# PedPDX

## PORTLAND'S CITYWIDE PEDESTRIAN PLAN



PBOT
PORTLAND BUREAU OF TRANSPORTATION

JUNE 2019



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## FUNDING

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by Moving Ahead for Progress in the 21st Century (MAP-21), local government, and State of Oregon funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon

## ACCESSIBILITY STATEMENT

The City of Portland complies with all nondiscrimination, Civil Rights laws including Civil Rights Title VI and ADA Title II. To help ensure equal access to City programs, services and activities, the City of Portland will reasonably modify policies/procedures and provide auxiliary aids/services to persons with disabilities. Call 503.823.5282, TTY 503.823.6868 or Oregon Relay Service: 711 with such requests, or visit http://bit.ly/13EWaCg

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# PEDPDX MISSION

Through PedPDX, the City of Portland affirms walking as a fundamental human right and the most fundamental means of transportation. PedPDX ensures walking is a safe, accessible, and attractive experience for everyone in Portland by putting pedestrians at the forefront of City policy, investments, and design.

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# PEDPDX VISION

Portland is a great
walking city for all.

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# EXECUTIVE SUMMARY

PedPDX is Portland's Citywide Pedestrian Plan. It prioritizes sidewalk and crossing improvements, along with other investments to make walking safer and more comfortable across the city. The plan identifies the key strategies and tools we will use to make Portland a great walking city for everyone.

# What is PedPDX?

## Why is Walking Important?

Everybody is a pedestrian. Walking (with or without the aid of a mobility device) is part of each of our everyday lives whether we think about it or not. Making walking a safe and attractive choice for all, and increasing the number of people walking in Portland, can help us address many issues important to Portlanders:

- **Equity** - Pedestrian safety and access is an equity issue. In Portland, inadequate pedestrian infrastructure and traffic safety concerns disproportionately impact low-income communities and people of color, where housing cost-burdened Portlanders are increasingly concentrated.
- **Health** - There is a strong link between walking activity and individual and public health outcomes. Walking can positively impact the physical and mental health of people of all ages, from children to older adults.
- **Environment** - Nearly 40% of all local carbon emissions come from transportation sources. Shifting our transportation patterns from driving to environmentally sustainable modes such as walking, biking, and public transit plays a major role in minimizing climate impacts.
- **Managing Growth and Congestion** - Portland's population is growing and will continue to grow. While the demands on our transportation system are increasing, space within city streets is not. Successfully absorbing growth means moving more people in the same amount of space. Sidewalks have the capacity to move more people than many other forms of transportation.
- **Livability** - Walkable urbanism is the foundational element for great neighborhoods and cities. Walking is more than just a mode of transportation and provides a way for people to interact with the city in a different way.

# What is the State of Walking in Portland?

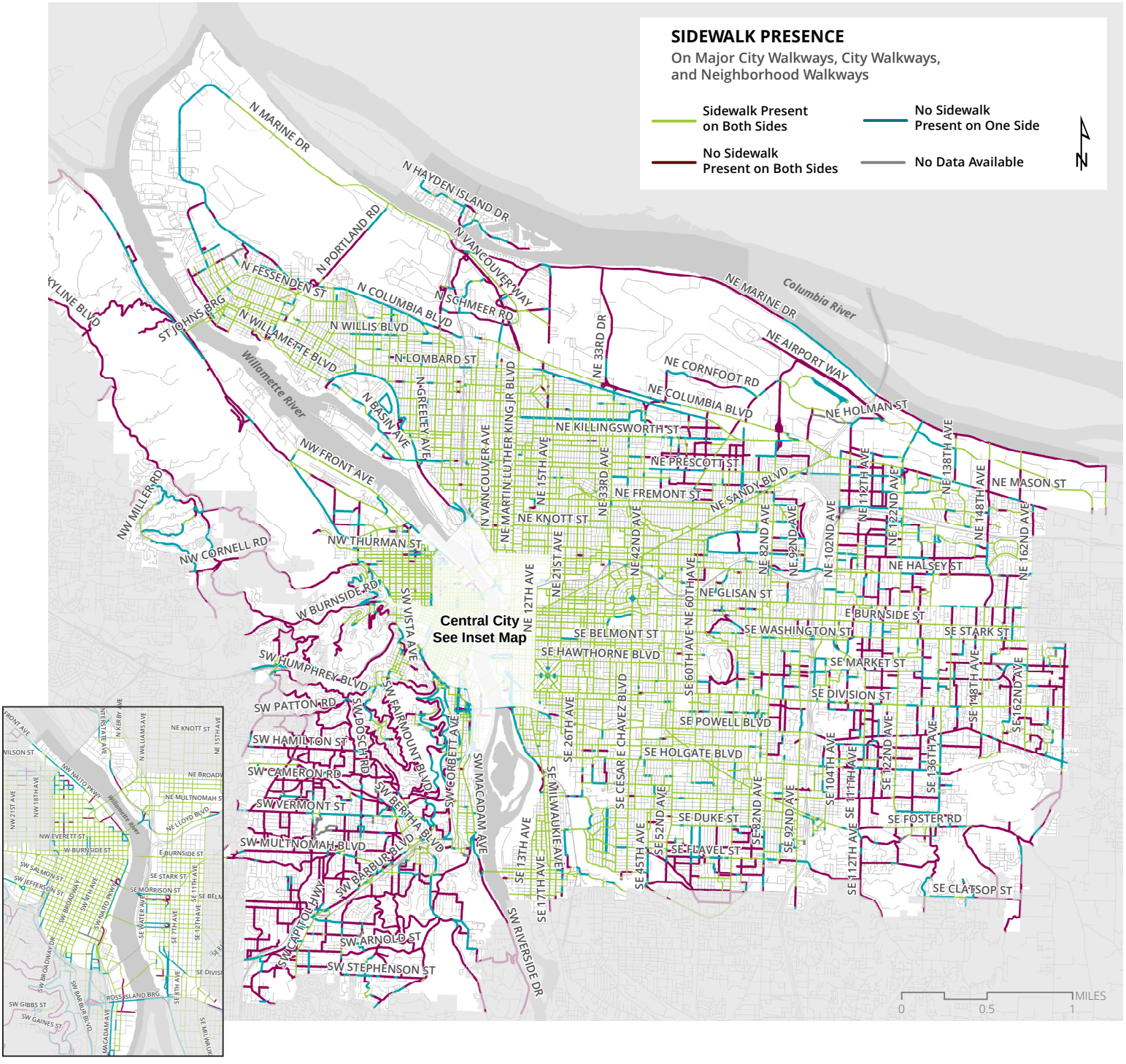
Portland has a reputation for walkability. The City crafted one of the country's first Pedestrian Master Plans in 1998 and has set national precedent with its "pedestrian first" transportation strategy for people movement.

However, there is much more we can do to make Portland a great walking city. The experience of walking varies widely across the city. Despite consistent investment in the pedestrian network, significant gaps and shortcomings remain. The 1998 Pedestrian Master Plan has served inner Portland well, but has often struggled to provide adequate guidance for areas such as East Portland and Southwest Portland that present environmental challenges and right-of-way constraints.

An incomplete pedestrian network limits the city's ability to absorb growth and meet the livability needs of residents, including safe walking access to public transit and essential services. Portland experiences anywhere from five to nineteen pedestrian fatalities on our streets in a given year. Even one is too many. While pedestrian trips account for nearly 9% of all trips taken citywide, 31% of all traffic fatalities in Portland involve people walking, meaning that pedestrians are suffering a disproportionate number of traffic deaths.

PedPDX reflects changes to pedestrian policy and design best practices that have emerged since the original Pedestrian Master Plan was adopted. These include an emerging understanding of transportation equity and a Vision Zero approach to pedestrian safety. PedPDX will help ensure that the City continues to lead the way in walkability, and will allow Portland to absorb growth in a sustainable way that encourages residents to walk, whether for commuting, shopping, going to school, or recreation.

Figure 1: Sidewalk Presence and Gaps



# PedPDX Mission, Vision, Goals & Objectives

## PedPDX Mission

**Through PedPDX, the City of Portland affirms walking as a fundamental human right and the most fundamental means of transportation.**

**PedPDX ensures walking is a safe, accessible, and attractive experience for everyone in Portland by putting pedestrians at the forefront of City policy, investments, and design.**

## PedPDX Vision

**Portland is a great walking city for all.**

## PedPDX Goals

- **Equitable + Inclusive**: Make Portland walkable and accessible for all, no matter who you are or where you live.
- **Safe + Secure**: Make walking in Portland safe and secure for everyone.
- **Comfortable + Inviting**: Provide a comfortable, inviting, and connected pedestrian network that supports walkable neighborhoods and strengthens community.
- **Healthy People + Environment**: Increase walking for transportation and recreation in Portland as a means of achieving improved health outcomes for all people and for the environment.

# PedPDX Objectives



**HISTORIC UNDERINVESTMENT**

Prioritize **investment in areas with the greatest historic underinvestment** in pedestrian infrastructure and with historically under-served populations to reduce disparities in access to safe pedestrian facilities.



**CONNECT TO DAILY NEEDS**

Complete and maintain a Pedestrian Priority Network that encourages walking for people of all ages, cultures, and abilities, and **connects people to their essential daily needs.**



**FUNDING**

**Commit to funding** pedestrian network improvements in the Pedestrian Priority Network.




**VISION ZERO**

Support the City's Vision Zero commitment to **eliminate traffic-related deaths and serious injuries.**



**PUBLIC SAFETY**

Protect the **public safety and personal security** of people walking.



**JOYFUL EXPERIENCE**

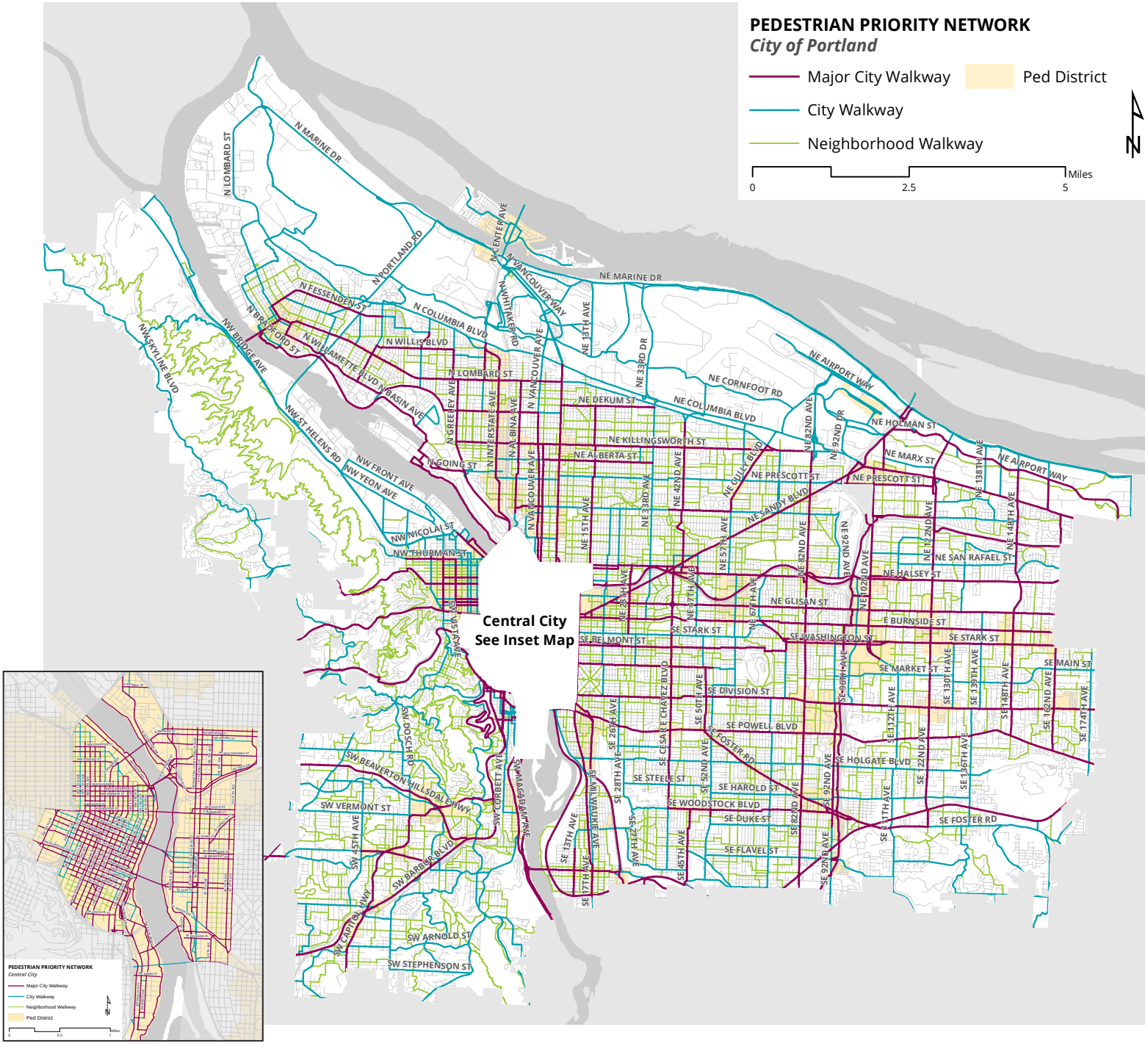
Make walking in Portland **a joyful experience** that helps people connect with their community.

# The Pedestrian Priority Network

The Pedestrian Priority Network (Figure 2) is the system of Portland streets and paths that provide pedestrian connections to key transit and land use destinations. Each of the streets within the network is given a pedestrian classification that reflects the level of demand for pedestrian movement on that street.

Directly reflecting community input from the PedPDX Citywide Walking Priorities Survey, only the sidewalk and crossing needs identified on the Pedestrian Priority Network are included in the PedPDX prioritization framework.

Figure 2: The Pedestrian Priority Network



# Prioritizing Needs

Why do we prioritize? Everywhere we look, we see places that need to be improved to provide a safe, inviting, and accessible pedestrian network. The PedPDX needs analysis identifies approximately **350 miles of missing walkways** and **3,500 marked crossing gaps** on our busy arterial and collector streets. Given the enormity of sidewalk and crossing needs across the city, PedPDX directs resources to locations with the greatest need first.

PedPDX identifies priority locations for pedestrian investment within the Pedestrian Priority Network using a data-based approach. A data-based approach helps ensure we are directing limited resources to the greatest needs first and allows us to provide a proactive, programmatic approach for addressing pedestrian infrastructure needs. Sidewalk and crossing needs located within high priority locations are identified as top tier needs and prioritized for capital improvements.

The PedPDX prioritization framework will guide pedestrian investments. It is based on the factors Portland residents say are most important to them:

- Equity
- Safety
- Pedestrian Demand




Figure 3: Citywide responses to the PedPDX Walking Priorities Survey question: "What Kinds of Places are Most Important to Improve for Walking in Portland"?

# The PedPDX Implementation Toolbox

The PedPDX Implementation Toolbox is the programmatic work plan to advance the vision and mission of PedPDX. The Toolbox is based on citywide feedback from the PedPDX Walking Priorities Survey, focus groups with underrepresented Portlanders, the PedPDX pedestrian safety analysis, the PedPDX Community Advisory Committee, the City of Portland Pedestrian Advisory Committee and the Portland Commission on Disabilities. It is organized by strategies and actions, and will guide the work of the City's pedestrian-related programs and activities.




Figure 4: Examples of actions and tools that are presented in the PedPDX Implementation Toolbox.

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# 1. WHAT IS PEDPDX?

PedPDX is Portland's Citywide Pedestrian Plan. It prioritizes sidewalk and crossing improvements, along with other investments to make walking safer and more comfortable across the city. The plan identifies the key strategies and tools we will use to make Portland a great walking city for everyone.

# Plan Purpose

PedPDX is an update of Portland's Pedestrian Master Plan. Since 1998, the Pedestrian Master Plan has guided pedestrian-friendly design and policies in Portland and has served as a model across the country. However, there is more we can do to make Portland a great walking city. Despite consistent investment in the pedestrian network, significant gaps remain and new policy questions have emerged.

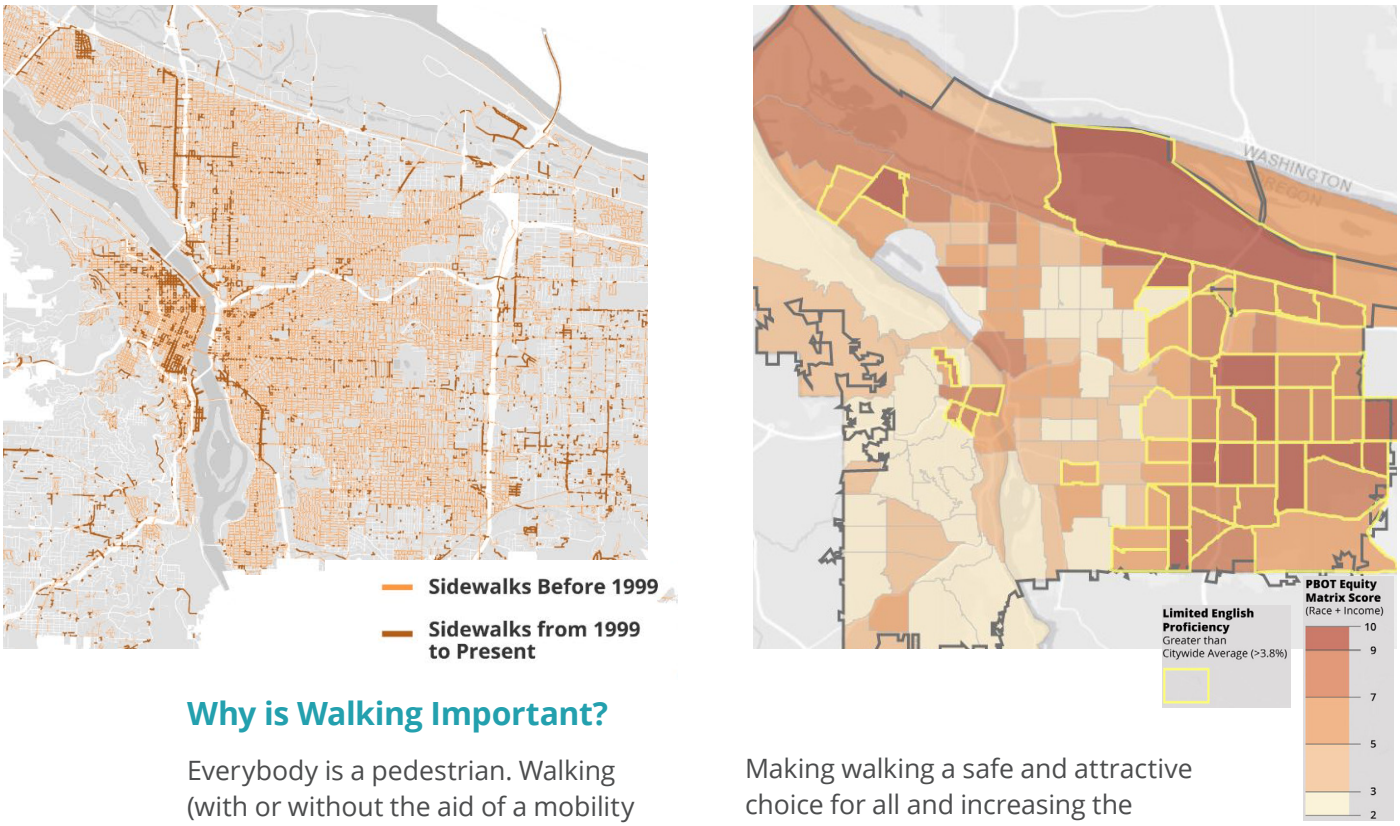
An incomplete pedestrian network limits the City's ability to absorb growth and meet the livability and access needs of residents, including safe walking access to public transit and essential services. The 1998 Pedestrian Master Plan has served inner Portland well, but has often struggled to provide adequate guidance for areas such as East and Southwest Portland that present environmental challenges and right-of-way constraints.

PedPDX reflects changes to pedestrian policy and design best practices that have emerged since the original 1998 Pedestrian Master Plan was adopted, including an emerging understanding of transportation equity and a Vision Zero approach to pedestrian safety. **This Plan ensures that the City will continue to lead the way in walkability and will allow Portland to absorb growth in a sustainable way that encourages all people in Portland to walk whether for commuting, shopping, going to school, or recreation.** For the City of Portland, leading the way in walkability is paramount because of the impact that walking conditions have on our residents' daily lives.

## Who is Included?

In one word, everybody. There are multiple ways that people can "walk." Pedestrians can move using their own two legs, a wheelchair, a walker, or a cane. PedPDX addresses the needs of all who use Portland's sidewalks and crossings, no matter how they move.

**Figure 5: Comparing sidewalk presence (left) to PBOT's Equity Matrix (right) shows that many Portland neighborhoods lacking sidewalks are also areas with higher equity concerns. The orange lines in the map at the left show where sidewalks exist in Portland. The darker orange areas in the map on the right indicate areas of the City where low-income and non-white populations are highest.**




## Why is Walking Important?

Everybody is a pedestrian. Walking (with or without the aid of a mobility device) is part of each of our everyday lives, whether we think about it or not.

Walking is the most fundamental means of transportation and forms the beginning or ending point for many of our daily tasks. People are pedestrians when walking or rolling to the bus stop, taking their dog on a walk, walking to lunch during work, casually strolling with their kids to their neighborhood park on the weekend, walking along a popular shopping street, or even walking to or from your parked car. We are all pedestrians at some time during the day.

Designing a walking-friendly city means designing a people-friendly city, where residents equally share the opportunity to safely and comfortably walk to neighborhood destinations, meet their neighbors, enjoy positive health impacts, and contribute to the quality of the environment.

Making walking a safe and attractive choice for all and increasing the number of people walking in Portland can help us address many issues important to Portlanders:

### EQUITY

Walking is the most accessible form of transportation available, requiring no fare, no license, and little equipment. Walking and transit are often the only option for the young, old, disabled, and poor, and others with limited transportation choices. Pedestrian infrastructure is key for those who rely on transit and need a safe way to reach transit.

Pedestrian safety and access is an equity issue. In Portland, inadequate pedestrian infrastructure and traffic safety concerns disproportionately impact low-income communities and people of color.

Figure 5 highlights how sidewalks are more often missing in areas with a higher equity concern, particularly in the outer neighborhoods of East Portland, while inner neighborhoods have good sidewalk coverage.

*We walk everywhere. I've found with children it's incredibly fulfilling, it's very peaceful, it's an activity that lets them come into their bodies and be present and to know their environment.*

***Evelyn***
PedPDX Walking Stories

## HEALTH

There is a strong link between walking activity and an individual's health. Walking is one way to incorporate movement within daily activities to improve health and reduce the risk of chronic diseases and early death[1]. Walking can positively impact the physical and mental health of people of all ages, from children to older adults. The Centers for Disease Control and Prevention (CDC) recommends thirty minutes of physical activity a day five days a week or 150 minutes per week. Much of this recommended physical activity can be attained through the simple act of walking, either for transportation or for recreation.

However, the presence and quality of public infrastructure plays a major role in one's ability to safely and comfortably walk, and as such greatly influences both public and individual health outcomes. Research shows that as the quality and presence of pedestrian infrastructure declines in

1 https://www.surgeongeneral.gov/library/calls/walking-and-walkable-communities/exec-summary.html

### *Supportive Policies*

The City of Portland's Transportation System Plan (or TSP) is the policy document that guides investment in the City's transportation system. Adopted TSP policies that support walking include:

- Prioritize walking over other modes (Policy 9.6)
- Create more complete pedestrian networks (Policy 9.18)
- Improve pedestrian safety, accessibility, and convenience for people of all ages and abilities (Policy 9.19)
- Establish an interconnected, multimodal transportation system (Policy 9.47)
- Increase walk to work rate to 7.5% by 2025 (Policy 9.26.g)
- By 2035, increase the mode share of daily non-drive alone commute trips to 70 percent citywide (Policy 9.26.h)

*People will not want to walk if their neighborhoods are trashed, and that's just because they are going to feel unsafe.*

***Eric***
PedPDX Walking Stories

a given neighborhood, so do health outcomes[2].

A study by the Robert Wood Johnson Foundation found that high income neighborhoods are significantly more likely to have sidewalks on one or both sides of the street (89 percent of neighborhoods) compared to middle or low income neighborhoods (59 percent and 49 percent)[3].

As cost-burdened Portlanders are increasingly forced into areas with poor pedestrian infrastructure, they may also be forced into neighborhoods that negatively impact health. Ensuring that all of Portland's neighborhoods are walkable is therefore critical in terms of improving the long-term health of all who live here, and ensuring that good health is equally attainable to all no matter where in the city you live.

2 "Move this Way: Making Neighborhoods More Walkable and Bikable." ChangeLab Solutions. https://changelabsolutions.org/sites/default/files/MoveThisWay_FINAL-20130905.pdf

3 "Income Disparities in Street Features that Encourage Walking." Bridging the Gap. http://www.bridgingthegapresearch.org/_asset/02fpi3/btg_street_walkability_FINAL_03-09-12.pdf

**ENVIRONMENT**

Nearly 40% of all local carbon emissions come from transportation sources. Shifting our transportation patterns from driving to environmentally sustainable modes such as walking, biking, and public transit plays a major role in minimizing climate impacts. **Walking is the most sustainable form of transportation there is.**

The City of Portland's Climate Action Plan outlines the City's commitments to reduce greenhouse gas emissions and energy use citywide. The Climate Action Plan sets targets related to transportation. These include:

- Create vibrant neighborhoods where 80 percent of residents can easily walk or bicycle to meet all basic daily, non-work needs and have safe pedestrian or bicycle access to transit
- Reduce daily per capita vehicle miles traveled by 30 percent from 2008 levels

The Climate Action Plan supports these goals through funding targets

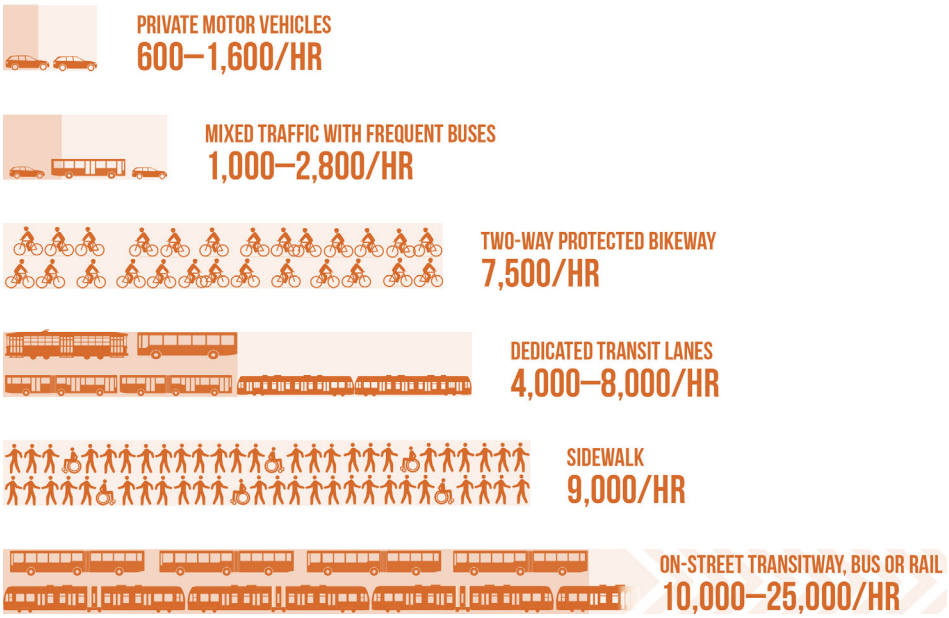



**Figure 6: Potential Capacity of Differing Facilities and Modes (Source: NACTO)**

to support transit and active transportation, recommendations to continue building these networks, and programs to help residents learn more about transportation options.

### MANAGING GROWTH & CONGESTION

While the population and demands on our transportation system are growing, space within city streets is not. Because most of the city is already highly developed, there is typically no room to widen city rights-of-way. Successfully absorbing the city's growth therefore means moving more people in the same amount of space. To do this, it is necessary to facilitate and encourage more people to travel by walking, biking and transit.

Figure 6 illustrates the potential capacity of different transportation facilities and modes. Sidewalks have the capacity to move more people than almost all other forms of transportation.

### LIVABILITY

Walkable urbanism is the foundational element of great neighborhoods and great cities. Neighborhoods where people can easily walk to transit stops, schools, parks, shops, and neighborhood services help promote a sense of community, social activity, and allow residents to age in place.

Walking is more than just a mode of transportation; it provides a way for people to slow down, interact with neighbors, enjoy public art, and interact with the city in a different way. Extending the benefits of walkable neighborhoods to all Portlanders is critical.

# PedPDX and Previous Plans

The City of Portland, Metro, and the State of Oregon all publish plans to guide investment and set priorities. These plans are created with public feedback to document what is important to Portlanders and residents throughout Oregon. Agencies work to implement their plans once they are completed. Some recommendations are quickly tackled after the plan is finished. Others may take a long time, such as 20 years or longer for complex projects. New or updated plans are created over time as transportation systems and communities change and as new technology and best practices evolve. Additionally, some agencies are federally required to produce certain types of plans.

Understanding how all these plans fit together helps planners make recommendations that are consistent with previous plans. The PedPDX team reviewed local, regional, and state level plans to learn more about how PedPDX strengthens and updates previous initiatives.

**PORTLAND 2035 TRANSPORTATION SYSTEM PLAN**

The Transportation System Plan (TSP) is the 20-year plan to guide transportation policies and investments in Portland by:

- Supporting the City's commitment to Vision Zero by saving lives and reducing injuries to all people using our transportation system
- Helping transit and freight vehicles to move more reliably
- Reducing, carbon emissions and promoting healthy lifestyles
- Keeping more money in the local economy, as we spend less on vehicles and fuel
- Creating great places

The 2035 TSP was adopted by City Council in 2018. It is a comprehensive transportation plan designed to help implement the City's 2035 Comprehensive Plan and the region's 2040 Growth Concept by supporting a transportation system that makes it more convenient for people to walk, bicycle, use transit,

and drive less to meet their daily needs. The TSP houses key goals and policies for the City's transportation system, and provides a list of major transportation projects the City intends to implement over the next 20 years to help realize the vision of the Comprehensive Plan.

Transportation improvements over $500,000 are listed individually as major projects within the TSP. These major projects are identified from individual planning processes such as modal plans (like PedPDX) or local area plans. Pedestrian-related projects in the TSP may include broad multi-modal "complete streets" corridor improvements that include pedestrian elements in their descriptions and cost estimates, or they may be specific large-scale projects with a pedestrian emphasis, such as pedestrian district improvements, large sidewalk or trail projects, or bicycle/ pedestrian bridges.

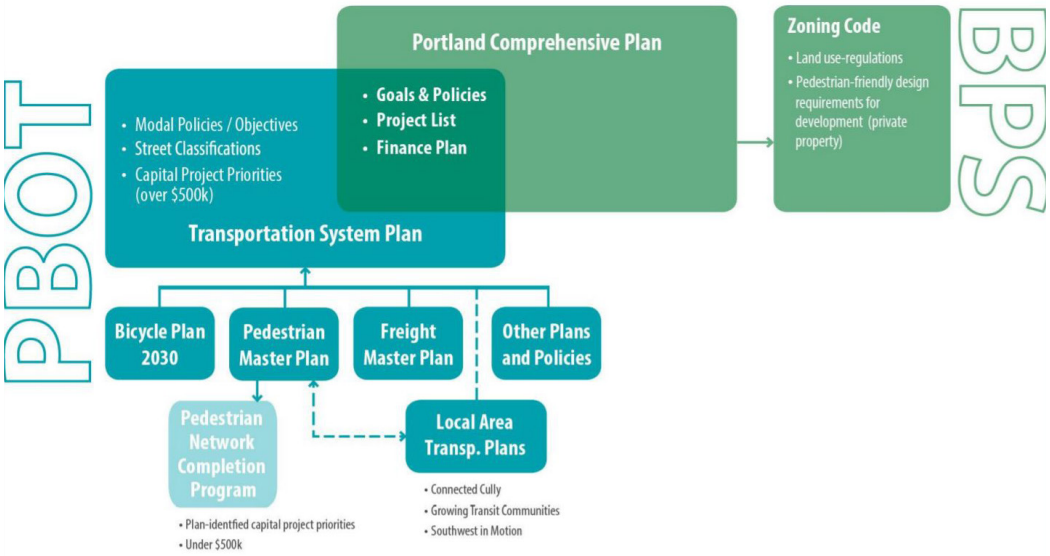
There are currently 427 Major Projects identified in the TSP. Of these, 241 projects include pedestrian elements.

In addition to identifying major capital project priorities, the TSP also creates a series of programs intended to deliver smaller-scaled transportation improvements, generally under $500,000. One of these programs is the Pedestrian Network Completion Program. Citywide programs help the public and staff understand, track, and promote small-scale transportation investments.

Prioritized needs on the PedPDX Pedestrian Priority Network will be eligible for funding through the Pedestrian Network Completion program, which is directly charged with expanding the city's network of sidewalks, walking paths, and crossings.

The TSP also provides goals and policies, as well as modal street classification and descriptions. Many of the goals and policies directly relate to the pedestrian experience (see Appendix E: "Policy Framework Review" for a detailed list of these pedestrian-specific TSP goals and policies). One of the key pedestrian-related policies included

Figure 7: Relationship Between City Agencies and Policies




in the 2035 TSP is Portland's Policy 9.6: Strategy for People Movement, which prioritizes pedestrians over other modes and states "implement a prioritization of modes for people movement by making transportation system decisions according to the following ordered list:

1. Walking

2. Bicycling

3. Transit

4. Fleets of electric, fully automated, multiple passenger vehicles

5. Other shared vehicles

6. Low or no occupancy vehicles, fossil-fueled non-transit vehicles"

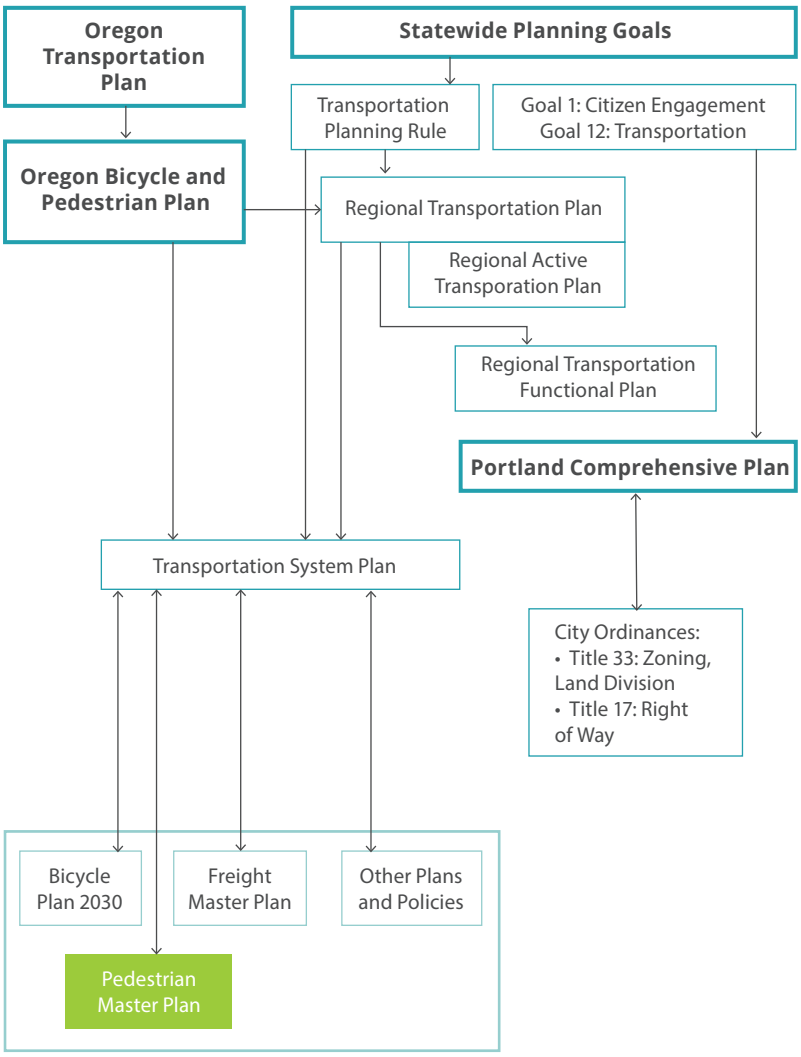
PedPDX will help us implement the newly adopted pedestrian-related goals and policies included in the 2035 TSP. The PedPDX prioritization framework as well as the strategies and actions within the PedPDX Implementation Toolkit directly reflect these newly adopted TSP goals and policies. Because the City's Comprehensive Plan was recently updated (2018) and includes strong pedestrian policies, no changes to newly adopted TSP goals and policies are recommended at this time.

