



## MEMORANDUM

To: Michelle Marx, City of Portland

From: Mathew Berkow and Corinna Kimball-Brown, Nelson\Nygaard Consulting Associates

Date: February 16, 2018

Subject: PedPDX Network Completeness and Adequacy Criteria Memo - DRAFT

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### PURPOSE

The update to the Portland Pedestrian Plan (PedPDX) will include a Pedestrian Network Needs evaluation that assesses the existence of and potential need for new or upgraded sidewalks, walking paths, crossings, stairways, and other pedestrian infrastructure. This memo describes the proposed framework for the evaluation by defining what constitutes a gap, deficiency, or barrier in the pedestrian network, both across and along the roadway. These criteria are based on standards and guidelines developed by the City of Portland. The results of the evaluation will be presented in an upcoming Pedestrian Network Needs Memo. In a future stage of the planning process, the project team will develop a prioritization framework to identify a list of prioritized needs.

### Crossing the Roadway

#### What Constitutes a Crossing Gap?

A roadway crossing gap is defined as any street segment where marked pedestrian crossings are further apart (on average) than the desired maximum established by the City of Portland's spacing frequency guidelines.

#### Spacing Guidelines for Marked Pedestrian Crossings

The City of Portland's spacing frequency guidelines for marked pedestrian crossings were established by the City Traffic Engineer in a November 2017 memo titled *Interim spacing guidelines for marked pedestrian crossings*. Portland's Vision Zero Action Plan identified the need for such guidelines as a means of identifying gaps in the pedestrian network. The guidelines are based on pedestrian and street design classifications defined in the Portland Transportation System Plan (TSP), and draw on regional standards from the Metro Regional Transportation Functional Plan. TSP street design classifications are based on number of lanes, design elements, and the existing and planned land uses a street serves. Pedestrian classifications are applied to streets and geographic areas that are intended to give priority to people walking. The Pedestrian Network Needs evaluation will evaluate the spacing of existing crossings to identify street segments that do not meet the interim spacing frequency standards, shown in Figure 1. The mapping analysis will also identify transit stops that are not within 100' of a crossing.

**Figure 1** Spacing Guidelines for Marked Pedestrian Crossings  
(as identified in PBOT's 'Interim spacing guidelines for marked pedestrian crossings')

Street Design and/or Pedestrian Classification	Description	Maximum Spacing
Arterials and Collectors within designated Pedestrian Districts	Pedestrian Districts are intended to give priority to pedestrian access in areas where high levels of pedestrian activity exist or are planned, including the Central City, Gateway regional center, town centers, and station communities.	530 feet (approximately two blocks)
Civic Main Streets	<ul style="list-style-type: none"> <li>▪ The city's busiest, widest, most prominent streets (typically two to four lanes)</li> <li>▪ Emphasize multimodal access to major activity centers and include high density development</li> <li>▪ Are located within the Central City, Regional Centers, Town Centers, Neighborhood Centers, and other areas of intensive commercial activity</li> </ul>	
Neighborhood Main Streets	<ul style="list-style-type: none"> <li>▪ Narrower than Civic Main Streets (typically two lanes)</li> <li>▪ Primarily serve surrounding neighborhoods and include a mix of commercial and higher-density housing</li> <li>▪ Are located within the Central City, Regional Centers, Town Centers, Neighborhood Centers, and other areas of intensive commercial activity</li> </ul>	
City Walkways outside of Pedestrian Districts and Main Streets	<p>City walkways:</p> <ul style="list-style-type: none"> <li>▪ Provide safe, convenient, and attractive pedestrian access to activities along major streets and to recreation and institutions</li> <li>▪ Provide connections between neighborhoods</li> <li>▪ Provide access to transit</li> <li>▪ Serve areas with dense zoning, commercial areas, and major destinations</li> </ul>	800 feet, (approximately three blocks)
Transit Stops	<ul style="list-style-type: none"> <li>▪ Marked and/or enhanced crossings should be provided at all transit stops, regardless of street classification</li> <li>▪ Generally, crossings should be no more than 100 feet from a stop</li> </ul>	Within 100 feet

