

# PBOT DEVELOPMENT REVIEW MANUAL

TO CREATING PUBLIC STREETS AND CONNECTIONS

**December 2020**

DEVELOPMENT SERVICES SECTION

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## **PBOT Development Review Manual to Creating Public Streets and Connections**

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# SECTION I: PURPOSE AND AUTHORITY

## Introduction

Portland City Code 17.88.020 outlines specific thresholds which will result in the need for improving existing streets and/or creating new streets, including property dedication, in relation to private development proposals. This manual contains information for designing public improvements consistent with the authority granted to the Portland Bureau of Transportation (PBOT) under City Code in relation to land use and building permit actions. The manual is to be used as a reference document and is a compilation of existing regulations, policy documents, and engineering requirements. The manual was created to ease coordination of projects, and when applicable, facilitate the planning, design and construction of projects in conformance to City standards and requirements.

Information provided is based largely on existing documents and adopted practices. A list of references is included. Because not all possible scenarios can be anticipated, the reference documents and practices are considered the basis for decision making.

## 1. Connectivity Requirements

The Transportation Planning Rule and Metro's Regional Transportation Plan require local jurisdictions to provide for safe and convenient pedestrian, bicycle and vehicle circulation. The City's Transportation Element of the Comprehensive Plan supports this goal through policy language stating that new and redeveloping areas should be served by interconnected public streets.

Connections should create short blocks, particularly in mixed-use areas of planned high-density development. Streets and pedestrian/bicycle accessways (where streets are not feasible) should connect to transit routes, schools, parks, and between and within residential neighborhoods and other activity centers. Metro's adopted spacing standards are a maximum of 530 feet for streets and 330 feet for pedestrian/bicycleways where streets are not possible. Portland City Code is consistent with these standards (see Section 17.88.040 "Street Access", Section 33.654.110 "Rights-of-Way" and Section 33.130.292.B "Commercial/Mixed Use Zones"). In some parts of the City, master street plans provide further guidance on connectivity (see Transportation System Plan, Chapter 4 "Master Street Plans").

When a site is reviewed through the land use or building permit process, connectivity will be considered. A new street extension or pedestrian/bicycle connection may be required as a condition of approval.

## 2. Early Assistance / Development Services Center

When a site has frontage on a street or right-of-way that is not improved to City Standards, developers are required to improve their frontages to meet standards including any property dedication for right-of-way purposes necessary to accommodate said improvements. Public improvement requirements can impact parcel size, project cost, and construction timelines. The Land Use Services Division of BDS offers several types of early assistance that are available prior to submittal of a land use review or building permit application. These services are intended to provide useful feedback for projects ranging from relatively simple to very large and complex. Depending on the complexity of your project, one or more of these

options may be useful as developers move forward with their projects. Developers can also get preliminary information at the Development Services Center, however, for sites abutting unimproved or underimproved rights-of-way, an early assistance appointment is recommended.

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## SECTION II: STANDARD STREET IMPROVEMENTS AND RIGHT-OF-WAY WIDTH FOR PUBLIC STREETS

The following tables summarize the most common criteria affecting street design elements. Elements are those items that require horizontal space and, therefore, establish the amount of width needed for the public right-of-way. The public right-of-way is land dedicated to the public for street purposes. Right-of-way widths shown in the charts are the needed width for the full street improvement.

**Note regarding new pedestrian classifications in the Transportation System Plan** - Until the 1998 Portland Pedestrian Design Guide is updated and adopted, Major City Walkways are subject to the same standards as City Walkways; Neighborhood Walkways are subject to the same standards as pedestrian classification of Local Service Walkway; if a Neighborhood Walkway is located within a Pedestrian District, the Pedestrian District standard applies.

