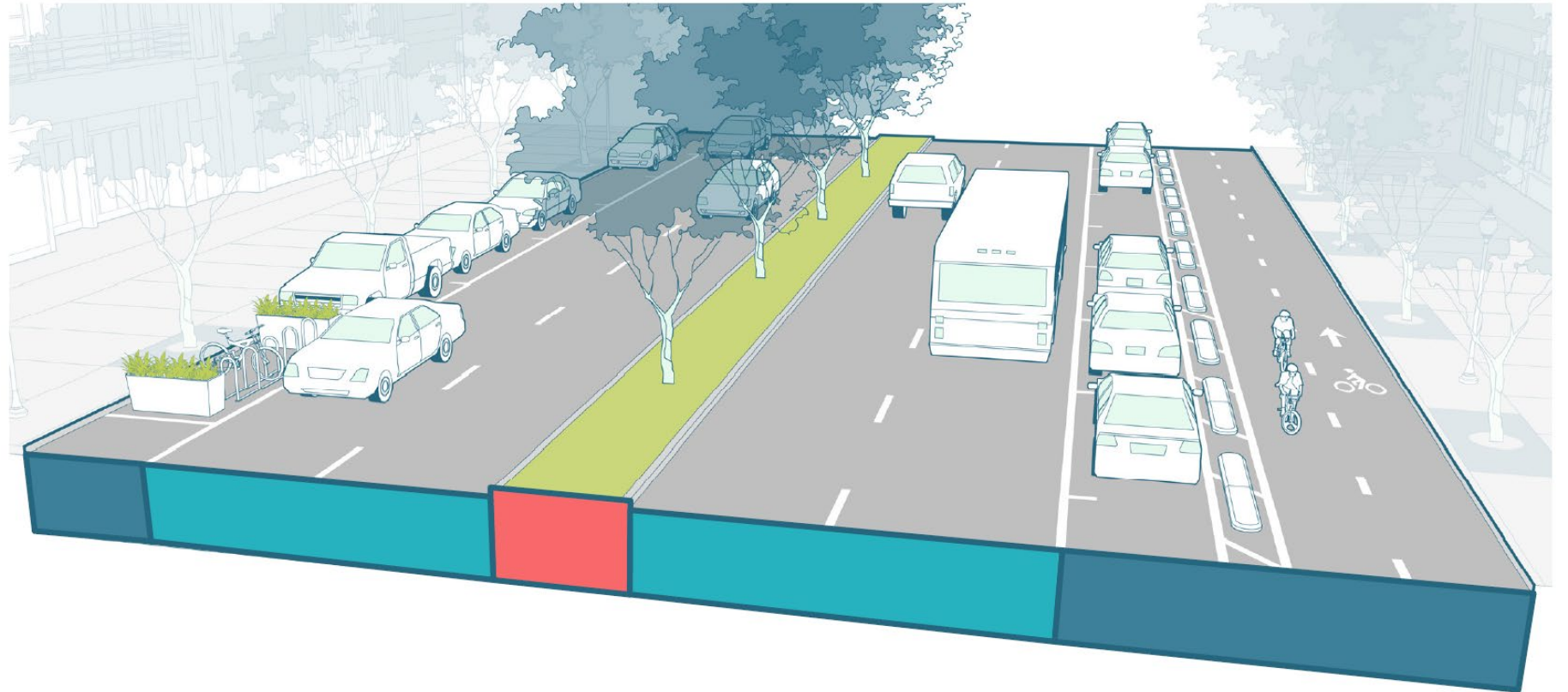


Street Type	Maintenance Buffer	Frontage Zone	Pedestrian Clear Zone	Street Buffer
Downtown Boulevard	0'	10' default; 0' min	15' default; 10' min	8' default, 6' min
Downtown Street	0'	10' default; 0' min	10' default; 8' min	6'; 11' if shared w/ street parking
Boulevard	2'	7' default; 0' min	6' min for sidewalk or 11' default/8' min for sidepath	8' default, 6' min
Town Center Boulevard	0'	7' default; 0' min	10' default; 8' min	8' default, 6' min

Chapter 5

Street Zone

- Curbside Zone
- Travelway Zone
- Median Zone
- Utilities
- Network Connectivity