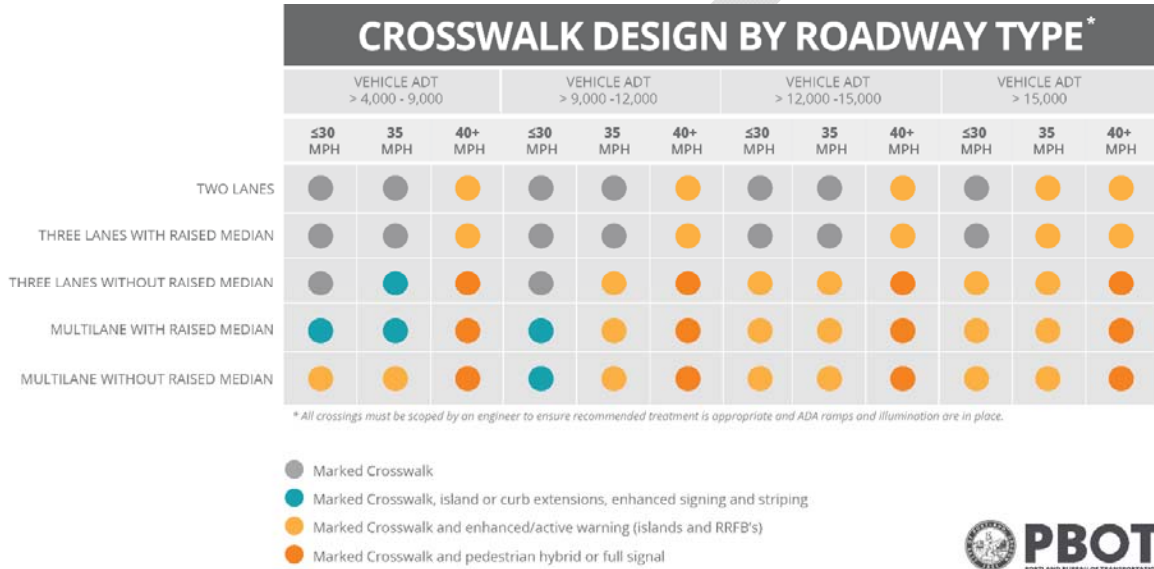
## What Constitutes a Crossing Deficiency?

A roadway crossing deficiency is defined as an existing marked pedestrian crossing that does not meet the City of Portland’s guidance for crosswalk design.

### Crosswalk Design Guidance

The City has developed crosswalk design guidance by roadway type (Figure 2) which indicates the appropriate type of crosswalk to install based on the number of lanes, posted speed, and average daily traffic of a roadway. The Pedestrian Network Needs evaluation will evaluate the design of existing crossings to identify those that do not meet current standards.

Figure 2 Crosswalk Design by Roadway Type



## Along the Roadway

Standards for sidewalks and other walkways along the roadway are defined in the 1998 Portland Pedestrian Design Guide. The City is currently developing Alternative Street Standards to allow flexible, context-sensitive design, recognizing that a sidewalk on both sides may not be necessary or appropriate for every street (see below).

### What Constitutes a Gap Along the Roadway?

The 1998 Portland Pedestrian Design Guide sets the standard that all city streets should have a sidewalk on both sides. A segment of a city street that does not have a sidewalk on both sides constitutes a gap in the network.

### What Constitutes a Deficiency Along the Roadway?

An existing sidewalk that does not meet the City's current sidewalk dimension standards constitutes a deficiency in the network. The Needs evaluation will identify deficiencies on arterial and collector streets.

#### Sidewalk Dimension Standards

Sidewalk dimension standards are based on the pedestrian classification, as defined in the Portland Transportation System Plan (TSP), and are detailed in Figure 3. Local streets will not be included in the needs evaluation for sidewalk design.