PedPDX will be adopted by City Council Resolution in 2019. City staff will subsequently update the pedestrian classifications within the TSP to reflect the PedPDX Pedestrian Priority Network. These updated pedestrian classifications will be proposed as amendments to the 2035 TSP.

## State and Regional Planning Context

Figure 7 and Figure 8 show the relationships of state, regional, and local plans in terms of the flow of policy directives. State law establishes requirements for consistency at the state, regional and local levels. Metro's Regional Transportation Plan, Active Transportation Plan, and Transportation Functional Plan must be consistent with Oregon Transportation Planning Rule (TPR) requirements, the Oregon Transportation Plan and state modal and topical plans. The City Comprehensive Plan, Transportation System Plan, and all local modal plans (including the PedPDX Portland Citywide Pedestrian Plan) conform to the requirements of the regional transportation plans. The

Figure 8: Plans and Policy Directives




process is not linear, however, as plan updates are staggered.

Though Portland has long held a strong set of policies supporting walking, regional and state plans have evolved in the past 20 years. PedPDX is an opportunity to update City policy to comply with new requirements and also incorporate recommended approaches to pedestrian planning. Specific changes to the policy context since 1998 include:

- Clearly defined directives around safety and equity in transportation
- Updates to the State Transportation Planning Rule and Metro Regional Transportation Framework Plan, which serve as the main drivers of compliance requirements for local pedestrian planning
- Updates to the City Comprehensive Plan and Transportation System Plan, which serve as the local planning framework for the local pedestrian plan

Portland meets or exceeds all of the key requirements state plans outline for local jurisdictions. Among regional policy directives, the Regional Transportation Functional Plan's guidance for developing a local pedestrian master plan and the Regional Active Transportation Plan's guidance for prioritizing pedestrian needs inform specific products of PedPDX.

# Who We Heard From

## PedPDX Community Advisory Committee (CAC)

In the twenty days between March 28 and April 16, 2017, staff received over 260 applications citywide from members of the public wishing to serve on the PedPDX Community Advisory Committee (CAC).

Recognizing that one's walking experience in Portland varies greatly depending on area of the city and one's physical abilities, committee members were selected for their demographic and geographic diversity as well as their passion for making the city better for everyone. The Commissioner in Charge and staff ultimately accepted 26 members. Staff prioritized most of the positions for people who had not yet had an opportunity to engage with City processes in an advisory manner and additionally included liaisons from Oregon Walks, the City of Portland Pedestrian Advisory Committee (PAC), OPAL Environmental Justice/ Bus Riders Unite and the PBOT Bureau & Budget Advisory Committee (BBAC).

PedPDX CAC members served for the duration of the planning process and provided feedback that was integrated into the plan. PedPDX CAC members were responsible for keeping their individual organizations, agencies, neighborhoods, and/or community and business groups up to speed on the progress of the Plan. Other responsibilities included reviewing and commenting on project materials, helping to distribute invitations to public feedback opportunities, providing regular updates to one's community on the project, and consulting with members of their community on how to best represent their views, concerns, and recommendations.

## Citywide Survey

A key piece of the PedPDX public involvement strategy was a community-wide "Walking Priorities Survey" asking Portlanders to share their priorities for making Portland a more walkable city. Community responses to the public survey helped the project team understand





*Community Advisory Committee Meeting*

the types of improvements that are most important to help address barriers to walking in Portland, as well as the general locations where these improvements are most important to residents.

This feedback served to identify pedestrian-related needs and to develop a methodology for prioritizing pedestrian improvements across the city. Additionally, responses to the survey were used to help develop the Plan's strategies and actions for improving walking conditions in Portland.

The Walking Priorities Survey was posted online for approximately 17 weeks, spanning the summer season from June 8, 2017 to October 2, 2017. It was available online and in paper form in English, Spanish, Chinese, Vietnamese, and Russian -the top languages spoken citywide. Staff worked with Spanish, Chinese, Vietnamese, and Russian Community Engagement Liaisons (CELs), who helped advertise the online survey opportunity among these language-specific audiences, and gathered translated paper "hard-copy" survey responses.

The survey was advertised and distributed using social media outlets, earned online media, targeted print advertising, quarter-sheet flier handouts, direct community engagement, and email distribution. Additionally, staff worked directly with community organizations to help spread the word about the PedPDX Walking Priorities Survey to their constituencies, and provided briefings to PBOT modal committees, neighborhood coalitions, local community groups and organizations throughout the city.

To incentivize participation in the survey, staff offered the chance to win a Fitbit Charge 2 as well as other prizes that included PedPDX t-shirts, walking tours donated by Slabtown Tours and Portland Walking Tours, water bottles, bumper stickers, umbrellas, pedometers, buttons, flashlights, carabiners, and pencils.




*Materials for the PedPDX Walking Priorities Survey were translated into Spanish, Chinese, Vietnamese, and Russian - the top languages other than English spoken citywide*

To kick-off PedPDX and the Walking Priorities Survey, staff provided 100 tickets to "Friends of PedPDX" public volunteers to walk in Portland's Grand Floral Walk on June 10, 2017. Participant volunteers were given free PedPDX t-shirts to wear in the four-mile walk from the Memorial Coliseum to Downtown. Volunteers handed out PedPDX-branded flashlight carabiners and quarter-sheet flyers advertising the Walking Priorities Survey to hundreds of bystanders as they walked to encourage the public to take the online survey.

To evaluate whether the project team heard from a representative sample of Portlanders, staff compared survey responses to the racial and geographic distribution of the city's population. Staff used this analysis on a rolling basis throughout the survey period to help drive public outreach, leveraging outreach to underrepresented respondent groups. Specifically, staff worked with community organizations to reach out to people of color and residents of East Portland to help garner as many survey responses from these underrepresented groups as possible. Staff shared mid-course demographic and geographic data with the PedPDX CAC and acted on their feedback about strategic groups and organizations to reach out to help ensure the survey represents the full spectrum of Portland's residents.

Subsequent outreach efforts resulted in increased survey responses from Hispanic/Latino and East Portland residents but had no impact on responses from Black/African American residents.

The online and hard copy surveys elicited 5,405 total responses in five languages, including 2,088 comments to open-ended questions. We received 432 non-English language surveys between online and hard copies combined. In addition to the online and paper surveys, staff held an engagement activity with 22 youth and surveyed approximately 550 public event participants. A full version of the Walking Priorities Survey Report is available in Appendix C.




*CAC Members Gathering Survey Responses at Sunday Parkways*

## PUBLIC EVENT ACTIVITIES

In addition to soliciting online and paper survey responses, the project team, CAC members, and Friends of PedPDX public volunteers administered the survey questions in person at public events across Portland via an interactive exercise. The activity asked participants to rank walking barriers and investment priorities by placing strips of paper into each of eleven buckets, indicating which issues were most (1) and least (11) important to them.

The in-person outreach events included:

- Nine Safe Routes to School open houses
- Two Fixing Our Streets open houses
- Three Sunday Parkways events
- Rosewood National Night Out
- Multnomah Days
- Division Midway Festival of Nations

## YOUTH ENGAGEMENT ACTIVITY

In an effort to reach more young Portlanders, staff facilitated an engagement activity with 22 high school students participating in the City of Portland Teen Force program. As a physical manifestation of the online survey, staff asked students to stand next to signs numbered 1 through 6 to indicate their biggest barriers to walking, and the types of places that are most important to improve. After each prompt, students engaged in a brief discussion about why some of the students gave the responses they did. These responses were incorporated into the Walking Priorities Survey analysis.



*Youth Engagement Activity*

## Walking While Black Focus Groups

Out of the 5,405 total respondents to the PedPDX Citywide Walking Priorities Survey, 2% identified as African or African American. However they represent 5.7% of Portland's overall population. In recognition of the low recorded[1] response rate from African and African American Portlanders in the Walking Priorities Survey, the project team hosted two focus groups to more intentionally elevate the voice of Black Portlanders in PedPDX. Facilitators provided a space for Black Portlanders to speak candidly about their Walking While Black experience in Portland, which the survey results show is different from the experience citywide (Figure 9).

Key elements that contributed to the success of these sessions included:

- PBOT staff worked with community partners from the Portland African American Leadership Forum (PAALF), Black Parent Initiative (BPI) and Immigrant and Refugee Community Organization (IRCO) Africa House to host two focus groups
- An event title and promotional materials that were inviting to the Black community and emphasized interest in their specific experience
- Partnership with popular community organizations that could extend invitations to community members
- The focus groups being held at Black-owned/operated community spaces and dinner being provided by Black-owned catering businesses
- A pre-focus group survey that collected demographic information so that facilitators could have a deeper understanding of the diversity of experiences within the Black Portland community
- Seeking participant responses to and dialogue on the citywide survey, as well as additional discussion questions that sought

1 Most of the Public Event Activities were held in racially diverse areas of North and East Portland, however demographic information was not captured because of the nature of passer-by, quick participation.

Figure 9: Citywide Versus "Walking While Black" Survey Responses

*Places to Improve - Average Point Value (from 1-6)*

| WHAT MAKES WALKING DIFFICULT IN PORTLAND? | WALKING WHILE BLACK | CITYWIDE |
|---|---|---|
| Poor Lighting | 5.00 | 3.62 |
| Sidewalks / walking paths missing on BUSY streets | 4.94 | 4.66 |
| People driving too fast on BUSY streets | 4.82 | 4.29 |
| Not enough safe places to cross busy streets | 4.78 | 4.46 |
| People driving too fast on RESIDENTIAL streets | 4.74 | 4.44 |
| Sidewalks / walking paths missing on RESIDENTIAL streets | 4.71 | 4.29 |
| Drivers not stopping for pedestrians crossing the street | 4.47 | 4.29 |
| Buckled / cracked / uplifted sidewalks, or other tripping hazards | 4.47 | 3.46 |
| Missing curb ramps at intersections | 4.00 | 3.22 |
| Not enough time to cross the streets | 3.91 | 3.08 |

more information on their pedestrian experience as Black Portlanders

- Participants were provided with $25 gift cards for grocery stores and a local Black-owned restaurant in appreciation of their time and contributions. Partnering organizations received a small donation for their assistance with outreach.

Focus groups were held on November 28th, 2017 at the June Key Delta Community Center in North Portland, and on December 9th, 2017 at IRCO Africa House in East Portland. The original goal was for each focus group to have eight to twelve participants. Nearly 50 community members participated in these sessions.

The input received at these focus groups directly informed the strategies and actions in the PedPDX Toolbox. A full version of the Walking While Black Focus Group Summary Report is available in Appendix D.

## District Coalitions

PedPDX includes new pedestrian street classifications across the city to reflect the PedPDX Pedestrian Priority Network. These proposed pedestrian classifications required careful review from community members to help ensure the classifications are correct and serving the right streets.

Prior to releasing the draft pedestrian classifications to the general public, PedPDX sought to meaningfully engage the City's District Coalitions for a careful review of and refinements to the Pedestrian Priority Network and associated classifications. Throughout the summer of 2018, staff brought the draft Pedestrian Priority Network to each of the City's seven District Coalitions.

Participants at the workshops learned about PedPDX and provided input on the proposed pedestrian classifications, drawing from their knowledge of their neighborhoods and recording how their proposed refinements meet the criteria of

*I think in Portland it is difficult just being a woman walking while black. It can be troublesome because people will not respect you unless you demand your respect.*

***Anjeanette***
PedPDX Walking Stories

the classification. For suggested changes to Neighborhood Walkways, for example, participants described how their proposed refinements would serve more than just the people who live on the adjacent street and serve as a key route to a community destination, especially for underserved or underrepresented members of their community.

Project staff subsequently reviewed every comment received by the District Coalitions and refined and revised the Pedestrian Priority Network and pedestrian classifications.

The following events were part of the Pedestrian Priority Network engagement:

- Southeast Uplift Neighborhood Coalition Land Use + Transportation Committee, 6/18/18
- Southwest Neighborhoods, Inc Transportation Committee, 7/16/18
- Northeast Coalition of Neighborhoods Land Use + Transportation Committee, 7/22/18
- North Portland Neighborhood Services North Portland Land Use Group, 7/26/18
- East Portland Neighborhood Office Land Use + Transportation Committee, 9/12/18
- Central Northeast Neighbors Land Use, Transportation + Open Space Committee, 9/13/18
- Neighbors West/ Northwest, 9/24/18

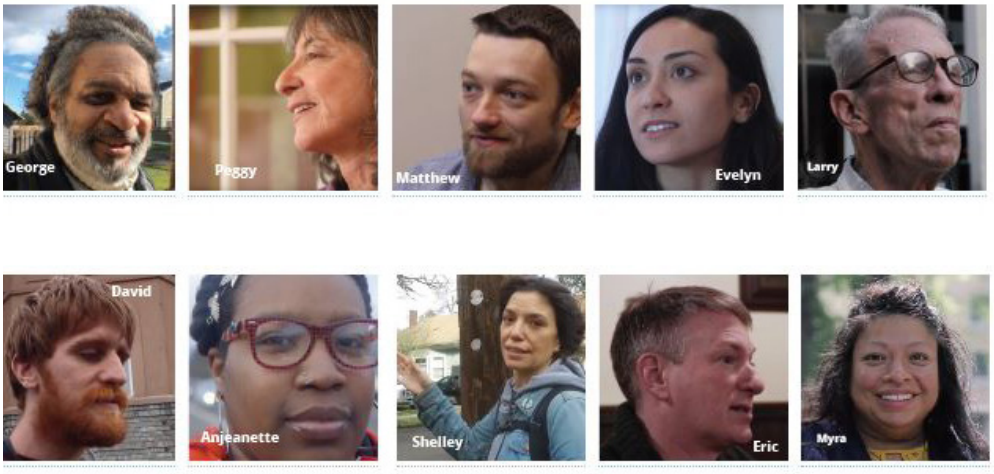
## City of Portland Pedestrian Advisory Committee

Prior to launching PedPDX, City staff consulted the City of Portland Pedestrian Advisory Committee (PAC), who recommended establishing a Community Advisory Committee (CAC) for PedPDX to help guide the development of the plan. While not the principal advisory body for PedPDX, the PAC received periodic updates and feedback opportunities throughout the process. In particular, the PAC directly contributed to developing the PedPDX vision, mission, goals and objectives as well as the Toolbox of implementation strategies and actions.

## City of Portland Commission on Disabilities

The City of Portland Commission on Disabilities (PCOD) provided early guidance about the Plan's key messaging regarding Portlanders with disabilities. Throughout the process, the Commission received periodic updates about the Plan, and in particular provided constructive feedback for the development of the Alternative Walkway Designs presented in the PedPDX Toolbox.

PCOD particularly supported the Pedestrian Stories series, which elevated understanding of the range and diversity of ways that people walk in Portland. They were interested to see additional Pedestrian Stories that shared the experiences of people who use wheelchairs or scooters. Together, PBOT and Office of Equity and Human Rights (OEHR) staff contributed resources to produce two additional Pedestrian Stories videos featuring two of PCOD's Commissioners.




*Pedestrian Stories were made available on the project website.*

## Pedestrian Stories

The Pedestrian Stories project was a partnership between PedPDX, the University of Oregon School of Journalism and Communications and the Agora Journalism Center, with financial support from America Walks and the American Planning Association's Transportation Planning Division. Graduate student teams followed eight different people with different abilities, from different parts of the city as they narrated what walking means to them, the challenges they face walking in Portland, and their hopes for Portland as a great walking city for everyone. The goal was to elevate the range and diversity of needs that Portlanders have when it comes to walking.

The Pedestrian Stories were screened to the general public at the White Stag Building in Portland on March 20, 2018. Students, video subject participants, and members of the public participated in small group discussions about how the films impacted them, as well as their own pedestrian stories.

The original eight Pedestrian Stories videos were shared through PBOT social media, on the PedPDX website and through the PedPDX email list. Together they were cumulatively viewed more than 25,000 times.

The PedPDX Pedestrian Stories help to demonstrate the range and diversity of reasons and ways that people walk in Portland. Quotes from the Pedestrian Stories are shared throughout this Plan.

*I have to be a lot more careful about things to trip over, if the surfaces are going to be slick and cause my crutches to slip out from under me...I actually plan my routes to avoid that kind of stuff.*

***Matthew***
PedPDX Walking Stories

## Toolbox Workshop for People with Disabilities

A PedPDX CAC member with a disability asked for the opportunity to lead a Toolbox Workshop for people with disabilities. Together, staff partnered with the CAC member to provide a workshop for 15 participants with a range of disabilities and accommodations in November, 2018. Participants identified needs and brainstormed solutions to make walking safer and more pedestrian-friendly for everyone. The ideas generated during this workshop directly influenced the implementing strategies and actions in the PedPDX Toolbox.

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# 2. MISSION, VISION, GOALS, & OBJECTIVES

The PedPDX mission, vision, goals, and objectives guide every aspect of the Plan. This framework provides a critical foundation for the Plan's needs analysis, prioritization criteria, implementing strategies and actions (the "toolbox"), and performance measures. Each of these plan elements ties directly back to the foundational mission, vision, goals, and objectives.

*When you're on foot you get to interact with your community.*

***Evelyn***
PedPDX Walking Stories

The mission, vision, goals, and objectives were developed with the project's guiding committees, as well as feedback from the Walking Priorities Survey. The PedPDX Community Advisory Committee (CAC) completed a "PedPDX vision, goals, and objectives exercise" early in the planning process, with core themes emerging from that exercise. Staff then drafted goals and objectives from the themes and subthemes that emerged and crafted draft vision and mission statements to reflect the spirit of the sum of the goal statements.

The draft mission, vision, goals, and objectives were reviewed and refined by the PedPDX Technical Advisory Committee (TAC), made up of partner agency, bureau, and department technical specialists. The drafts were then brought to the City of Portland's Pedestrian Advisory Committee (PAC) for additional feedback and refinement, and then further refined once again by the PedPDX CAC.

## How does this shape PedPDX?

Figure 10 shows how PedPDX recommendations are shaped by the Plan's mission, vision, goals, objectives, strategies, and action items. The overarching mission and vision inform a set of goals that are supported by a series of objectives. The objectives are achieved through strategies and action items. Together, these components provide the basis for PedPDX's analysis of network needs, development of prioritization criteria, and the implementation toolkit.

Building from this work, the performance measures in Chapter 7 circle back and provide a way to answer the question "Are we achieving our objective?" The following section describes the Plan's mission, vision, goals, and objectives in more detail.

Figure 10: The overarching mission and vision inform a set of goals that are supported by a series of objectives. The objectives are achieved through strategies and action items.



*Portland already has a reputation of being a good bike city, but I think becoming an even better walking city is good for everybody as well.*

***Eric***
PedPDX Walking Stories

## WHAT ARE MISSION, VISION, GOALS, AND OBJECTIVES?

A **mission statement** is a short description of the purpose of an entity, organization, or campaign. It succinctly summarizes aims and values to define what the group is going to do and why it is going to do that. Mission statements account for the "big picture" while being practical and action-oriented.

A **vision** statement concisely introduces a future that the Plan is intended to achieve. It offers the broadest expressions of a community's desires, providing overarching direction for the long term, and often describing ideal situations.

A **goal** is a broad statement that sets preferred courses of action in support of the vision and mission. Goals are intended to carry out the vision in the foreseeable future and should be specific enough to help determine whether or not a proposed project, program, or course of action will advance the community values expressed in the goals.

**Objectives** are specific statements of action that support achieving the goals. Objectives help assess incremental progress toward advancing the broader outcomes expressed in the vision and goals. Once the big, broad ideas of the vision and goals are channeled into objectives that offer a practical, workable approach, their strategies and action items provide the basis for a work plan. Performance measures provide a means of tracking progress along that work plan.

The following mission, values, goals, and objectives inform all of the recommendations included within PedPDX.

# PedPDX Mission

**Through PedPDX, the City of Portland affirms walking as a fundamental human right and the most fundamental means of transportation.**

**PedPDX ensures walking is a safe, accessible, and attractive experience for everyone in Portland by putting pedestrians at the forefront of City policy, investments, and design.**

# PedPDX Vision

**Portland is a great walking city for all.**

# PedPDX Goals

- **Equitable + Inclusive**: Make Portland walkable and accessible for all, no matter who you are or where you live.
- **Safe + Secure**: Make walking in Portland safe and secure for everyone.
- **Comfortable + Inviting**: Provide a comfortable, inviting, and connected pedestrian network that supports walkable neighborhoods and strengthens community.
- **Healthy People + Environment**: Increase walking for transportation and recreation in Portland as a means of achieving improved health outcomes for all people and for the environment.

# PedPDX Objectives



**HISTORIC UNDERINVESTMENT**

Prioritize **investment in areas with the greatest historic underinvestment** in pedestrian infrastructure and with historically under-served populations to reduce disparities in access to safe pedestrian facilities.



**CONNECT TO DAILY NEEDS**

Complete and maintain a Pedestrian Priority Network that encourages walking for people of all ages, cultures, and abilities, and **connects people to their essential daily needs.**



**FUNDING**

**Commit to funding** pedestrian network improvements in the Pedestrian Priority Network.




**VISION ZERO**

Support the City's Vision Zero commitment to **eliminate traffic-related deaths and serious injuries.**



**PUBLIC SAFETY**

Protect the **public safety and personal security** of people walking.



**JOYFUL EXPERIENCE**

Make walking in Portland **a joyful experience** that helps people connect with their community.

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# 3.WHAT IS THE STATE OF WALKING IN PORTLAND?

"Walkability" can be a difficult quality to measure. Although current data collection opportunities are somewhat limited, planners have a variety of tools for understanding what it is like to walk in Portland today. This existing conditions analysis is a starting place for making recommendations to improve walking in the city.

# The Portland Walking Story

Portland has a reputation for walkability. The City crafted one of the country's first Pedestrian Master Plans in 1998 and has set national precedent with its "pedestrian first" transportation strategy for people movement. The design of the Central City and inner eastside neighborhoods, with small blocks oriented on a grid, are friendly to walking.

However, challenges have persisted and the experience of walking varies widely across the city, partially due to significant network gaps in East and Southwest Portland.

**Despite consistent investment in the pedestrian network, significant gaps and shortcomings remain.** These challenges limit the City's ability to welcome new residents and meet the livability needs of current residents, including safe walking routes to public transit and essential services.

The 1998 Pedestrian Master Plan has served inner Portland well, but has often struggled to provide adequate guidance for areas such as East Portland and Southwest Portland that present environmental challenges and right-of-way constraints.

## Role of Property Owners to Construct and Repair Sidewalks

Per City charter and City code, property owners are responsible for constructing, maintaining, and repairing the sidewalks abutting their property. This applies to home owners, business owners, schools and other large institutions, and to homeowners' associations. Traditionally the requirement to construct sidewalks where they are missing or deficient is triggered when development or redevelopment projects are proposed. As part of the development, property owners must construct or improve the sidewalks fronting their property in accordance with City standards. This is how the vast majority of sidewalks have **historically** been built in the City of Portland. The mature sidewalk system in inner Portland that was constructed with development (often over 100 years ago) still serves residents today.

City charter and City code also grants the City the authority to require the construction and maintenance of sidewalks outside of the development process. The City can require the construction of new sidewalks, if "in the opinion of the City Engineer a sidewalk or curb or both are needed" (Portland City Code, Title 17.28.030). Traditionally the City has not used this authority to require construction of sidewalks where they are missing in already developed areas. **However, while not enforced, City code stipulates that sidewalk construction is legally the obligation of private property owners.**

Local Improvement Districts (LIDs) are a common means by which property owners construct sidewalks in Portland. An LID is a means by which the City can assist a group of property owners with constructing streets, sidewalks, and stormwater management systems. With LIDs, property owners are responsible for paying for the cost of the street and sidewalk improvements, typically on streets not prioritized for public investment. Because City investment priorities are often on busy arterial and collector streets, LIDs can be a good option for property owners who would like to improve streets and sidewalks on local residential

*What I find also is important to a good community and livability is understanding how those things function best, and not trying to have them all function in the exact same space.*

***Peggy***
PedPDX Walking Stories

streets. With an LID, the City assists by setting up financing and payment structures, and by assisting with project design, engineering, and delivery. LIDs must be approved by City Council.

In the past 15 years, 35 LIDs have built sidewalks on both sides of approximately 7 miles of new and improved roadways.

In addition to constructing new sidewalks where they are lacking or substandard, property owners are also responsible for maintaining the sidewalks fronting their property when they are cracked, broken, or uplifted by tree roots. Historically, this authority has been referred to as "posting," because a notice requiring the repair of the sidewalk is posted on the property. When a City sidewalk inspector finds a safety hazard attributable to cracked or broken sidewalks, the owner of the adjacent property is notified and is required to repair the sidewalk.

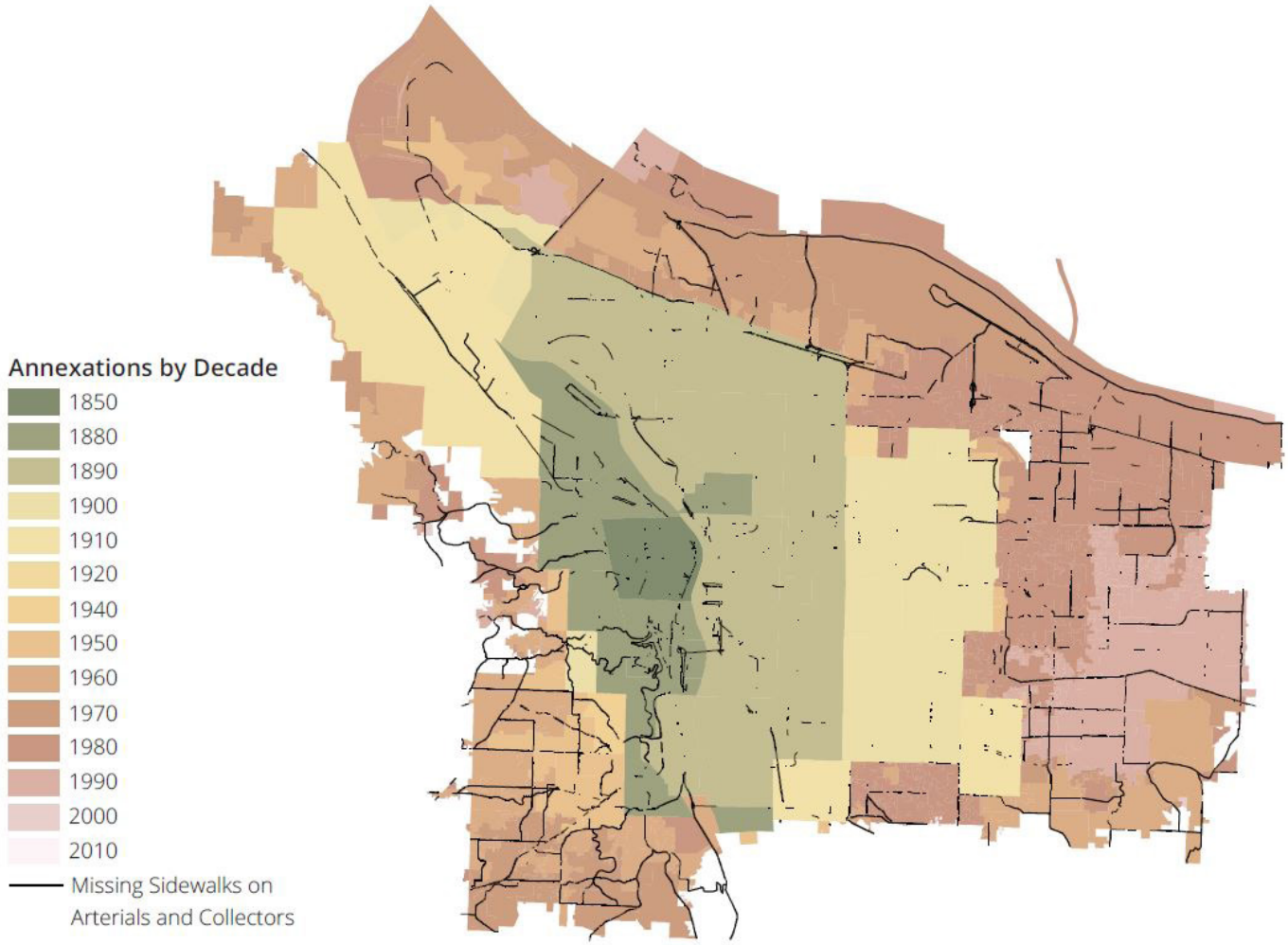
## History of Private Sidewalk Development

As Portland's boundaries have expanded over the years, missing sidewalks have become an increasingly prevalent problem.

Historically, the Portland city limits ended at 82nd Avenue. It wasn't until the late 1970s and 1980s that Portland began annexing parts of unincorporated Multnomah County, much of which was already developed without sidewalks. Neighborhoods in outer East Portland and Southwest Portland that were annexed into the City typically did not have complete sidewalk networks. In locations where sidewalks were constructed they were often "curb-tight," lacking furnishing zones or street trees to buffer people walking from roadway traffic. Many of these annexed areas still retain some of their rural character, and they continue to have insufficient infrastructure to meet the needs of people walking.

Figure 11 shows that the vast majority of Portland's missing sidewalks on busy streets lie within neighborhoods that were originally developed under County regulations

**Figure 11: The majority of streets with missing sidewalks lie within already developed neighborhoods that were annexed to the City of Portland in the 1960's, 1970's, and 1980's**




that were annexed to the City of Portland in the latter half of the 20th century. In contrast, areas of inner Portland that were developed under City regulations requiring sidewalk construction in conjunction with private development provides a much more complete sidewalk network.

## Role of the City

While building and maintaining sidewalks remains a private obligation, the City does invest in sidewalk construction frequently, particularly on busy streets that are deficient and could serve a larger number of people walking. The next section describes the pedestrian infrastructure activity led by the City of Portland over the last 20 years.

## What We've Built

The 1998 Pedestrian Master Plan has successfully led pedestrian improvements. The 1998 Pedestrian Master Plan recommended 146 pedestrians projects. Of these:

- 99 projects have been constructed or are currently in progress
- 33 have not yet been constructed but are identified in our TSP as priority projects
- 14 are identified as TSP program priorities (spot improvements under $500k)

According to PBOT's asset management database, Portland currently has approximately 2,462 total miles of sidewalk. Of this total, approximately **232 miles of new sidewalk** have been built, repaired, or reconstructed since 1998 (Figure 12).

Much of this new sidewalk infrastructure was built as part of private frontage improvements required in conjunction with new development or redevelopment, as guided by the Portland Pedestrian Design Guide. Historically, this is how most sidewalk infrastructure has been provided in Portland. PBOT capital projects providing sidewalk infill have also contributed significantly to filling priority sidewalk gaps over the last 20 years.

In addition, PBOT has significantly increased the number of marked crossings over the last two decades. According to PBOT's asset management database, **approximately 2,150 crosswalks** have been painted or repainted since 1998, for a total of 4,914 marked crossings across the city (Figure 13).

Despite this activity, many sidewalk and crossing gaps remain. Chapter 4 identifies and quantifies remaining sidewalk and crossing needs within the Pedestrian Priority Network.