Chapter 5

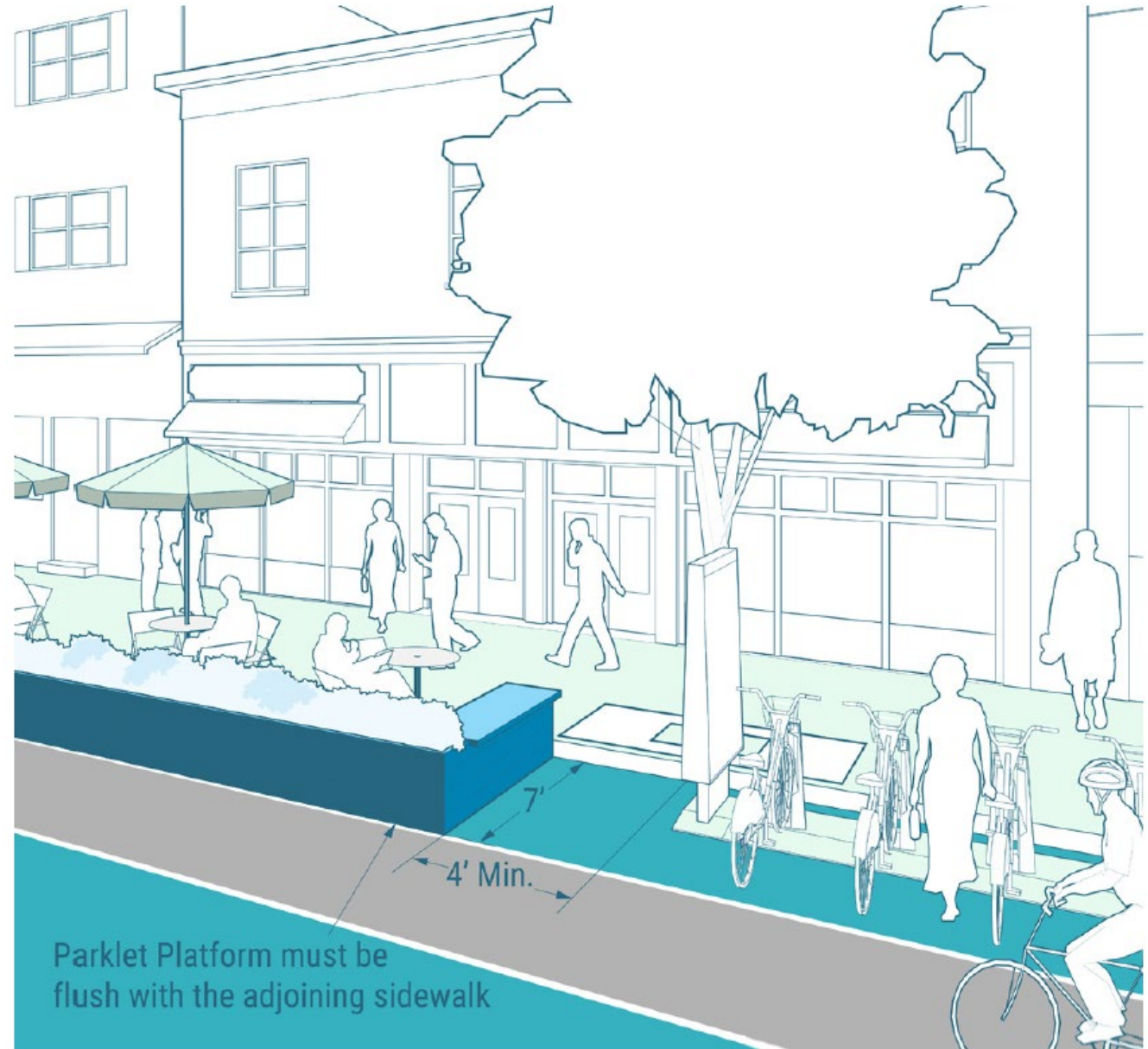
Street Zone

Street Zone

- On-Street Parking
- Carshare Parking
- E/V Charging
- Mobile Food Vending
- Parklets
- In-Street Bike Corrals
- Commercial and Passenger Loading Zones
- Travel Lane Width

