



# **APPENDIX H:**

## Network Completeness and Adequacy Criteria Memo



## MEMORANDUM

To: Michelle Marx, City of Portland  
From: Corinna Kimball-Brown, Nelson\Nygaard Consulting Associates  
Date: May 30, 2018  
Subject: PedPDX Network Completeness and Adequacy Criteria Memo

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### PURPOSE

PedPDX, Portland's Citywide Pedestrian Plan, includes a Pedestrian Network Needs evaluation that assesses the existence of and potential need for new or upgraded sidewalks, walking paths, and crossings. This memo describes the framework for that 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 gap analysis based on these criteria are presented in the Pedestrian Network Needs Memo. In a future stage of the planning process, the project team will develop a framework for prioritizing the identified pedestrian network gaps.

### 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 guidelines for marked pedestrian crossings were established on an interim basis by the City Traffic Engineer in early 2018, and will be fully adopted with Council adoption of PedPDX in late 2018. 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 intended to identify crossing gaps in Portland's pedestrian network<sup>1</sup>.

As a part of PedPDX, the project team identified a Pedestrian Priority Network, made up of streets, trails, and geographic areas that are intended to give priority to people walking. The streets and walkways on this network are assigned a pedestrian classification based on the level of

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<sup>1</sup> These crossing spacing guidelines are intended to identify gaps where further engineering analysis is required. While the stated maximum desired distances between marked pedestrian crossings should generally not be exceeded, the exact location of marked crossings should be context-driven, and will be determined based on pedestrian crossing demand, specific land use generators, sight distance needs, proximity to traffic signals, existing pedestrian crossings, and engineering judgement.

pedestrian demand associated with key pedestrian destinations along these streets. These classifications are based on the Portland Transportation System Plan (TSP) and regional standards from the Metro Regional Transportation Functional Plan.

The Pedestrian Network Needs evaluation evaluates the spacing of existing marked crossings on the Pedestrian Priority Network to identify street segments that do not meet the interim spacing frequency guidelines, shown in Figure 1. The citywide crossing gap analysis is applied to those Pedestrian Priority Network streets that are designated City Walkways or Major City Walkways.

**Figure 1      Spacing Guidelines for Marked Pedestrian Crossings**  
(as identified in PBOT's 'Interim Spacing Guidelines for Marked Pedestrian Crossings')

Pedestrian Designation	Description	Desired Frequency
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)
City Walkways and Major City Walkways outside of Pedestrian Districts	City walkways: <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)

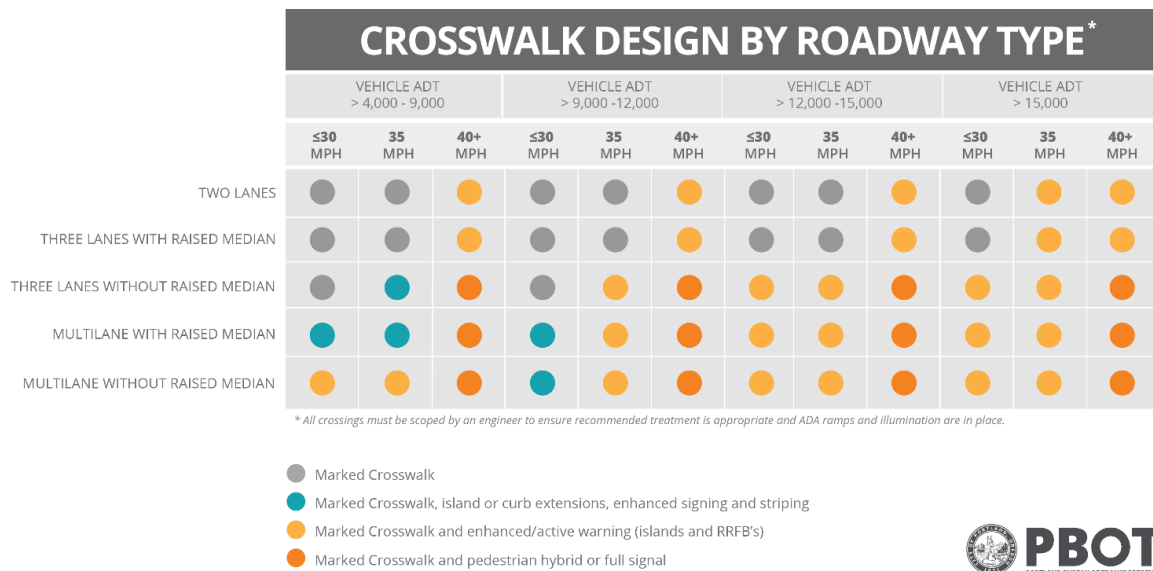
## What Constitutes a Crossing Deficiency?

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 assesses the design of existing marked crossings on City Walkways and Major City Walkways within the Pedestrian Priority Network to identify those that do not meet current guidelines.

**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 Pedestrian Walkway Guidelines to allow flexible, context-sensitive design, recognizing that a traditional concrete sidewalk on both sides of the street may not be necessary or appropriate for every street. Applicability of Alternative Pedestrian Walkway designs are not assessed as part of the network completeness and adequacy criteria, but will be considered during the project development process as needs are addressed.

### What Constitutes a Gap Along the Roadway?

The 1998 Portland Pedestrian Design Guide set the standard that all city streets should have a sidewalk on both sides of the street. Portland's Comprehensive Plan, however, acknowledges that 'one size does not fit all' when it comes to supporting walkability. 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 Pedestrian Walkway Guidelines that will replace the 2012 standards, and provide alternative design options for collector and arterials streets as well.

The sidewalk gap analysis is conducted on all streets within the identified Pedestrian Priority Network. For the purposes of this analysis, a segment of a city street that does not have a sidewalk on both sides constitutes a gap in the network. However, the evaluation recognizes that in many gap locations, a sidewalk on both sides of the street is not the appropriate design solution. To better identify along-the-roadway needs that could be addressed by the Alternative Pedestrian Walkway Guidelines, the evaluation identifies two types of gap: locations with sidewalk gaps on both sides of the street, and locations where gaps exist on only one side of the street. In a future phase of planning, the PedPDX Toolkit will provide guidance for the application of alternative street design treatments, including "walkway on one side" and "shared local street." These treatments represent complete walkways provided that certain criteria are met.

### What about Deficiencies Along the Roadway?

PedPDX identifies completeness criteria related to pedestrian infrastructure "along" the roadway. It does not however establish adequacy criteria for facilities "along" the roadway. While deficiencies in the sidewalk and trail network were considered within the process, the project team did not develop criteria to analyze these needs for two reasons: 1) available data is inconsistent and difficult to interpret when it comes to sidewalk width, clear zones for pedestrians, and similar aspects of sidewalk design; and 2) in the face of limited public resources, a lack of any pedestrian facility (a gap) will be prioritized over an existing facility that is substandard. This decision does not preclude the City from investing in sidewalk or trail deficiencies on the Pedestrian Priority Network in the future.