## A. Standard Through Street or Permanent Dead-End Street Less Than 300' In Length

Table 1

Standard Through Street or Dead-end <300'										
Pedestrian District / City Walkway  Traffic Classification	Zoning		RF, R20, R10, R7		R5, R2.5		RM4, RM3, RM2, RM1, RX, RMP		Any Other Zoning (Non-Residential)	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
	Local Service Street									
Total Right-of-Way Width <sup>(1)</sup>										
Two Parking Lanes										
No Surface Stormwater	46'	50'	48'	50'	54'	56'	54'	56'		
One Side Surface Stormwater	50'	54'	52'	54'	58'	60'	58'	60'		
Both Sides Surface Stormwater	54'	58'	56'	58'	62'	64'	62'	64'		
Zero or One Parking Lane										
No Surface Stormwater	40'	44'	42'	44'	50'	52'	50'	52'		
One Side Surface Stormwater	44'	48'	46'	48'	54'	56'	54'	56'		
Both Sides Surface Stormwater	48'	52'	50'	52'	58'	60'	58'	60'		
Roadway Width:										
Two Parking Lanes	26'		26'		32'		32'			
Zero or One Parking Lane	20'		20'		28'		28'			
Sidewalk Corridor:										
Standard Width	10'	12'	11'	12'	11'	12'	11'	12'		
Width with Stormwater Facility	14'	16'	15'	16'	15'	16'	15'	16'		
Additional Width for Bike Lanes (Per Side):										
City or Major City Bikeway ADT <3000	-		-		-		-			
City or Major City Bikeway ADT ≥3000	6'		6'		6'		6'			
Legend & Notes:										
When zoning is split with single family on one side and multi-family and/or mixed-use commercial on the other, the road will be constructed at 28'. Parking will be allowed on both sides.										
A 15' sidewalk corridor is required on streets in Pedestrian Districts with a traffic classification other than a Local Service Street.										
<sup>(1)</sup> Two parking lanes is standard. This requirement may be reduced due to the unique characteristics of a site, subject to approval by the City Engineer.										

## B. Standard Dead-End Street Greater Than 300' In Length

Table 2

Zoning	Standard Through Street or Dead-end ≥300'							
	RF, R20, R10, R7		R5, R2.5		RM4, RM3, RM2, RM1, RX, RMP		Any Other Zoning (Non-Residential)	
	No	Yes	No	Yes	No	Yes	No	Yes
	Local Service Street							
Pedestrian District / City Walkway								
Traffic Classification								
Total Right-of-Way Width: <sup>(1)</sup>								
Two Parking Lanes								
No Surface Stormwater	52'	56'	54'	56'	54'	56'	54'	56'
One Side Surface Stormwater	56'	60'	58'	60'	58'	60'	58'	60'
Both Sides Surface Stormwater	60'	64'	62'	64'	62'	64'	62'	64'
One Parking Lane								
No Surface Stormwater	48'	52'	50'	52'	50'	52'	50'	52'
One Side Surface Stormwater	52'	56'	54'	56'	54'	56'	54'	56'
Both Sides Surface Stormwater	56'	60'	58'	60'	58'	60'	58'	60'
Zero Parking Lanes								
No Surface Stormwater	40'	44'	42'	44'	50'	52'	50'	52'
One Side Surface Stormwater	44'	48'	46'	48'	54'	56'	54'	56'
Both Sides Surface Stormwater	48'	52'	50'	52'	58'	60'	58'	60'
Roadway Width:								
Two Parking Lanes	32'		32'		32'		32'	
One Parking Lane	28'		28'		28'		28'	
Zero Parking Lanes	20'		20'		28'		28'	
Sidewalk Corridor:								
Standard Width	10'	12'	11'	12'	11'	12'	11'	12'
Width with Stormwater Facility	14'	16'	15'	16'	15'	16'	15'	16'
Additional Width for Bike Lanes (Per Side):								
City or Major City Bikeway ADT <3000	-		-		-		-	
City or Major City Bikeway ADT ≥3000	6'		6'		6'		6'	
Legend & Notes:								
A 15' sidewalk corridor is required on streets in Pedestrian Districts with a traffic classification other than a Local Service Street.								
<sup>(1)</sup> Two parking lanes is standard. This requirement may be reduced due to the unique characteristics of a site, subject to approval by the City Engineer.								