Median

- Dimensions



Chapter 5

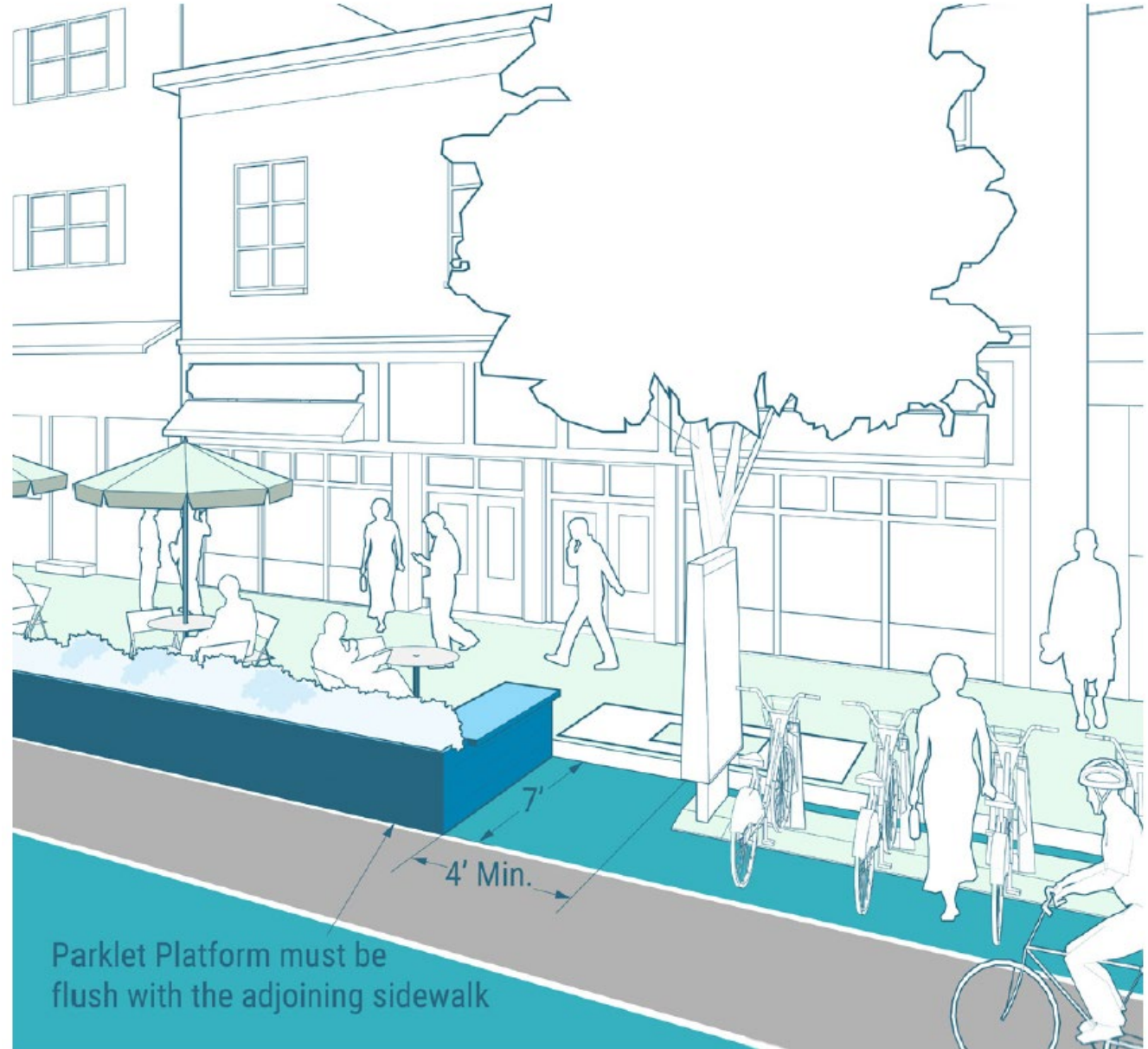
Street Zone

Utilities

- Water and Sewer
- Gas
- Dry Utilities
- Utility Clearance
- Utility Appurtenances

