

## Briefing on Complete Streets Design Guide and Roadway Functional Classification Project

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The Montgomery County Planning Department and the Montgomery County Department of Transportation will conduct a joint briefing on the status of the Complete Streets Design Guide / Roadway Functional Classification project. A summary of this project is included as Attachment A, which will be the focus of this briefing.

### OVERVIEW

In June 2018, the Maryland-National Capital Park and Planning Commission and the Montgomery County Department of Transportation signed a memorandum of understanding (MOU) in which the two agencies agreed to pool their resources to conduct a joint study to:

- Develop a Complete Streets Design Guide to design and operate roads to provide safe, accessible and healthy streets for all users of our roadway system in support of the County's Vision Zero policy, and
- Propose a replacement for Montgomery County's roadway functional classification system that organizes and categorizes streets based on how they are used by people and their land use context, rather than the current approach that largely organizes streets based on how vehicles use them.

This MOU merged separate projects that each agency had been pursuing independently. The Montgomery County Planning Department's FY18 budget included a project to evaluate options for replacing Montgomery County's existing roadway functional classification system. Concurrently, the Montgomery County Department of Transportation was pursuing the development of a Complete Streets Design Guide to comply with requirements established as part of a 2013 law (Bill 33-13) that modified the provisions for urban streets in Section 49 of the County Code and that is identified as an initiative in the County's Vision Zero Two Year Action Plan.

### BACKGROUND

#### What are Complete Streets?

Complete Streets are roadways that are designed and operated to provide safe, accessible and healthy travelways for all users of our roadway system, including pedestrians, bicyclists, transit riders and motorists. They make it intuitive and safe to cross the street, walk to shops, and bicycle to school. The

approach to Complete Streets will vary in different parts of Montgomery County. Complete Streets in rural Boyds, suburban Olney and downtown Wheaton will all look different depending on the adjacent land uses. A common misconception of Complete Streets is that every roadway will be designed to have wide sidewalks, bus only lanes and separated bike lanes. In actuality, Complete Streets function as a network, ensuring that the transportation network as a whole provides safe and efficient access for all roadway users and only provides designated spaces for each mode when needed.

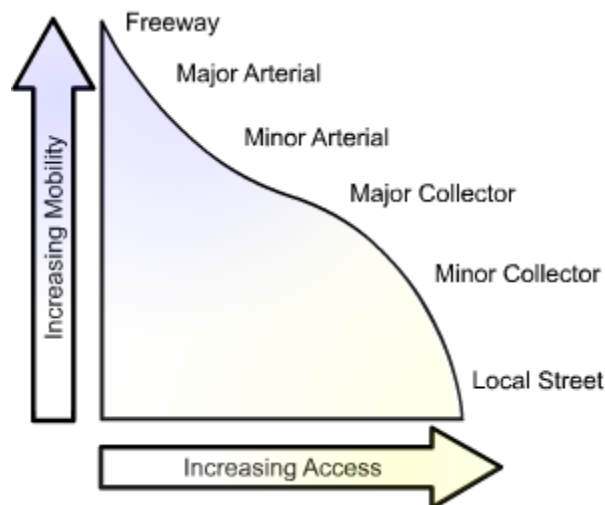
#### What is Roadway Functional Classification?

The purpose of establishing a roadway functional classification system is to categorize streets for consistent design and application. The Federal Highway Administration (FHWA) classifies roadways based on two primary travel needs for motor vehicles: access to/from specific locations (how many places you can get to) and mobility (how far you can go in a given time, or speed).

A typical graphic that shows how street types vary based on the level of mobility and access they provide is shown below. This classification system includes:

- Freeways (those that are designed almost exclusively for mobility such as I-270).
- Arterials (those that have high mobility and low access such as US 29).
- Collectors (those with moderate mobility and moderate access such as Fenton Street).
- Local streets (those with low mobility and high access such as Woodland Drive, in the Woodside neighborhood across from the Planning Department).

In the State of Maryland, all roads are classified by the Maryland Department of Transportation using the FHWA functional classification system.



*Street types and the relationship of mobility and access*

Montgomery County also maintains its own separate functional classification system, which originated in the 1930s and predates the FHWA functional classification system. This system is formalized in the Master Plan of Highways and Transitways (see [www.mcatlas.org/mpohtcomments](http://www.mcatlas.org/mpohtcomments)) and includes

designations such as major highways, arterials, primary residential streets and business streets, among others. While this system was most recently modified in 2008 to provide more land use context (the County is divided into urban, suburban and rural areas) and to include new street types such as the minor arterial classification, it continues to largely describe the street network based on how motor vehicles use them and does not fully accommodate all of the land use contexts in the County. For example the urban area designation does not adequately distinguish between downtowns, town centers and other commercial areas.

This project therefore will propose a new functional classification system to replace Montgomery County's existing system with one that provides more nuance in classifying roads based on the land use context and how people – not motor vehicles – use them.

## **OUTREACH**

Developing a Complete Streets Design Guide and a Roadway Functional Classification System is a highly technical endeavor and typically involves substantial collaboration among county agencies and a targeted approach to public engagement involving key stakeholders. On May 21, 2019, a roundtable meeting was conducted with members of the development community. In November 2019, an open house will be conducted with the broader public and other stakeholders.