Figure 12: Sidewalks Constructed, Reconstructed, or Repaired After Adoption of the 1998 Pedestrian Master Plan (1999-2017)

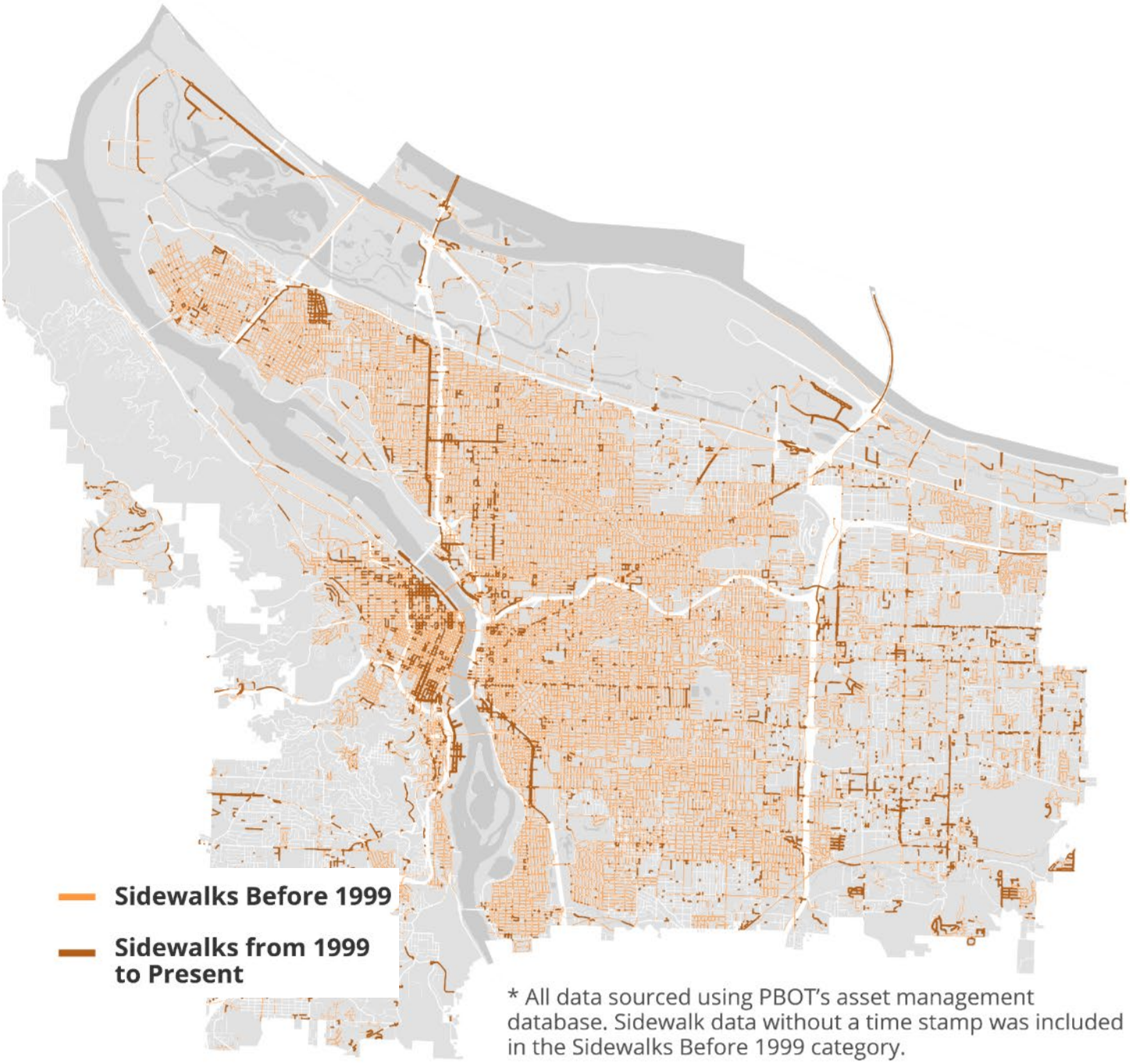
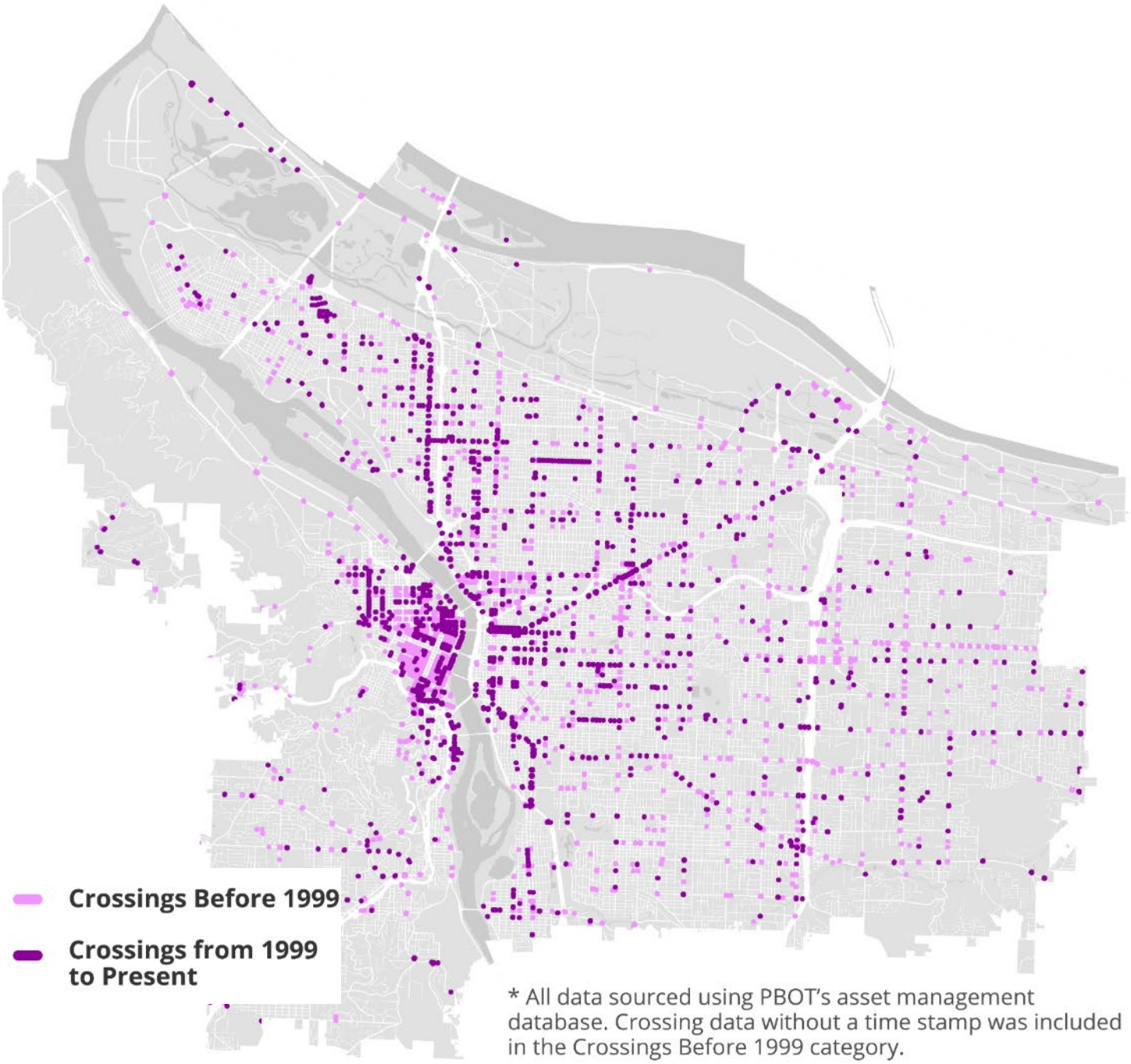


Figure 13: Marked Crossings Painted, Repainted, or Repaired After Adoption of the 1998 Pedestrian Master Plan (1999-2017)



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# Measuring Portland's "Walkability"

While "walkability" can be a difficult quality to measure, we can use available data to provide a snapshot of what it is like to walk in Portland. We can measure walking and walkability in three ways:

- Pedestrian activity data tells us how many people in Portland walk to work and to other destinations. The number of people walking on Portland sidewalks over time helps tell us if our land use and transportation policies and actions are encouraging more walking. It also indicates to some extent whether Portlanders feel comfortable and safe choosing walking over other modes.
- Safety data tells us the number of pedestrians involved in crashes over time and is an indication of how safe Portland streets are for walking.
- Pedestrian network completion data tells us how complete (or incomplete) our sidewalk and crossing infrastructure is across the city. An incomplete pedestrian network can prohibit pedestrian activity. Addressing gaps in sidewalk and crossing infrastructure is critical to providing Portlanders a safe and comfortable place to walk.

The current state of Portland's pedestrian network gaps and needs, including an assessment of all of the city's sidewalk and crossing gaps, is provided in Chapter 4. This section provides an assessment of existing walking activity and pedestrian safety trends to better understand the state of walking in Portland today.

**Table 1: Portland Commute Mode Share Targets and Current Activity**

| | DRIVE ALONE | CARPOOL | WALK | BIKE | TRANSIT | WORK AT HOME |
|---|---|---|---|---|---|---|
| City mode split target | 30% | 10% | 7.5% | 25% | 25% | 2.5 |
| 2015 Census (American Community Survey) | 57.8% | 8.9% | 6% | 6.5% | 12.1% | 7.5% |

## PEDESTRIAN ACTIVITY

Pedestrian activity data are collected over time to show changes to the number of people walking to work and to other destinations. Walking commute data are easily collected from national sources such as the US Census. However, walk to work trips are only a small percentage of all trips taken. Local sources, such as counts of pedestrians at key locations, add to national sources. These data sets help planners establish goals for the percentage of workers who commute by various forms of transportation. They also help evaluate whether the City reaches these goals.

While the City's goal for commute "walk to work" mode share is 7.5%, Portland's current "walk to work" rate is 6.0% (Table 1).

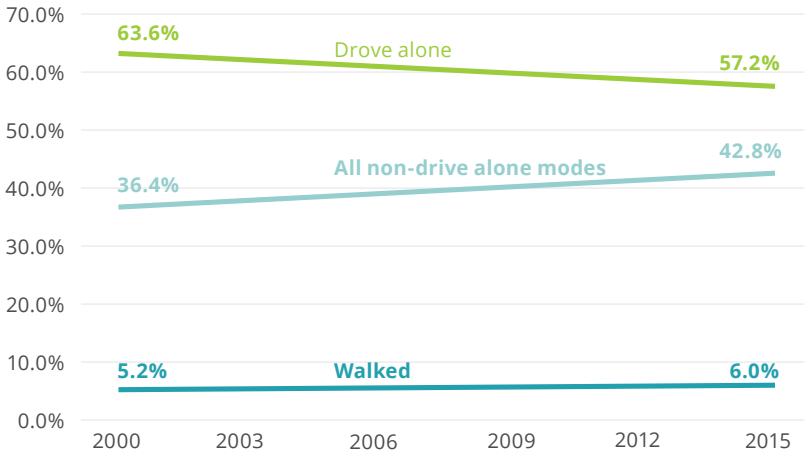
Compared to other large cities, Portland's "walk to work" rate is low, as seen in Table 2. Evaluating Portland's walking rate against other cities helps our understanding of how the city is performing, and shows there is clearly room for improvement in Portland.

**Table 2: Top 10 Cities for Walk to Work Rates**

| MOST POPULOUS U.S. CITIES | | |
|---|---|---|
| 1 | Boston | 14.8 |
| 2 | Washington D.C. | 13.3 |
| 3 | San Francisco | 10.6 |
| 4 | Seattle | 10.1 |
| 5 | New York | 10.0 |
| 6 | Philadelphia | 8.2 |
| 7 | Minneapolis | 7.2 |
| 8 | Baltimore | 6.7 |
| 9 | Chicago | 6.7 |
| 10 | Portland, OR | 6.0 |

*Source: League of American Bicyclists "Bicycling and Walking in the United States Benchmarking Report" 2018*

**Figure 14: Portland Commute Mode Splits 2000-2015**




Across the United States, walk to work rates have generally been increasing over time, particularly among commuters in populous cities. In 2005, the average walk to work rate across the most populous cities was 4.4% and in 2013 it grew to 5.0%.

The increasing percent of trips made by walking is consistent with national generational trends in travel choices. The percentage of various age groups that commute to work by car are[1]:

- Baby boomers (born 1947-1965): 90%
- Generation X (born 1966-1978): 92%
- Millennials (born 1979-1995): 77%

Generally, nationwide, younger populations are choosing to commute by means other than by car.[2]

These nationwide commute trends are happening in Portland, too. Between 2000 and 2015, the percent of Portlanders driving alone to work decreased from approximately 64% to 57%. At the same time, the percent of Portlanders commuting by other modes, known as the non-drive alone rate (people who use transit, bike, foot, carpool, and/or work at home), increased from 36% to 43%. Walking to work in Portland grew from approximately 5% in 2000 to 6% in 2015 (Figure 14).

However, it is important to note that walking commute trips provide a very limited picture of actual pedestrian activity. People tend to walk outside of peak times of day (rush hour) and days of the week, and much walking activity occurs outside of commute trips. US Census commute data captures only a very small proportion of all trips taken. Furthermore, people responding to the Census are only asked their *primary* mode of travel to and from work. Because walking tends to be only a piece of the commute trip (e.g., walking to transit stops), actual pedestrian activity in the city may be higher than what is currently recorded.

In recognition of the limitations of Census commute trip data, many communities engage in local surveys,

1 Source: Urban Land Institute, 2013

2 Source: League of American Bicyclists "Bicycling and Walking in the United States Benchmarking Report" 2018.

*In order to make it a great walking city, you've got to definitely be aware of a lot of the other people that are driving and riding bicycles and everything, and even other walkers, because they'll run into you.*

***George***
PedPDX Walking Stories

which ask respondents to self-record data on how they get around for all trips taken during a given reporting period. However, these surveys can be expensive and cumbersome. This means they are not conducted frequently or regularly. The Oregon Household Activity Survey was last conducted in Portland in 2011. Before that, the most recent survey of comparable depth and quality was conducted in 1994. Furthermore, active transportation activity is highly influenced by seasonal changes. Point-in-time surveys do not always account for these changes in travel behavior over time.

We need better pedestrian data to make decisions about transportation infrastructure. We need a better understanding of how people are traveling on our sidewalks and roadways. Better data on how and where people are traveling is important to inform:

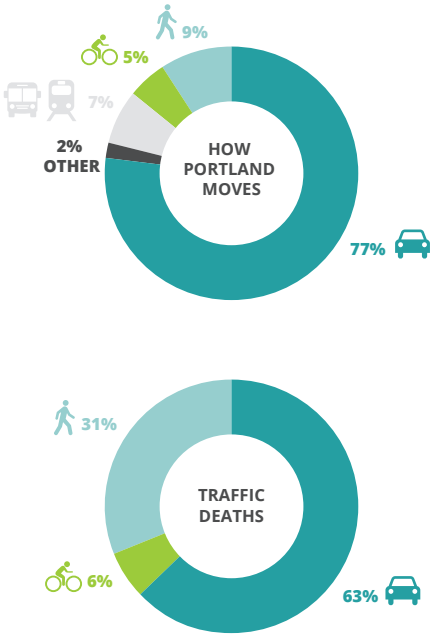
- How we design limited rights-of-way (the sidewalk and street space between buildings)
- Infrastructure needs and investment decisions (based on usage, demand, and mode share targets)
- The effectiveness of infrastructure investments in impacting how people travel
- The effectiveness of strategies to encourage commute travel by ways other than one person driving alone (called Transportation Demand Management or TDM), and potential need for policies and incentives to support commuters' transportation choices

PedPDX recognizes the need for better "all trips" pedestrian data in Portland. New data collection technologies and methodologies are emerging. They could help fill the gap in pedestrian activity data and also provide a broader understanding of how and where people travel across the city.

The PedPDX toolbox includes strategies and action items to pursue better pedestrian data in Portland.

*Vision Zero is the goal to eliminate traffic deaths and serious injuries on Portland streets.*

**Figure 15: Portland Traffic Deaths vs. Travel Mode** 3




## PEDESTRIAN SAFETY

Portland is a **Vision Zero City**. We are committed to ending all traffic-related deaths and serious injuries on Portland streets by 2035. More than half of deadly crashes occur on just 8% of Portland's streets. These streets make up the High Crash Network.

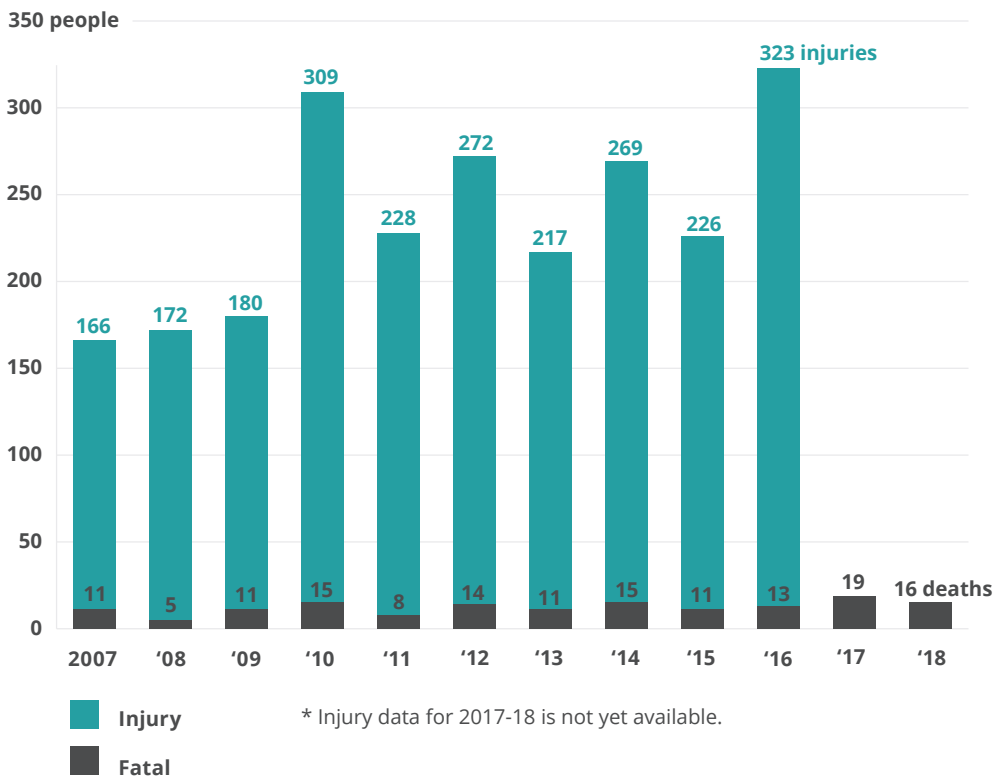
Generally, Portland experiences approximately five to nineteen pedestrian fatalities on our streets in a given year (Figure 16). Even one is too many. Pedestrians suffer a disproportionate number of traffic deaths in Portland. While pedestrian trips account for approximately 9% of all trips taken citywide[3], 31% of all traffic fatalities in Portland involve people walking (Figure 15).

Portland's Vision Zero Action Plan notes that **people walking in Portland are ten times more likely than people driving to sustain a serious or fatal injury.** Nearly 20% of pedestrian crashes in Portland result

3 Source: 2015 City of Portland Community Survey https://www.portlandoregon.gov/auditservices/article/551383; 2004-2013 ODOT Crash Data

Note: The American Community Survey (ACS) only asks about commute trips. In contract, the City of Portland Community Survey asks about all trips (a separate question also asks about commute trips).

Figure 16: Traffic Deaths and Injuries to People Walking



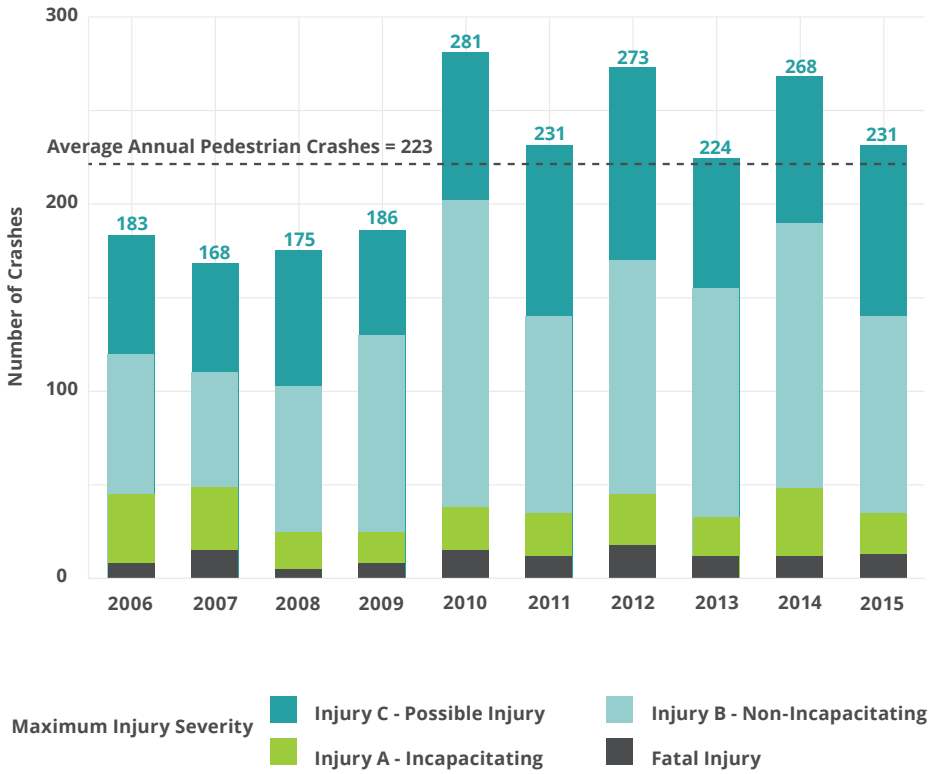

*Source: The City of Portland provided the crash data for this analysis, which it received from the Oregon Department of Transportation (ODOT) Crash Analysis and Reporting Unit.*

in a fatality or serious injury (almost one in five). Portlanders who have to walk (including those who rely on transit) are most exposed to these systemic safety issues.

PedPDX seeks to better understand the roadway and behavioral characteristics potentially correlated with pedestrian crashes in Portland. Understanding these relationships could help address these factors to prevent pedestrian crashes.

As part of this work, PedPDX analyzed all reported pedestrian crashes in Portland since 2005 to identify potential patterns. According to that analysis, there are a variety of factors that may negatively influence pedestrian safety on any given street in Portland. Looking at seasons, time of day, presence of street lighting, crash locations, and crash types gives a picture of what contributes to killed or serious injury (KSI) pedestrian crashes. Appendix F: "Pedestrian Safety Existing Conditions Memo" provides more information about the study and methodology. The following sections provide key takeaways from the analysis that directly inform the PedPDX prioritization and toolbox.

Figure 17: Total Pedestrian Crashes vs Severity




*Source: The City of Portland provided the crash data for this analysis, which it received from the Oregon Department of Transportation (ODOT) Crash Analysis and Reporting Unit.*

### *General Trends*

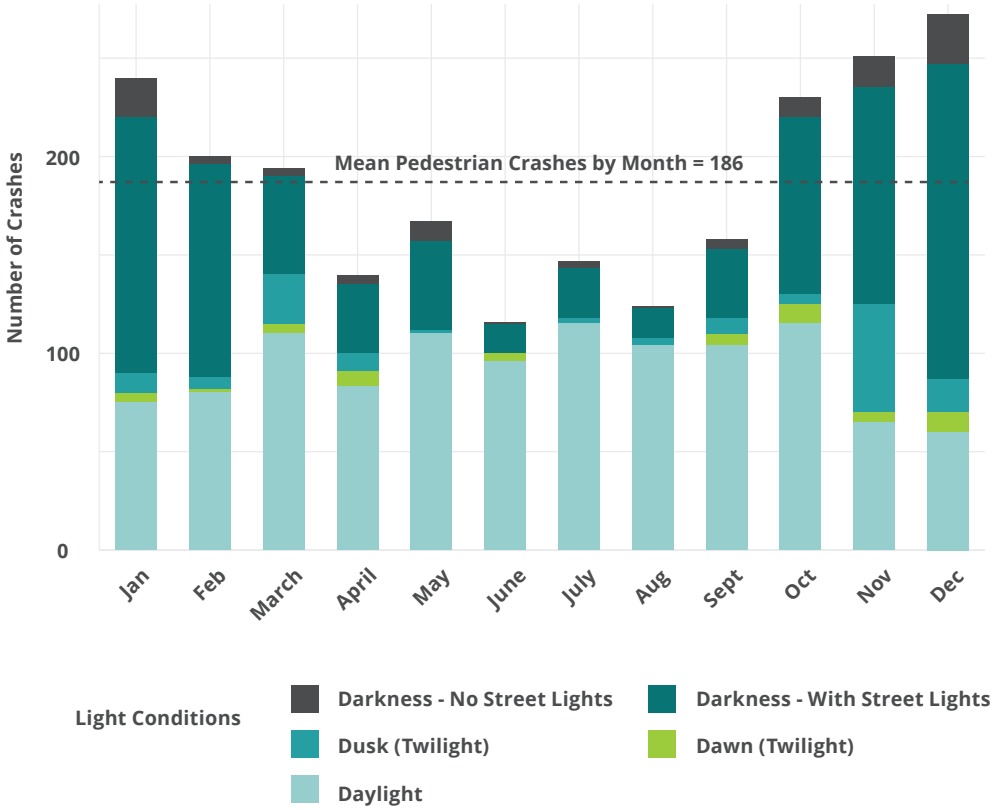
Pedestrian crashes are on the rise in Portland. Injury crashes increased by 25% between 2006 and 2015 (Figure 17). Even considering Portland's 17% population growth over this time period, the number of pedestrian crashes per 100,000 residents (a common way of comparing safety across cities) has been trending up. The need to address pedestrian safety on Portland roadways is urgent.

While the roadway and behavioral trends reported below are correlated with crashes, we know that the number of traffic crashes is largely a function of the number of people driving. A large part of improving pedestrian safety outcomes in Portland will lie with reducing the number of people driving, and facilitating and encouraging more Portlanders to walk, bike, and take transit. However, we cannot simply wait for mode shift to occur. While drive alone mode split has dropped from 64% to 57% in Portland over the last fifteen years, the number and rate of pedestrian crashes has increased. Addressing the factors potentially correlated with fatal and serious injury pedestrian crashes can help to improve pedestrian safety in Portland.

### *Temporal Trends*

The fall and winter months see an increase in pedestrian crashes as compared to the spring and summer (Figure 18). This is despite the likelihood that there are more people walking in the warmer months. The number of crashes occurring

Figure 18: Crashes by Month and Lighting Conditions




*Source: The City of Portland provided the crash data for this analysis, which it received from the Oregon Department of Transportation (ODOT) Crash Analysis and Reporting Unit.*

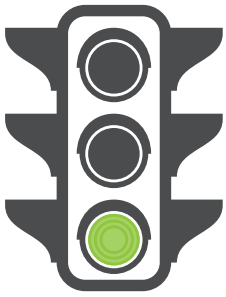
in daylight is relatively constant throughout the year, while crashes in dark conditions increase dramatically in fall and winter, when there are fewer daylight hours. Pedestrian crashes after dark commonly occur in the presence of streetlights, suggesting that current street lighting conditions are not sufficient to ensure motorists and pedestrians see each other.

More pedestrian crashes occur in the late afternoon and early evening than any other time of day, particularly between 5 pm and 7 pm. While there are fewer pedestrian crashes during the nighttime and early morning hours, crashes during these periods are more likely to result in a serious or fatal injury and are more likely to involve impairment.

To help address pedestrian safety in dark conditions, the PedPDX Toolbox in Chapter 6 seeks to address lighting conditions to improve visibility of people walking in dark conditions in Portland.

### *Location Trends*

The PedPDX safety analysis evaluated the location of all reported pedestrian crashes between 2006-2015 in Portland in an effort to identify location trends.



OVER
**40%** of pedestrian crashes
AND
**30%** of severe/fatal crashes citywide

**OCCUR AT SIGNALIZED INTERSECTIONS**

The analysis showed that two-thirds of all pedestrian collisions (71%) occurred at intersections (Table 3). The remainder (29%) occurred on roadway segments at either driveway or mid-block locations (places between traffic signals). The majority of intersection collisions occurred at locations with traffic signals and when the pedestrian had the "WALK" indication.

Mid-block collisions were the most likely to result in a severe injury or fatality at 26.1% – this is 9 percentage points more likely than for all collisions.

While intersections with traffic signals have the highest frequency of crashes, unsignalized and mid-block intersections have a higher probability of serious injury or fatality.

This analysis shows a need for PedPDX recommendations to address:

- Crossing spacing: to address mid-block crashes where crossing treatments are non-existent or inadequate.
- Signal phasing: to address pedestrian crashes at intersections- separating vehicle turning movements from pedestrian crossing movements.

The PedPDX Toolbox provides strategies and actions for increasing the number of marked crossing

**Table 3: Pedestrian Crash Location Type Summary (2006-2015)**

| LOCATION TYPE | NUMBER OF CRASHES | PERCENT OF CRASHES | NUMBER OF KSI* CRASHES | PERCENT OF KSI* CRASHES | PROBABILITY OF A KSI* CRASH |
|---|---|---|---|---|---|
| Signalized Intersections | 971 | 43.5% | 97 | 33.4% | 13.1% |
| Unsignalized Intersections | 614 | 27.5% | 127 | 25.5% | 15.8% |
| Mid-block | 567 | 25.4% | 148 | 38.9% | 26.1% |
| Driveway | 78 | 3.5% | 8 | 2.1% | 10.3% |
| **Total** | **2,230** | **100%** | **380** | **100%** | **17.0%** |

** KSI = Killed or Serious Injury Crash*

*Source: The City of Portland provided the crash data for this analysis, which it received from the Oregon Department of Transportation (ODOT) Crash Analysis and Reporting Unit.*

**Table 4: Non-Intersection Pedestrian Crash Summary by Roadway Size (2006-2015)**

| ROADWAY SIZE | CENTERLINE MILES | | CRASHES | | CRASH OCCURRENCE RISK FACTOR* | KSI* CRASHES | | PROBABILITY OF KSI* CRASH | KSI CRASH RISK FACTOR* |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | | # | % | | |
| 2-Lanes (Local) | 1,877 | 71.6% | 93 | 14.4% | 0.20 | 14 | 9.0% | 15.1% | 0.62 |
| 2 Lanes (Non-local) | 386 | 14.7% | 192 | 28.8% | 2.02 | 45 | 28.8% | 23.4% | 0.97 |
| 3-4 Lanes | 141 | 5.4% | 150 | 23.3% | 4.32 | 28 | 17.9% | 18.7% | 0.77 |
| 5 or More Lanes | 73 | 2.8% | 189 | 29.3% | 10.54 | 60 | 38.5% | 31.7% | 1.31 |
| Freeway | 144 | 5.5% | 21 | 3.3% | 0.54 | 9 | 5.8% | 42.9% | 1.77 |
| **Total** | **2,621** | **100%** | **645** | **100%** | **1.00** | **156** | **100%** | **24.2%** | **1.00** |

** KSI = Killed or Serious Injury Crash; Crash Occurrence Risk Factor = % Crashes / % Centerline Miles; KSI Crash Risk Factor = % KSI Crashes / % All Crashes*

*Source: The City of Portland provided the crash data for this analysis, which it received from the Oregon Department of Transportation (ODOT) Crash Analysis and Reporting Unit.*

opportunities, making intersection operations safer for pedestrians, and increasing visibility of pedestrians at intersections.

The PedPDX Toolbox also includes strategies and actions to expand educational efforts to help improve drivers' yielding rates at these locations. These programs could help remind drivers about legal crossing and yielding laws, and help empower people walking by educating Portlanders about how to keep themselves safe while walking.

### *Roadway Size*

Pedestrian crashes are more likely to occur on larger roadways. They are over four times more likely to occur on three- and four-lane roadways, and over 10 times more likely on roads with five or more lanes.

The differences in representation of pedestrian crashes on larger roads is illustrated in Table 4. Roadways with five lanes or more are disproportionately represented in the crash data and pose the highest risk for serious injury or fatality crashes.

Prioritizing improvements on some of Portland's widest roadways could help reduce crash risk factors at these locations. These findings are directly incorporated into the PedPDX prioritization.

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# 4.THE PEDESTRIAN PRIORITY NETWORK

The Pedestrian Priority Network is the network of Portland streets and paths that provide important pedestrian connections to transit and other key destinations. PedPDX uses this network as the basis for identifying where pedestrian infrastructure needs exist.

# The Pedestrian Priority Network

The Pedestrian Priority Network and the prioritization of needs within it are directly shaped by the community input received in the PedPDX Citywide Walking Priorities Survey. Figure 19 summarizes the citywide survey responses to the question "What kinds of places are most important to improve for walking in Portland?" Portlanders' most reported demand-based priority locations for walking improvements are:

- Streets connecting people to transit/bus stops
- Along and across busy streets
- Streets connecting families and children to schools
- Streets connecting people to neighborhood commercial districts

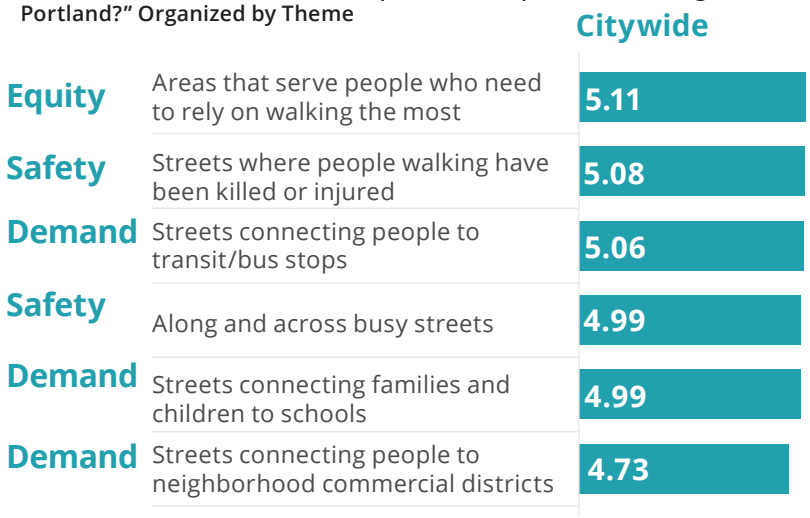
The Pedestrian Priority Network directly reflects these demand-based priorities. Public priorities relating to safety ("Streets where people walking have been killed or injured") and equity needs ("Areas that serve people who need to rely on walking the most") are overlaid on the Pedestrian Priority Network as part of the PedPDX prioritization framework described in Chapter 5.

Each of the streets within the Pedestrian Priority Network is given a **pedestrian classification** that reflects the level of demand for pedestrian movement on that street. This demand-based approach ensures that improvements are prioritized on streets that provide access to the walking destinations that Portlanders say are most

*A **classification** is a formal designation of a street based on its roadway characteristics and context and is required by the Transportation Planning Rule as a policy for current and future use. The classification determines how that street is handled in a range of processes (such as roadway design, traffic operations, funding eligibility, and similar).*

*The City of Portland has several different street classifications for the network including transit classifications, bicycle classifications, and, as established through PedPDX, pedestrian classifications.*

**Figure 19: Top Responses to PedPDX Walking Priorities Survey Question "What Kinds of Places are Most Important to Improve for Walking in Portland?" Organized by Theme**




*Places to Improve - Citywide average point values (from 1-6). The figure shows that the top priorities identified by respondents citywide are "Areas that serve people who rely on walking the most," "Streets where people walking have been killed or injured," and "Streets connecting people to transit/bus stops."*

**Pedestrian Districts include:**
- "Centers," as defined by Portland's 2035 Comprehensive Plan, where high levels of pedestrian activity exist or are expected in the future
- Transit Station Areas (1/4 Mile walksheds to Major Transit Stations)

**Major City Walkways include:**
- "Corridors" and "Main Streets," as defined by Portland's 2035 Comprehensive Plan, where pedestrian destinations such as housing, goods, and community services exist or are expected in the future
- Frequent transit streets
- Core downtown streets
- High-demand regional trails

**City Walkways include:**
- Non-frequent transit streets
- All other arterials and collectors
- Moderate-demand trails

**Neighborhood Walkways include:**
- Designated Safe Routes to School (local streets)
- Neighborhood Greenways (existing and funded)
- Neighborhood trails

important to them. It also helps to implement the City's 2035 Comprehensive Plan Vision to create walkable Centers, Main Streets, and Corridors.

The street classifications that together make up the Pedestrian Priority Network from highest demand to lowest demand are:

- **Major City Walkways:** These walkways have a high number of transit and land use destinations and are streets where we would expect a high number of pedestrians. Major City Walkways are generally comprised of Civic and Neighborhood Corridors and Main Streets (as defined in the 2035 Comprehensive Plan), streets along the planned and existing Frequent Transit Network, core downtown streets, and off-street trails in high demand corridors.
- **City Walkways:** These walkways serve moderate pedestrian demand and are generally comprised of major traffic streets, collector streets, and streets with transit service that

Figure 20: Pedestrian Demand Corresponds to Pedestrian Classification




are not designated as Major City Walkways, as well as off-street trails in moderate demand corridors.

- **Neighborhood Walkways:** These walkways serve neighborhood-level demand (typically on local residential streets) and are generally comprised of designated Safe Routes to School travel routes, neighborhood greenways, and priority walking routes on local traffic streets identified in area plans. Neighborhood walkways also include designated paths within the public right-of-way and neighborhood trails.