Network Connectivity

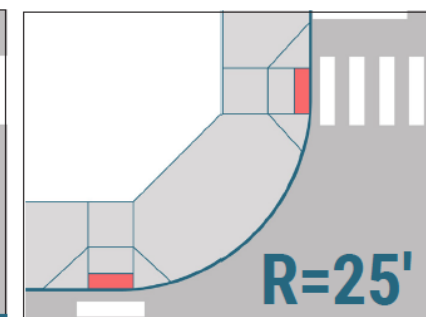
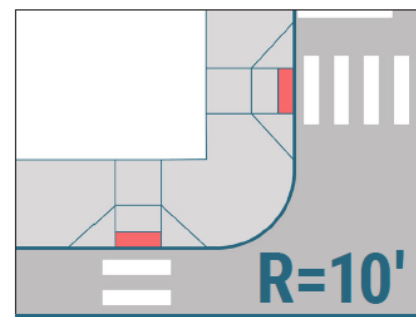
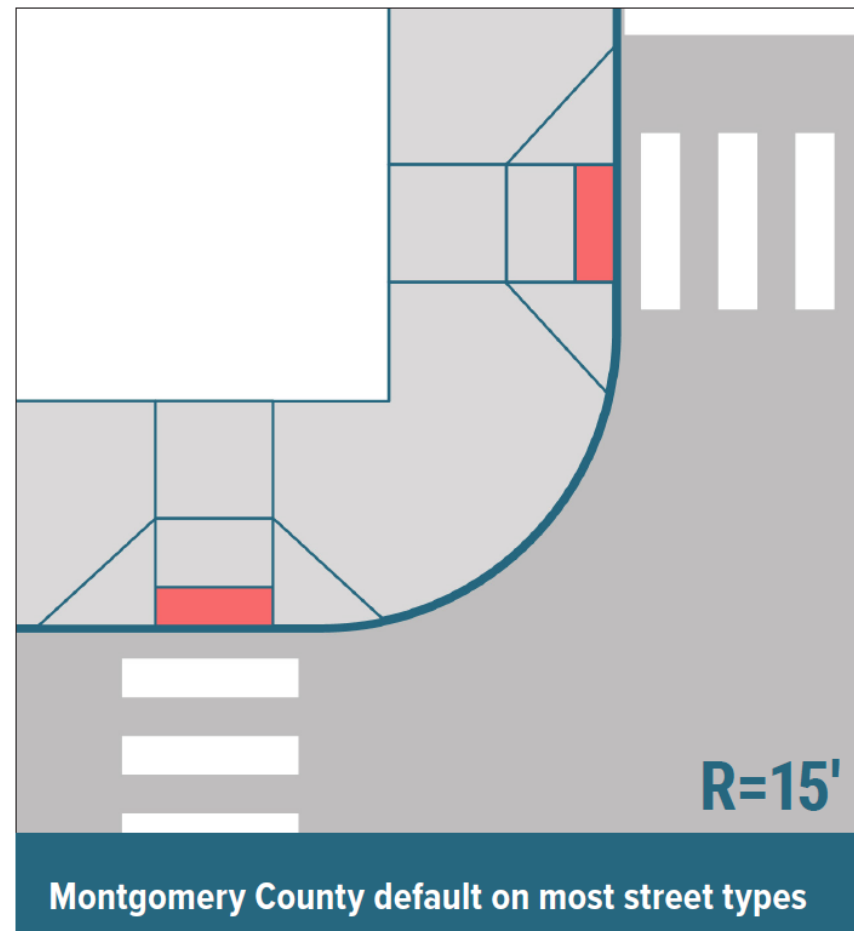
- Bike/ped and street connections between existing and new development