## C. Standard Cul-De-Sac (turnaround on a dead-end street)

Table 3

Zoning		Standard Cul-de-Sac							
		RF, R20, R10, R7		R5, R2.5		RM4, RM3, RM2, RM1, RX, RMP		Any Other Zoning (Non-Residential)	
		No	Yes	No	Yes	No	Yes	No	Yes
Pedestrian District / City Walkway		Local Service Street							
Traffic Classification									

Total Right-of-Way Width (dia.): <sup>(1)</sup>								
Connecting Street Length <300' <sup>(2)</sup>	49'	60'	58'	60'	58'	60'	58'	60'
Connecting Street Length ≥300'	83'	94'	92'	94'	92'	94'	92'	94'

Pavement Diameter:								
Connecting Street Length <300' <sup>(3)</sup>	36'		36'		36'		36'	
Connecting Street Length ≥300'	70'		70'		70'		70'	

Sidewalk Corridor:								
Standard Width	11.5' <sup>(4)</sup>	12'	11'	12'	11'	12'	11'	12'

Legend & Notes:	
Other cases not listed above are designed on a case by case basis.	
On-street parking is not permitted in cul-de-sacs built with these standards.	
<sup>(1)</sup> Where a public stormwater facility is necessary, a greater right-of-way width may be required.	
<sup>(2)</sup> Width determined on a case by case basis.	
<sup>(3)</sup> Typically 36' in diameter, designed on case by case basis by City Engineer.	
<sup>(4)</sup> 6.5' combination curb/sidewalk with 5' clear zone at the back of walk.	

## D. Alley

Table 4

Zoning	Alleys
	Any
<b>Total Right-of-Way Width: <sup>(1)(2)</sup></b>	
Two-way	20'
One-way	12'
<b>Travel Way Width:</b>	
Two-way	18'
One-way	10'
<b>Buffer (on each side of Travel Way):</b>	
Width per side	1'
<b>Legend &amp; Notes:</b>	
On-street parking is not permitted in alleys.	
<sup>(1)</sup> A two-way alley is standard. One-way alleys are subject to review and approval by City Traffic Engineer.	
<sup>(2)</sup> Where a public stormwater facility is necessary, a greater right-of-way width may be required.	