## **NEXT STEPS**

- November 2019: Community / Stakeholder Meeting
- December 2019: Planning Board Public Hearing
- January 2020: Planning Board Worksessions
- April 2020: Planning Board Transmittal to County Council

## **ATTACHMENTS**

Attachment A – Presentation

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

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Planning Board Briefing

June 27, 2019



# AGENDA

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- Overview
- Why Develop a Complete Streets Design Guide?
- Process Overview
- Outline & Content
- Street Types
- Next Steps

# Overview

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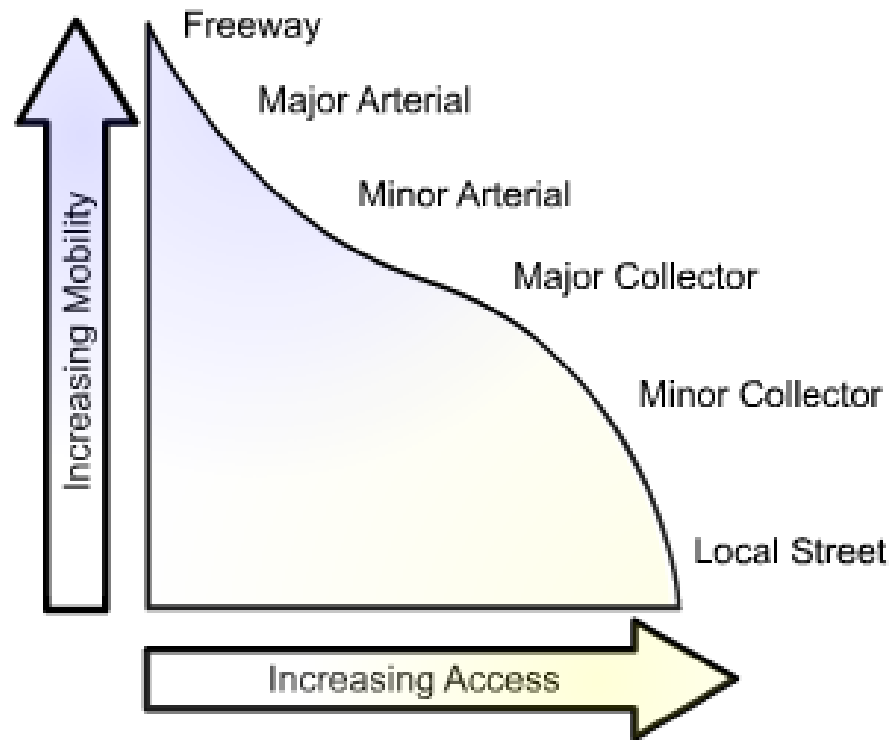
# Overview

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- What are Complete Streets?

# Overview

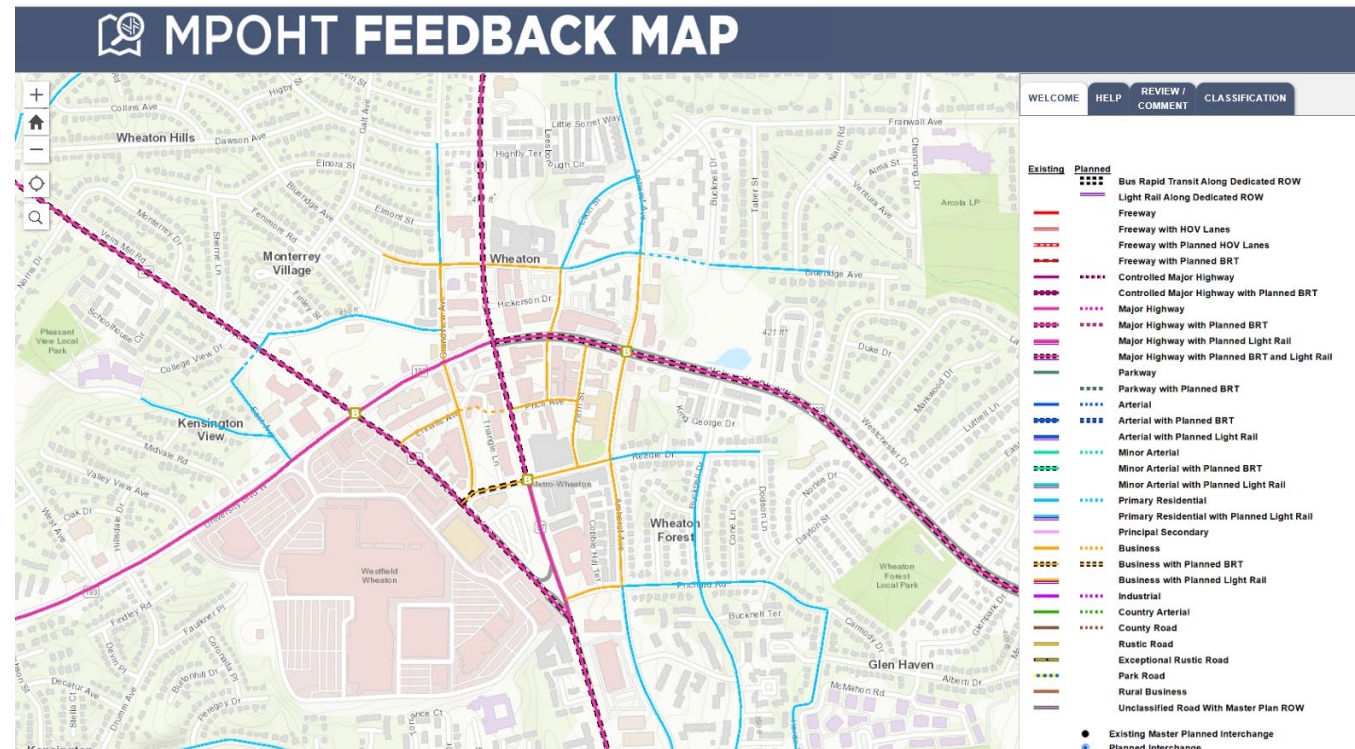
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# Overview

- What is Roadway Functional Classification?