In addition to the street classifications, a Pedestrian District overlay indicates areas of additional pedestrian demand. Pedestrian Districts are comprised of designated Centers, as defined by Portland's 2035 Comprehensive Plan, where high levels of pedestrian activity exist or are expected in the future (such as the Center City, the Gateway District, Hollywood, and other districts with a concentration of pedestrian destinations and activity). They also include Transit Station Areas, comprised of streets within a quarter-mile walk of major transit stations that serve neighborhoods or employment areas.

PedPDX worked with each of the City's seven District Coalitions to review and refine the Pedestrian Priority Network and associated classifications presented in the maps on the following pages. The City's Transportation System Plan will be updated to reflect these new pedestrian classifications.

## Adopting PedPDX Pedestrian Classifications

After the adoption of PedPDX, the Transportation System Plan (TSP) will be updated to reflect the PedPDX pedestrian classifications. The pedestrian classification descriptions within the TSP will include the following langauge:

*Pedestrian Districts*

*Pedestrian Districts are intended to give priority to pedestrian access in areas where high levels of pedestrian activity centers, neighborhood centers, exist or are planned, including the Central City, Gateway regional center, town and transit station areas.*

- *Land Use. Zoning should allow a transit-supportive density of residential and commercial uses that support lively and intensive pedestrian activity. Auto-oriented development should be discouraged in Pedestrian Districts. Institutional campuses that generate high levels of pedestrian activity may be included in Pedestrian Districts. Exceptions to the density and zoning criteria may be appropriate in some designated historic districts with a strong pedestrian orientation.*
- *Streets within a District. Make walking the mode of choice for all trips within a Pedestrian District. All streets within a Pedestrian District are important in serving pedestrian trips and should have sidewalks on both sides or meet alternative design criteria.*
- *Characteristics. The size and configuration of a Pedestrian District should be consistent with the scale of walking trips. A Pedestrian District includes both sides of the streets along its boundaries, except where the abutting street is classified as a Regional Trafficway. In these instances, the land up to the Regional Trafficway is considered part of the Pedestrian District, but the Regional Trafficway itself is not.*
- *Access to Transit. A Pedestrian District should have, or be planned to have, frequent transit service and convenient access to transit stops.*
- *Improvements. Pedestrian Districts should be designed to provide a safe and comfortable walking environment for high volumes of pedestrians, with a highly-connected and built-out pedestrian network with relatively low levels of delay at signals and other crossings. Major City Walkways and City Walkways within Pedestrian Districts should have closely-spaced marked crossings.*

*Major City Walkways*

*Major City Walkways are intended to provide safe, convenient, and attractive pedestrian access along major streets and trails with a high level of pedestrian activity supported by current and planned land uses. These include Civic and Neighborhood Corridors, Civic and Neighborhood Main Streets, frequent transit lines, high-demand off-street trails, and streets in areas with a high density of pedestrian-oriented uses.*

- *Land Use. Major City Walkways generally serve areas with the highest density of mixed-use zoning, major commercial areas, and major destinations. Where auto-oriented land uses are allowed on Major City Walkways, site development standards should address the needs of pedestrians for access.*
- *Improvements. Consider special design treatments for Major City Walkways that are also designated as Civic or Neighborhood Main Streets. Major City Walkways should have regularly-spaced marked crossings (with closer spacing in Pedestrian Districts), wide sidewalks on both sides, and a pedestrian realm that can accommodate high volumes of pedestrian activity.*

*City Walkways*

*City Walkways are intended to provide safe, convenient, and attractive pedestrian access along major streets and trails with a moderate level of pedestrian activity supported by current and planned land uses. These include Community and Regional Corridors, non-frequent transit lines, and moderate-demand off-street trails.*

- *Land Use. City Walkways should provide access along major streets to neighborhood commercial areas and other community destinations. Where auto-oriented land uses are allowed on City Walkways, site development standards should address the needs of pedestrians for access.*
- *Improvements. City Walkways should have regularly-spaced marked crossings (with closer spacing in Pedestrian Districts), sidewalks on both sides, and a pedestrian realm that can accommodate moderate levels of pedestrian activity.*

*Neighborhood Walkways*

*Neighborhood Walkways are intended to provide safe and convenient connections from residential neighborhoods to Major City Walkways, City Walkways, and nearby destinations such as schools, parks, transit stops, and commercial areas, primarily using routes that have low levels of motor vehicle traffic or do not allow motor vehicle traffic.*

- *Land Use. Neighborhood Walkways are usually located in residential or natural areas on low-volume Local Service Traffic Streets or connections that do not allow motor vehicles.*
- *Improvements. Neighborhood Walkways should be designed to provide a safe and comfortable walking environment, but may take many forms depending on the context. Design types may include sidewalks, shoulders, shared streets, pedestrian-only paths, multi-use paths, soft-surface trails, and ramps/stairs.*

*Local Service Walkways*

*Local Service Walkways are intended to serve local circulation needs for pedestrians and provide safe and convenient access to local destinations.*

- *Land Use. Local Service Walkways are usually located in residential, commercial, or industrial areas on Local Service Traffic Streets that are not classified as Neighborhood Walkways.*
- *Classification. All streets that allow pedestrian access and are not classified as Major City Walkways, City Walkways, or Neighborhood Walkways, are classified as Local Service Walkways.*
- *Improvements. Local Service Walkways should be designed to provide a safe and comfortable walking environment that provides access to adjacent land uses.*

Figure 21: PedPDX Pedestrian Priority Network

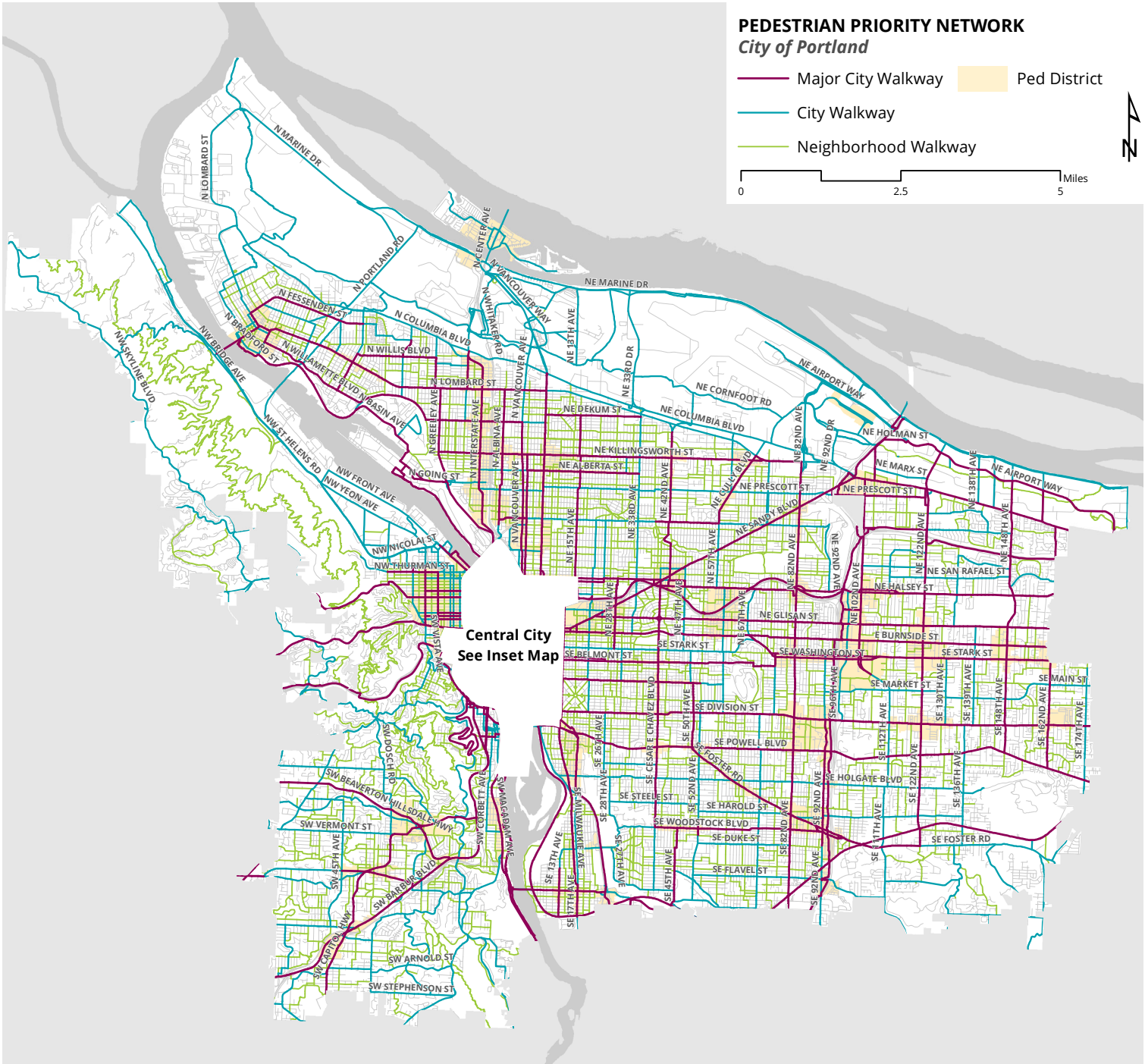


Figure 22: Central City Inset Map - PedPDX Pedestrian Priority Network

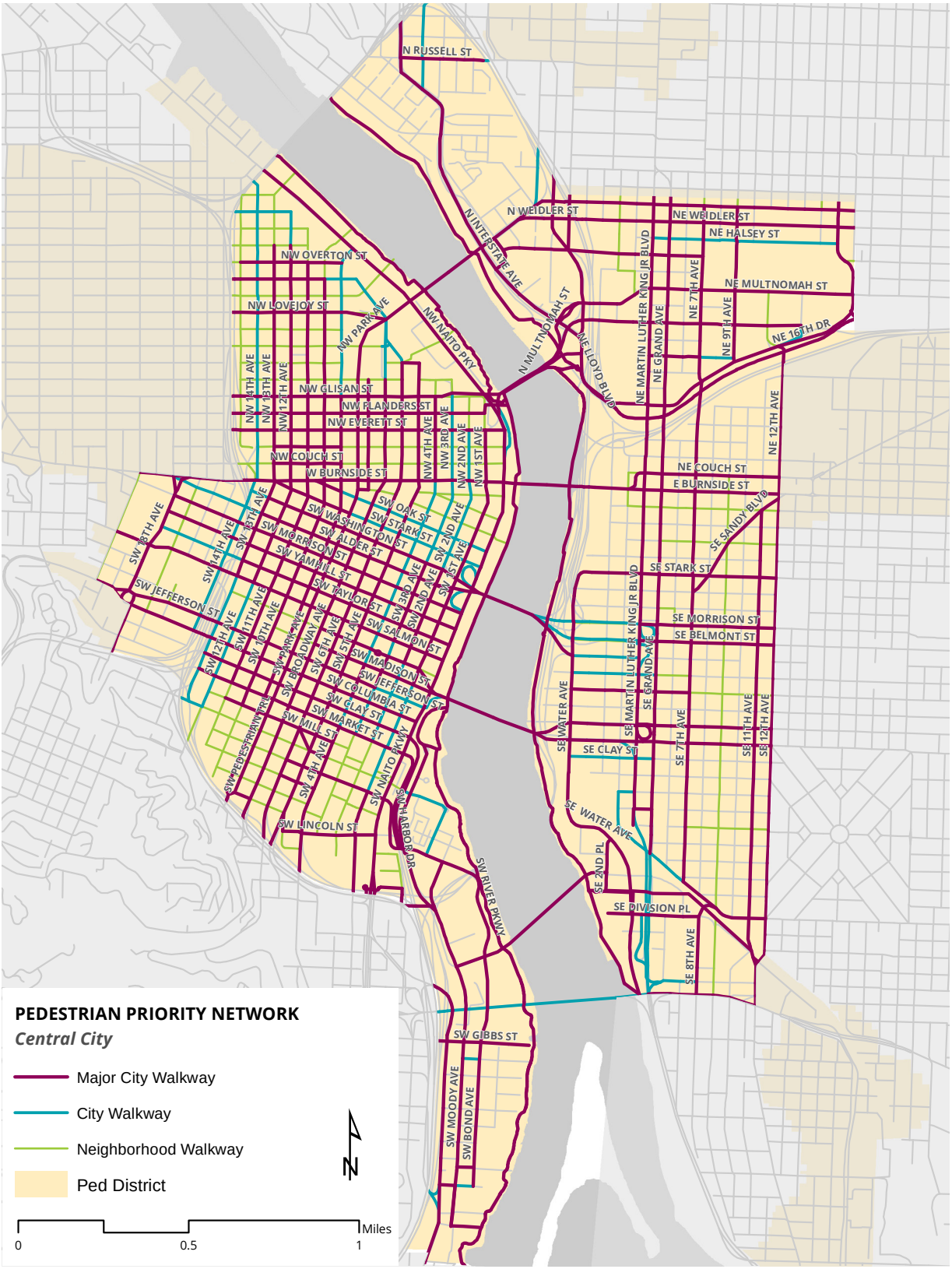


Figure 23: PedPDX Pedestrian Priority Network - Northwest Portland

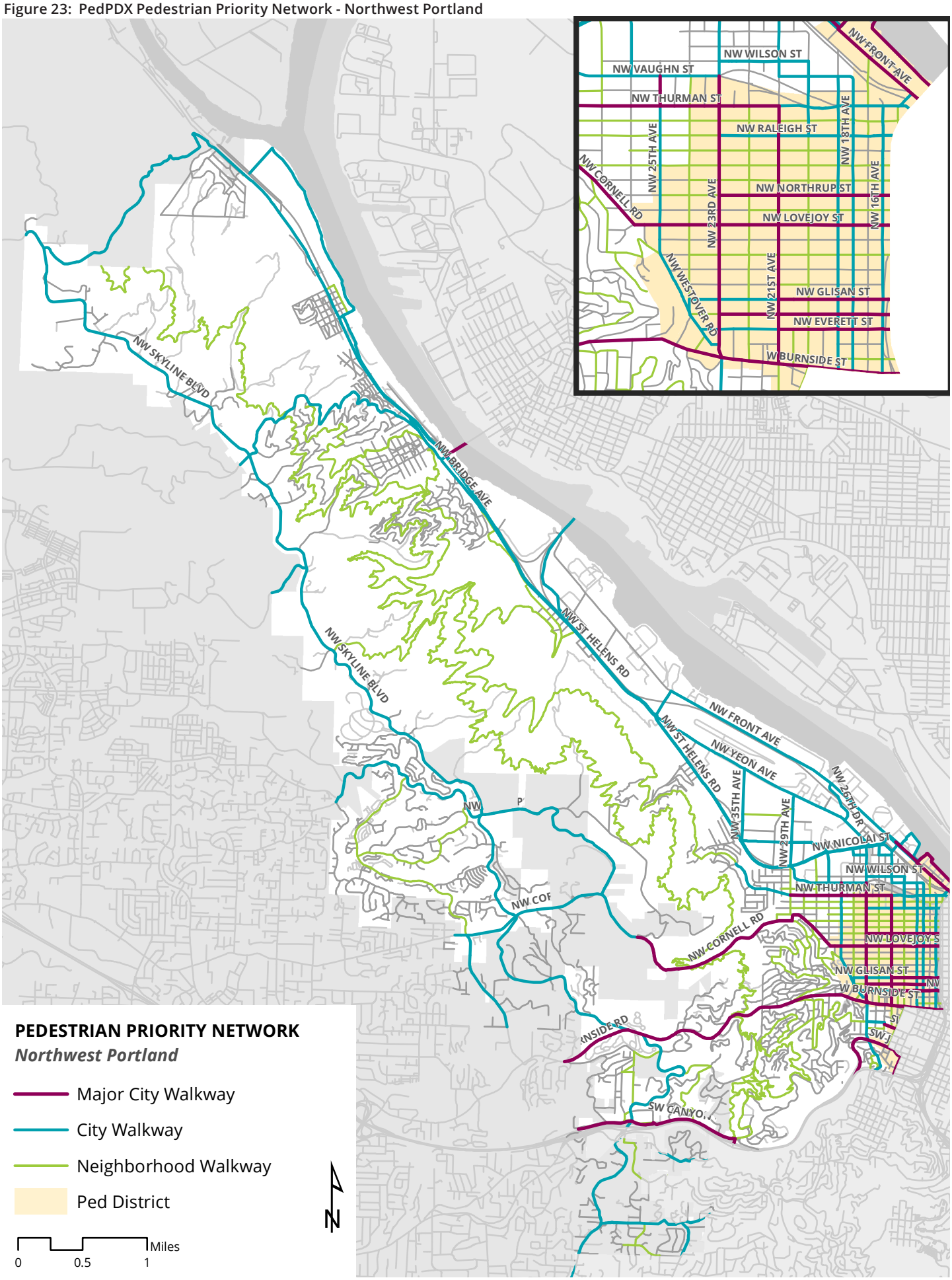


Figure 24: PedPDX Pedestrian Priority Network - North Portland

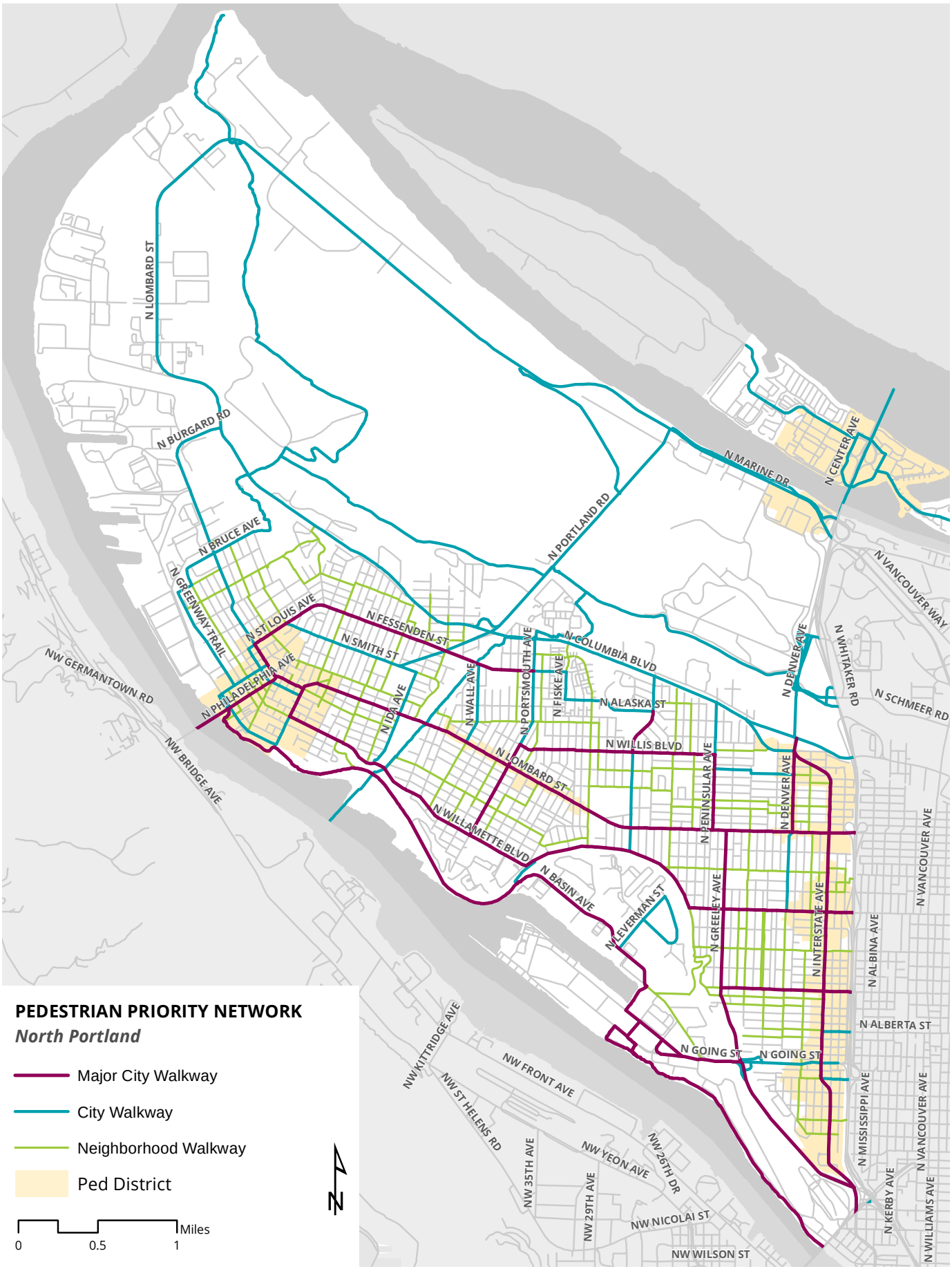


Figure 25: PedPDX Pedestrian Priority Network - Northeast Portland

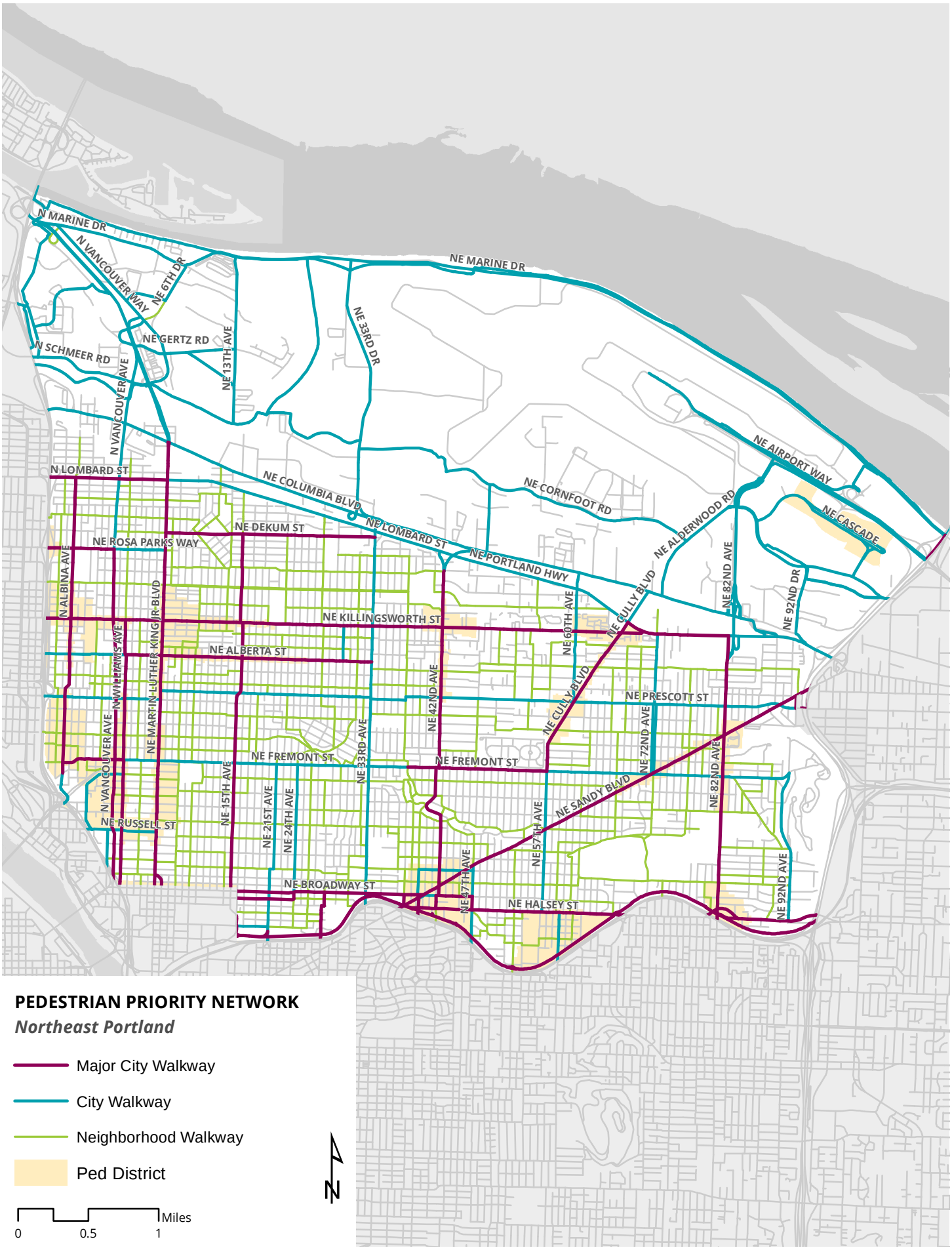
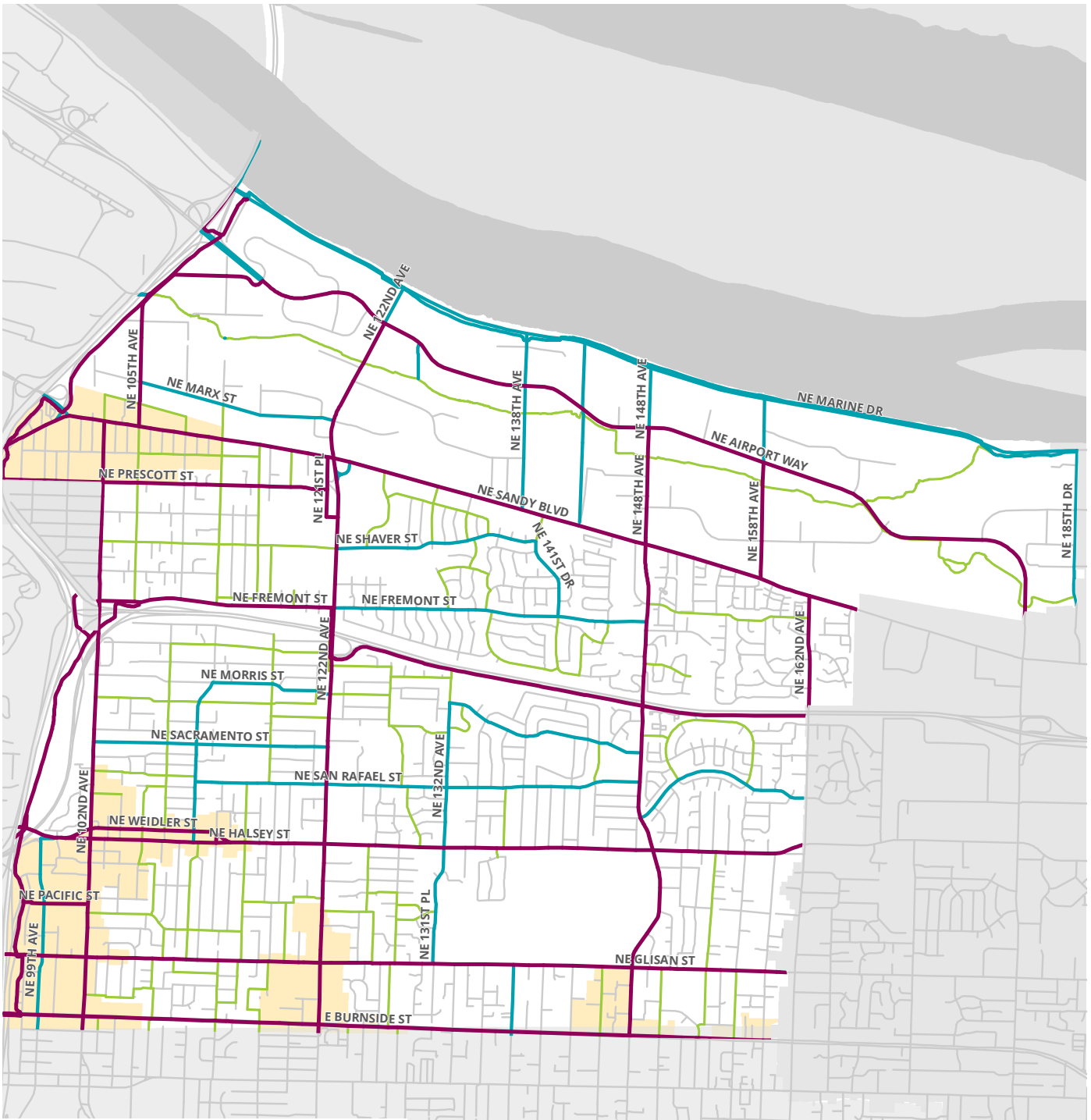


Figure 26: PedPDX Pedestrian Priority Network - Outer Northeast Portland




**PEDESTRIAN PRIORITY NETWORK**

***Outer Northeast Portland***

- Major City Walkway
- City Walkway
- Neighborhood Walkway
- Ped District

0 0.5 1 Miles

N

Figure 27: PedPDX Pedestrian Priority Network - Southwest Portland

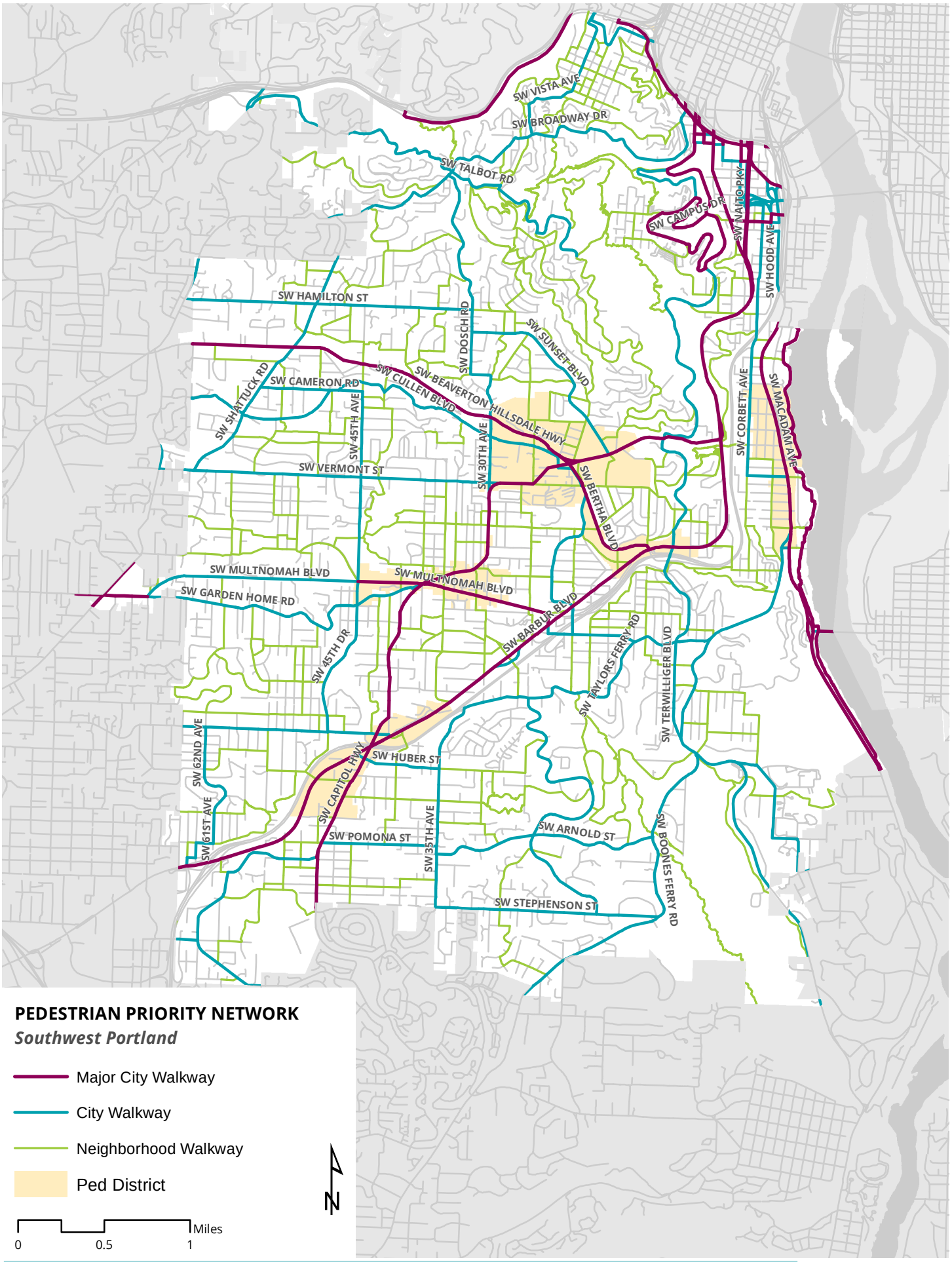
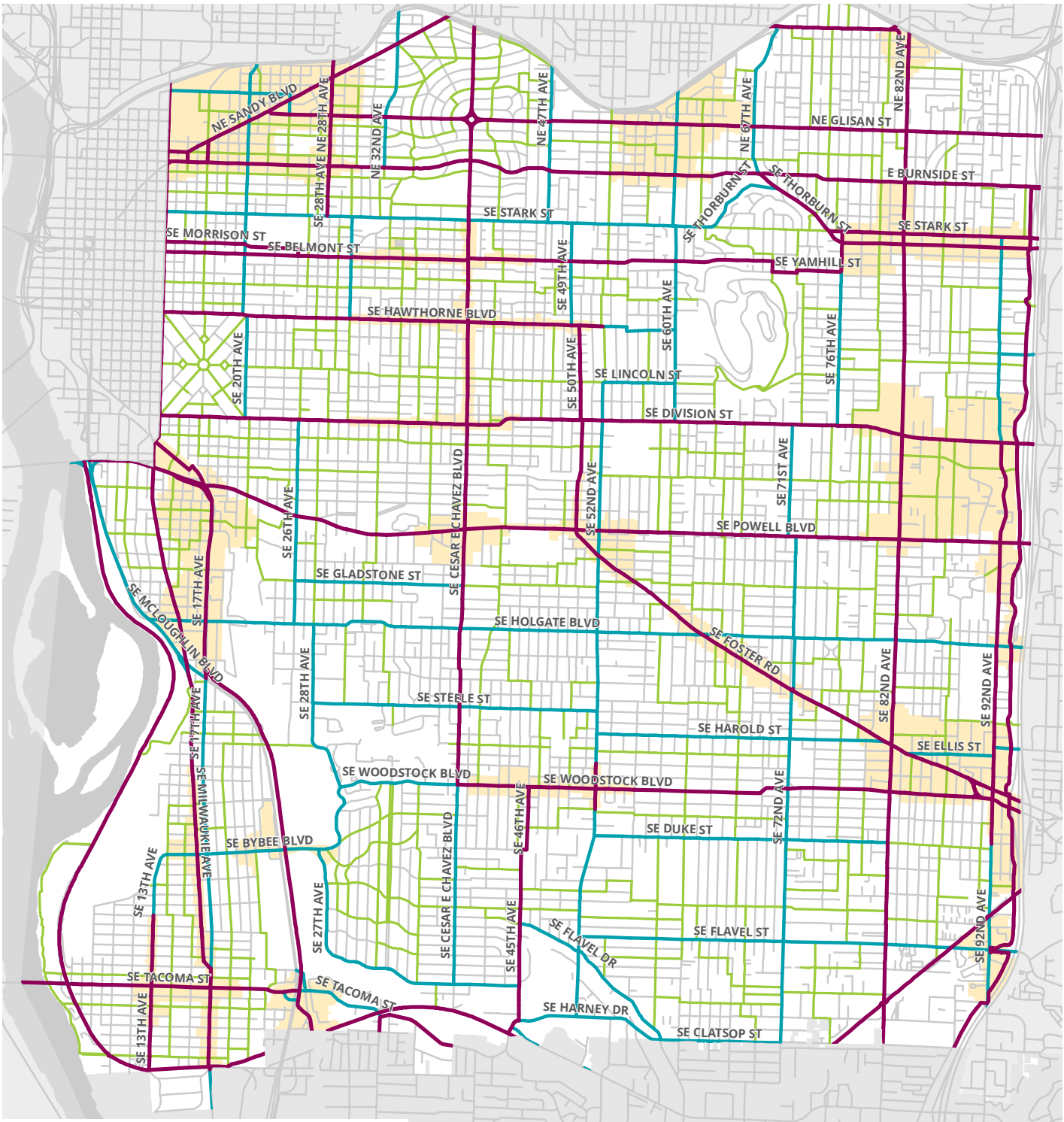


Figure 28: PedPDX Pedestrian Priority Network - Southeast Portland



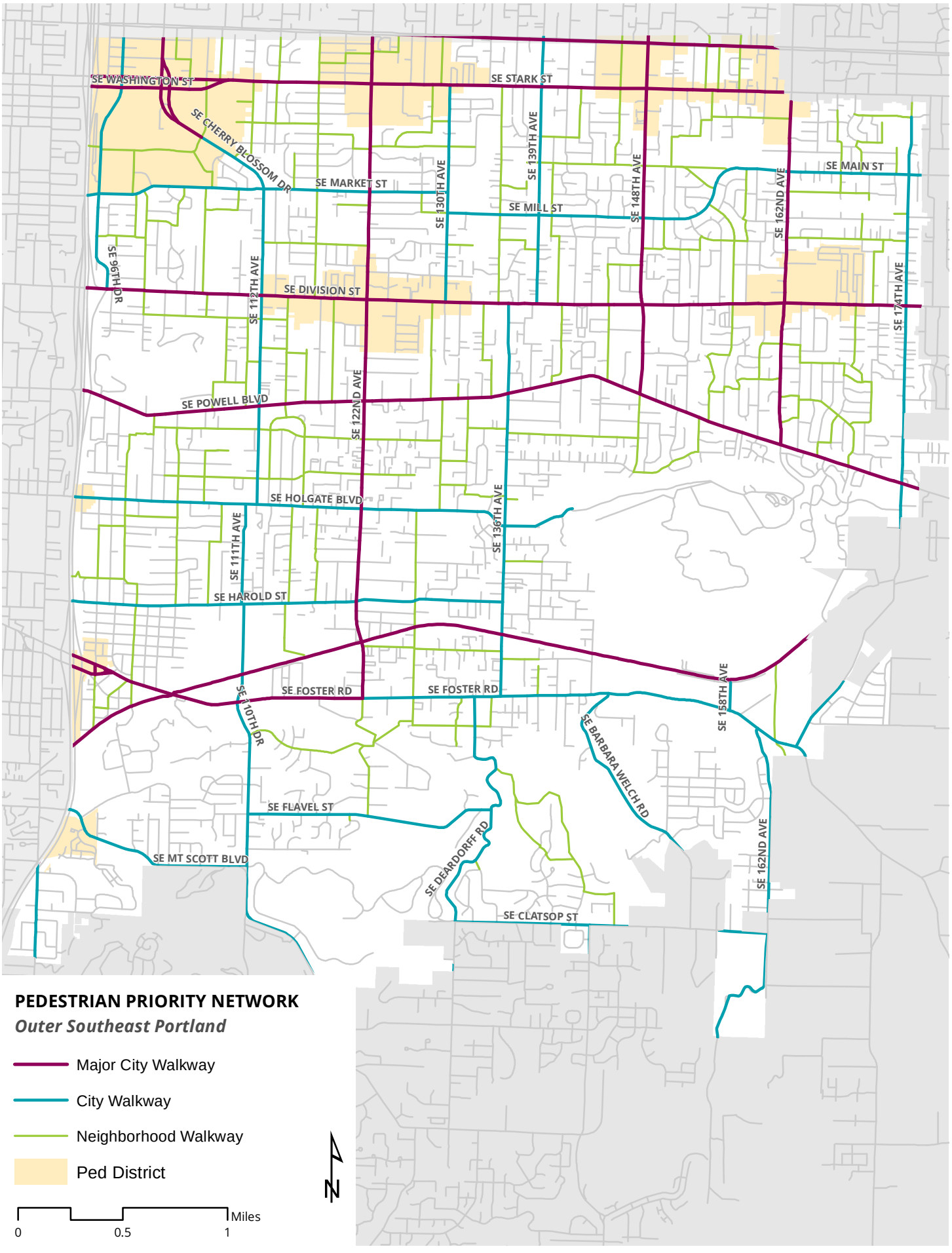

**PEDESTRIAN PRIORITY NETWORK**

***Southeast Portland***

- Major City Walkway
- City Walkway
- Neighborhood Walkway
- Ped District

0 0.5 1 Miles

Figure 29: PedPDX Pedestrian Priority Network - Outer Southeast Portland



# Identifying Needs within the Pedestrian Priority Network

The PedPDX needs assessment identifies where there are sidewalk and crossing needs across and along each of the streets within the Pedestrian Priority Network. These needs are subsequently prioritized as part of the PedPDX prioritization framework described in the next chapter.

