



MEMORANDUM

To: Michelle Marx, City of Portland
From: Mathew Berkow and Corinna Kimball-Brown, Nelson\Nygaard Consulting Associates
Date: April 10, 2018
Subject: PedPDX Network Completeness and Adequacy Criteria Memo - DRAFT

PURPOSE

PedPDX, Portland's Citywide Pedestrian Plan, 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 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 will be presented in an upcoming 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 will be 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 network¹.

¹ 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.

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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 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 will evaluate the spacing of existing marked crossings on the Pedestrian Priority Network to identify street segments that do not meet the interim spacing frequency standards, shown in Figure 1. The citywide crossing gap analysis will be 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"> Provide safe, convenient, and attractive pedestrian access to activities along major streets and to recreation and institutions Provide connections between neighborhoods Provide access to transit Serve areas with dense zoning, commercial areas, and major destinations 	800 feet, (approximately three blocks)
Transit Stops	<ul style="list-style-type: none"> Marked and/or enhanced crossings should be provided at all transit stops, regardless of street classification Generally, crossings should be no more than 100 feet from a stop Transit stops will not be part of the street segment crossing spacing analysis, but the analysis will flag those stops not located within 100' of a crossing 	Within 100 feet

Commented [KC1]: Michelle is there anything to add/remove from this?

Commented [MM2R1]: See proposed modification within text.

Formatted Table

Commented [MM5]: Note that we will not use this in our analysis.

Commented [MM3]: Did we decide to discuss this with the TAC?

Commented [KC4R3]: I think not, so remove it?

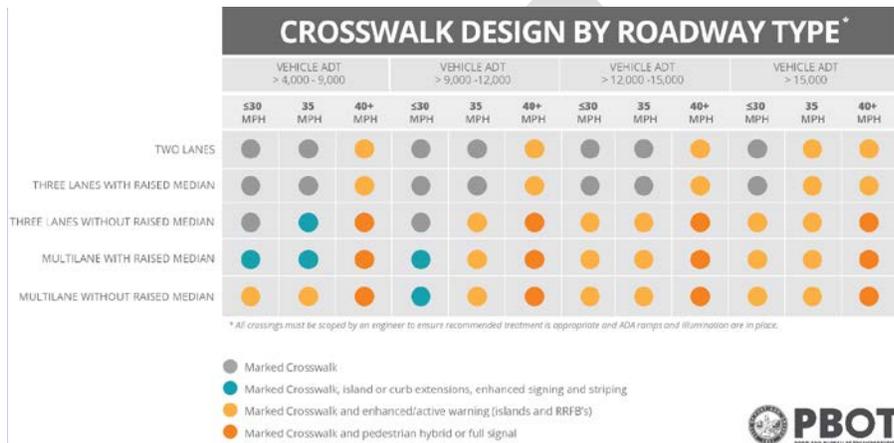
What Constitutes a Crossing Deficiency?

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 marked crossings on City Walkways and Major City Walkways within the Pedestrian Priority Network to identify those that do not meet current standards.

Figure 2 Crosswalk Design by Roadway Type



Commented [MM6]: I will ask our traffic engineering folks for guidance on one-way streets.

Commented [KC7R6]: Did we ever get guidance on one-way streets? They were analyzed to the same standards as two-ways

Commented [MM8R6]: Same standard as two-way. As noted, we'll need the data/locations of identified substandard crossings ASAP so our traffic engineering group can review in advance of the CAC.

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 (see below).

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. 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, unless the street meets Alternative Pedestrian Walkway Guidelines for a complete walkway. Once complete, the Alternative Pedestrian Walkway Guidelines described below will allow for exceptions such that certain alternative designs ("shared local street" and "walkway on one side") may constitute a complete walkway, provided the street meets all of the associated design and traffic criteria described in Figure 3. The sidewalk gap analysis will be conducted on all streets within the identified Pedestrian Priority Network.

Commented [MM9]: For "shared streets" or "walkway on one side" (ie., the two "permanent" alternative design types)

Alternative Pedestrian Walkway Guidelines

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. A summary table of the draft guidelines, including the roadway classes to which they apply as well as the speed and volume conditions under which they may be considered, is provided in Figure 3. The full guidelines will include information describing the design elements of each alternative street type.

Two of the Alternative Street Designs, "walkway on one side" and "shared local street", are intended to represent complete walkways provided the criteria are met. All other alternative walkway design options are intended to be interim solutions.

The network analysis will identify all locations with a sidewalk on one side, distinguishing those where the posted speed meets Alternative Street Design criteria and those that do not (where additional traffic calming would be required for the sidewalk on one side to be deemed a complete walkway).

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 in the Pedestrian Priority Network 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 prioritized, and what type, will be determined at a later point in the planning process based on prioritization analysis, topography, and other factors.

Commented [KC10]: I saw there was some discussion in the last draft comments about whether these are Gaps or Deficiencies. Since most of them are on local streets, and local streets are not part of the Deficiencies analysis unless they are within a Ped District, I left this in gaps.

Commented [MM11R10]: Let's hold off on determining whether this is gap or deficiency until we determine what we're doing with local streets and trails after the TAC meeting.

Figure 3 Summary of PBOT draft Alternative Pedestrian Walkway Guidelines

Contextual information for Alternative Pedestrian Walkways

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

*Must meet marked crosswalk spacing guidelines.

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 sidewalk deficiencies on Major City Walkways citywide, and on all Pedestrian Priority Network streets that fall within Pedestrian Districts.

Sidewalk Dimension Standards

Sidewalk dimension standards are currently based on the pedestrian classification, as defined in the Portland Pedestrian Design Guide. In the future, the standards will be based on design classifications. For the purposes of this analysis, a minimum 6-foot clear zone was used as the standard for Major City Walkways citywide, and for all Pedestrian Priority Network streets within Pedestrian Districts. Ultimately, a wider sidewalk clear zone will be required for many streets, but a 6-foot width represents a conservative approach to identifying deficiencies, as none of the streets analyzed are expected to have a lower standard.