## E. Pedestrian/Bicycle Connections

Table 5

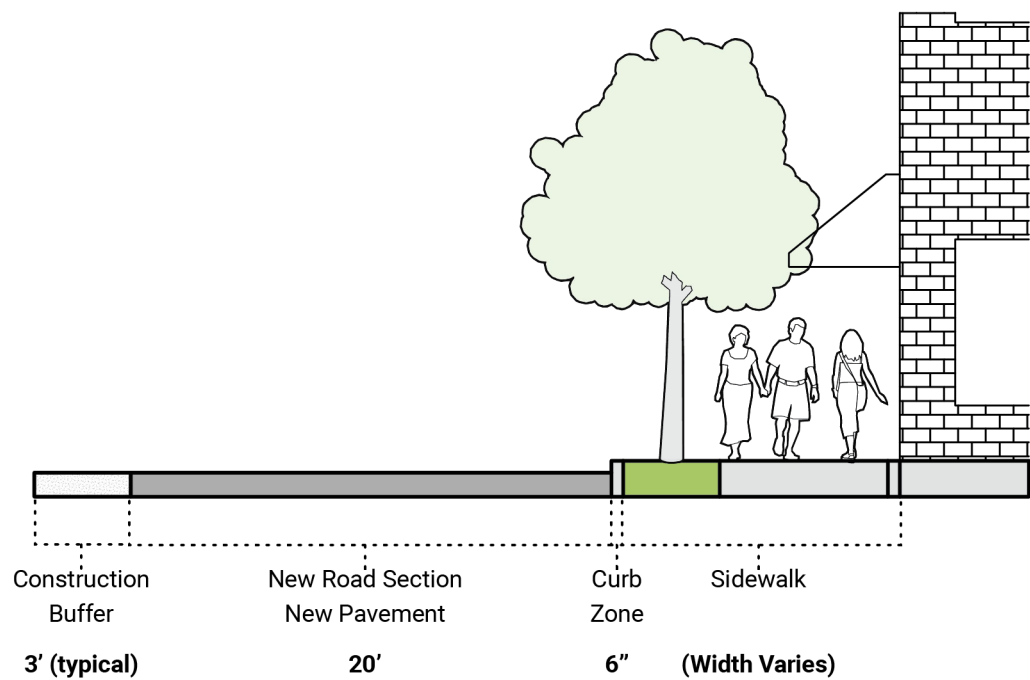
Zoning	Pedestrian/Bicycle Connections				
	RF, R20, R10, R7	R5, R2.5	RM4, RM3, RM2, RM1, RMP	RX	Any Other Zoning (Non- Residential)
<b>Total Right-of-Way Width: <sup>(1)</sup></b>					
Width	15'	15'	15'	20'	20'
<b>Multi-Use Path: <sup>(2)</sup></b>					
Width	8'	8'	8'	12'	12'
<b>Buffer: <sup>(3)</sup></b>					
Width	7'	7'	7'	8'	8'
<b>Legend &amp; Notes:</b>					
<sup>(1)</sup> Where a public stormwater facility is necessary, a greater right-of-way width may be required.					
<sup>(2)</sup> For all zoning categories, care must be taken to ensure that the proposed alignment for a public pedestrian/bicycle connection provides clear visibility through the length of the connection.					
<sup>(3)</sup> Edge of path to property line. The buffer width allows for stormwater on one side and a construction buffer on the other side.					

# F. Partial Width Streets

Table 6

Partial Width Streets	
Zoning	Any
<p><b>Notes:</b></p> <p>Partial width streets, also known as half street improvements, typically occur when only a single frontage or portion of frontage can be developed at one time. The partial width street components and resulting right-of-way width should be based on the appropriate parts of Tables above. Exceptions may occur where portions of the partial width street have been built already or where widths should more appropriately reflect adjacent existing street segments (as determined by the City Engineer).</p> <p>The minimum paved street width shall be 20' with buffers/shoulders to accommodate poles, signs and other appurtenances. Buffer widths are typically 3', but determined on a case by case basis by the City Engineer.</p>	

## Half Street Improvement



## G. Other Technical Information

### Local Service Streets

Local service streets with a centerline and one-way streets are designed on a case by case basis, subject to review and approval by the City Traffic Engineer.

Streets in areas zoned CX, EX, or RX with a traffic classification of Local Service Street will be at least 36' curb-to-curb to accommodate two 10' travel lanes + two parking/bike lanes.

Streets in industrial zones (IG1, IG2, IH) with a traffic classification of Local Service Street will be at least 44' curb-to-curb to accommodate two 12' travel lanes and two 10' parking/loading lanes. Cul-de-sacs in industrial zones will be at 100' in diameter.

### Non-Local Streets

This guide applies to streets with a Traffic Classification of Local Service Street. All other streets are designed on a case by case basis.

Streets with a Traffic Classification other than a Local Service Street will be at least 36' curb-to-curb to accommodate two 10' travel lanes and two parking or bike lanes. Additional roadway width may be required.

A 15' sidewalk corridor is required on streets in Pedestrian Districts with a traffic classification other than a Local Service Street. A Pedestrian District includes both sides of the streets along its boundaries. Refer to Section III for the applicable dimensions of each zone of the sidewalk.

Motor vehicle lane widths\* - City of Portland's preferred lane width is 10' on roadways with lane markings. Lanes widths of less than 10 feet must be approved by the City Traffic Engineer. Lane widths wider than 10' may be needed as shown below:

	Typical Lane Width
<b>Freight Routes (TSP class or &gt;10% trucks)</b>	12'
<b>Transit Routes (TSP class or ex. route)</b>	11'
<b>All other streets, next to bike lane or parking</b>	10'
<b>All other streets, next to curb</b>	11'
<b>Parking lanes, commercial</b>	8'
<b>Parking lanes, residential</b>	8'

\*These guidelines do not apply to roadways without marked center lane lines. Examples are typical residential streets or neighborhood greenways with SHARROW pavement markings.