# Why Develop a Complete Streets Design Guide?

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**CONSISTENT  
VISION**



**ONE-STOP-  
SHOP**



**EMPHASIS:  
COUNTY  
ROADS**

**Why  
develop a  
CSDG  
?**



**PRIORITIES IN  
CONSTRAINED  
ROW**



**FLEXIBILITY +  
CLARITY**



**BEST  
PRACTICES**



## Division of Transportation Engineering

### Design Standards

Standard No.	Description
MC-100.01	Combination Concrete Curb and Gutter - Type A
MC-101.01	Combination Concrete Curb and Gutter - Type C
MC-102.01	Depressed Curb Entrance
MC-103.01	Bituminous Concrete Curb



Montgomery County Government

### Drainage Design Criteria

Department of Transportation

### Rain Gardens

Project Requirements (PDF)



## Bethesda Downtown Plan Design Guidelines

community  
identity

equity

habitat +  
health

access +  
mobility

water

energy



Approved July 2017

THE MONTGOMERY COUNTY PLANNING DEPARTMENT  
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION



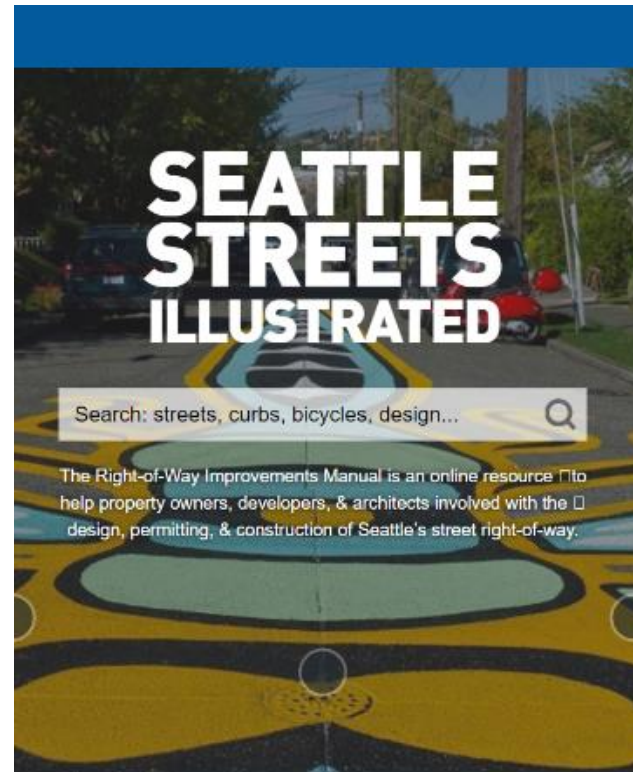
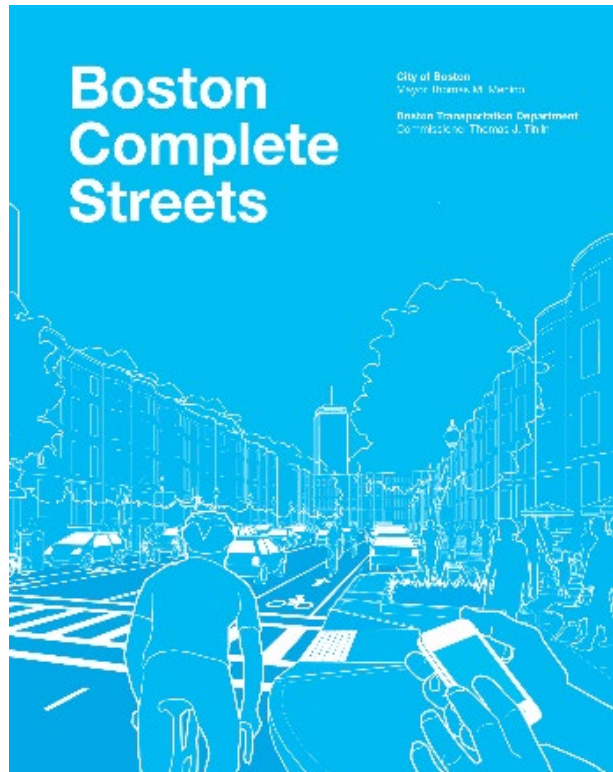


# Process





# Research on CS Design Guides



# Research on CS Design Guides



## ALEXANDRIA COMPLETE STREETS DESIGN GUIDELINES

Alexandria Department of Transportation & Environmental Services

Prince George's County Maryland  
Department of Public Works and Transportation  
Largo, Maryland

## Urban Street Design Standards



11/08/16





# Agency / Stakeholder Engagement

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- Work Sessions with MCDOT, DPS, M-NCPPC staff
- Focused effort related to Fire/EMS safety
- Development community open houses
- Additional stakeholder meetings

# Develop Draft Content

## Key elements:

- Safety
- Widths and priorities in constrained ROW
- Stormwater and green infrastructure
- Accessibility

## Targeted schedule:

- Draft Guide for public / stakeholder review in Fall 2019
- Final Guide approval process in early 2020

## Downtown Commercial

Downtown Commercial  
Downtown Mixed-use  
Neighborhood Main Street  
Neighborhood Connector  
Neighborhood Residential

Industrial  
Shared Streets  
Parkways  
Boulevards

### Overview

Downtown Commercial Streets define Boston's dense commercial core. These Street Types are found primarily in the Financial District, Government Center, Chinatown, the Leather District, Back Bay, and the South Boston Waterfront. Containing a mix of mid- and high-rise office buildings, the streets serve as international cultural destinations and connect with highways and transit hubs that serve the Greater Boston region.