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 7

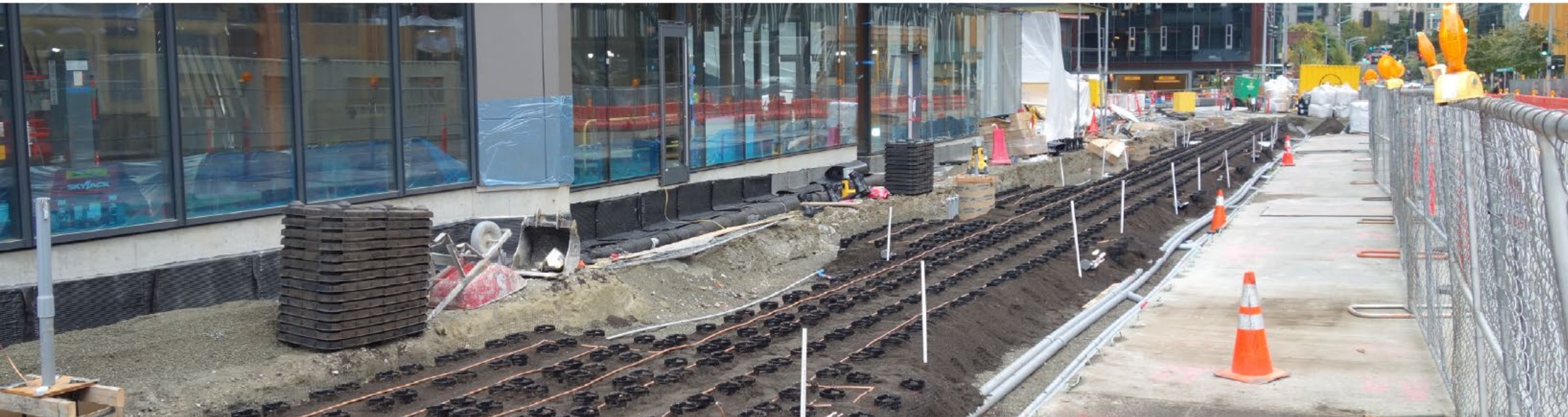
Green Streets

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

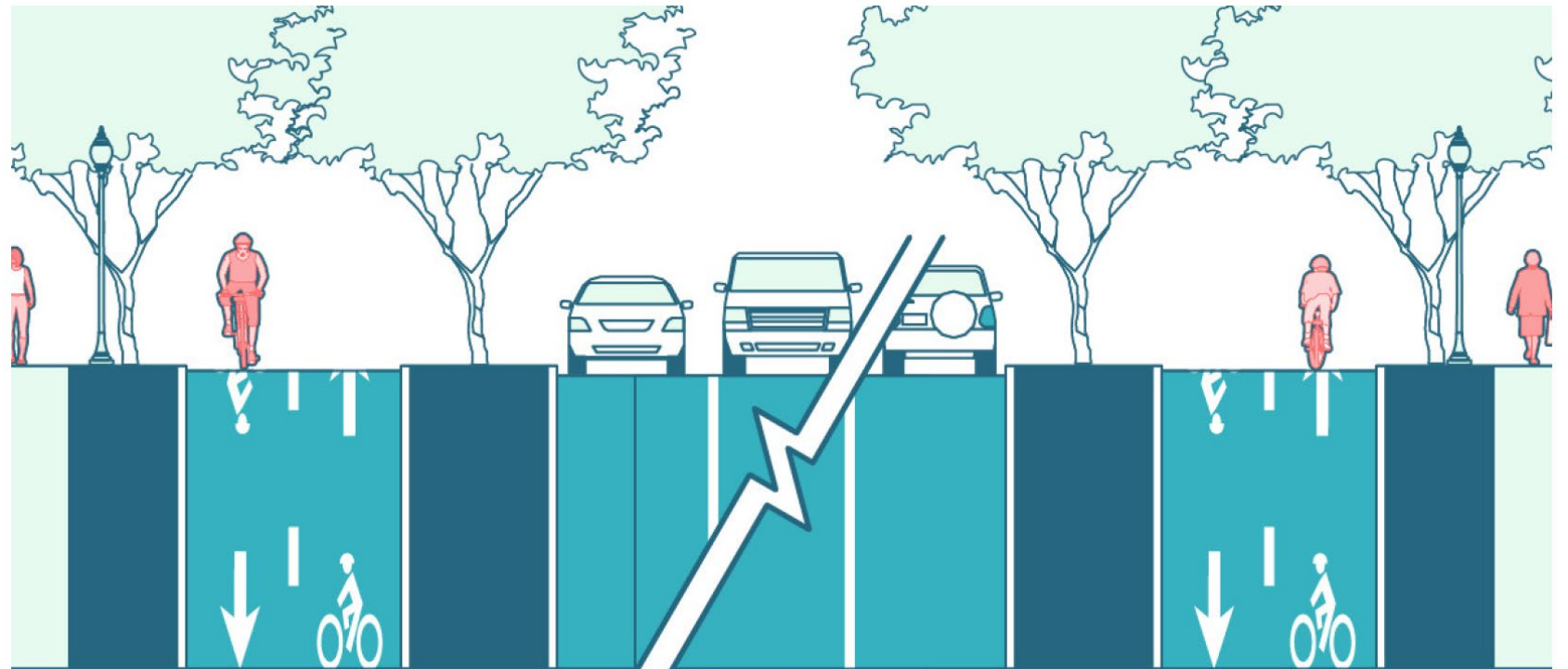
Bikeways

Design Guidance

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

Other Considerations