The typical lane widths noted may require adjustment to accommodate truck turning movements.

## Stormwater

Stormwater facility dimensions and property dedication requirements may vary as a result of design decisions that are subject to City approval and must be evaluated through the necessary city review process for compliance with applicable design standards.

## Fire Bureau Considerations

Portland Fire & Rescue requirements may impact final design and will be reviewed as part of the Public Works process.

## Plans

Adopted street plans may include frontage or other requirements that supersede those in this document. Plans may also identify special design districts, streetscape elements or street connections. These plans may trigger the public works process and additional requirements.

## Local Transportation Infrastructure Charge

For sites that qualify for payment of the Local Transportation Infrastructure Charge (LTIC), property dedication may be required to accommodate future street improvements consistent with the designs referenced herein.

## Curbs

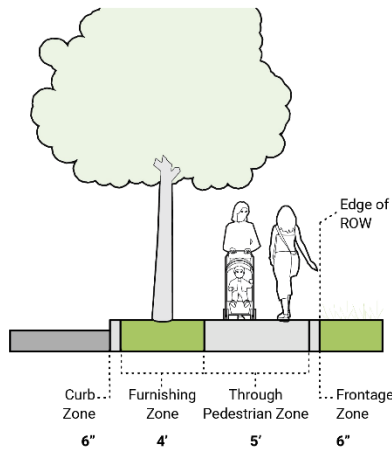
PBOT development review has historically recognized established curb lines as permanent structures. Provided the existing roadway has a minimum width of 20-feet, removal and relocation of curb lines as part of the development process is not a standard practice. PBOT may allow or request the removal and relocation of an established curb line in certain circumstances with the approval of the City Engineer.

# SECTION III: SIDEWALK CORRIDOR CROSS-SECTIONS

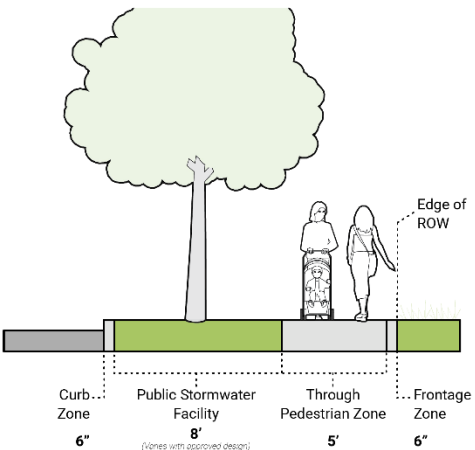
The sidewalk corridor requirement is determined based upon the zoning and pedestrian classification in the Transportation System Plan. Refer to Section II to identify which sidewalk corridor requirement applies: 10', 11', 12' or 15'. The stormwater facility, if required, increases the width of the furnishing zone in the sidewalk corridor by up to 4' per side. This images below identify the dimensions of the four distinct zones of the sidewalk corridor (Curb Zone, Furnishings Zone, Through Pedestrian Zone, and Frontage Zone), with and without stormwater.

## TEN FOOT SIDEWALK CORRIDOR

Sidewalk Corridor (10')

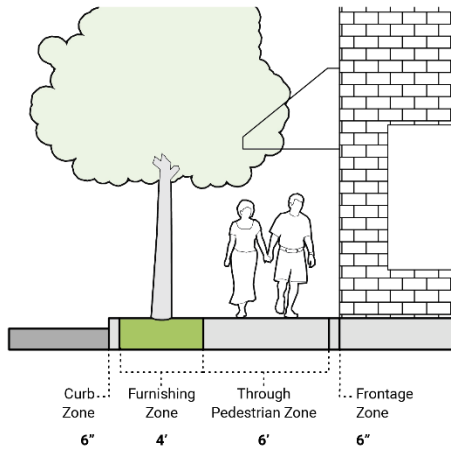


Sidewalk Corridor with Stormwater Facility (14')