These often iconic streets play a key role in the regional movement of people, and designs must support extremely high user volumes. Congestion, commercial vehicle traffic, and high volumes of pedestrians and bicycles, combined with relatively short blocks and numerous irregular intersections, make achieving the right modal balance a considerable challenge. Lined with a mix of centuries-old and modern

building facades and grand lobbies, these streets require wide sidewalks which typically feature enhanced finishes and materials. Designs must also respect the historic significance of these streets.

### Example Streets

- ▶ Congress Street (Government Center/Financial District)
- ▶ State Street (Government Center/Financial District)
- ▶ Kneeland Street (Chinatown/Leather District)
- ▶ Summer Street (Financial District/South Boston Waterfront)
- ▶ Boylston Street (Back Bay)



# Future Steps

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- Adopt a revised street type map as a technical update to the Countywide Master Plan of Highways and Transitways
- As area plans are adopted, some decisions about street type designations will be refined/changed
- Update Design Standards

# Outline & Content

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# Guide Outline

1. Introduction
2. Street Types

## Downtown Commercial

Downtown Commercial  
Downtown Mixed-use  
Neighborhood Main Street  
Neighborhood Connector  
Neighborhood Residential

Industrial  
Shared Streets  
Parkways  
Boulevards

### Overview

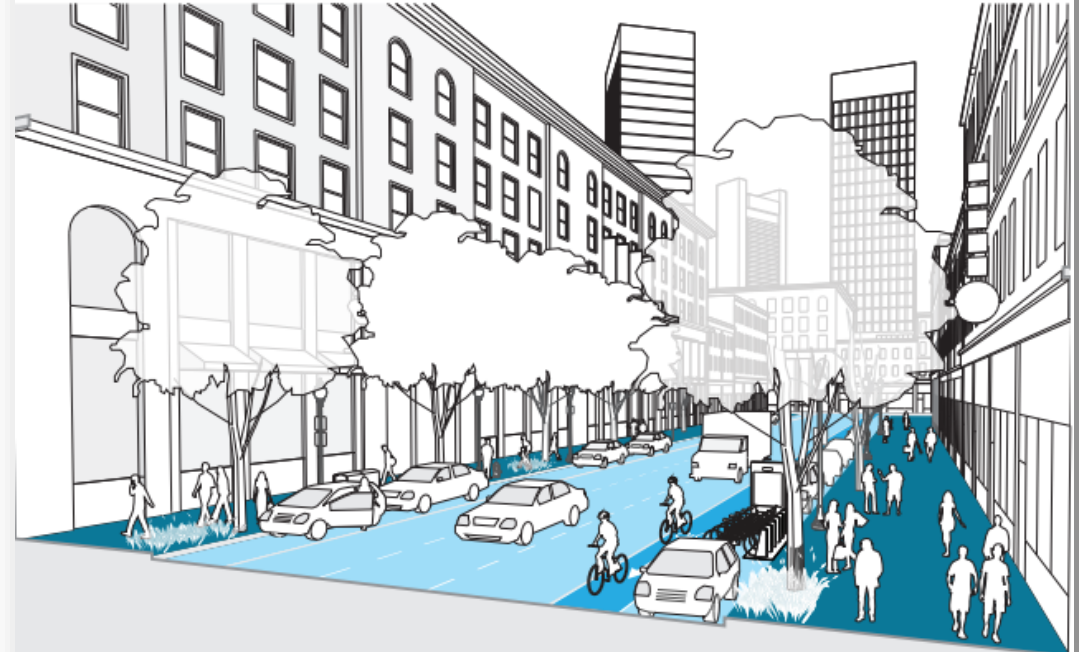
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# Guide Outline

1. Introduction
2. Street Types

RECOMMENDED WIDTH CHART FOR DALLAS COMPLETE STREETS ELEMENTS				
	Mixed-Use Streets		Commercial Streets	
Recommended Designation	Min	Pref	Min	Pref
<b>Pedestrian Zone<sup>2</sup></b>				
Frontage zone: <sup>3</sup>				
Frontage zone <sup>3</sup>	-	-	-	-
Sidewalk clear zone: <sup>4</sup>				
Sidewalk clear zone	6'	8'- 15'	5'	6'- 10'
Buffer/furnishing zone:				
Buffer with street tree	6'	8'	6'	10'
Buffer (adjacent to on-street parking) <sup>5</sup>	2'	6'	2'	6'
Buffer (adjacent to travel lane, on-street parking not permitted) <sup>5</sup>	5'	8'	5'	10'
Curb zone: <sup>6</sup>				
Curb zone width <sup>6</sup>	6"	1'- 2'	6"	1'- 2'
<b>Street Zone</b>				
Parking zone: <sup>7</sup>				
Parallel parking	7'	8'	-	-
Back-in angled parking <sup>8</sup>	15'	22'	-	-
Flex lane <sup>9</sup>	12'	15'	-	-
Travelway zone—lanes on thoroughfares:				
General purpose inside travel lane <sup>10</sup>	10'	11'	10'	11'
Inside travel lane (adjacent to bicycle lane and parking lane)	10'	10'	-	-
Inside travel lane (adjacent to bicycle lane and curb, parking not permitted)	10'	10'	10'	11'