- Shy Zones
- Bicycle Ramps
- Green Paint

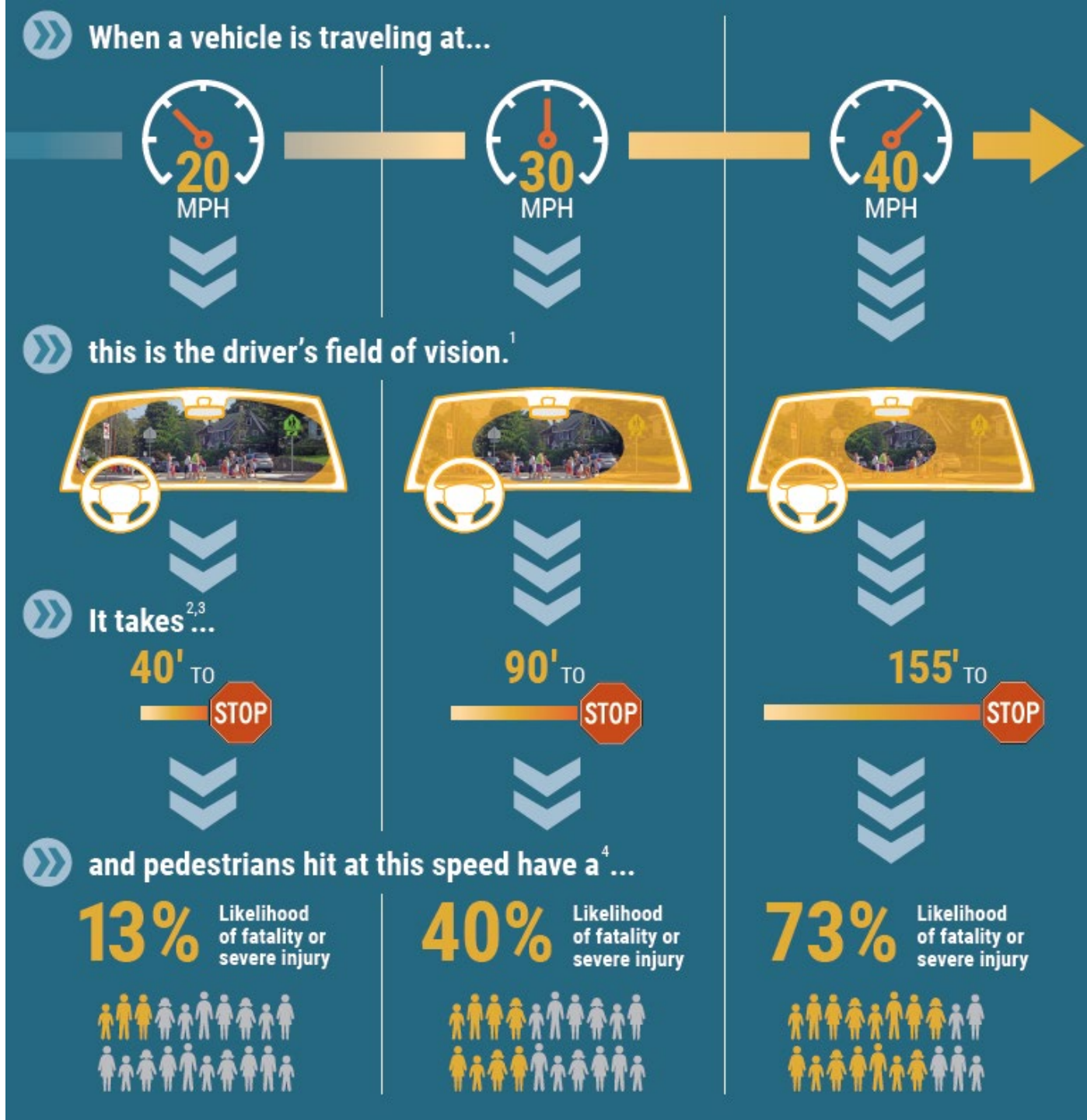


Chapter 9 Speed Management

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

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	35
Major Highway	45 - 55

Figure 9-2: Target speeds



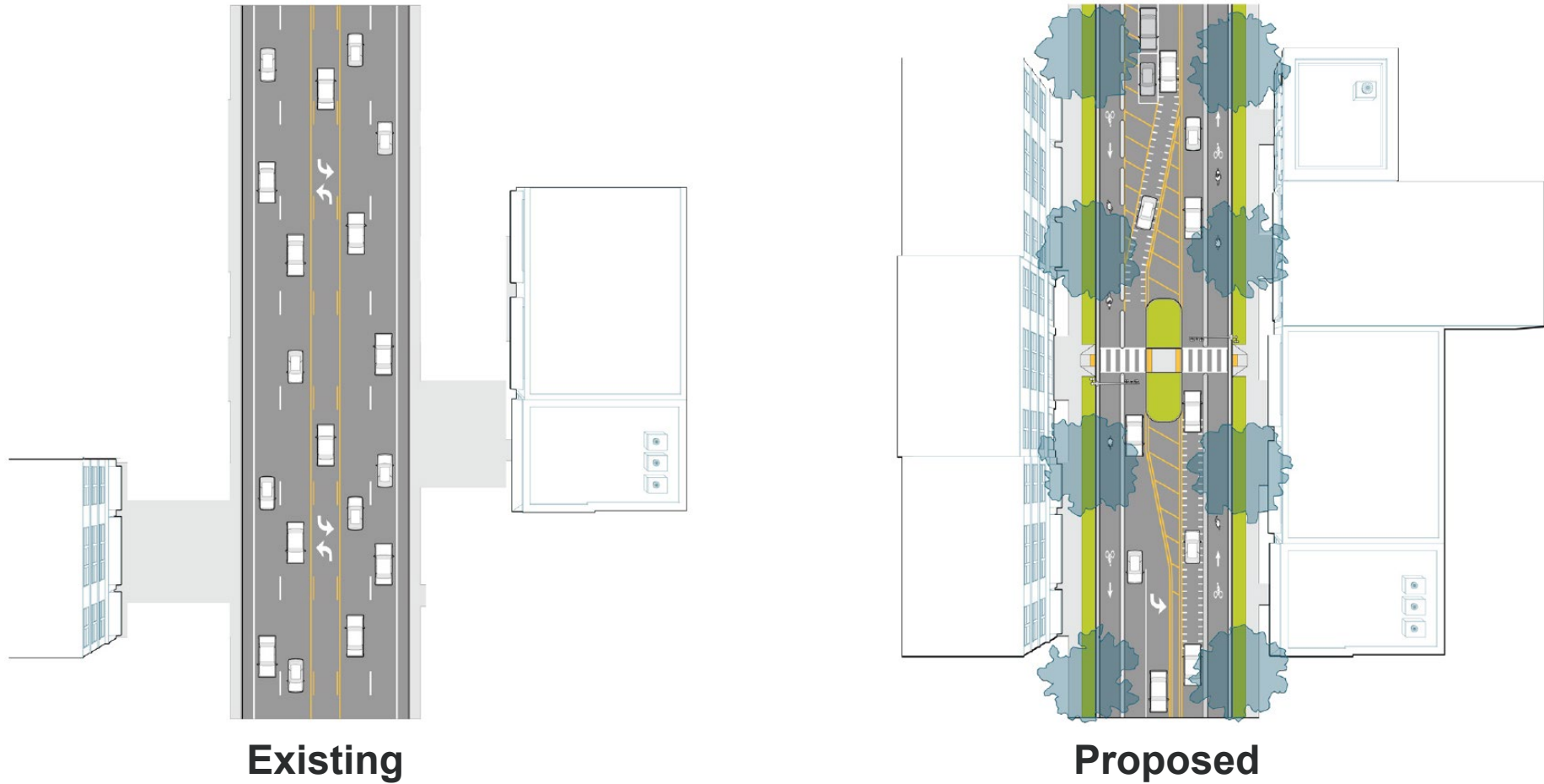
Speed Management Techniques

- Road diet
- Lane diet
- Speed humps/cushions
- Speed tables/Raised crossings
- Raised intersections
- Curb extensions/Bulb outs
- Neckdowns/Chokers
- Crossing islands
- Traffic Diverters
- Chicanes/Roadway Curvature
- Textured Pavement
- Sense of Enclosure