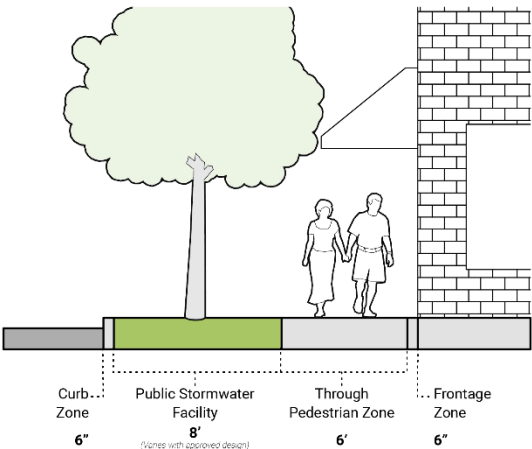


## ELEVEN FOOT SIDEWALK CORRIDOR

Sidewalk Corridor (11')

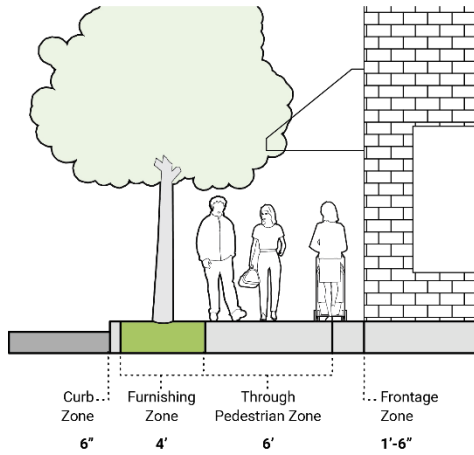


Sidewalk Corridor with Stormwater Facility (15')