Figure 3 Recommended Widths for Sidewalk Corridor Zones (as identified in the Portland TSP)

Pedestrian Classification	Sidewalk Corridor Width
Pedestrian Districts, especially for arterial streets	15 feet
City walkways, and local streets in pedestrian districts	12 feet
Local service walkways, acceptable for city walkways provided the through pedestrian zone is 6 feet (1.9 m)	11 feet
Local service walkways in residential zones of R-7 or less dense	10 feet
Not recommended, except in existing conditions when increasing the sidewalk corridor width is not practicable	9 feet or less

### Alternative Street Designs Standards

In 2012, the City of Portland adopted "street-by-street" standards that allow for flexible street design of local residential streets. These standards allow eligible streets to be built with a narrow right of way, without curbs, and with a sidewalk on only one side, creating less impervious surface and fewer impacts to existing natural features. The City is currently developing Alternative Street Designs standards that will replace the 2012 standards, and provide alternative design options for collector and arterials streets as well. A summary table of the draft standards, including the roadways classes to which they apply as well as the speed and volume conditions under which they may be considered, is provided in Figure 4. The full guidelines will include information describing the design elements of each alternative street type.

Figure 4 Summary of PBOT draft Alternative Street Designs Standards

**Contextual information for Alternative Street Designs**

Alternative street type	Roadway classification	Max daily vehicles	Max posted speed	Safe Routes Applicability	Traffic calming may be required	Unit cost
<b>Pedestrian or Shared Use Path</b>	N/A	N/A	N/A	Yes		
<b>Shared local street</b>	Local	500	15 mph	with 15 mph design speed	Yes	
<b>Advisory Shoulder</b>	Local	3000	25 mph	500 vpd, local streets only	Yes	
<b>Safer Shoulder</b>	Local, Collector, Arterial	3000	25 mph	500 vpd	Yes	
<b>Separated Walkway, one side</b>	Local, Collector, Arterial	N/A*	25 mph	w/posted speed of 20 mph	Yes	
<b>Separated Walkway, both sides</b>	Local, Collector, Arterial	N/A	N/A	w/posted speed of 20 mph		

\*Must meet crosswalk spacing standard.

**Pattern Areas – Where are alternative walking treatments appropriate?**

In some parts of the city, the standards outlined above may not be feasible or desirable. Development patterns and natural features vary considerably throughout the city, and there are areas where alternative walking treatments may be appropriate. The City of Portland’s 2035 Comprehensive Plan identifies five Pattern Areas with distinct physical, social, cultural, and environmental characteristics. The plan includes design policies tailored to the unique natural and built assets of each pattern area.

There are two Pattern Areas where Alternative Street Standards are likely to apply:

- **Eastern Neighborhoods** – The diverse range of urban and natural landscapes found in the Eastern Neighborhoods present both opportunities and challenges. Many areas were developed after World War II and feature large blocks, wide streets, and gaps in pedestrian connectivity. New and distinctive approaches to infrastructure design can help preserve natural features while prioritizing new pedestrian connections.
- **Western Neighborhoods** – The terrain of Portland’s west hills has shaped the development of the Western Neighborhoods. Infrastructure design should respond to natural features, and focus on enhancements to the existing system of trails, filling key gaps, and improvements in the designated Centers and Corridors identified by the Comprehensive plan.

The remaining three Pattern Areas are conducive to the application of existing standards or, in the case of the Rivers, sidewalk standards do not apply.

- **Central City** – Home to Portland’s greatest concentration of employment and civic, cultural and higher education institutions, the Central City has a highly interconnected pedestrian system.
- **Inner Neighborhoods** – Characterized by a regular pattern of neighborhood business districts interspersed with residential areas, the Inner Neighborhoods have small blocks with an interconnected street grid and extensive sidewalks.

- Rivers – The Columbia and Willamette rivers are features of significant historic and cultural significance; are essential transportation corridors; support fisheries; provide important habitat; and are important scenic, recreational and transportation amenities.

### **Unimproved Rights-of-Way**

Unimproved rights-of-way represent untapped opportunities to make pedestrian connections. For the purpose of the pedestrian network needs evaluation, any unimproved right-of-way that does not include a stairway, trail, or other pedestrian improvement will be identified as a gap in the pedestrian network. Whether an improvement is warranted, and what type, will be determined at a later point in the planning process based on prioritization analysis, topography, and other factors.

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