# Guide Outline

1. Introduction
2. Street Types

Trade-Offs in Limited Right-of-Way Priorities Chart

	Pedestrian Zone			Street Zone		
	Frontage Zone (private)	Sidewalk Clear Zone	Buffer/Furnishing/Curb Zone	Parking Zone	Travelway Zone	Median Zone
Contextual Street Types and Functional Classifications						
Mixed Use Streets						
Principal Arterial		1	2	5	4	3
Minor Arterial		1	2	3	4	5
Collector		1	2	3	4	5
Minor/Local		1	2	3	4	5
Commercial Streets						
Principal Arterial		1	3	5	1	4
Minor Arterial		1	4	5	2	3
Collector		1	3	4	2	5
Minor/Local		1	4	3	2	5
Residential Streets						
Principal Arterial		1	2	5	3	4
Minor Arterial		1	4	2	5	3
Collector		1	4	2	3	5
Minor/Local		1	4	2	3	5
Industrial Streets						
Principal Arterial		2	3	4	1	5
Minor Arterial		2	3	4	1	5
Collector		2	3	4	1	5
Minor/Local		2	3	4	1	5
Parkways						
Principal Arterial		2	4	5	3	1
Minor Arterial		2	4	5	3	1
Collector		2	4	5	3	1
Minor/Local		5	1	4	3	2

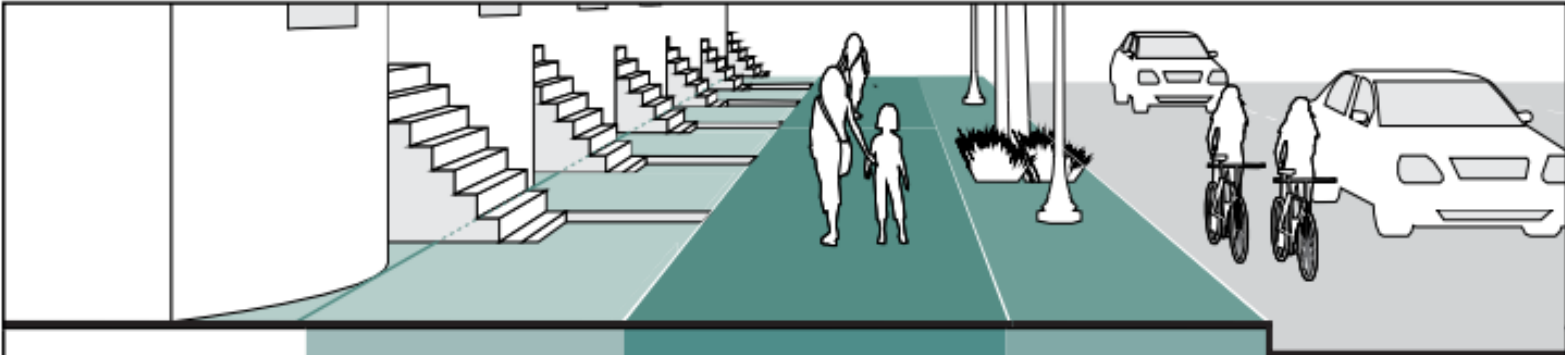
High Priority  
Medium Priority  
Low Priority