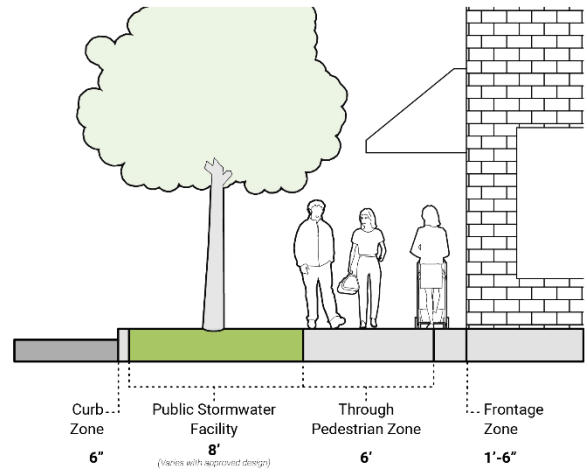


## TWELVE FOOT SIDEWALK CORRIDOR

**Sidewalk Corridor (12')**

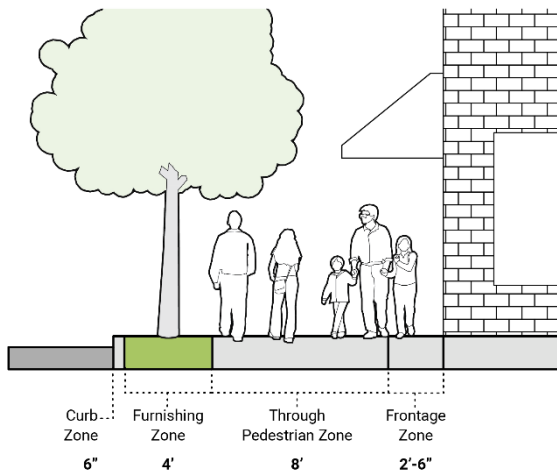


**Sidewalk Corridor with Stormwater Facility (16')**

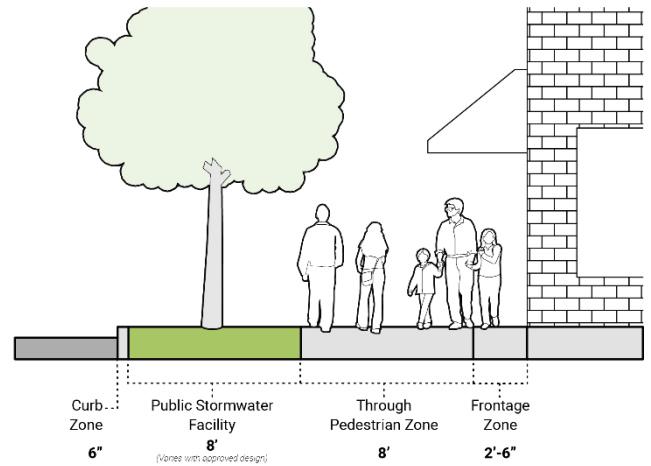


## FIFTEEN FOOT SIDEWALK CORRIDOR

**Sidewalk Corridor (15')**



**Sidewalk Corridor with Stormwater Facility (19')**



## SECTION IV: RESOURCES

### Related Plans, Codes, Manuals and Other Documents

#### Disclaimer

OTHER CODES, POLICIES AND STANDARDS NOT LISTED BELOW MAY ALSO BE APPLICABLE AND WILL NEED TO BE DETERMINED ON A CASE-BY-CASE BASIS AT TIME OF REVIEW BY CITY DEVELOPMENT REVIEW STAFF.

Below is a list of codes, administrative rules, manuals, and other documents that are used in the street design process:

#### Administrative Rules

##### Bureau of Transportation

- TRN-1.09 - Design Standards for Public Streets
- TRN-1.10 - Design Guide for Public Street Improvements
- TRN-1.22 - Infill Development on Streets with an Existing Sidewalk Corridor
- TRN-1.27 - Bureau of Transportation Public Works Alternate Review Committee
- TRN-1.28 - Curb Extensions for Buildings and Planning Actions
- TRN-6.02 - Pedestrian Master Plan
- TRN-6.09 - PedPDX - Portland's Citywide Pedestrian Plan
- Streetscape and Special Design Districts, as approved by council and provided in several transportation administrative rules (TRNs) <https://www.portlandoregon.gov/citycode/26826>

##### Urban Forestry

- PRK-2.01 - Urban Forestry Management Plan

##### Bureau of Environmental Services (BES) Stormwater Management Manual

- ENB-4.01 - Stormwater Management Manual

##### Portland Fire Bureau

- FIR-2.01 - Development Processes, Standards & Guidelines

#### City Code

11.60.030 Tree Protection Specifications.

17.28.060 Location, Size and Materials of Sidewalks and Curbs.

17.28.110 Driveways - Permits and Conditions.

17.38.040 Stormwater Management Facilities Required.

Chapter 17.43 Pedestrian Plazas

Chapter 17.88 Street Access

#### Other

Portland Pedestrian Design Guide <https://www.portlandoregon.gov/transportation/article/84048>

2035 Transportation System Plan <https://www.portlandoregon.gov/transportation/67263>

PBOT Strategic Plan <https://www.portlandoregon.gov/transportation/79722>

Stormwater Management Manual <https://www.portland.gov/bes/stormwater/swmm>

Portland Protected Bicycle Lane Planning and Design Guide

PBOT Traffic Design Manual Volume 1 <https://www.portlandoregon.gov/transportation/article/751333>

Other Applicable Design Guidelines <https://www.portlandoregon.gov/transportation/36167>

Standard Drawings & Details <https://www.portlandoregon.gov/transportation/50383>

## Terms

**ADT** - Average Daily Traffic is the vehicle count over a 24-hour period (typically counted on a weekday) for the segment of road in question.

**Bicycle Classification** - The street classification in the Transportation System Plan related to the desired bicycle use for the street.