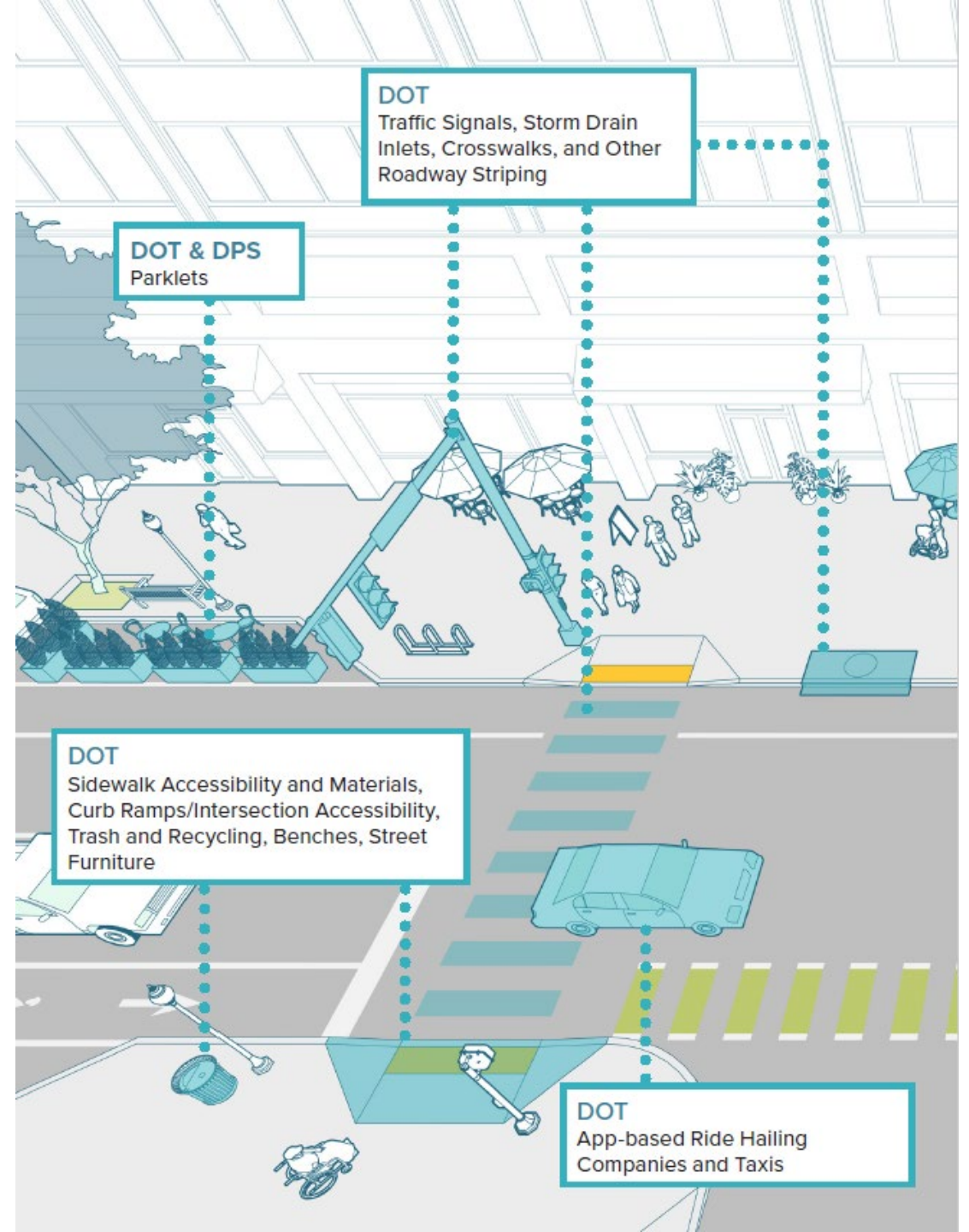
Retrofitting Arterials for Lower Speeds

- Three hypothetical scenarios



Chapter 10 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



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:

- Public information meeting – June 17
- Informal meetings with developers/county committees
- Public hearing – July 23
- Planning Board work sessions – September/ October 2020
- County Council review – January 2021

Future efforts:

- Changes to County Code and Executive Regulations
- Update to Functional Master Plan of Highways and Transitways
- Ongoing updates – **this is a living document**

Questions?

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