# Guide Outline

1. Introduction
2. Street Types
3. Sidewalks

## Preferred Widths for Sidewalk Zones

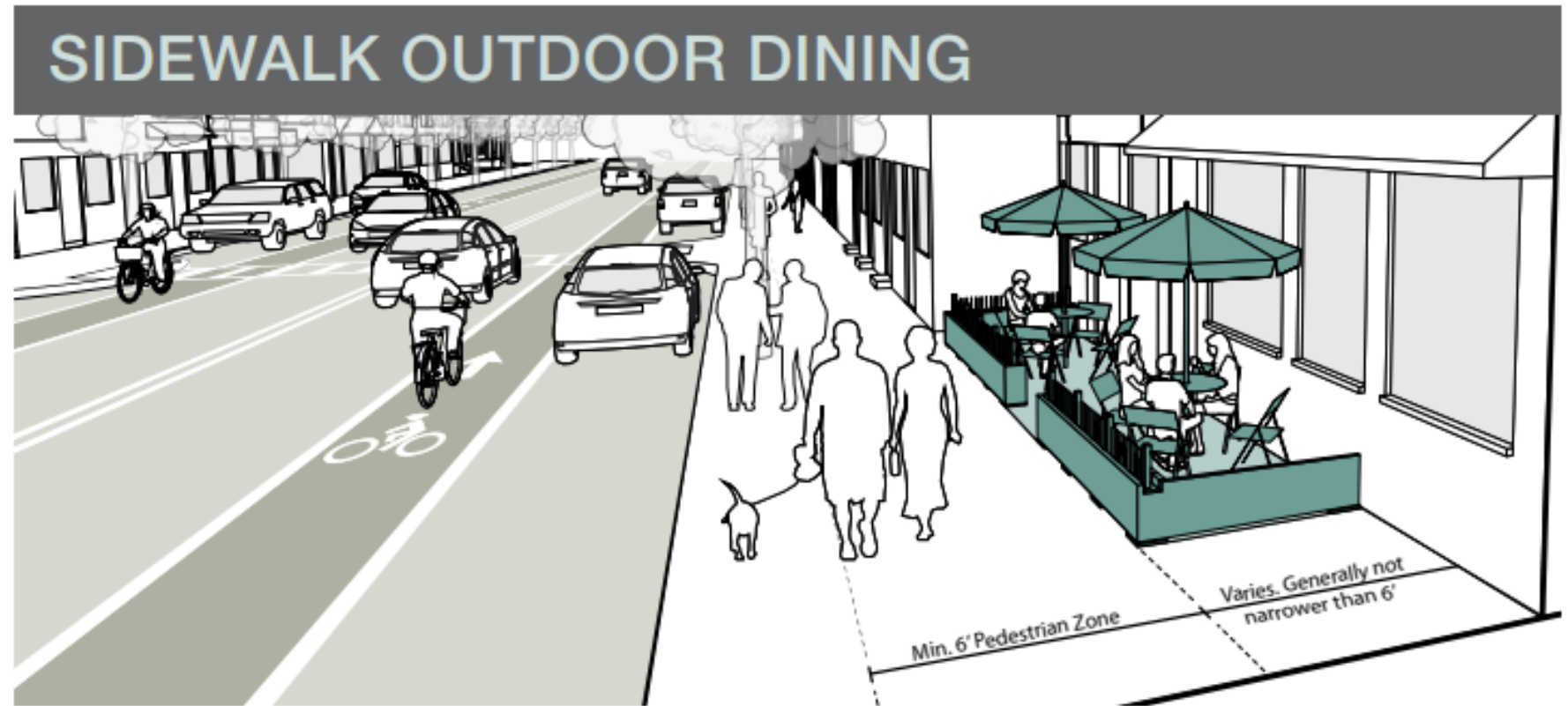


Street Type	Frontage Zone <sup>1</sup>	Pedestrian Zone <sup>2</sup>	Amenity Zone <sup>3</sup>	Total Width
	Door swings, Awnings, Café seating, Retail signage and displays, Building projections	Zone should be clear of any and all fixed obstacles. Clear space for pedestrian travel only.	Street lights and utility poles, Street trees, Bicycle racks, Parking meters, Transit stops, BMPs, Street furniture and signage	
Commercial Connector	2'-5'	6'-15'	6'-10'	14'-30'
Main Street	2'-6'	6'-10'	6'-10'	14'-22'
Mixed Use Boulevard	2'-6'	6'-18'	6'-10'	14'-30'
Neighborhood Connector	2'	6'-8'	6'-7'	14'-17'
Neighborhood Residential	2'	6'	5'-7'	11'-13'
Parkway	N/A	6'-10'	5'-10'	11'-20'
Industrial	2' or N/A	6'	5'-7'	11'-15'
Shared Streets	2'	N/A	N/A	N/A



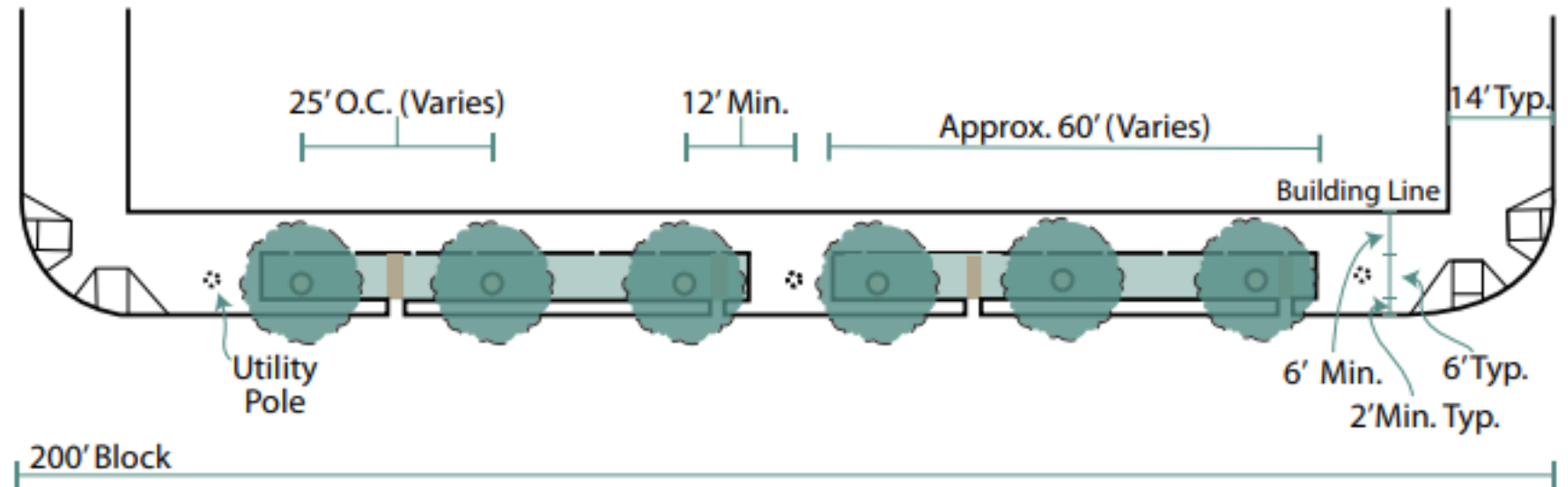
# Guide Outline

1. Introduction
2. Street Types
3. Sidewalks



# Guide Outline

1. Introduction
2. Street Types
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# Guide Outline

1. Introduction
2. Street Types
3. Sidewalks
4. Street Zone

Determine if the street is a candidate for a:

## 1 Road Diet

A road diet is a reduction in overall roadway width.



Remove Lanes



## 2 Lane Diet

A lane diet is a reduction in travel lane width.