**Connecting Street Length** - The length of a dead-end street from the center of the nearest public street intersection to the terminus of the dead-end street.

**Official Zoning Maps** - Maps showing comprehensive Plan and Zoning designations. Maps can be found at [www.portlandmaps.com](http://www.portlandmaps.com).

**Pavement Diameter** - The width of the pavement across a turnaround or cul-de-sac bulb.

**Pedestrian Classification** - The street classification in the Transportation System Plan related to the desired pedestrian use for the street.

**Pedestrian/Bicycle Connection** - A public path not adjacent to a street. It may connect between two public streets, or between a public street and a public facility such as a school, library, park, community center, etc. The standard pedestrian/bicycle connection includes a path and landscaped buffers on each side that may include stormwater facilities (and may also provide access for maintenance). Pedestrian/bicycle connections may include other items (such as street lighting or swales) which are not listed as elements.

**Permanent Dead-End Street** - Streets not intended to be extended to meet Title 17 connectivity goals. Permanent dead-end streets require the standard vehicle turnaround (cul-de-sac). Dead-end streets that are clearly intended to be extended with future development will need a temporary turnaround (such as a hammerhead) which can be on private property in an easement or a type III barricade.

**Right-of-way** - An easement held by the City over land owned by the adjacent property owners that allows the City to exercise control over the surface and above and below the ground of the right-of-way. Property owners are typically responsible for the construction of transportation improvements adjacent to their property. The City maintains the street, while the property owner is responsible for maintaining the sidewalk.

**Roadway** - The paved area typically reserved for vehicle use, including bicycles.

**Sidewalk Corridor** - The area located within the public right-of-way between the curb line of a street or roadway edge and the property line at the edge of right-of-way.

**Stormwater Management Manual (SWMM)** - Provides development and design professionals with specific requirements for reducing the impacts of stormwater from new development and redevelopment.

**Street** - Means any street as defined in the City Charter, including all area between property lines, and area dedicated to street use.

**Street Improvements** - Items to be constructed to create a new street or pedestrian connection, or to widen or extend an existing street or pedestrian connection. The standard full-width street improvement

includes vehicle travel lanes, parking lanes on one or more sides, and a sidewalk corridor on each side. Bicycle lanes may also be included. Street improvements also include many other items, such as street lighting and storm water management, which are not listed as elements.

**Traffic Classification** - The street classification in the Transportation System Plan related to the desired passenger vehicle use for the street.

**Travel ways** - Defines whether an alley will carry one-way or two-way traffic.

## SECTION V: PUBLIC WORKS ALTERNATIVE REVIEW PROCESS

The Public Works Alternative (PWA) Review process allows an applicant to submit an alternative to the identified public improvements required to meet current standards, codes, and policies. This process was created to allow the Public Works Alternative Review Committee (ARC) to support alternative improvements due to unique characteristics of a particular site such as topography and/or environmental features.

Applicants who receive written notice of public improvement requirements in the form of a PBOT Checksheet, Early Assistance response, Public Works Inquiry, or PBOT Land Use response may apply for a Public Works Alternative Review. PWA's cannot alter public improvement requirements that were identified in a recorded land use decision. Additionally, the ARC does not have authority to alter specific technical requirements such as ADA standards and items requiring approval of a Design Exception by the City Engineer. (General information obtained from the Development Services Center and other informal communications do not qualify for the Public Works Alternative Review Process.)

Decisions of the ARC are valid for one year from the date of approval and apply only to the specific development proposed. If the scope of the project changes, the applicant will be required to seek approval of a new PWA.

Additional information on the PWA process and application materials can be found on the PBOT website.

### **Public Works Appeal Process**

Applicants may elect to enter the Public Works Appeals process to challenge a decision of the ARC. This is a two-step process which includes the Public Works Administrative Appeal Panel and the Public Works Board of Appeals. The Panel/Board must review the same request and materials that the ARC evaluated when making their original decision.

Additional information about this process, including specific requirements for the types of applications that qualify to enter the process, can be found on the PBOT website.