See Appendix H: "Network Completeness and Adequacy Criteria Memo" for more detailed information on the methodology used for the needs assessment.

## Crossing Needs

### CROSSING GAPS

PedPDX establishes new design guidelines for the desired frequency of marked pedestrian crossings in Portland moving forward. These guidelines are intended to identify crossing gaps in Portland's pedestrian network at a planning level, and vary according to the street's pedestrian classification. Pedestrian streets and districts with higher expected pedestrian activity and destinations should provide more frequent marked crossing opportunities, while streets with fewer destinations and expected pedestrian volumes may provide less frequent marked crossings (see Action 1.3 in Chapter 6 - "The PedPDX Implementation Toolbox" for additional information about the crossing spacing guidelines). Figure 30 describes the PedPDX crossing spacing guidelines according to pedestrian classification.

Crossing spacing guidelines are intended to identify gaps where further engineering analysis is

*There need to be more crosswalks along the road that are very visible and actually get the cars to stop.*

***David***
PedPDX Walking Stories

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 judgment.

For the purposes of the needs assessment, a roadway crossing gap is defined as any street segment where marked pedestrian crossings are further apart (on average) than the desired maximum. The needs assessment identifies street segments in the Pedestrian Priority Network that do not meet the crossing spacing guidelines shown in Figure 30. These gaps should be evaluated to determine whether a new marked crossing would make sense within the identified area.

**The crossing gap analysis found that approximately 3,520 new marked crossings may be needed to meet the City's crossing spacing guidelines.**

79% of the total miles of City Walkways and Major City Walkways have a gap. The average gap length is roughly one-third mile; however, gaps are less prevalent in pedestrian districts than on streets outside of pedestrian districts.

The map in Figure 32 shows the location of crossing gaps in the Pedestrian Priority Network according to the PedPDX planning level analysis. These are street segments that do not currently meet the new crossing spacing guidelines. These crossing gaps are prioritized as part of the PedPDX prioritization framework described in Chapter 5.

## CROSSING DEFICIENCIES

PBOT has developed design guidance that identifies the appropriate type of crossing treatment to install based on the number of lanes, posted speed limit, and average daily traffic of a roadway Figure 31).

Figure 30: PedPDX Marked Crossing Spacing Guidelines

## Inside Pedestrian Districts:

**DESIRED SPACING OF**

**530 feet**

*between marked crossings*



### City Walkways and Major City Walkways within Pedestrian Districts

**DESIRED CROSSING FREQUENCY**

**530 ft**

Pedestrian Districts are areas where high levels of pedestrian activity exist or are planned, including the Central City, Gateway regional center, town centers, and near MAX stations.

For Major City Walkways and City Walkways within Pedestrian Districts the desired spacing between marked pedestrian crossings is 530 feet.

Demonstrating existing crossing demand will not be required to justify new marked crossings within Pedestrian Districts.

On a street with standard 200-ft blocks, the 530-ft crossing frequency results in a marked pedestrian crossing approximately every other block.

## Outside of Pedestrian Districts:

**DESIRED SPACING OF**

**800 feet**

*between marked crossings*



### City Walkways and Major City Walkways outside of Pedestrian Districts

**DESIRED CROSSING FREQUENCY**

**800 ft**

City Walkways and Major City Walkways provide walking access to important land use and transit destinations. The desired spacing between marked pedestrian crossings on these streets is 800 feet.

On a street with standard 200-ft blocks, the 800-ft crossing frequency results in a marked and/or enhanced pedestrian crossing approximately every three blocks.

To ensure that new marked crossings on streets with lower pedestrian volumes do not result in driver disregard of crosswalks, a minimum of 20 pedestrian/bicycle crossings per peak hour will be required to provide new marked/enhanced crossings on City Walkways and Major City Walkways outside of Pedestrian Districts or where there is not a transit stop.

## At Transit stops:

**WITHIN OF ALL TRANSIT STOPS**

**100 ft**



### Transit Stops

**DESIRED CROSSING WITHIN**

**100 ft**

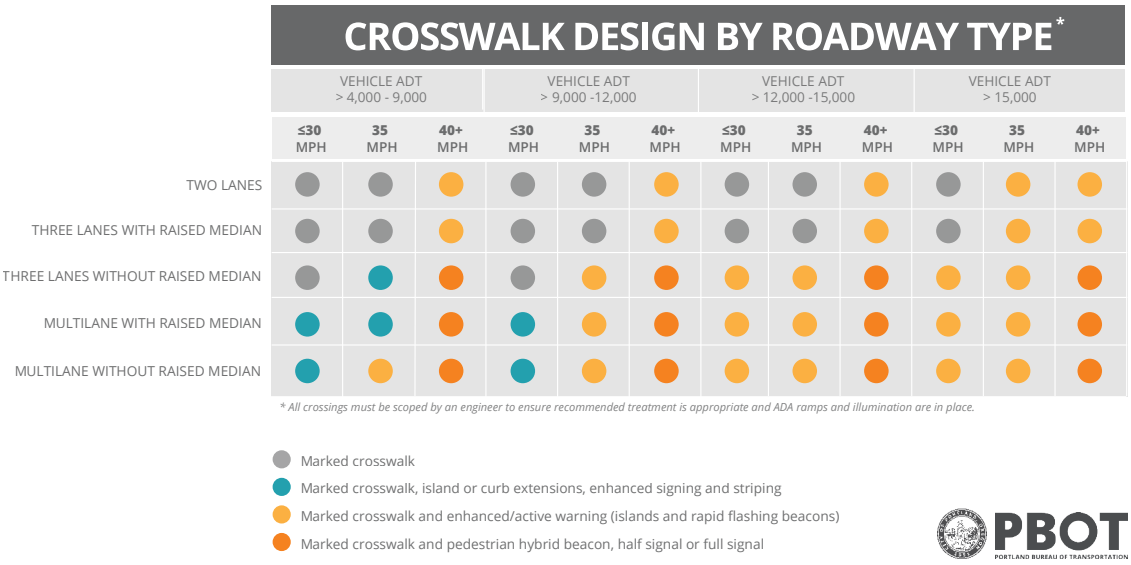
Moving forward, PBOT practice will be to provide a marked pedestrian crossing at all transit stops[1], regardless of street classification.

Demonstrating existing crossing demand will not be required to justify new marked crossings at transit stops.

Marked crossing requirements at transit stops may be implemented by providing new marked crossings at existing transit stops, and/or by strategically relocating or consolidating transit stops such that they are located at existing marked crossings. This will require PBOT capital project managers to collaborate with TriMet to consolidate, relocate, or otherwise confirm stop locations.

1 Engineering judgment may deem marked crossings unwarranted in some locations, particularly on two-lane streets with very low vehicle volumes and low transit ridership

**Figure 31: Crosswalk Design by Roadway Type**




For the purposes of the PedPDX needs analysis, a crossing deficiency is defined as an existing marked pedestrian crossing within the Pedestrian Priority Network that may not meet the City of Portland's guidance for crosswalk design. This planning level analysis requires additional engineering evaluation to verify if additional enhancements are needed at each of these individual locations.

Ninety-four percent of existing crossings that are potentially deficient are on roads that would need a new Rapid Rectangular Flashing Beacon (RRFB) or other enhancement to be considered sufficient. RRFBs are pedestrian beacons that are used at crossings without existing traffic signals. The beacons flash with a specific pattern to alert drivers to expect pedestrians crossing the street.

The crossing gaps and deficiencies maps in Figures 32 and 33 show that



*What is an "RRFB"?*
*A Rectangular Rapid Flashing Beacon (RRFB) is a rectangular shaped light bar installed below the pedestrian crosswalk signs located on each side of the road near the crosswalk. The RRFB has two high-intensity yellow LED light heads that flash in an irregular flashing pattern. The flashing lights are activated when a pedestrian pushes the crosswalk button. The lights flash for a specified period of time while the pedestrian crosses the street.*

Figure 32: Crossing Gaps and Deficiencies on the Pedestrian Priority Network

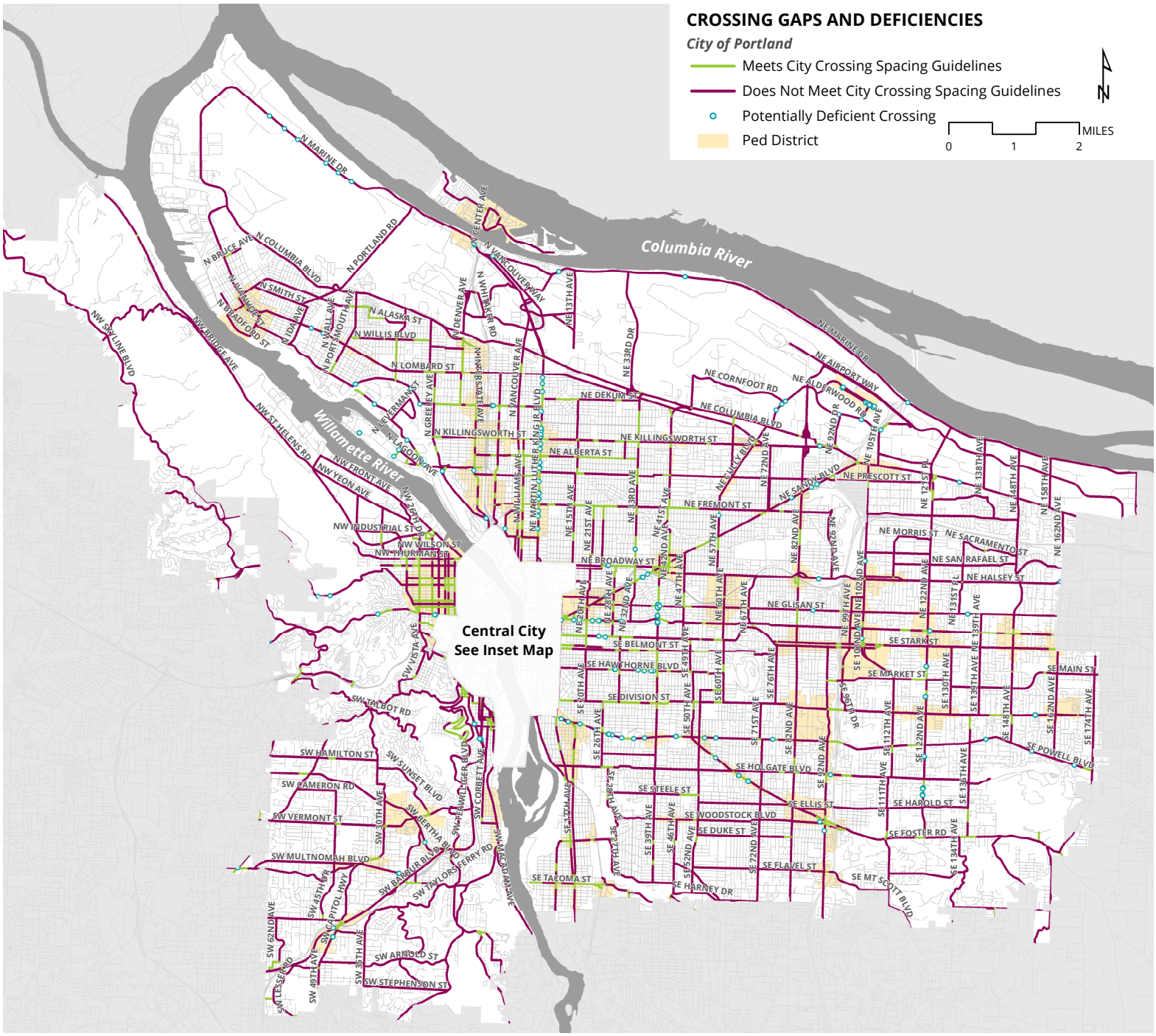
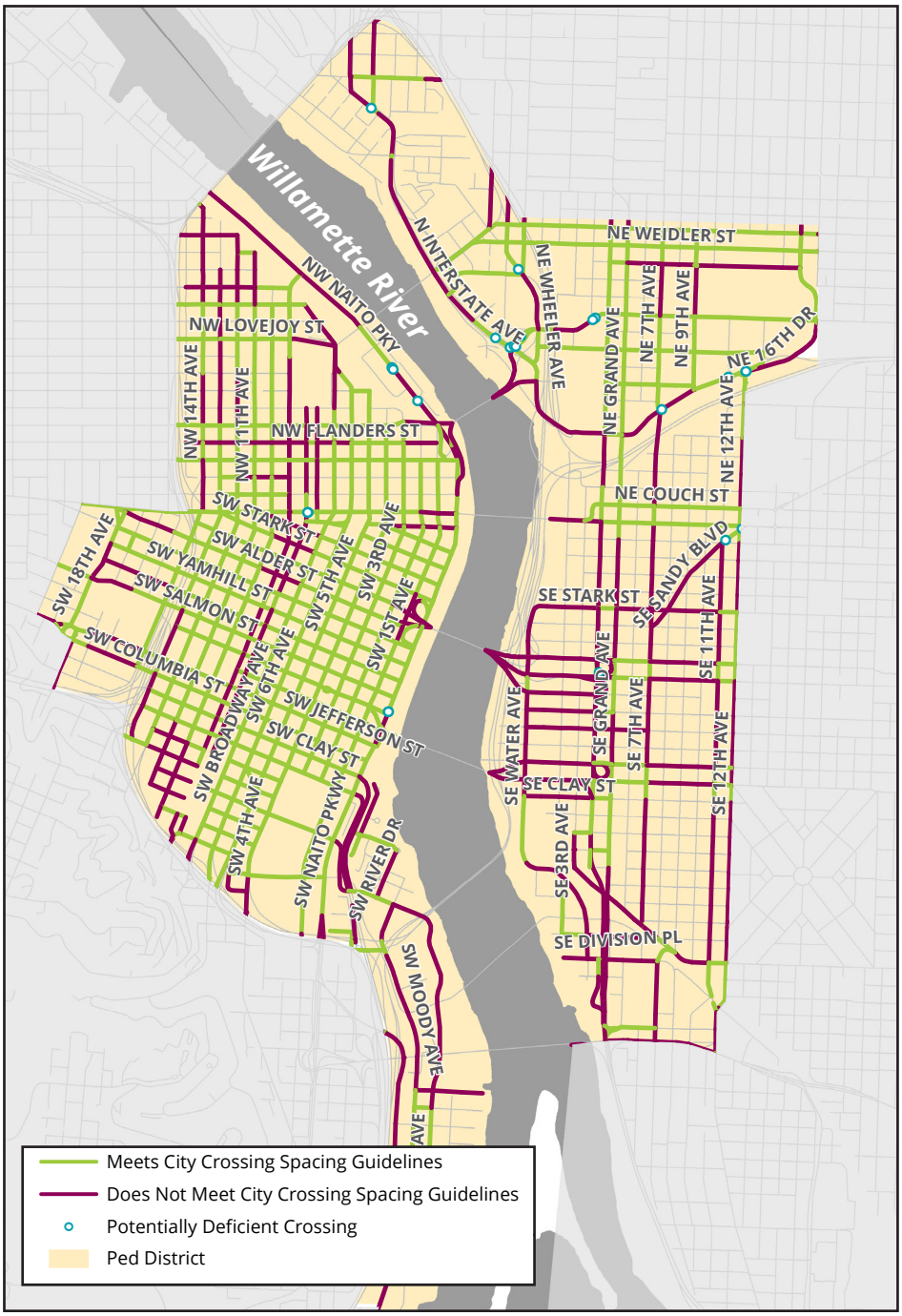


Figure 33: Central City Inset Map- Crossing Gaps and Deficiencies on the Pedestrian Priority Network



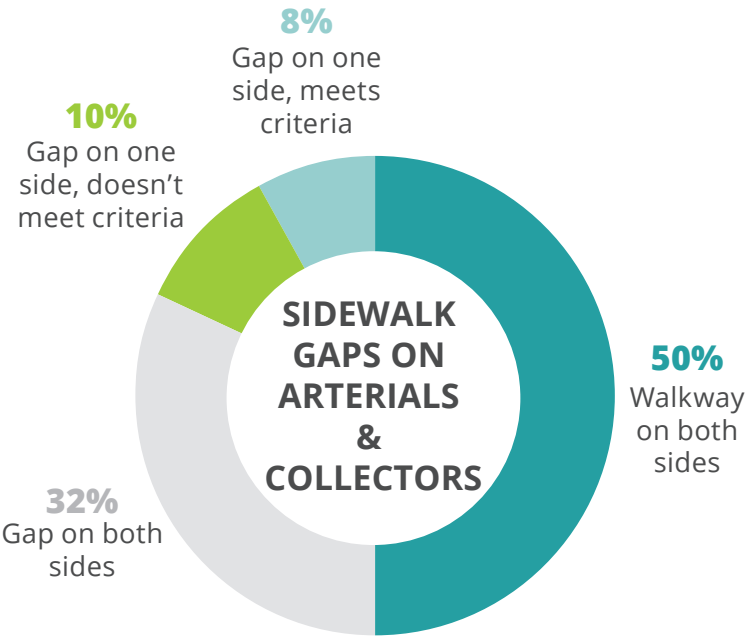



**Figure 34: Summary of Sidewalk Needs**

many of the potentially deficient crossings are on a few key streets. These are streets where there are many mid-block crossings, so there aren't as many gaps, but the crossings that exist could potentially use improvements.

## Sidewalk Needs

A gap along the roadway is a location where a sidewalk is not provided. The PedPDX needs analysis identifies two types of gaps: street segments within the Pedestrian Priority Network with a sidewalk gap on both sides of the street, and street segments with a sidewalk gap on only one side of the street. Trails gaps are considered a gap on both sides of the street.

Though a street with a sidewalk on one side only is identified as a gap, we know that in some locations, a sidewalk on both sides of the street may not be the best design solution. In recognition of new City Comprehensive Plan policies indicating that context-sensitive walkways may be more appropriate than a traditional sidewalk on both sides of the roadway in certain locations, the PedPDX Implementation Toolbox provides guidance for the application of alternative pedestrian walkway treatments.

Figures 35 and 36 illustrate the sidewalk gaps on the Pedestrian Priority Network. **The sidewalk gap analysis found that there are approximately 350 miles of missing sidewalk on busy arterial and collector streets in Portland.** This figure does not include sidewalks that may be missing on local streets as well.

Figure 34 shows that while fifty percent of all arterial and collector roadways in Portland have a sidewalk on both sides of the street, 32% of busy arterial and collector streets have a sidewalk missing on both sides of the roadway.

PedPDX identifies gaps along the roadway only, and does not identify deficiencies. While deficiencies were considered within the process, the project team did not analyze these needs for two reasons: 1) available data is inconsistent and difficult to interpret; and 2) with limited public resources, a gap will be prioritized over an existing facility. This decision does not preclude the City from investing in sidewalk or trail deficiencies on the Pedestrian Priority Network in the future.

## Prioritizing Crossing and Sidewalk Needs

The magnitude of pedestrian infrastructure needs is significant. The PedPDX needs analysis shows that there are approximately 350 miles of missing sidewalks along Portland's busy arterial and collector streets, and a need for approximately 3,520 new marked crossings across the city.

**This is likely more need than we have resources to address in the next 20 years.**

As a comparison, the existing conditions analysis in Chapter 3 found that we constructed and repaired approximately 230 miles of sidewalk and installed or re-installed approximately 2,500 marked crossings in the last 20 years.

The following chapter describes the prioritization framework we will use to systematically address these sidewalk and crossing needs across the city and ensure that we are addressing locations with the greatest needs first.

Figure 35: Central City Inset Map- Sidewalk Gaps on the Pedestrian Priority Network

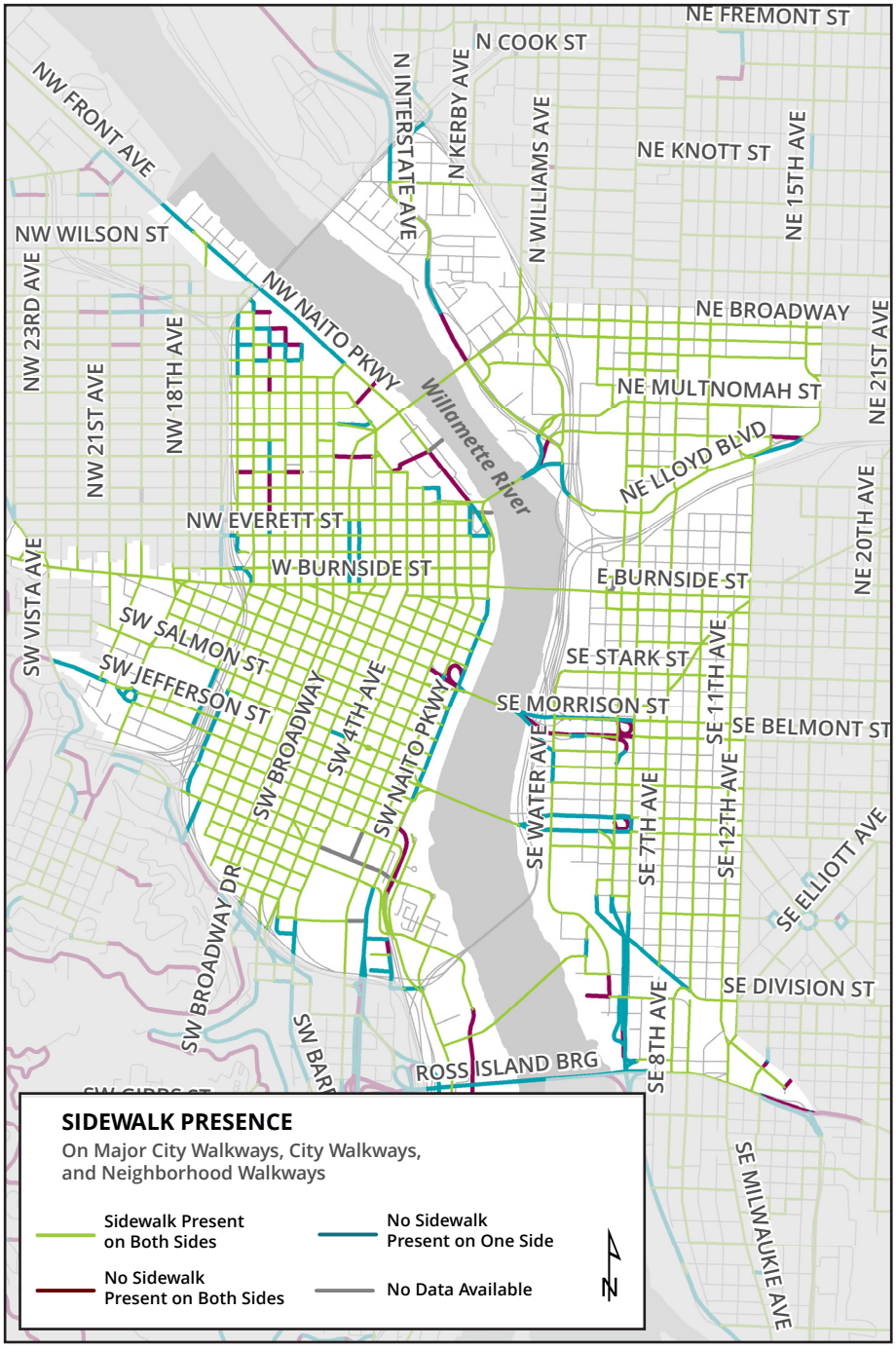
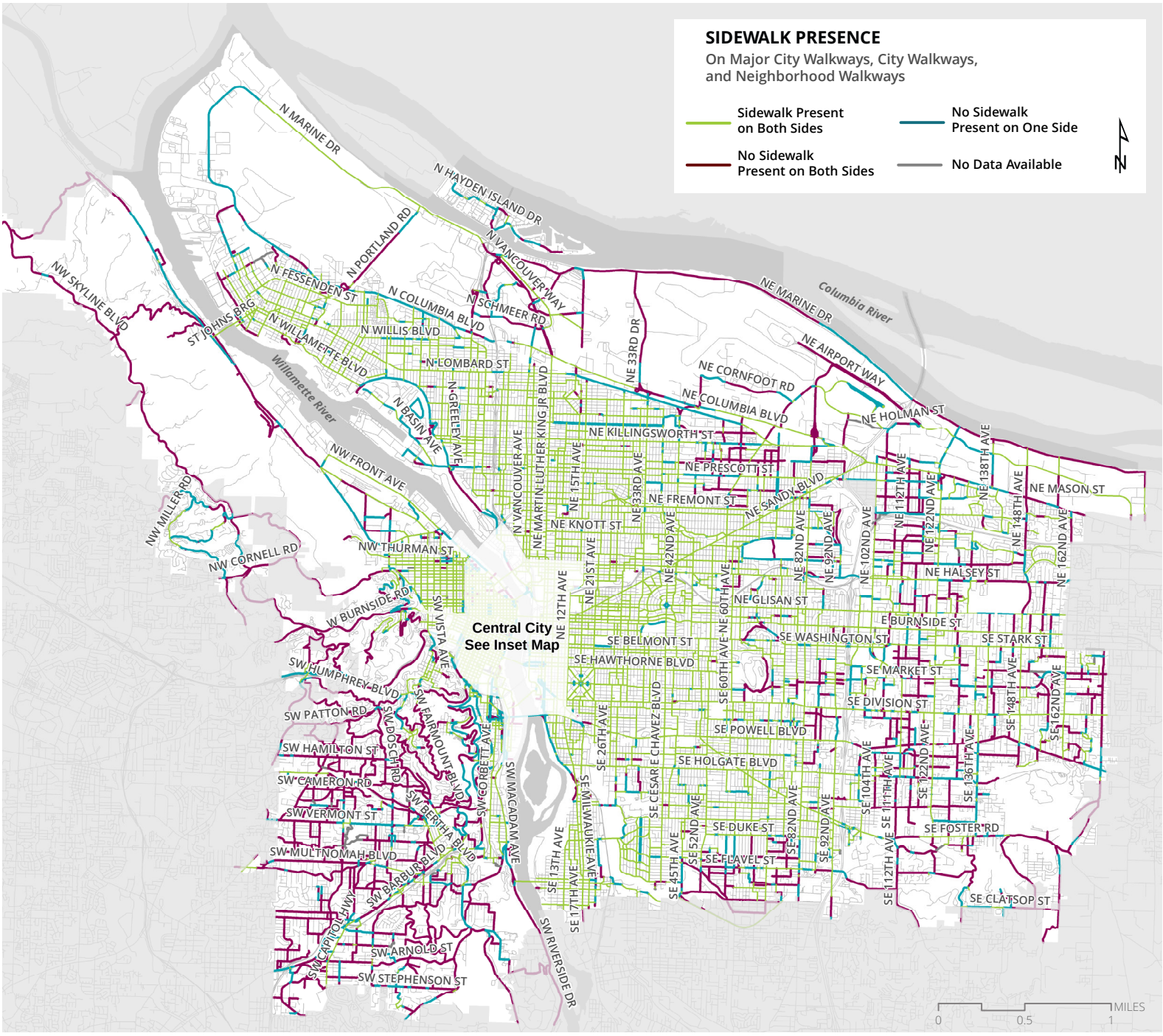


Figure 36: Sidewalk Gaps on the Pedestrian Priority Network



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# 5. PRIORITIZING PEDESTRIAN NEEDS

Why do we prioritize? Everywhere we look, we see places that need to be improved to provide a safe, inviting, and accessible pedestrian network. Despite these clearly-defined needs, the City has limited resources to address them.

# A Data-Based Approach

The need for new sidewalks and crossings is extensive. **Given the enormity of sidewalk and crossing needs across the city, we are obligated to ensure that we are directing resources to locations with the greatest need first.**

This chapter describes how PedPDX identifies priority locations for pedestrian investment within the Pedestrian Priority Network. Sidewalk and crossing needs located within priority areas will be prioritized for capital improvements.

## Benefits of a Data-based Approach

Prioritizing needs using a data-based approach helps ensure we are directing limited resources to locations with the greatest needs first. It aligns our spending priorities with adopted City goals and policies and the public's stated priorities, and creates a process that is transparent and repeatable.

Furthermore, a data-based approach to prioritizing sidewalk and crossing needs helps ensure that we provide needed improvements in an equitable manner across the city, rather than responding to individual requests which may not always be where demands of safety, equity, and pedestrian need are greatest.
A data-based approach allows us to provide a proactive, programmatic approach for addressing pedestrian infrastructure needs.

*It's going to take a lot of safety and letting the people be aware that there are walkers out there and just being very cautious of your surroundings.*

***George***
PedPDX Walking Stories

## How Will Prioritization Work?

The PedPDX prioritization framework is based directly on the public's priorities as reported in the Walking Priorities Survey. This prioritization framework will be applied to the Pedestrian Priority Network regularly to identify near term pedestrian infrastructure priorities for PBOT capital improvements. Regularly applying the prioritization framework allows for a dynamic approach. It allows the Plan to remain relevant, as we will apply fresh safety, demand, and equity data as it becomes available.

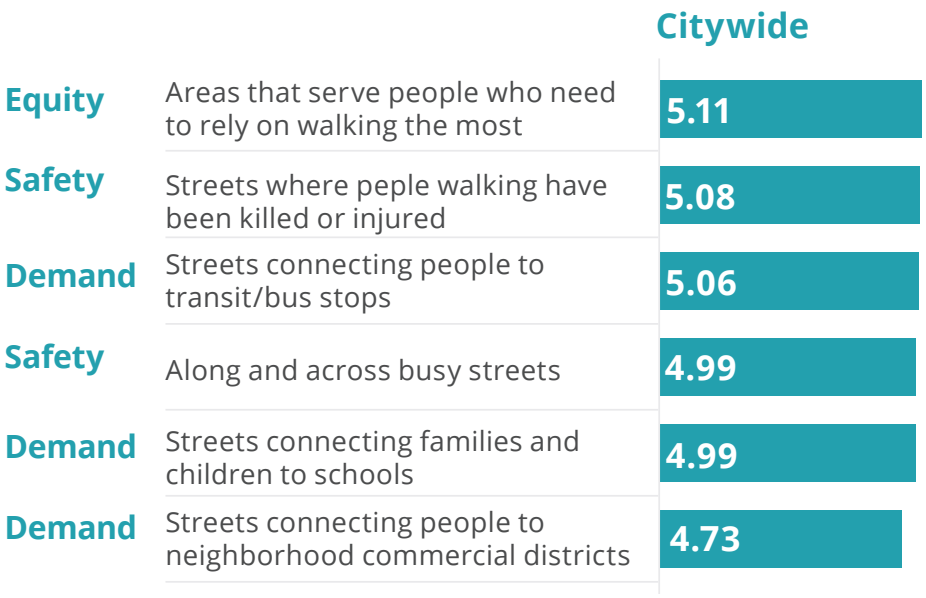
Other factors that will be considered when developing regular implementation plans include leverage, funding availability, project readiness, feasibility, key destinations and generators (such as affordable housing, transit stops, schools, senior centers, or community centers). As the city changes and needs are addressed, PBOT will regularly repeat this prioritization process to ensure that the highest needs and priorities continue to be met.