Reduce Lane Widths



# Guide Outline

1. Introduction
2. Street Types
3. Sidewalks
4. Street Zone
5. Intersections



## INTERSECTION CONTROLS

Uncontrolled and midblock crossings can be the most challenging places to provide safe pedestrian crossings.

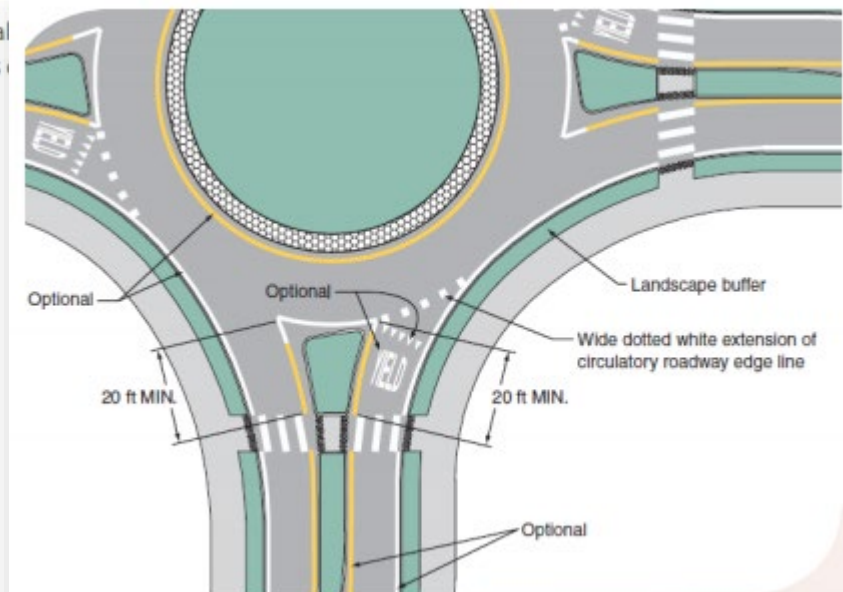
### Uncontrolled Intersections

Uncontrolled intersections are those where no traffic control devices facilitate the movement of traffic, and users yield the right-of-way to those who have already been established in the intersection, or those approaching from the right.

### Midblock Crossings

A midblock crossing is a pedestrian crossing that is not located at a roadway intersection. If a midblock crossing is not designated by a marked crosswalk, then pedestrians must yield the right-of-way to motorists.

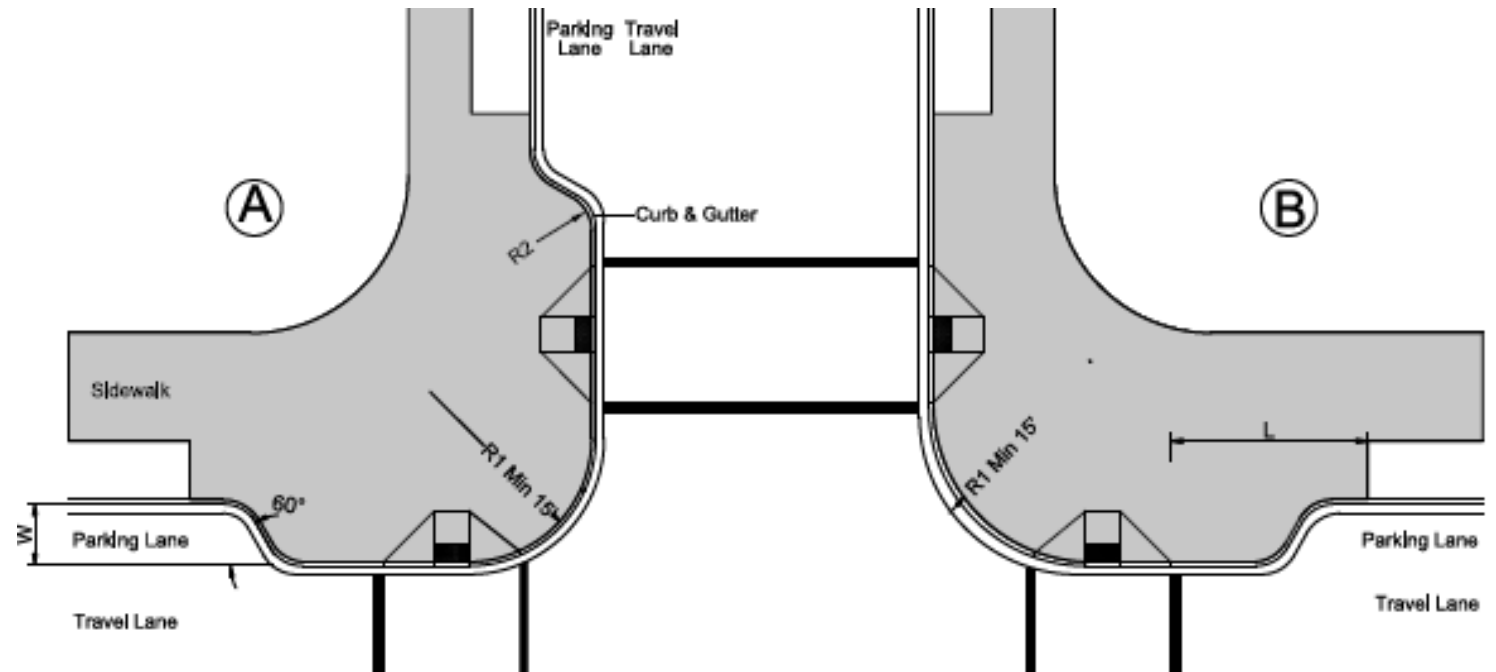
A discussion of when to mark crosswalks at midblock crossings is provided in this section. This section also discusses how to create signalized midblock crossings.