## Public Input Guides Prioritization

The PedPDX prioritization framework is directly informed by feedback received as part of the project's citywide survey. Question 2 of the survey asked, "Which kinds of places are the most important to improve for walking in Portland?" Respondents were asked to rate various places from one to six, with one indicating "not very important" and six indicating "extremely important." Citywide responses to Question 2 are shown in Figure 37, in order of point value. Answers to Question 2 indicated an overall preference for improving areas that serve people who need to rely on walking the most (5.11 average point value), streets where pedestrians have been killed or injured (5.08), and transit connections (5.06).

Figure 38 illustrates the top three priorities for improvement identified by area of residence. Residents from almost every district identified the same top three issues, though at times in somewhat different orders,

**Figure 37: Top three priorities for pedestrian investments by area of Portland (Responses to question 2 in the Walking Priorities Survey: "What Kinds of Places are Most Important to Improve for Walking in Portland?" Organized by Theme**




*Places to Improve - Citywide average point values (from 1-6). The figure shows that the top priorities identified by respondents citywide are "Areas that serve people who rely on walking the most," "Streets where people walking have been killed or injured," and "Streets connecting people to transit/bus stops."*

which is consistent with citywide responses:

- Places where people rely on walking
- Streets where people walking have been killed or injured
- Transit connections

The top three issues all revolve around the topics of **demand** (places where people are walking), **safety** (where people walking have been killed or injured), and **equity** (where people rely on walking). Those topics were used to construct the PedPDX prioritization methodology.

Figure 38: Citywide responses to Question 2: What Kinds of Places are Most Important to Improve for Walking in Portland?



# The PedPDX Prioritization Framework

The PedPDX prioritization framework will guide City pedestrian investments. It is based on the factors Portland residents say are most important to them:

- Equity
- Safety
- Pedestrian Demand

The prioritization process assigns a number value to all street segments within the Pedestrian Priority Network using data to measure these three factors. Sidewalk and crossing needs located within high priority locations will be prioritized for PBOT capital improvements.

The following section describes the methodology for calculating the scores for each of the three prioritization criteria. See Appendix J: "Prioritization Memo" for more detailed technical information on the prioritization scoring and methodology.

## Equity

To inform our work, guide our investments and work to achieve the Citywide Racial Equity Goals and Strategies, PBOT has created an Equity Matrix, or equity ranking index, that can be used to help rank many of our internal lists that relate to projects, programs and even procedures. PBOT has developed this standardized Equity Matrix based on national best practices, so that moving forward we can have more consistency in how we use an equity matrix, and what the equity matrix measures.

PedPDX applies the PBOT Equity Matrix to the Pedestrian Priority Network to identify locations in the city where there are potential concerns about equity outcomes.

*Keep communities livable by combining things, but combining them in a way that keeps them comfortable for everyone using it.*

***Peggy***
PedPDX Walking Stories

## *Racial Equity Goals*

**City of Portland's Racial Equity Goals and Strategies provide a guide for City employees and leadership to follow.**

**Equity Goal #1**

We will end racial disparities within city government, so there is fairness in hiring and promotions, greater opportunities in contracting, and equitable services to all residents.

**Equity Goal #2**

We will strengthen outreach, public engagement, and access to City services for communities of color and immigrant and refugee communities, and support or change existing services using racial equity best practices.

**Equity Goal #3**

We will collaborate with communities and institutions to eliminate racial inequity in all areas of government, including education, criminal justice, environmental justice, health, housing, transportation, and economic success.

To align PedPDX with the Citywide Racial Equity Goals and Strategies, PBOT's Racial Equity Plan, and the public's stated priorities, PedPDX will prioritize pedestrian investments in these locations with high equity needs.

National best practice and the City's Office of Equity and Human Rights note that the two demographic variables appropriate for measuring equity are race and income. As such, the PBOT Equity Matrix provides a location-based equity score using US Census American Community Survey (ACS) data, identifying census tracts with higher than citywide average of people of color and low-income households. By using race and income data, the Equity Matrix accounts for the intersectionality of other important considerations, including persons with disabilities, affordable housing, and persons with limited English proficiency, all of which are highly correlative with race and income.

**Table 5: Equity Scoring**

| FACTOR | EQUITY SCORE |
|---|---|
| Race (by census tract per ACS, weighted by tract population) | 1 to 5 |
| Income (by census tract per ACS) | 1 to 5 |
| Overall Equity Score | Sum (2 to 10) |

Figures 39 and 40 show the 2019 PedPDX equity analysis using the methodology described above. Each street segment within the Pedestrian Priority Network received a score of 2-10, based on the PBOT Equity Matrix inputs of ACS race and income data. Locations with the highest equity needs receive the highest score (9-10) and are indicated in dark blue.

As previously noted, the prioritization analysis will be reevaluated regularly and the Pedestrian Network Completion Program will develop an updated PedPDX equity analysis using updated ACS data at that time, using the methodology described here. Applying updated race and income data will help ensure that the prioritization and the Plan remains relevant and current as demographic conditions potentially shift over time.

PBOT's Equity Matrix is regularly updated by the PBOT Equity Manager. As best practices for measuring equity and PBOT and the City's approach evolve over time, PedPDX and the Pedestrian Network Completion Program will reflect evolving practices and apply PBOT's most current methodology and data for measuring equity.

Figure 39: Pedestrian Network Equity Analysis

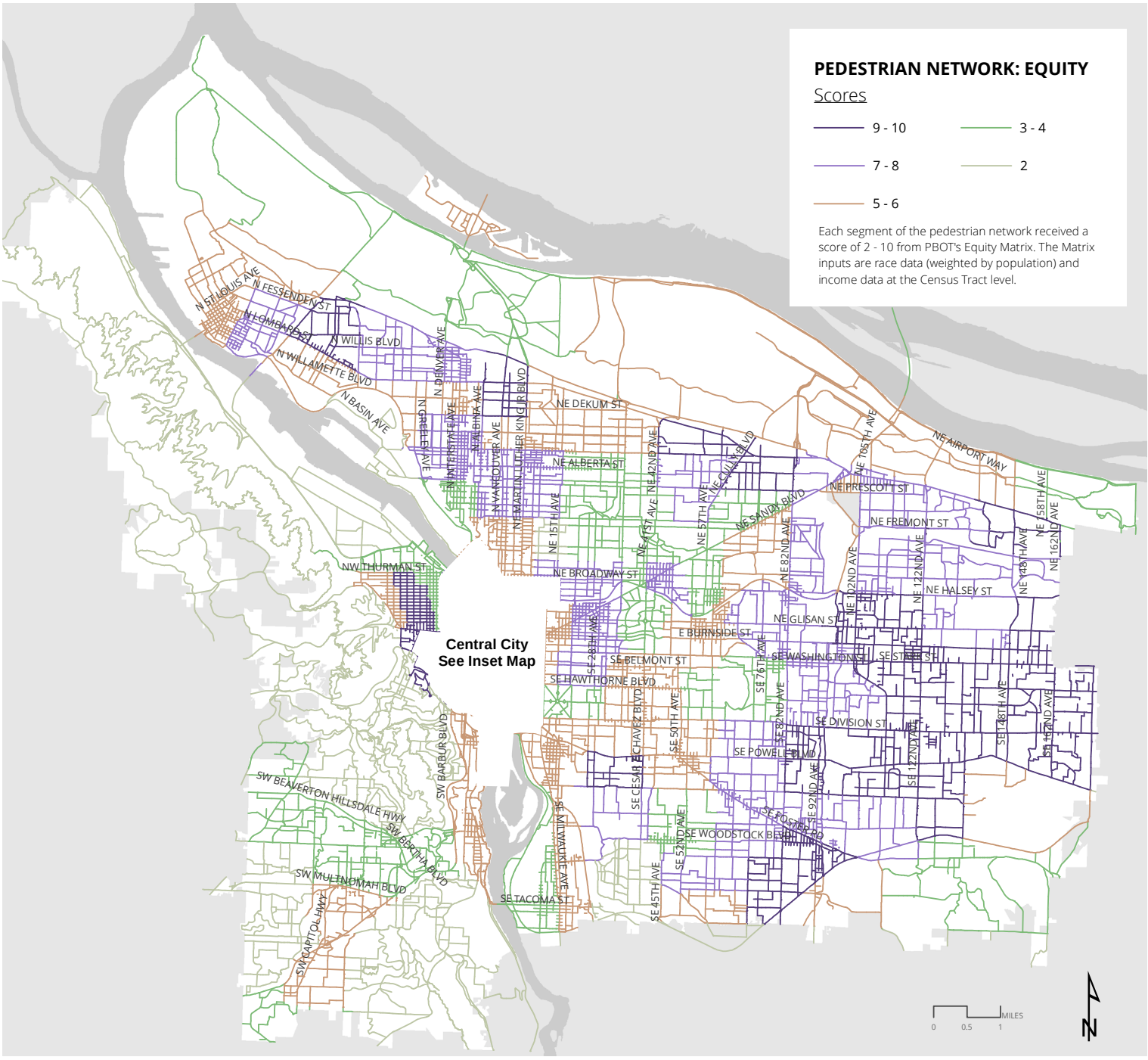


Figure 40: Central City Inset Map - Pedestrian Network Equity Analysis

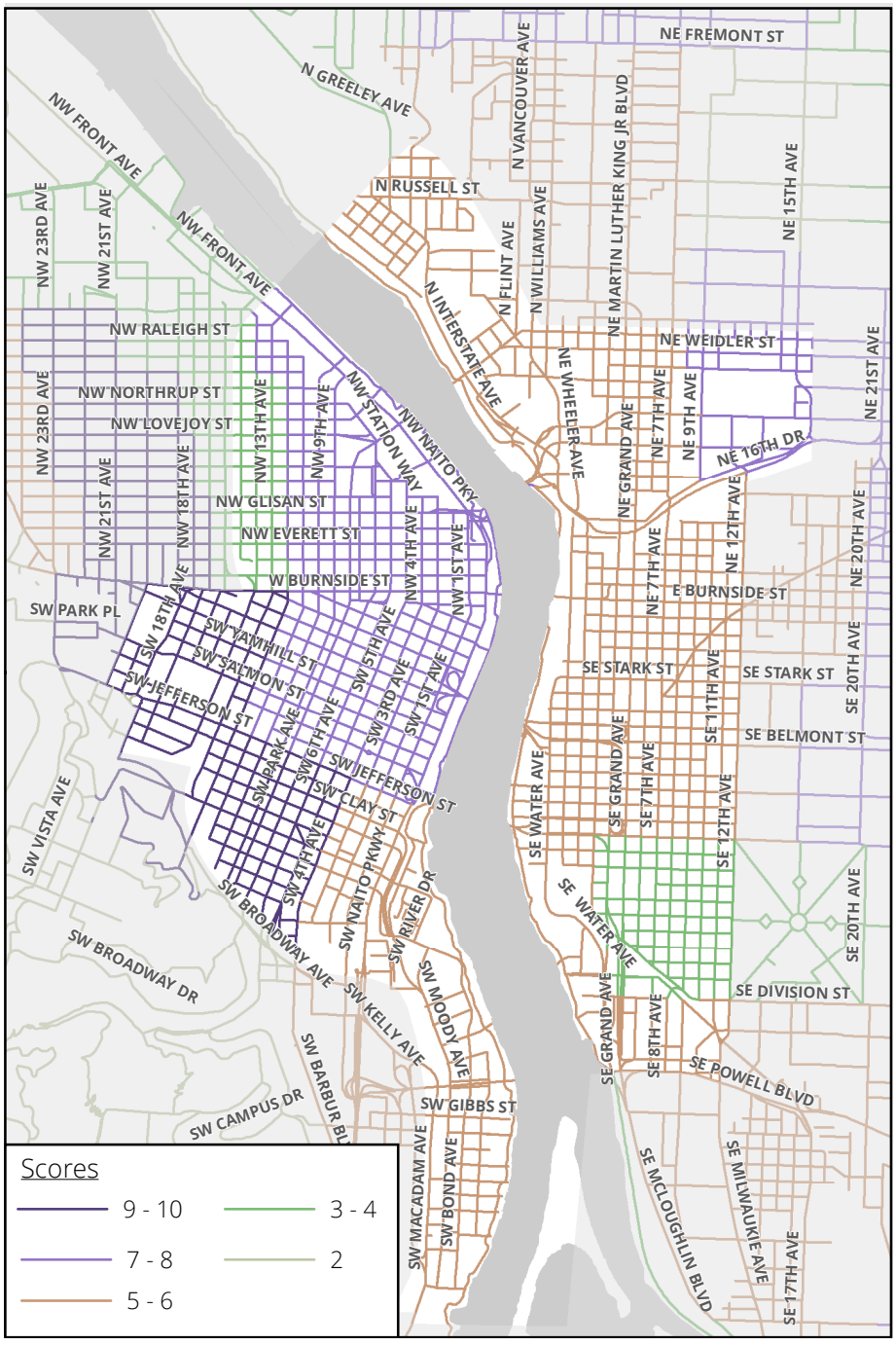


Table 6: Safety Scoring

| CONDITION | SAFETY SCORE |
|---|---|
| *Collision-Based Factors* | |
| Pedestrian High Crash Network | 2 |
| Street segments with one killed or serious injury pedestrian collision | 1 |
| Street segments with multiple killed or serious injury pedestrian collisions | 2 |
| *Risk Factors* | |
| Streets with two or fewer travel lanes | 1 |
| Streets with three travel lanes (two-way street) | 1 |
| Streets with three travel lanes (one-way street) | 2 |
| Streets with four or more travel lanes | 3 |
| Locations with posted speeds of 30 mph or higher | 2 |
| Locations with posted speeds of 40 mph or higher | 3 |
| *Off-Street Factors* | |
| Trail segments separated from motor vehicles | 1 |
| **Overall Safety Score** | **Sum Total (1-10)** |

## Safety

Pedestrian safety was also a key priority expressed by community members in the Walking Priorities Survey. Portlanders want to prioritize pedestrian improvements on streets where people walking have been killed or injured, and on busy arterial streets. Prioritizing pedestrian investments on our busiest, most dangerous streets for pedestrians is also in alignment with the City's Vision Zero commitment to end traffic deaths and serious injuries on Portland streets. We know that pedestrians are disproportionately represented in traffic crashes.

Prioritizing investments in locations where we see (or might expect to see) pedestrian crashes can help us meet our Vision Zero goal sooner.

In establishing criteria for measuring pedestrian safety, PedPDX seeks to look not only to locations where pedestrian crashes have occurred in the past, but also to locations where roadway and behavioral characteristics are potentially correlated with pedestrian crashes. The intent is to make changes before crashes happen. As such, the PedPDX safety criteria are drawn directly from the Pedestrian

*Having children, especially young children, I really want Portland to be better for them when they grow up.*

***Eric***
PedPDX Walking Stories

Safety Existing Conditions analysis described in Chapter 3 (and provided in full in Appendix F). That analysis evaluated all pedestrian crashes in Portland since 2006 to identify factors potentially associated with pedestrian crashes.

In addition to identifying streets within the pedestrian high crash network and street segments where serious and fatal pedestrian crashes have occurred, the PedPDX safety criteria includes risk factors identified in the Pedestrian Safety Existing Conditions Analysis, including streets with three or more travel lanes, and locations with posted or prevailing speeds 30 mph or higher. These criteria are intended to prioritize investment in locations that are currently dangerous and are used by people walking (locations with a pedestrian crash history) and locations that may be dangerous for walking but may not be used frequently by pedestrians because of the potential danger (streets demonstrating the risk factors identified above). Table 6 provides the criteria and scoring for each of the collision-based and risk-based safety factors included in the PedPDX prioritization. As with the equity analysis, the PedPDX safety methodology will be updated as PBOT's approach for measuring pedestrian risk and crash factors evolves over time.

Figures 41 and 42 show the 2019 PedPDX safety analysis using the methodology described above. Each street within the Pedestrian Priority Network is allocated a score. Streets with the highest scores (9 or 10) are those with the most crash history or risk factors and are indicated in red. Street segments with the lowest safety scores (1-2) are those with the lowest pedestrian crash history and risk factors and are indicated in blue.

The Pedestrian Network Completion Program will regularly update the PedPDX safety analysis using current safety data and applying the methodology described here. Applying updated safety data will help ensure that the prioritization and the Plan remains dynamic and respond to potentially changing safety conditions in Portland over time.

Figure 41: Pedestrian Network Safety Analysis

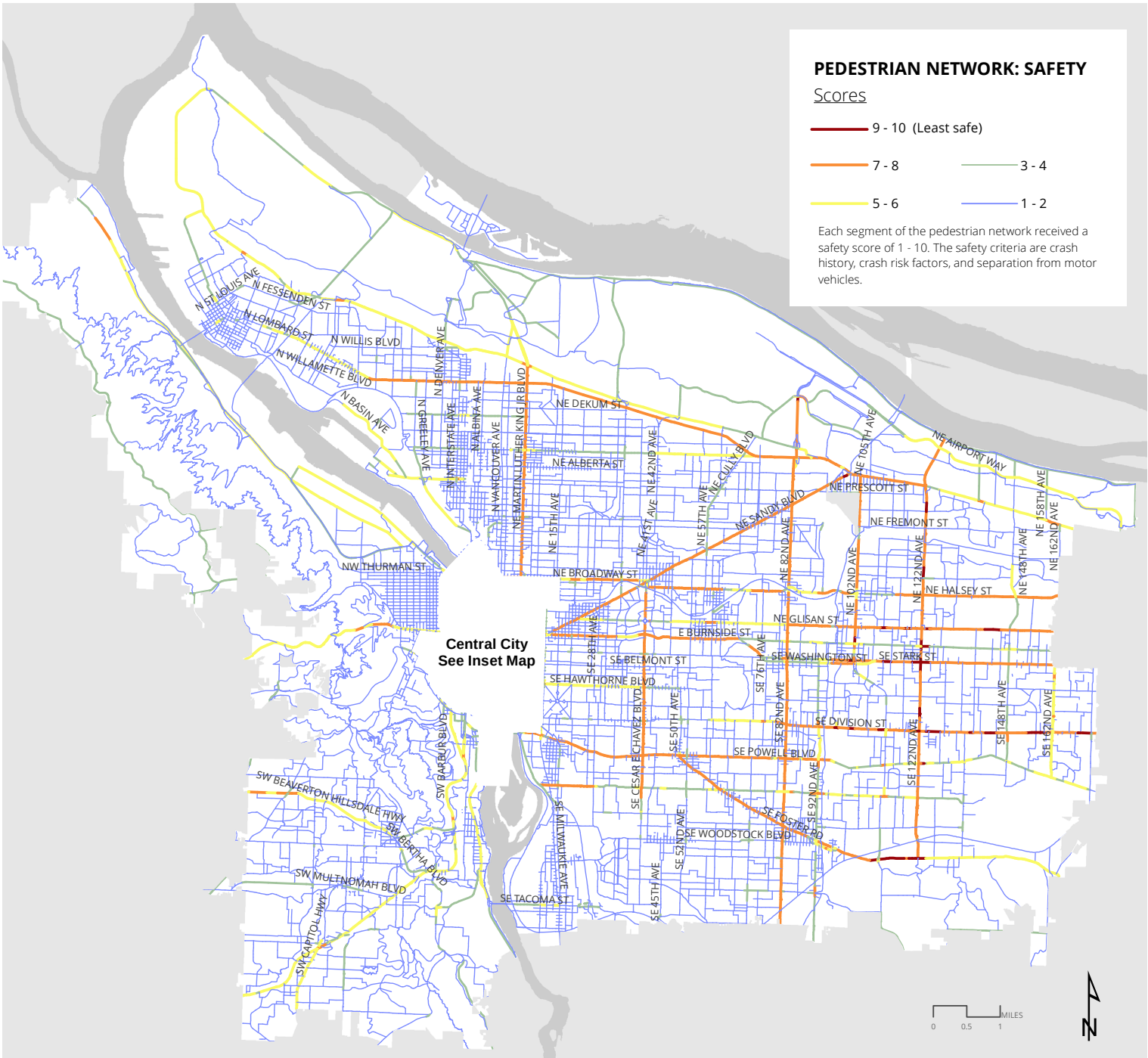


Figure 42: Central City Inset Map - Pedestrian Network Safety Analysis

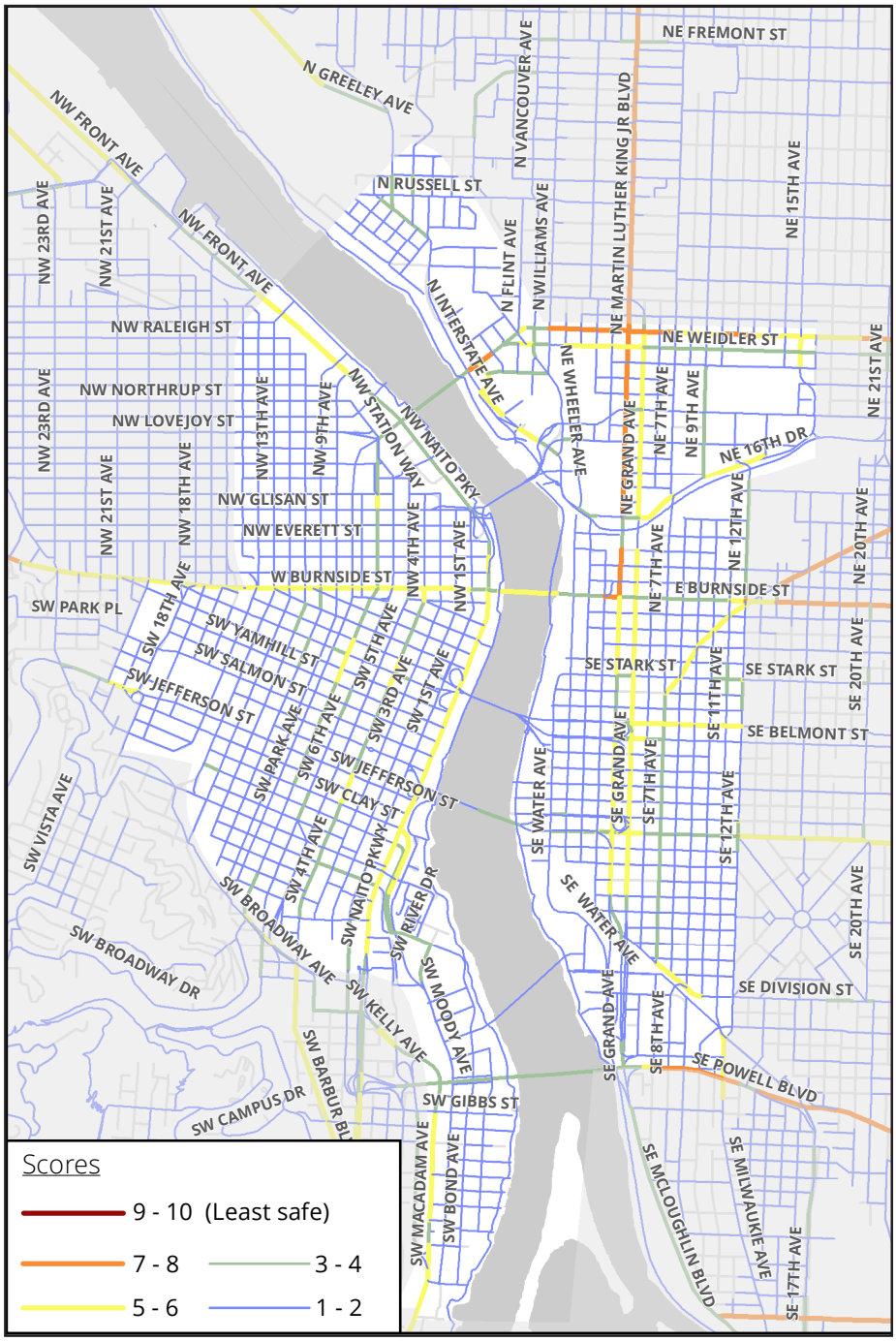
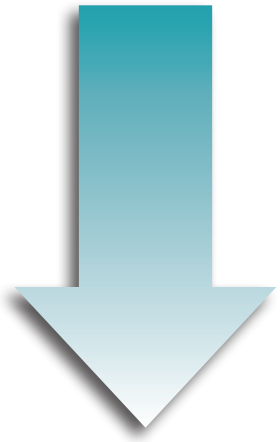


Figure 43: Pedestrian Demand Corresponds to Pedestrian Classification



**Pedestrian Districts**

**Major City Walkways**

**City Walkways**

**Neighborhood Walkways**

## Pedestrian Demand

The pedestrian classifications that together make up the Pedestrian Priority Network are organized according to pedestrian demand. These classifications are based on access to key land use and transit destinations and reflect the demand-based priorities expressed by community members in the Walking Priorities Survey. This demand-based approach ensures that we are prioritizing pedestrian improvements on streets that provide access to important walking destinations including goods, services, jobs, and transit. Furthermore, it helps to implement the vision for walkability and pedestrian vibrancy expressed in Portland's 2035 Comprehensive Plan.

To quantify and score pedestrian demand, the PedPDX prioritization assigns scores to Major City Walkways, City Walkways, Neighborhood Walkways, and Local Streets, as shown in Table 7. Higher point values are allocated to streets where more people are expected

**Pedestrian Districts include:**
- "Centers," as defined by Portland's 2035 Comprehensive Plan, where high levels of pedestrian activity exist or are expected in the future
- Transit Station Areas (1/4 Mile Walksheds to Major Transit Stations)

**Major City Walkways include:**
- "Corridors" and "Main Streets," as defined by Portland's 2035 Comprehensive Plan, where pedestrian destinations such as housing, goods, and community services exist or are expected in the future
- Frequent transit streets
- Core downtown streets
- High-demand regional trails

**City Walkways include:**
- Non-frequent transit streets
- All other arterials and collectors
- Moderate-demand trails

**Neighborhood Walkways include:**
- Designated Safe Routes to School (local streets)
- Neighborhood Greenways (existing and funded)
- Neighborhood trails

Table 7: Pedestrian Classification Scoring

| PEDESTRIAN CLASSIFICATION | DEMAND SCORE IN PEDESTRIAN DISTRICTS | DEMAND SCORE ON DESIGNATED SAFE ROUTES TO SCHOOL | DEMAND SCORE OUTSIDE OF PEDESTRIAN DISTRICTS |
|---|---|---|---|
| Major City Walkway | 10 | 8 | 6 |
| City Walkway | 8 | 6 | 4 |
| Neighborhood Walkway | 4 | 1 | 1 |
| Local Streets | 2 | N/A | N/A |

*Note: Demand Score is a single score based on classification (not a sum)*

to walk (Major City Walkways, for example) and lower point values are assigned to streets where less pedestrian activity might be expected (Local Streets). Street segments located within Pedestrian Districts receive additional points to account for the higher levels of walking activity in these areas.

Figures 44 and 45 show the PedPDX demand analysis using the methodology described above. Each street within the Pedestrian Priority Network is allocated a score from 1 to 10. Street segments with the highest levels of expected pedestrian demand (those with scores of 9 or 10) are indicated in dark blue. These tend to be Major City Walkways located within Pedestrian Districts. Streets with the lowest level of expected pedestrian activity (those with scores of 1 or 2) are indicated in light green. These are typically Neighborhood Walkways located along residential streets.

.

## Overall Prioritization: Equity + Safety + Demand

The overall PedPDX prioritization score is equal to the sum of the equity, safety, and pedestrian demand scores. Individual scores for equity, safety, and demand are weighted equally and added together to create an overall prioritization score of 3 to 30.

Figures 46 and 47 show the combined overall prioritization of the Pedestrian Priority Network. Street segments with the highest aggregated equity, safety, and demand scores are in “Tier 1” locations, indicated in purple. Street segments with lower aggregated equity, safety, and demand scores are in lower tiers, with “Tier 5” as the lowest scoring (and lowest priority).

Figure 44: Pedestrian Network Demand Analysis

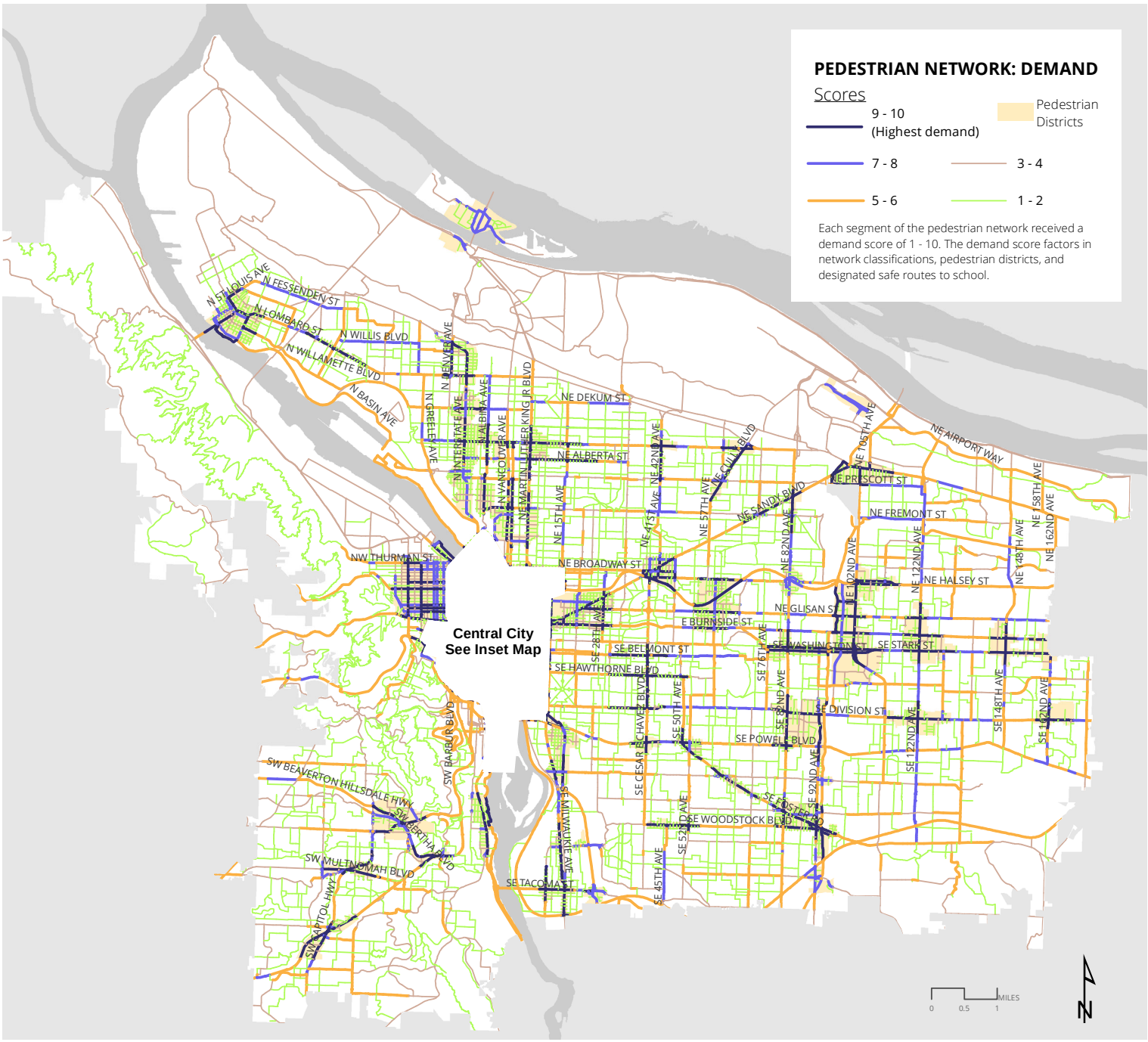


Figure 45: Central City Inset Map - Pedestrian Network Demand Analysis

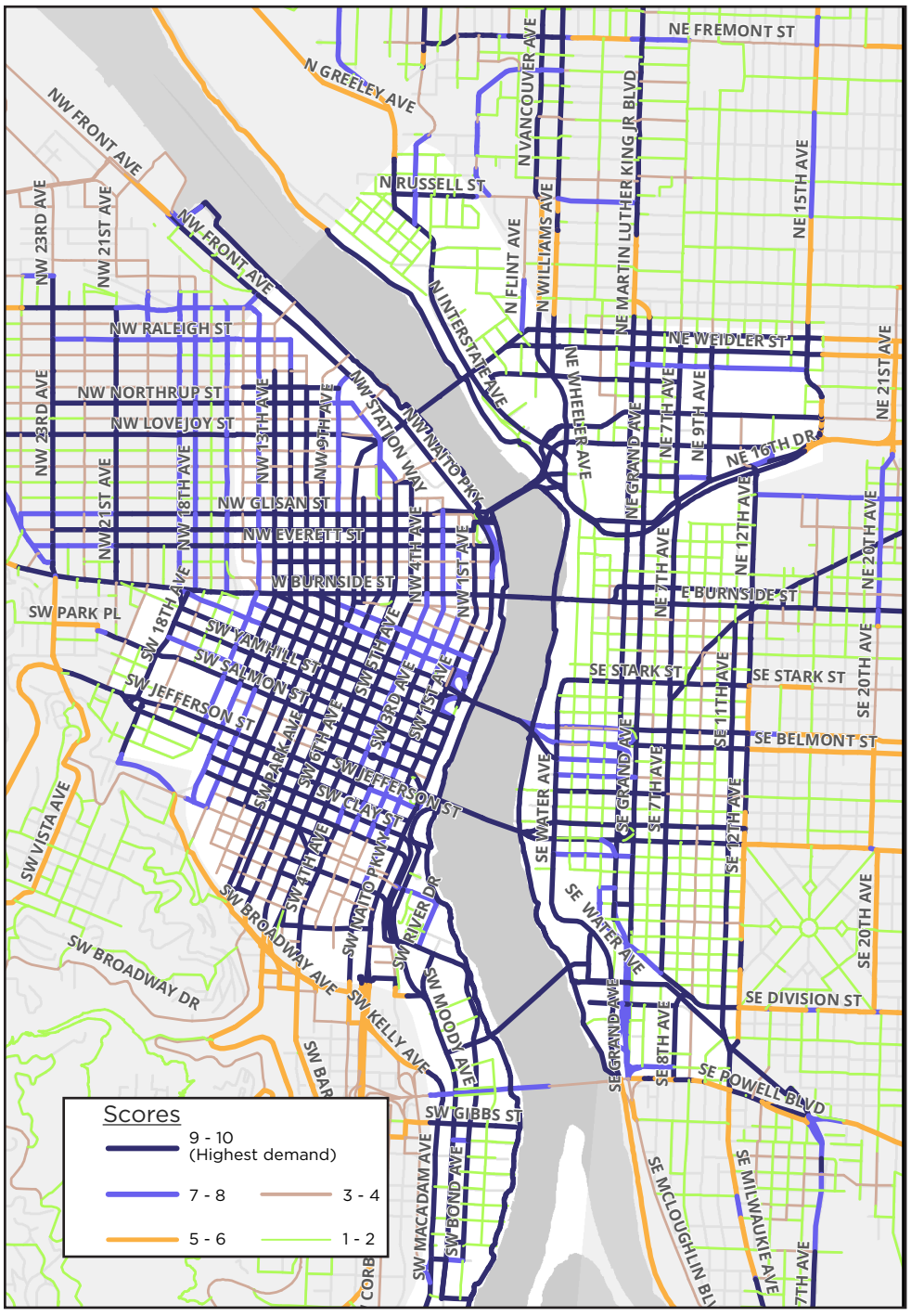


Figure 46: Pedestrian Network Prioritization

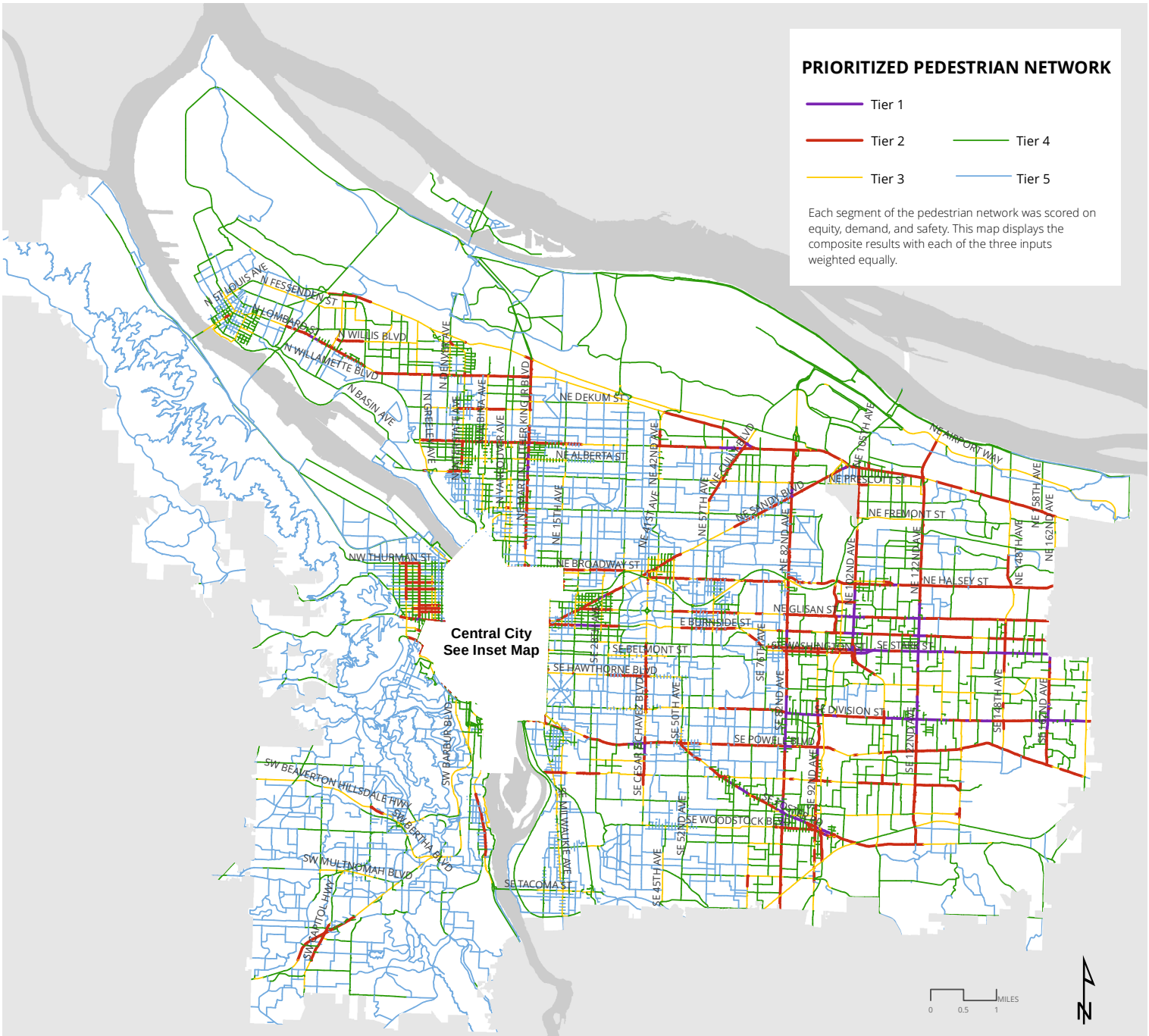
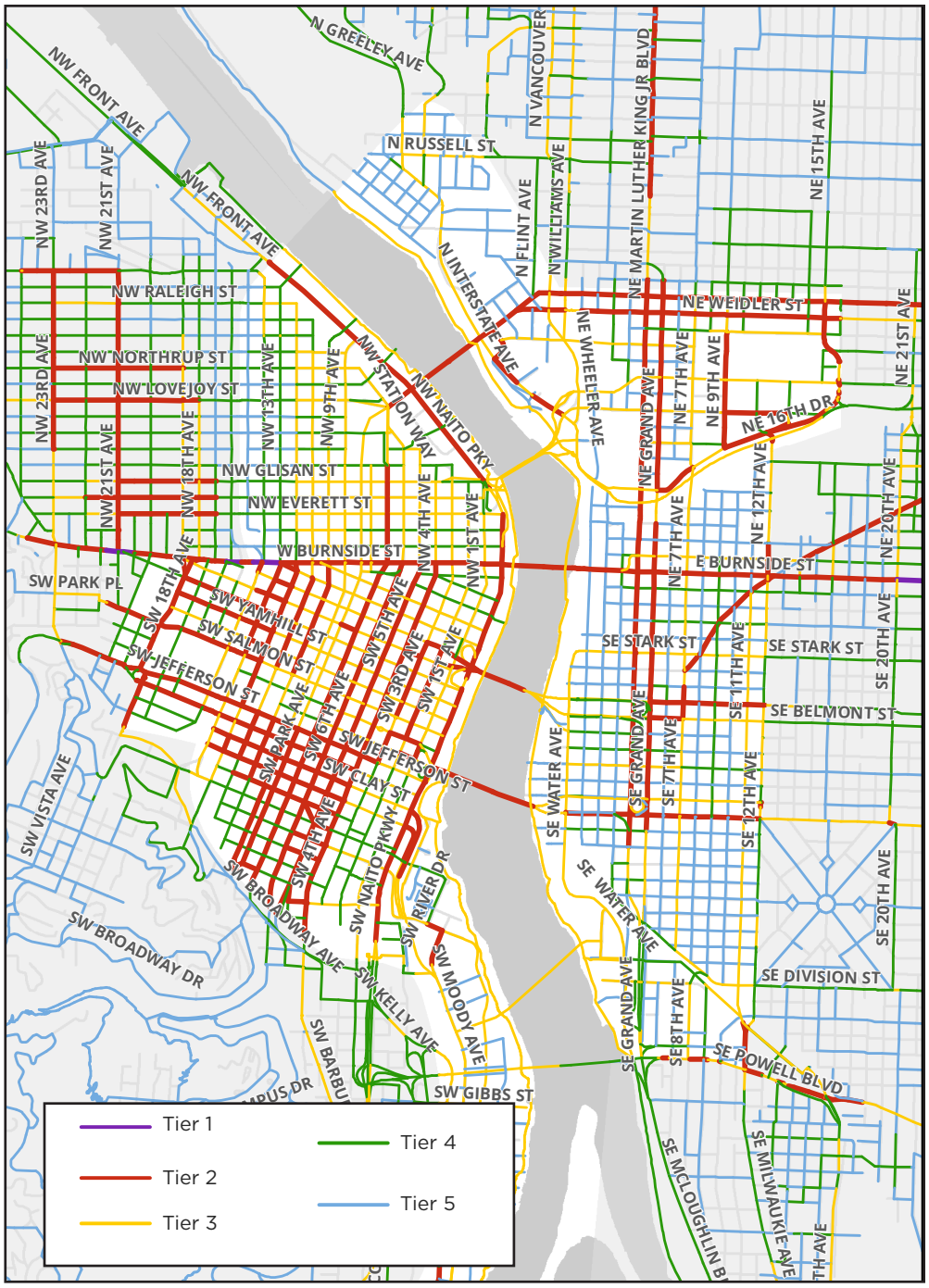


Figure 47: Central City Inset Map - Pedestrian Network Prioritization



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## Applying the PedPDX Prioritization Framework to Pedestrian Needs

The PedPDX prioritization framework identifies priority locations for investment within the Pedestrian Priority Network. This framework is based on the priorities Portlanders report are most important for them when prioritizing pedestrian improvements: Equity, Safety, and Demand.

Sidewalk, crossing, and other pedestrian needs within these high priority locations will be prioritized for near-term investment. Figures 48 through 51 identify the sidewalk and crossing needs that currently lie within top tier priority locations (tiers 1-3). These needs will be prioritized for capital improvements by the Pedestrian Network Completion Program and will be used to help determine how pedestrian-related projects are selected from the existing TSP project list for implementation and grant funding opportunities (as described further in Chapter 7).

In theory, street segments with the highest scores (tier 1) will be addressed first. However, other factors will be considered in identifying near term sidewalk and crossing implementation opportunities, including leverage opportunities, funding sources, project readiness, and feasibility. As needs in top tier locations are systematically addressed, needs in lower tiers will be subsequently addressed.

As noted previously, the PedPDX evaluation of equity, safety, and demand, per the methodology and criteria described above will be applied regularly. This allows us to evaluate and identify infrastructure investment priorities using up-to-date data. Known sidewalk and crossing gaps will be regularly compared against these prioritized streets segments to identify high priority needs for near term investment on an ongoing basis.

Figure 48: Prioritized Crossing Needs

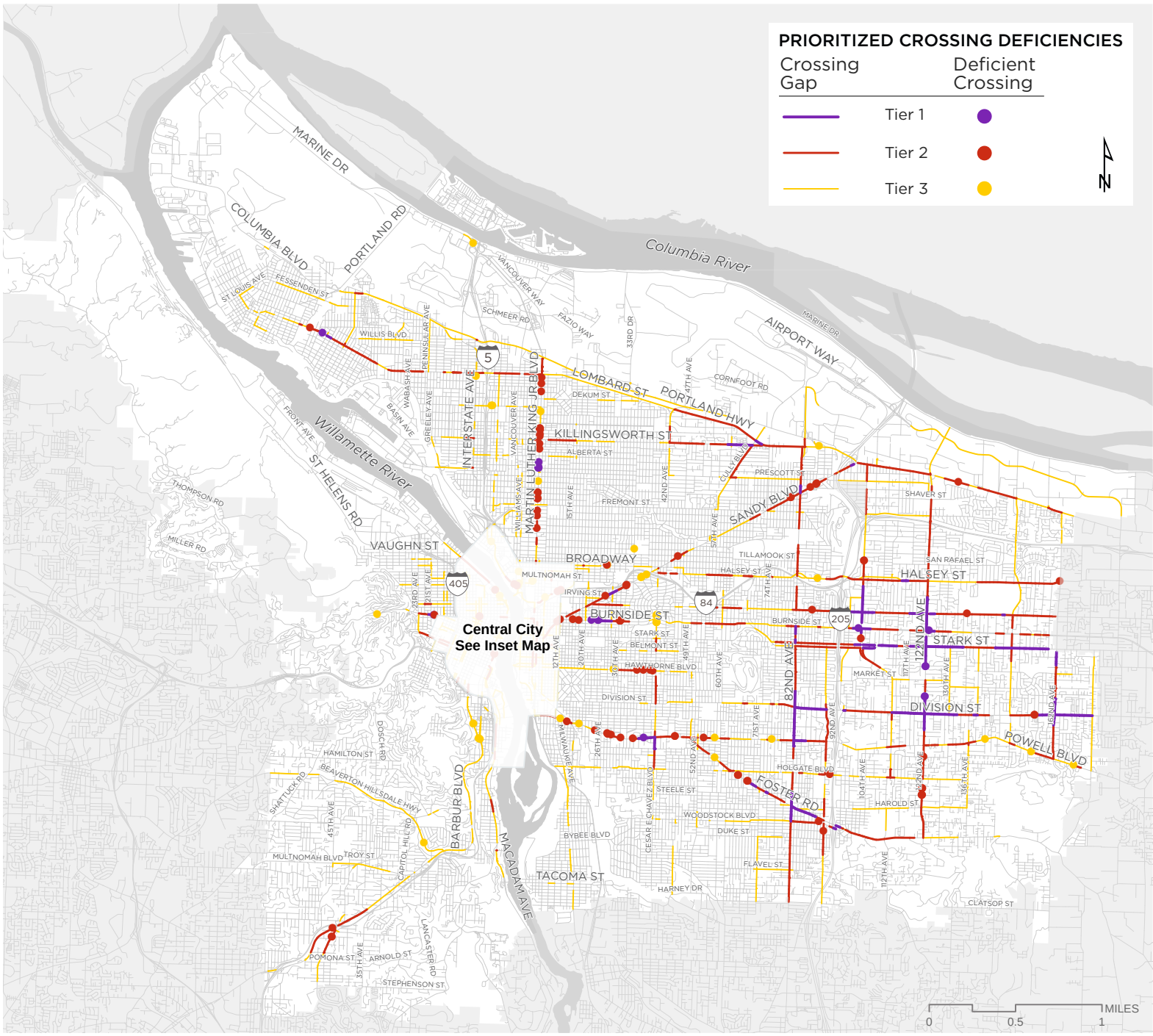


Figure 49: Central City Inset Map - Prioritized Crossing Needs

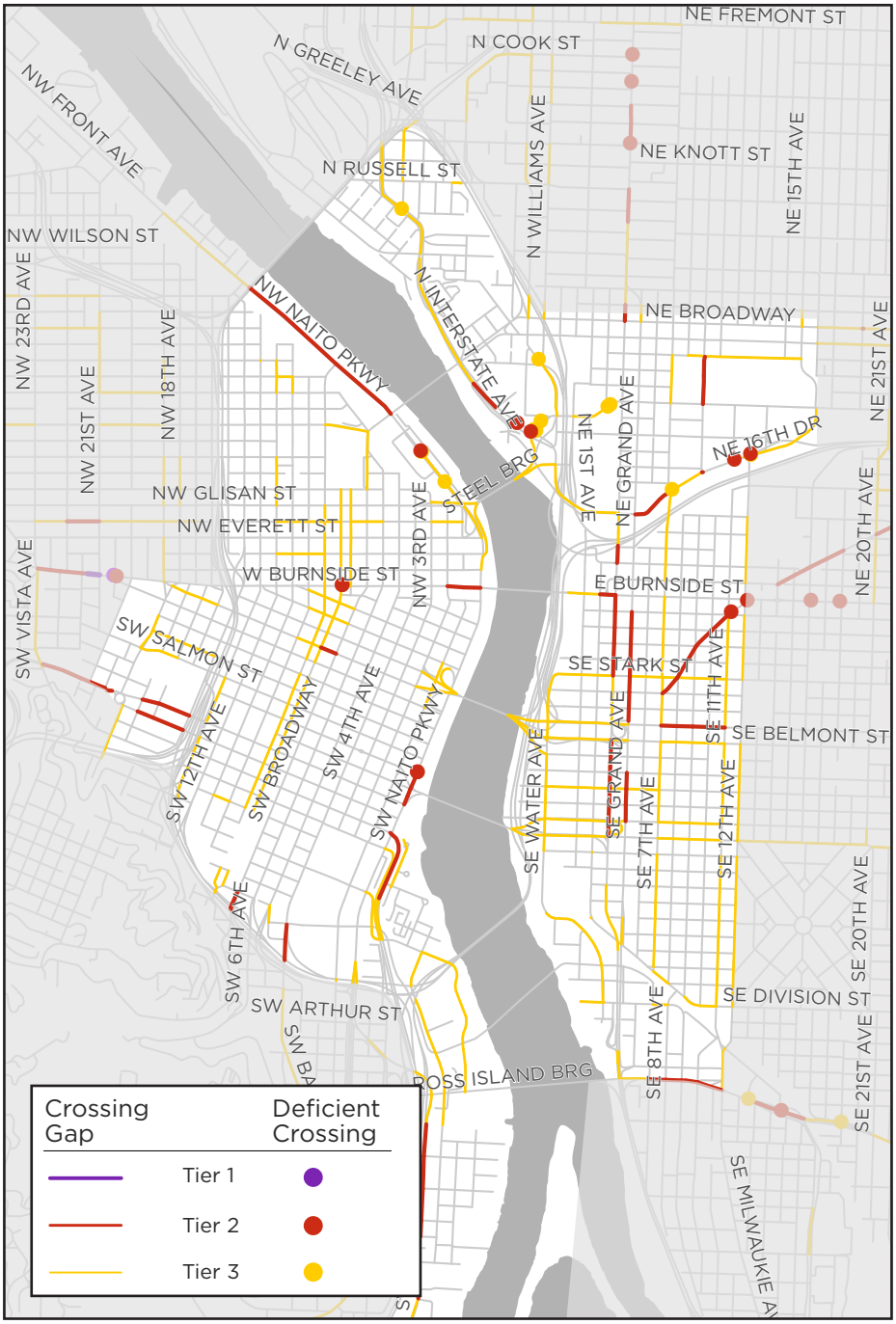


Figure 50: Prioritized Sidewalk Needs

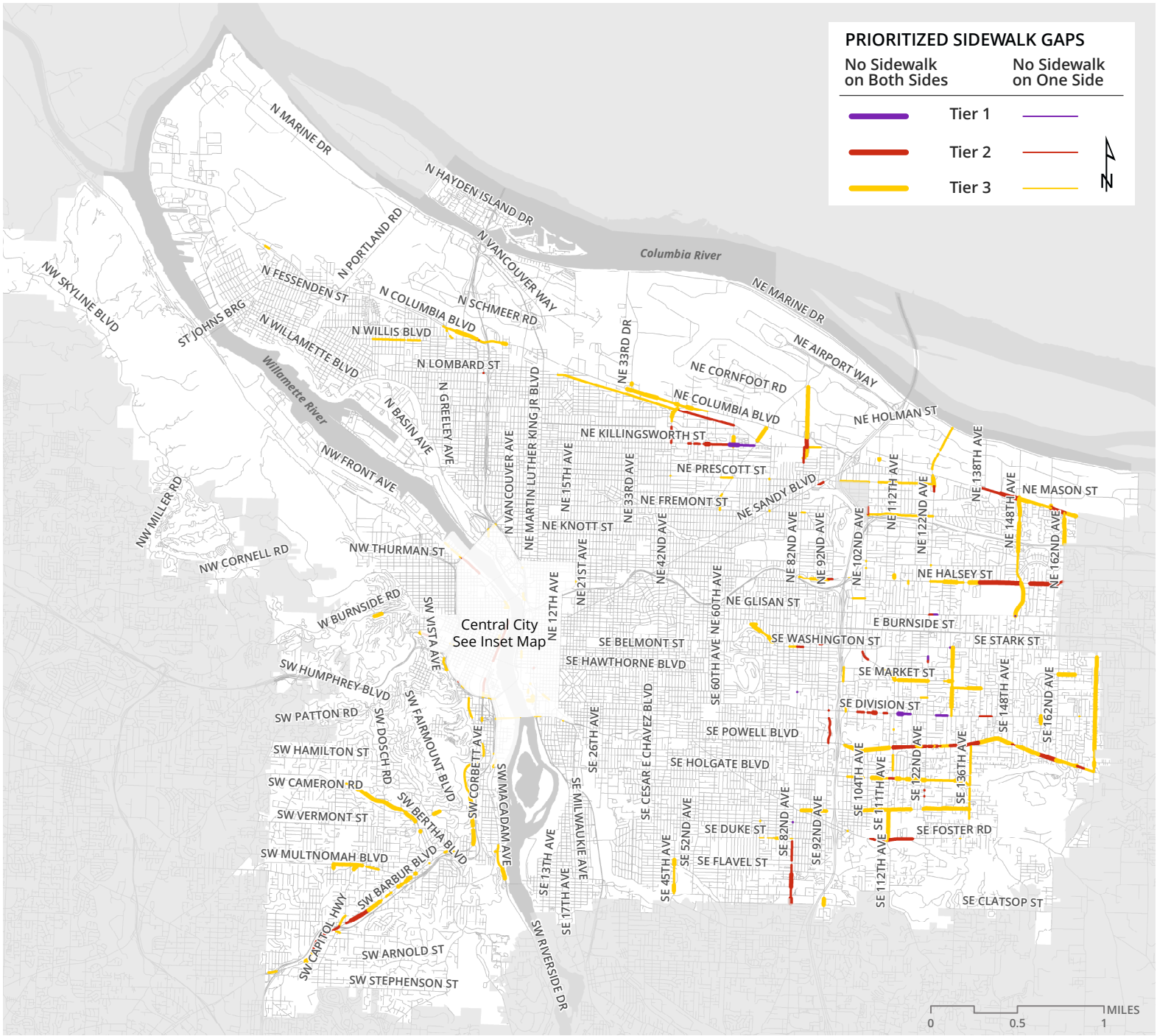
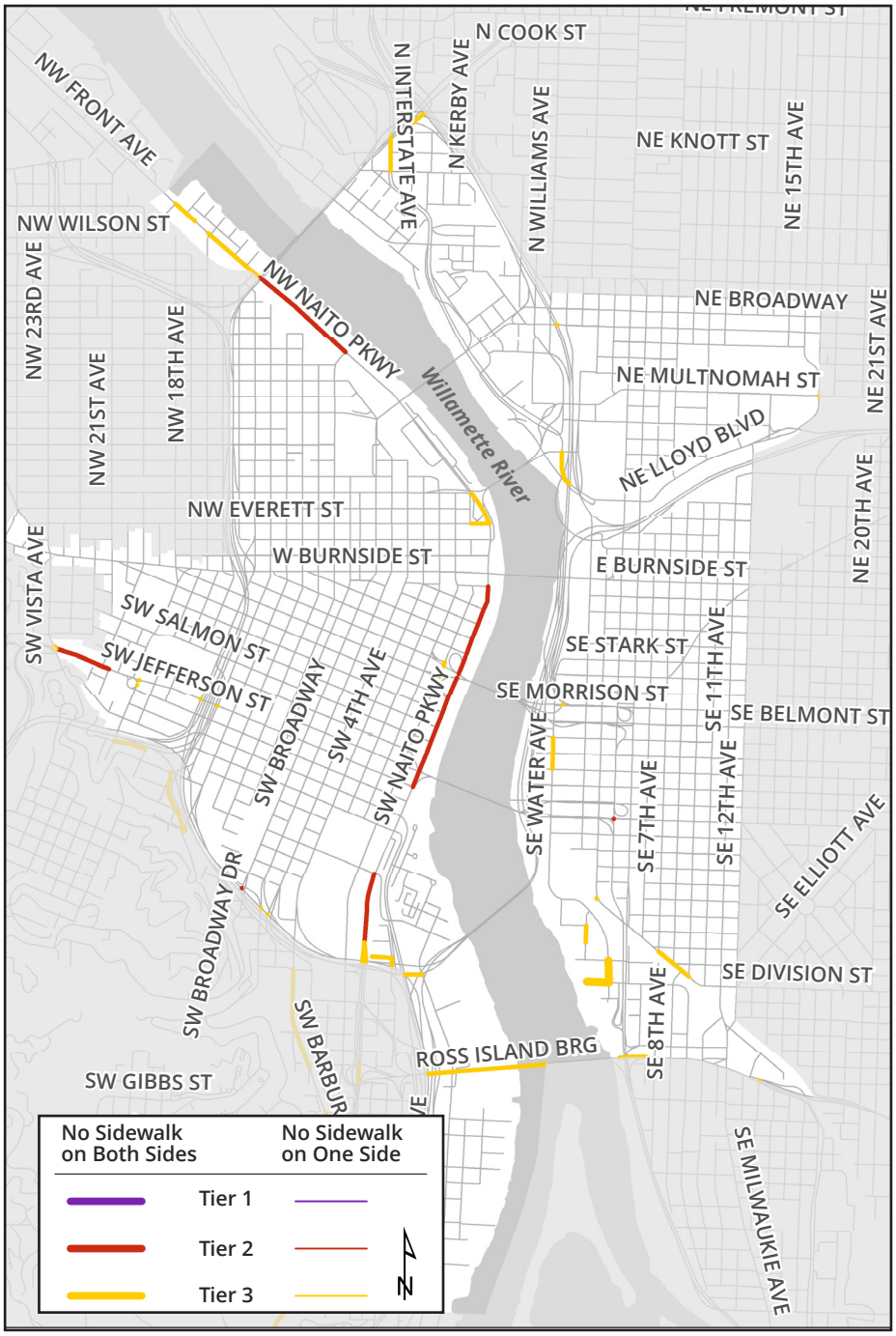


Figure 51: Central City Inset Map - Prioritized Sidewalk Needs



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# 6. THE PEDPDX IMPLEMENTATION TOOLBOX

The Implementation Toolbox is the programmatic work plan to advance the vision and mission of PedPDX.

# What is the Implementation Toolbox?

The Implementation Toolbox serves as a complement to the prioritization of infrastructure needs presented in the previous section. While the prioritization framework identifies infrastructure needs at specific locations, the Implementation Toolbox provides citywide strategies and actions for making Portland a more walkable city for all. Those strategies and actions include a variety of ways to improve the physical pedestrian network, but also include improvements to policies, programs, and planning. The strategies and actions in the PedPDX Implementation Toolbox will guide the work of all of PBOT's pedestrian-related programs and activities (these various programs are described in more detail in Chapter 7).

**Data analysis and extensive outreach, including public surveys, focus groups, and work sessions with technical staff and community members, directly informed the development of the Toolbox's strategies and actions.** This robust process resulted in thirteen strategies and 67 actions.

The Toolbox serves as both a chapter of the PedPDX Plan and as a stand-alone resource for the City of Portland and its implementing partners.

# What are Strategies and Actions?

The toolbox is organized by strategies and actions. Strategies are the approaches we will use to advance the PedPDX vision. Actions describe the specific means through which a strategy will be implemented.

Each PedPDX strategy includes an explanation of why that strategy is important. For each strategy, a quick reference table of all actions that support that particular strategy is provided. For each action the table identifies the following information:

- **Implementing vs. Future Action**

  *An "implementing action" is one that is rooted in existing City policy or that becomes policy through the City Council's adoption of PedPDX. A "future action" is one that will be explored and pursued as future policy.*

- **Category**

  *Actions reflect a multi-faceted approach to advancing the PedPDX mission and vision. Each action is categorized as one or more of the following types of improvements to the pedestrian environment: Infrastructure, Policy, Funding, Maintenance, Education, Enforcement.*

- **Leading Role**

  *PBOT is the lead agency charged with implementing PedPDX. For each action, the leading role is further defined to show the specific division or staff position within the Bureau or another department or agency within whose responsibility the action falls.*

- **PedPDX Objectives Addressed**

  *Each action supports one or more of PedPDX's six objectives, which are identified with a shortened label: Historic Underinvestment; Connect to Daily Needs; Funding; Vision Zero; Public Safety; and Joyful Experience.*

Each action also has a "cut sheet" that provides more detailed information. The "cut sheet" defines the action and explains its intended effect on the pedestrian experience in Portland. The "cut sheet" also notes considerations that staff and implementing partners should take into account as the action is implemented.

# PedPDX Objectives



**HISTORIC UNDERINVESTMENT**

Prioritize **investment in areas with the greatest historic underinvestment** in pedestrian infrastructure and with historically under-served populations to reduce disparities in access to safe pedestrian facilities.



**CONNECT TO DAILY NEEDS**

Complete and maintain a Pedestrian Priority Network that encourages walking for people of all ages, cultures, and abilities, and **connects people to their essential daily needs.**



**FUNDING**

**Commit to funding** pedestrian network improvements in the Pedestrian Priority Network.




**VISION ZERO**

Support the City's Vision Zero commitment to **eliminate traffic-related deaths and serious injuries.**



**PUBLIC SAFETY**

Protect the **public safety and personal security** of people walking.



**JOYFUL EXPERIENCE**

Make walking in Portland **a joyful experience** that helps people connect with their community.

# How will the Toolbox be Used?

The PedPDX Implementation Toolbox is a shared workplan. It is not intended to be a comprehensive resource documenting all potential opportunities for improving the safety and mobility of pedestrians, but rather an articulation of the key actions and tools the City will use to implement PedPDX.

Improving the safety and mobility of people walking in Portland cannot be limited to the resources of one staff person, one division, or one agency. It requires a broad, ongoing effort that leverages the expertise and funding opportunities from many different people and programs. The Toolbox facilitates this broad coordination.

Following the adoption of PedPDX, City of Portland staff will refer to the PedPDX Toolbox to set priorities and refer to the action "cut sheets" to inform work programs. With the quick reference indices provided in the Toolbox, staff can identify actions for which they are responsible, initiate discussion with coordinating staff or partners, and collaborate to ensure that program, policy and facility development are aligned with PedPDX goals.

Implementing partners, such as ODOT, Metro, and TriMet, can refer to the Toolbox strategies and actions to consider their own roles in supporting these efforts and aligning resources and initiatives that serve shared goals.

The PBOT Pedestrian Coordinator will track implementation of the 67 actions listed in the PedPDX Implementation Toolbox using the measures identified in the next section of this document (7. Implementing the Plan).

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# STRATEGY 1

## Address gaps in the Pedestrian Priority Network

This strategy supports the overarching need to access the pedestrian network and focuses on filling sidewalk gaps and increasing the number of safe pedestrian crossing locations. Feedback from the Walking Priorities Survey indicate that Portland residents feel there are currently not enough places to cross busy streets. The PedPDX Safety Analysis revealed that crashes at unmarked locations are more likely to occur where marked crosswalk spacing does not meet the new PedPDX crossing spacing guidelines.

# Strategy 1
## Address gaps in the Pedestrian Priority Network

Table 8: Index of Strategy 1 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE/ COORDINATION |
|---|---|---|---|
| **1.1** Fund and construct high priority crossing and sidewalk needs identified through PedPDX. | Implementing Action (policy adopted with PedPDX) | Infrastructure; Funding | PBOT Pedestrian Coordinator |
| **1.2** Apply new marked crossing spacing guidelines as part of PBOT capital projects. | Implementing Action (policy adopted with PedPDX) | Policy; Infrastructure | PBOT Capital Delivery Division |
| **1.3** Explore options to enable and encourage off-site pedestrian improvements by private development. | Future Action | Policy; Infrastructure | PBOT Development Permitting and Transit |

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 1.1

## Fund and construct high priority crossing and sidewalk needs identified through PedPDX.

PedPDX identifies priority crossing gaps, where marked crossings are not provided at the frequency required by the City's new crossing spacing guidelines, as well as potential crossing deficiencies where an existing crossing may not meet current design guidance. The Plan also identifies and prioritizes gaps in the sidewalk network. Prioritized needs on the Pedestrian Priority Network are eligible for funding through the Pedestrian Network Completion Program, which is directly charged with expanding the city's network of sidewalks, walking paths, and crossings. The Pedestrian Network Completion Program will develop regular implementation plans to identify high priority crossing and sidewalk improvements to be funded and constructed through the program.

Additionally, PedPDX priority needs will influence pedestrian projects selected from the Transportation System Plan (TSP) for implementation and grant opportunities. All TSP projects are prioritized into two categories for implementation. Projects are prioritized for 1-10 year implementation, or 11-20 year implementation. PedPDX does not influence the TSP's methodology for prioritizing projects into these broad implementation categories. However, the PedPDX prioritization will be used to help determine how pedestrian-related projects are prioritized for implementation within these broad categories as funding opportunities arise.



Crosswalk

### Considerations

The Pedestrian Network Completion Program will apply the PedPDX prioritization methodology regularly to identify priorities based on current equity, safety, and demand data. While the Pedestrian Network Completion Program will be driven by the PedPDX prioritization, other factors will also be considered when developing program priorities, including project readiness, project feasibility, available funding, leverage opportunities, and key pedestrian destinations/generators within prioritized locations.

# Strategy 1
## Address gaps in the Pedestrian Priority Network

PEDPDX OBJECTIVES ADDRESSED




**ACTION 1.2**

## Apply new marked crossing spacing guidelines as part of PBOT capital projects.

In Oregon, every intersection is a legal "crosswalk" (ORS 801.220), unless prohibited with crosswalk closed signage. As such, pedestrians are legally permitted to cross any street at any intersection whether the crossing is marked or not, and motorists are required to yield.

A major component of the City's Vision Zero effort to eliminate traffic-related deaths and serious injuries on Portland streets includes increasing the number of locations where people walking and biking can comfortably cross busy streets. While the City has guidelines in place for determining crossing design treatments appropriate for various roadway types, there has traditionally been no guidance in place regarding desired spacing between marked and/or enhanced pedestrian crossing opportunities.

While research on exactly how far a person walking will travel out of direction to access a marked or enhanced pedestrian crossing is scant, it is a general rule of thumb that people walking will typically take the shortest route from point A to point B[1]. Increasing the number of marked and enhanced crossing opportunities increases the number of options for people walking to cross the street.

PedPDX establishes new design guidelines for the desired frequency of marked pedestrian crossings in Portland. Upon adoption of PedPDX, the City Traffic Engineer will issue a directive formally instituting the new PedPDX crossing spacing guidelines as part of PBOT engineering and design practice.

These guidelines are intended to identify crossing gaps in Portland's pedestrian network, and vary according to the street's pedestrian classification. Crossing spacing guidelines will be implemented by PBOT capital projects moving forward. PBOT will scope and adequately fund capital projects to include improved crossings on streets where these spacing guidelines are not currently met. Crossing gaps outside of planned capital projects will be implemented via the Pedestrian Network Completion program.

Existing City guidelines require a minimum of 20 people per hour crossing the street (walking or biking) in a given location to mark a crosswalk. In meeting new PedPDX crossing spacing guidelines, PBOT will apply the following approaches to demonstrating that new marked crossings are warranted:

- **Within Pedestrian Districts**: New marked/enhanced crossings on City Walkways and Major City Walkways (all arterials and collectors) within Pedestrian Districts will be determined based on anticipated and desired future use. Given the high volume of pedestrian traffic anticipated in Pedestrian Districts, City staff will establish desired crossing volumes for pedestrian crossings on these pedestrian-oriented street types. As such, a minimum of 20 pedestrians crossing during peak hour will not be required to justify new marked crossings within Pedestrian Districts.

1 The AASHTO Green Book notes that "Pedestrians tend to walk in a path representing the shortest distance between two points" (as quoted by King, Michael in To Cross or Not to Cross, Examining the Practice of Determining Crosswalks, ITE Journal, November 2014.)

## Inside Pedestrian Districts:

**DESIRED SPACING OF**

**530 feet**

*between marked crossings*



## City Walkways and Major City Walkways within Pedestrian Districts

**DESIRED CROSSING FREQUENCY**

**530 ft**

Pedestrian Districts are areas where high levels of pedestrian activity exist or are planned, including the Central City, Gateway regional center, town centers, and near MAX stations.