Example of markings for approach and circulatory roadways at a roundabout

# Guide Outline

1. Introduction
2. Street Types
3. Sidewalks
4. Street Zone
5. Intersections





# Guide Outline

1. Introduction
2. Street Types
3. Sidewalks
4. Street Zone
5. Intersections
6. Speed Management

## Speed Hump

**Description:** A raised section of pavement with parabolic or flat top that extends across the road. used traffic calming devices.

**Placement & Design Guidance:** Speed humps should be placed at right angles to traffic. The profile should be designed to be comfortably traversed at the desired design speed, but uncomfortable at higher speeds. Profiles can have the unintended consequence of encouraging drivers to slow at speed humps but to speed up again after the hump. Gaps should be provided between the curblines and the end of the speed hump to allow stormwater drainage.

The spacing between speed humps should be a minimum of 250-feet apart and a maximum of 500 feet. A 300-foot spacing is recommended:

Speed (mph)	Spacing (feet)
10	250
15	300
20	
25	

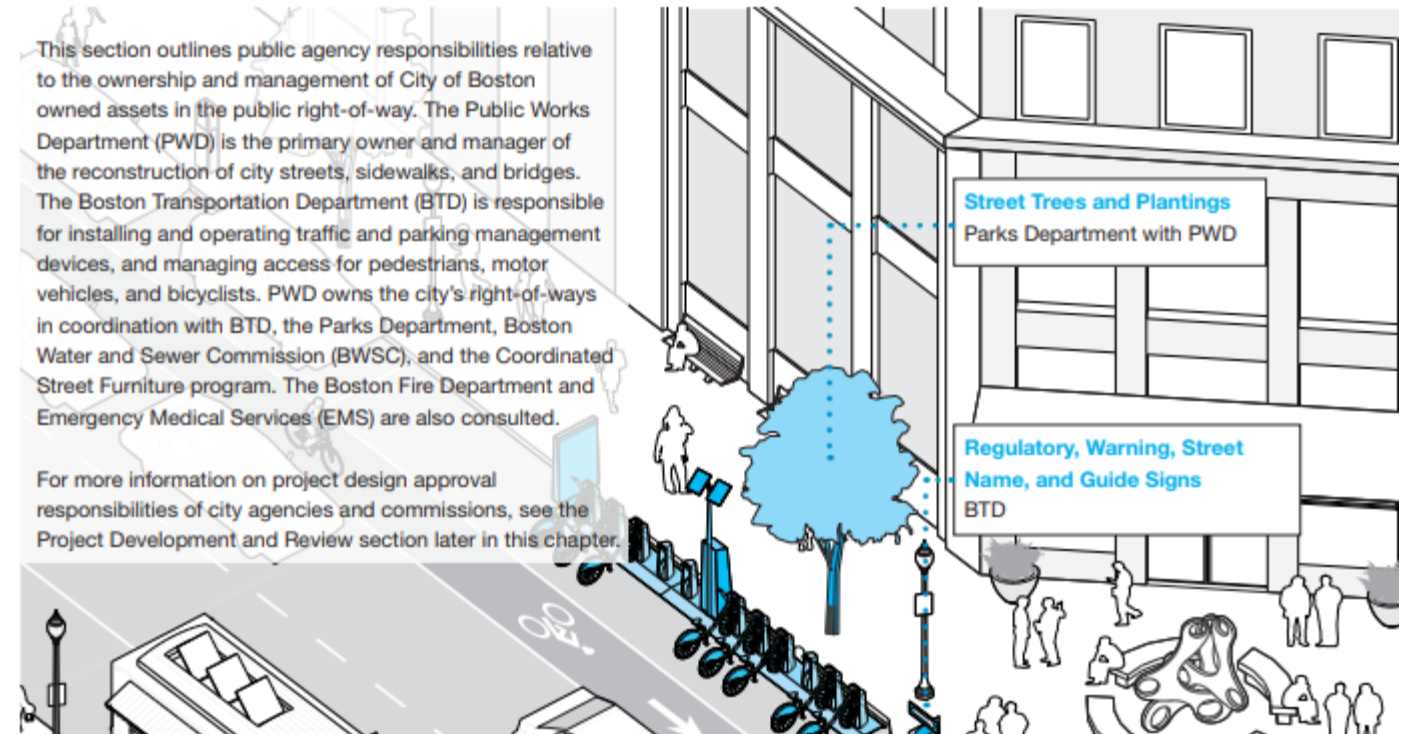


Speed Hump showing drainage bypass along curblines and chine in background (Seattle, WA)

# Guide Outline

1. Introduction
2. Street Types
3. Sidewalks
4. Street Zone
5. Intersections
6. Speed Management
7. Implementation

## Public Agency Fiduciary Responsibilities



# Street Types

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# Why create a new Street Typology?

Each 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

*What types of streets should we be building moving forward?*



# Draft Street Types

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- Downtown Boulevard
- Downtown Street
- Suburban Boulevard
- Town Center Boulevard
- Town Center Street
- Main Street
- Neighborhood Connector
- Neighborhood Street
- Neighborhood Yield Street
- Industrial Street
- Country Connector
- Country Road
- Freeway

# Special Streets

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



# Next Steps

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# Next Steps

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- November 2019: Community / Stakeholder Meeting
- December 2019: Planning Board Public hearing
- January 2020: Planning Board Worksessions
- April 2020: Planning Board Transmittal to County Council