For Major City Walkways and City Walkways within Pedestrian Districts the desired spacing between marked pedestrian crossings is 530 feet.

Demonstrating existing crossing demand will not be required to justify new marked crossings within Pedestrian Districts.

On a street with standard 200-ft blocks, the 530-ft crossing frequency results in a marked pedestrian crossing approximately every other block.

## Outside of Pedestrian Districts:

**DESIRED SPACING OF**

**800 feet**

*between marked crossings*



## City Walkways and Major City Walkways outside of Pedestrian Districts

**DESIRED CROSSING FREQUENCY**

**800 ft**

City Walkways and Major City Walkways provide walking access to important land use and transit destinations. The desired spacing between marked pedestrian crossings on these streets is 800 feet.

On a street with standard 200-ft blocks, the 800-ft crossing frequency results in a marked and/or enhanced pedestrian crossing approximately every three blocks.

To ensure that new marked crossings on streets with lower pedestrian volumes do not result in driver disregard of crosswalks, a minimum of 20 pedestrian/bicycle crossings per peak hour will be required to provide new marked/enhanced crossings on City Walkways and Major City Walkways outside of Pedestrian Districts or where there is not a transit stop.

## At Transit stops:

**WITHIN OF ALL TRANSIT STOPS**

**100 ft**



## Transit Stops

**DESIRED CROSSING WITHIN**

**100 ft**

Moving forward, PBOT practice will be to provide a marked pedestrian crossing at all transit stops[2], regardless of street classification.

Demonstrating existing crossing demand will not be required to justify new marked crossings at transit stops.

Marked crossing requirements at transit stops may be implemented by providing new marked crossings at existing transit stops, and/or by strategically relocating or consolidating transit stops such that they are located at existing marked crossings. This will require PBOT capital project managers to collaborate with TriMet to consolidate, relocate, or otherwise confirm stop locations.

2 Engineering judgment may deem marked crossings unwarranted in some locations, particularly on two-lane streets with very low vehicle volumes and low transit ridership

# Strategy 1
## Address gaps in the Pedestrian Priority Network

- **City Walkways and Major City Walkways Outside of Pedestrian Districts**: Crossing demand and pedestrian volumes are likely lower on streets outside of Pedestrian Districts. To ensure that new marked crossings on streets with lower pedestrian volumes do not result in driver disregard of crosswalks, a minimum of 20 pedestrian/bicycle crossings per peak hour will still be required to provide new marked/enhanced crossings on City Walkways and Major City Walkways outside of Pedestrian Districts or where there is not a transit stop. Projected future crossing volumes (in addition to current volumes) may be used to meet this minimum crossing volume. Note that this may result in temporarily deferring new marked crossings in certain locations on City Walkways or Major City Walkways outside of a Pedestrian District or transit stop, though crossing spacing standards may identify a network gap.
- **Transit stops:** Moving forward, PBOT practice will be to provide a marked pedestrian crossing at all transit stops. A minimum of 20 pedestrians crossing during peak hour will not be required to justify new marked crossings at transit stops. Implementing this new guideline will require collaborating with TriMet staff to consolidate, relocate, or otherwise confirm transit stop locations before determining marked crossing needs to help meet this guideline.

### Considerations

These crossing spacing guidelines are intended to identify gaps where further engineering analysis is required. While the stated 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 judgment.

As new design guidelines, the PedPDX Crossing Spacing Guidelines will be implemented as part of new capital projects as they are scoped and constructed. While these spacing guidelines will determine the general locations where additional marked pedestrian crossings should be evaluated, the design of those crossings (whether a simple marked crosswalk is provided, or whether additional enhancements are provided) will be determined by existing City guidelines outlining the types of crossing design treatments appropriate for various roadway types.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 1.3

## Explore options to enable and encourage off-site pedestrian improvements by private development.

PBOT's Development Permitting and Transit group reviews and permits all street and frontage improvements associated with private development. In Portland, private development is often required to make street frontage improvements along the property as part of a development project. This includes providing or improving sidewalks in a manner consistent with the City's rules and the Pedestrian Design Guide. A large proportion of new sidewalks constructed or improved in Portland over time have been provided in conjunction with private development activities.

Current case law on exactions often limits developers to improving the sidewalk frontage directly adjacent to the property. There are few mechanisms in place to encourage or require private developments to provide pedestrian infrastructure beyond the immediate property frontage, including crossing enhancements that could serve future tenants, or sidewalk extensions beyond the property to connect to new development to surrounding neighborhoods.

PBOT Development Permitting and Transit team will work with PBOT Policy, Innovation, and Regional Collaboration staff, the City Attorney, and City Council to explore mechanisms for encouraging off-site pedestrian improvements in conjunction with private development. Options to explore include updating PBOT's development review criteria to require off site pedestrian mitigations when appropriate.

### Considerations

Changes to PBOT development review criteria or will likely require updates to City Code and authorization by the City Attorney and City Council. Establishing a funding source for PBOT Development Review to leverage private pedestrian improvements could also help maximize improvements provided by private development.



*Crossing improvements made in conjunction with new development can help address the increase in demand on the pedestrian network and help serve future tenants and/or residents*

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# STRATEGY 2

## Improve visibility of pedestrians at crossings

The PedPDX Safety Analysis found that citywide, 70% of pedestrian crashes in Portland occur at intersections (in Oregon, every intersection is a legal crosswalk). Making sure pedestrians crossing the street are visible to people driving is a critical factor for increasing pedestrian safety on our roadways. The following actions seek to improve visibility conditions at pedestrian crossings through intersection design, changes to street markings, and by applying vision clearance best practices. The actions presented as part of this strategy may be viewed as a set of tools for improving visibility of pedestrians at intersections. The appropriate treatment or set of treatments will vary according to context.

Improved street lighting at intersections and crossings is also a critical tool for improving visibility of pedestrians and will be addressed in greater detail as part of Strategy 6.

# Strategy 2
## Improve visibility of pedestrians at crossings

Table 9: Index of Strategy 2 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **2.1** Implement vision clearance guidelines at uncontrolled crossings in conjunction with PBOT capital projects, development review, and paving projects. | Implementing Action (policy adopted with PedPDX) | Policy | PBOT Capital Delivery Division; PBOT Development Review; PBOT Parking |
| **2.2** Identify key intersections for retroactive vision clearance improvements by Safe Routes to School, Neighborhood Greenways, Vision Zero, and Pedestrian Network Completion programs. | Future Action | Infrastructure | Vision Zero; Safe Routes to School; Neighborhood Greenways; PBOT Traffic Investigations |
| **2.3** Evaluate the need for vision clearance guidelines at controlled crossings and on local streets. | Future Action | Policy | City Traffic Engineer |
| **2.4** Provide high visibility crosswalks at all marked crossings when restriping or providing new crosswalks. | Implementing Action (policy adopted with PedPDX) | Infrastructure | PBOT Capital Delivery Division; PBOT Maintenance Operations |
| **2.5** Clarify design guidance for tree location within the right-of-way. | Future Action | Policy | Urban Forestry; City Traffic Engineer |
| **2.6** Update PBOT design guidance to maximize the use of curb extensions, floating curb extensions, and interim painted curb extensions within the Pedestrian Priority Network at both controlled and uncontrolled crossings. | Future Action | Policy | Streets 2035 Project Manager; PBOT Modal Coordinators; City Traffic Engineer |

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# Strategy 2
## Improve visibility of pedestrians at crossings

## ACTION 2.1

### Implement vision clearance guidelines at uncontrolled crossings in conjunction with PBOT capital projects, development review, and paving projects.

In many locations throughout the city, vehicles have historically been permitted to park all the way to the edges of street corners. This practice can significantly decrease visibility at street intersections and crossings, making it difficult for people driving to see pedestrians and bicyclists attempting to cross the street. This is a particular concern along busy arterials, and in locations with high pedestrian and bicycle crossing demand (including in neighborhood centers, retail districts, and along neighborhood greenways). While pedestrians and bicyclists are most vulnerable, inadequate vision clearance impacts safety for all modes, as parked cars at street corners can make it difficult for people driving to see oncoming traffic when turning onto or crossing busy streets.

To improve safety for all modes at street intersections and crossings, PBOT has updated our design guidelines to set back on-street parking a minimum of 20 feet from the approaches to all marked and unmarked crosswalks on pedestrian priority streets. This new design guideline was enacted by a directive from the City Traffic Engineer in 2018. Pedestrian priority streets include Major City Walkways, City Walkways, Neighborhood Greenways, and streets on the High Crash Network.

New PBOT capital projects impacting crossings, corners, and/or on-street parking will implement these new vision clearance guidelines on pedestrian priority streets when the project is constructed. PBOT's Development Review group will implement updated vision clearance guidelines in conjunction with private frontage improvements during the public works permitting process.

Daylighting approaches to crosswalks (both marked and unmarked) by setting back on-street parking makes people crossing the street and people riding bicycles

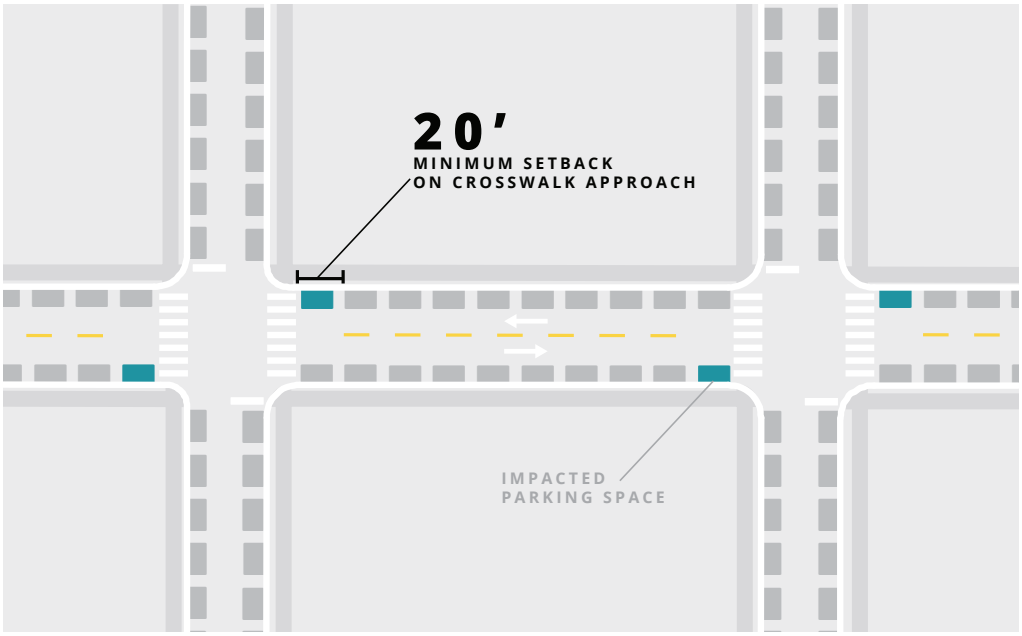


Before:
Visibility of the person attempting to cross the street is blocked


After:
Setting back parking at intersections improves visibility for all modes

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE




*Vision Clearance Diagram*

more visible to people driving, and is current best practice in cities across the country[1]. PBOT's new vision clearance guidelines will improve visibility for people attempting to cross pedestrian priority streets and streets within Portland's High Crash Network at marked and unmarked crosswalks. It will also improve visibility of people walking and biking along neighborhood greenways.

## Considerations

New Vision Clearance Guidelines are intended to serve as a guide for capital projects moving forward and will be implemented incrementally as new right-of-way improvements are delivered and as part of the development of parking management plans. Methods for setting back parking from marked and unmarked crossing approaches include providing curb extensions long enough to effectively meet the minimum parking setback, or providing signs prohibiting parking on the approaches to the crosswalk. Visually permeable uses such as bicycle or motorcycle parking, stormwater management facilities, and bike share stations may be provided within this required vision clearance zone.

At this time, PBOT's new Vision Clearance Guidelines apply to approaches to "uncontrolled" crossings (the legs of intersections that do not have stop signs or signals), and do not automatically apply at intersections with traffic signals or stop signs.

Outside of new capital projects, PBOT Traffic Investigations will continue to conduct engineering analysis to evaluate intersection visibility in response to public requests through the 823-SAFE hotline.

[1] ORS 811.550 prohibits on-street parking within 20 feet of a crosswalk at an intersection. While other sections of State code (ORS 810) authorize cities to establish local regulations and/or practices which may deviate, many jurisdictions follow this guidance.

# Strategy 2
## Improve visibility of pedestrians at crossings

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 2.2

# Identify key intersections for retroactive vision clearance improvements by Safe Routes to School, Neighborhood Greenways, Vision Zero, and Pedestrian Network Completion programs.

PBOT's new vision clearance guidelines will implement on-street parking setbacks as new capital projects are constructed and in conjunction with frontage improvements associated with private development. However, many corridors on designated routes to school, neighborhood greenways, High Crash Corridors, and on the PedPDX Pedestrian Priority Network could greatly benefit from improved vision clearance at intersections but do not currently have planned or active projects. An analysis of key corridors and intersections on these networks is needed to identify and prioritize additional locations for program-funded vision clearance improvements outside of capital projects.

PBOT Safe Routes to School, Neighborhood Greenways, Vision Zero, and Pedestrian Network Completion programs will collaboratively identify, fund, and implement intersections for retroactive vision clearance improvements along these networks.




*Parked Car Blocking Visibility at Crossing*

### Considerations

Changes to on-street parking will impact parking availability within neighborhoods.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 2.3

## Evaluate the need for vision clearance guidelines at controlled crossings and on local streets.

PBOT's new vision clearance guidelines do not currently apply to controlled crossings (intersections that have stop signs or signals) or to local streets. Vehicles parked near intersection corners on local streets and at controlled crossings may obscure views of pedestrians attempting to cross the street at stop signs and at traffic signals. It can also impede visibility of side-mounted traffic signs (such as stop signs) for people driving.

The City Traffic Engineer and PBOT Parking Management will evaluate the need for vision clearance guidelines at pedestrian crossings with stop signs and traffic signals and on local streets to improve visibility for all modes.

### Considerations

Analysis to determine whether vision clearance guidelines should be extended to controlled crossings and local streets must include an engineering justification confirming the need for safety reasons. Engineering analysis may suggest that improving safety and visibility of pedestrians at intersections may be best achieved through other tools in this toolbox.

Changes to on-street parking regulations on local streets will impact parking availability within neighborhoods. New parking setback requirements at traffic signals will reduce on-street parking supply in locations with high parking demand, such as the Center City and in neighborhood retail districts. As part of this evaluation, City parking and curb space policy, actual localized parking demand, and other methods to improve visibility and safety of pedestrians at crossings should all be considered.





*Parked vehicles at signalized intersections can make it difficult for people driving to see people attempting to cross the street.*

# Strategy 2
## Improve visibility of pedestrians at crossings

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 2.4**

## Provide high visibility crosswalks at all marked crossings when restriping or providing new crosswalks.

The PedPDX Safety Analysis found that signalized intersections are not preventing pedestrian crashes in Portland. Over 40% of pedestrian crashes and 30% of severe/fatal crashes citywide occur at signalized intersections. Over a quarter of all crashes involve a turning driver failing to yield when the person walking has the right of way at the signal.



OVER **40%** of pedestrian crashes

AND **30%** of severe/fatal crashes citywide

**OCCUR AT SIGNALIZED INTERSECTIONS**

Improving the visibility of pedestrian crosswalks at signalized intersections may help make crossing pedestrians more visible to people driving. PBOT's Traffic Design Manual has historically called for crosswalk markings with two transverse lines (running perpendicular to oncoming traffic) at signalized intersections. In contrast, high visibility (or "continental") crosswalks with longitudinal lines parallel to traffic flow allow drivers to see the marked crosswalk from a greater distance. This increased visibility gives drivers more time to safely stop for a pedestrian waiting to cross. The PBOT Traffic Design Manual currently requires these high-visibility "continental" crosswalk markings at uncontrolled crossings and at school crossings where increased visibility is needed.

To increase visibility at all marked crossings, PBOT will provide high-visibility crosswalks at all marked crossings moving forward, including at traffic signals. Upon adoption of PedPDX, the City Traffic Engineer will issue a directive to make high-visibility "continental" crosswalk markings our citywide practice. This updated design practice will subsequently be integrated into an updated PBOT Traffic Design Manual. As new crosswalks are installed or reinstalled by PBOT Maintenance Operations or contractors, they will be transitioned to high-visibility markings.

### Considerations

As an update to PBOT's design guidelines, changes to crosswalk markings will be implemented incrementally as crossings are installed or reinstalled moving forward.



*High visibility, "continental" style crosswalk*

PEDPDX OBJECTIVES ADDRESSED




# ACTION 2.5

## Clarify design guidance for tree location within the right-of-way

Street trees are a critical element of a pedestrian-friendly city. They provide a pleasant walking experience by buffering pedestrians from the roadway, provide shade along sidewalks, and introduce natural features into the public realm. Street trees help mitigate the impacts of climate change by improving local air quality and reducing the effects of urban heat islands. Trees in the right-of-way promote walking by providing shade, calming traffic, and beautifying the urban environment.

While a critical component of our urban infrastructure, vegetation in the right-of-way must be strategically sited and maintained to ensure clear visibility of people crossing the street at marked crosswalks and intersections.

PBOT staff will work with Urban Forestry to clarify existing Urban Forestry Street Tree Planting Standards in relation to pedestrian crossings on sidewalks and in medians, and collaboratively refine current guidance as appropriate. This may include clarifying where within the right-of-way trees should/should not be planted in relation to crosswalks, when and where tree limbing needs should be regularly evaluated, where particular species are preferable or should be avoided, and/or other context specific approaches for maintaining visibility of people crossing at marked crosswalks and intersections.

### Considerations

Collaboratively clarifying street tree planting standards will help decrease the amount of vegetation removal and trimming at pedestrian crossings that occurs as trees become overgrown.

# Strategy 2
## Improve visibility of pedestrians at crossings

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 2.6**

## Update PBOT design guidance to maximize the use of curb extensions, floating curb extensions, and interim painted curb extensions within the Pedestrian Priority Network at both controlled and uncontrolled crossings.

Curb extensions, floating curb extensions and painted curb extensions are improvements that increase visibility of people walking to drivers and decrease the crossing distance and exposure time for pedestrians crossing the street.

Curb extensions are important at uncontrolled crossings to improve the visibility of pedestrians waiting to cross the roadway (and driver yielding), but they are also important at intersections with traffic signals and stop signs. The PedPDX Safety Analysis found that the largest proportion of pedestrian crashes in Portland occur at signalized intersections. Over a quarter of all crashes involve a turning driver failing to yield when the person walking has the right of way at the signal. Curb extensions (including floating curb extensions) help increase the visibility of pedestrians waiting to cross the roadway and may be particularly beneficial at signals where pedestrians and turning vehicles move during the same signal phase. Curb extensions can also help keep signal poles and other infrastructure out of pedestrian clear zones.

The PBOT Streets 2035 Plan will develop multi-modal decision-making frameworks for Portland rights-of-way. The PBOT modal coordinators will work with the Streets 2035 project manager and the City Traffic Engineer to develop clear design guidance for when and where curb extensions and floating curb extensions should be provided as part of capital projects and development review.



*Curb extensions at signalized intersections can increase visibility of pedestrians attempting to cross the street. They also help set back vehicle parking to improve sight lines.*

### Considerations

While curb extensions are an important tool for enhancing pedestrian safety and comfort, they can present trade-offs that must be considered. Concrete curb extensions can preclude future bike and transit improvements. They can sometimes restrict turns for large vehicles, including buses, freight and delivery trucks, and emergency response vehicles. Floating curb extensions and interim curb extensions are two design variations that can help to address these concerns. In some locations, a pedestrian refuge median may be more desirable or appropriate.

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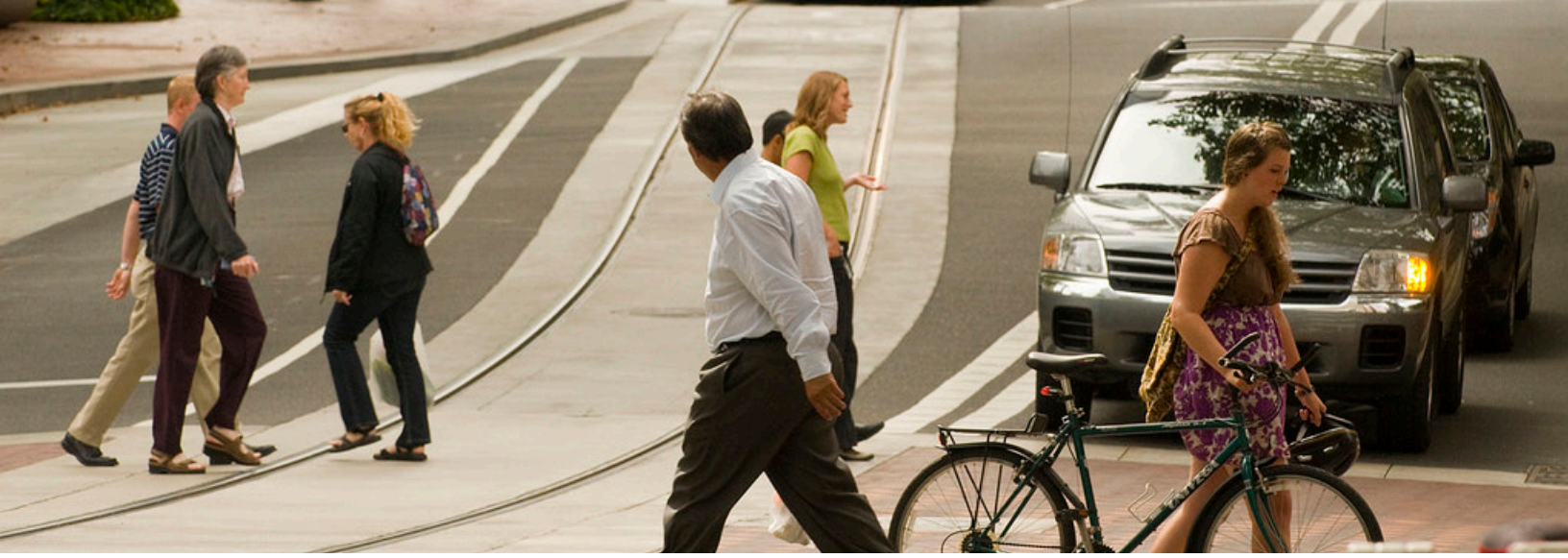

# STRATEGY 3

## Reduce turning movement conflicts at intersections

Intersections are where pedestrians are most likely to be killed or seriously injured. This strategy aims at protecting pedestrians trying to cross at a “WALK” signal from turning cars, a problem shown in the PedPDX Safety Analysis and heard in the Disability Focus Group. Intersection design focused on turning movements can facilitate safe turning and improve pedestrian safety.

# Strategy 3
## Reduce turning movement conflicts at intersections

Table 10: Index of Strategy 3 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE/ COORDINATION |
|---|---|---|---|
| **3.1** Develop guidelines and practices for separating vehicle turning movements concurrent with the pedestrian walk phase and incorporate signal timing analysis into capital project scopes. | Implementing Action (policy adopted with PedPDX) | Policy | City Traffic Engineer; Vision Zero; PBOT Signals and Street Lighting; PBOT Capital Delivery Division |
| **3.2** Develop a pilot to study prohibiting "turn-on-red" within Pedestrian Districts and at High Pedestrian Crash Intersections. | Implementing Action (policy adopted with PedPDX) | Policy | City Traffic Engineer; Vision Zero; PBOT Signals and Street Lighting |
| **3.3** Reduce uncontrolled left turn conflicts at arterial/non-arterial intersections along Major City Walkways, City Walkways, and High Crash Corridors in conjunction with capital projects. | Implementing Action (policy adopted with PedPDX) | Policy; Infrastructure | City Traffic Engineer; Vision Zero; PBOT Capital Delivery Division |
| **3.4** Identify and fund key intersections for signal timing improvements to separate pedestrian crossing and vehicle turning movements, prioritizing high crash Intersections. | Future Action | Infrastructure | Vision Zero; PBOT Signals and Street Lighting |
| **3.5** Use raised crosswalks to slow automobile turning movements at arterial/non-arterial intersections. | Future Action | Infrastructure | City Traffic Engineer; PBOT Pedestrian Coordinator; PBOT Capital Delivery Division |

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# Strategy 3
## Reduce turning movement conflicts at intersections

## ACTION 3.1

### Develop guidelines and practices for separating vehicle turning movements concurrent with the pedestrian walk phase and incorporate signal timing analysis into capital project scopes.

The PedPDX Safety Analysis found that over 40% of crashes involving pedestrians occur at signalized intersections. Assignments of error for pedestrian crashes show that 8% involve a right-turning driver failing to yield and 20% involve a left-turning driver failing to yield when the person walking has the right of way. Protecting crossing pedestrians from automobile turning phases can help decrease these right and left turn conflicts.

There are a variety of tools for separating pedestrian crossing movements from vehicle turning movements, including protected left turns, protected right turns, all-pedestrian phases, leading pedestrian intervals, and protected-permissive phasing. Protected-permitted left turns area flashing yellow arrows that if concurrent with conflicting walk symbols also create a hazard and should be avoided (this is already PBOT practice). The Oregon Department of Transportation's Crash Reduction Factor Appendix cites a 37% pedestrian and bicycle crash reduction factor for leading pedestrian intervals and a 43% pedestrian crash reduction factor for installing signals with no pedestrian phase with flashing yellow arrows.

The City Traffic Engineer, PBOT Signals and Street Lighting, and Vision Zero staff will develop guidelines and practices for separating vehicle turning phases concurrent with pedestrian walks, including identifying contexts and criteria where various treatments are appropriate and where shared phasing should be eliminated.

In the interim, PBOT Signals and Street Lighting and the City Traffic Engineer will generally not approve permissive left turns at new signals across Major City Walkways (or Bikeways), unless engineering judgment justifies the treatment. PBOT will utilize ODOT guidelines and practices for separating vehicle turning phases from opposing through traffic. PBOT Signals and Street Lighting will continue to use PBOT's Leading Pedestrian Interval (LPI) Guidelines to identify opportunities to provide LPIs.

These guidelines will consider PedPDX classifications and designated pedestrian high crash intersections as a factor. The decision to separate pedestrian crossing phases from vehicle turning phases should largely be a function of where we have seen or predict pedestrian safety concerns.

Once developed, PBOT Complete Streets will incorporate new signal timing guidelines into the PBOT project development checklist to inform project scoping needs.

PEDPDX OBJECTIVES ADDRESSED

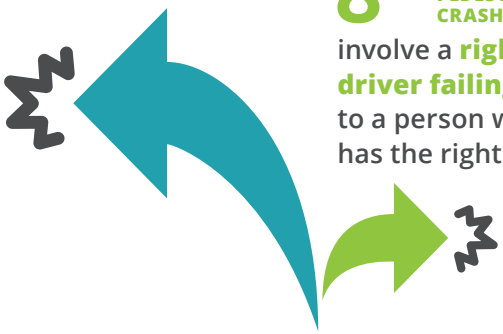
HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**20%** **OF ALL PEDESTRIAN CRASHES**

involve a **left-turning driver failing to yield** to a person walking who has the right of way

**8%** **OF ALL PEDESTRIAN CRASHES**

involve a **right-turning driver failing to yield** to a person walking who has the right of way



## Considerations

There are a number of trade-offs to be considered when determining how to effectively set signal timing to maximize safety and efficiency for all road users. Giving more walk time to pedestrians will have an impact on traffic flows, including transit vehicles and people biking. Increasing the overall length of time it takes for a signal to move through a cycle length will increase wait time for all users, including pedestrians, which can lead to less efficient crossings and non-compliant movements. Turn pockets needed for protected turning phases require sufficient right-of-way width, which is not always available. Changing the signal timing at one location could lead to a ripple impact to dozens of nearby signals.

### *Tools for separating pedestrian crossing movements from vehicle turning movements:*

**PROTECTED (OR PROHIBITED) LEFT TURNS:** Turning vehicle has a green left-turn signal and pedestrians are not permitted to cross (as opposed to an unprotected turn, when turning vehicles have a green light and must yield to oncoming traffic and pedestrians typically have a "WALK" signal, which creates a potential conflict for pedestrians and turning vehicles). Prohibited left turn movements may be an appropriate tool where there is not adequate space for a left turn pocket.

**PROTECTED RIGHT TURNS:** Protected right turns are similar to protected left turns in that they hold vehicles from turning right with a red light to provide pedestrians with a "WALK" signal. This prevents pedestrians from sharing a traffic phase with right-turning vehicles. When vehicles have a green right turn arrow, pedestrians are not permitted to cross. The addition of a "NO TURN ON RED" sign may also be used.

**ALL-PEDESTRIAN PHASES:** Stops all motor vehicle movement and allows pedestrians to cross in any direction at the intersection, including diagonally.

**LEADING PEDESTRIAN INTERVALS:** Gives pedestrians a 3-10 second head start when entering an intersection.

**PROTECTED PERMISSIVE PHASING:** Motor vehicles are given two phasings. In a "permissive/protected" mode, the permissive left-turn phase is immediately followed by an exclusive, protected left-turn phase, initiated by a green arrow signal indication.

# Strategy 3
## Reduce turning movement conflicts at intersections

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 3.2

# Develop a pilot to study prohibiting "turn-on-red" within Pedestrian Districts and at High Pedestrian Crash Intersections.

Allowing rights on red is common throughout the city. Left turns on a red light are also allowed when the driver is turning onto a one-way street, which is common downtown. To make these movements, drivers must pull forward into the crosswalk to look for a gap in on-coming traffic, into and across the path of pedestrians who have a "walk" signal. This can create a dangerous situation if the driver does not see a pedestrian entering the crosswalk. It is particularly dangerous for blind pedestrians, who do not receive visual clues (through signals or eye contact with the driver) that the driver intends to turn against the signal. Furthermore, drivers looking for gaps in traffic to make the turn do not always look the opposite direction to check for crossing pedestrians before making the turn against the signal.

As part of the PedPDX public outreach, members of Portland's disability community in particular have expressed strong support for eliminating "turn-on-red." Engineering studies show a significant increase in pedestrian crashes where "right-on-red" is permitted [1] [2]. The City Traffic Engineer, PBOT Signals and Street Lighting, and Vision Zero staff will develop a pilot to study prohibiting "turn-on-red" in high pedestrian demand districts and/or at pedestrian high crashes intersections. The pilot study will establish evaluation criteria and based on the findings of the pilot the City Traffic Engineer may consider permanent prohibitions on "turn-on-red" at key locations.




*No Turn on Red*

### Considerations

A pilot study will allow PBOT to monitor what impact prohibiting "turn-on-red" might have on pedestrian safety and automobile congestion. It will also offer an opportunity to monitor driver compliance. The pilot study should be coupled with education about the safety concerns underlying the study, as well as enforcement for non-compliance.

[1] 10% increase in right turn crashes where right turn on red is permitted - Handbook of Road Safety Measures, Elvik, R. and Vaa, T., 2004

[2] 69% increase in vehicle/bike and vehicle/pedestrian crashes (all severities) – Highway Safety Manual, 1st Edition, 2010

# ACTION 3.3

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## Reduce uncontrolled left turn conflicts at arterial/ non-arterial intersections along Major City Walkways, City Walkways, and High Crash Corridors in conjunction with capital projects.

The PedPDX Safety Analysis found that 27.5% of all crashes and 33% of fatal and serious injury crashes occur at uncontrolled intersections (intersections without a stop sign or traffic light). Many of these crashes occur when drivers are looking for gaps in oncoming traffic to make a left turn and do not see pedestrians crossing streets and driveways. This can happen when drivers are turning left off of major arterials onto local streets and driveways, and where drivers are turning from local streets onto major arterials.

Reducing the number of potential vehicle turning movements at uncontrolled intersections can help prevent pedestrian crashes. Medians within the arterial roadway that span across the intersection with the local street prevents unexpected vehicle turning movements at uncontrolled intersections that pedestrians must contend with, allowing pedestrians to more safely walk along the arterial street. Medians also provide opportunities for enhanced pedestrian crossings by creating space for a refuge island. In the absence of central median islands or diverters, left turn restrictions can also help reduce uncontrolled left turns and create a safer walking environment along the roadway.

As part of PBOT capital projects, project managers will evaluate opportunities to apply left turn restrictions on Major City Walkways, City Walkways, and on High Crash Corridors. The analysis will be included in the PBOT Project Development Checklist to help identify project scope.

**33%** of fatal and serious injury crashes

**OCCUR AT UNCONTROLLED INTERSECTIONS**

***(intersections with no stop signs or traffic signals)***

### Considerations

Medians, diverters, and left turn restrictions disallow uncontrolled left turns, forcing drivers a block or two out of direction to make a left turn or u-turn. This can lead to slightly longer driving times and potential delay at traffic signals. Left turn restrictions should be context driven to ensure there is reasonable access to and through neighborhoods.



*Median diverters at arterial / non-arterial intersections reduce the number of conflicts with turning vehicles that pedestrians must contend with and provide a central refuge to make crossings safer and more comfortable.*

# Strategy 3
## Reduce turning movement conflicts at intersections

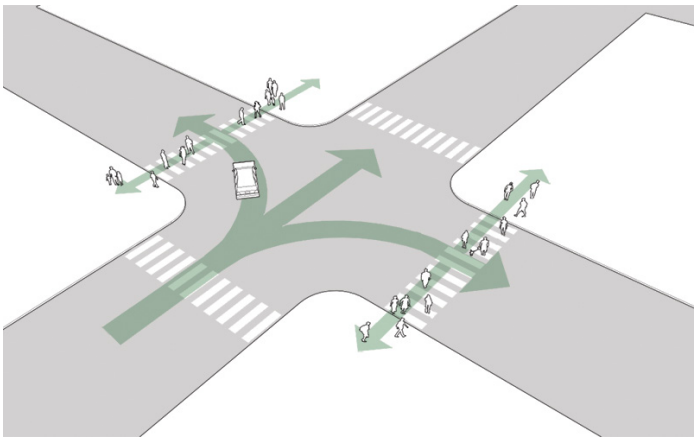
PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 3.4

### Identify and fund key intersections for signal timing improvements to separate pedestrian crossing and vehicle turning movements, prioritizing high crash intersections.

In addition to implementing signal timing improvements through capital projects, PBOT Signals and Street Lighting and Vision Zero staff will collaboratively identify locations, particularly at high crash intersections, where separating pedestrian crossing and vehicle turning movements could decrease vehicle/pedestrian conflicts. The Vision Zero and Signals and Street Lighting will advocate for funding for these programmatic improvements at pedestrian high crash intersections as needed.



*Signal Phasing Diagram*

### Considerations

While some retroactive signal timing improvements may be simple changes to signal timing, locations where new signal heads, right-of-way, roadway striping, or new signal technology is needed will be more costly and will depend upon available funding.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 3.5

## Use raised crosswalks to slow automobile turning movements at arterial/non-arterial intersections.

Raised crosswalks bring pedestrian street crossings to be level with the sidewalk and street curb. Raising crosswalks offers numerous benefits. They can improve accessibility and eliminate the need for curb ramps by keeping the sidewalk and the roadway crossing at the same grade. Raised crosswalks also make pedestrians slightly more visible to people driving and provide traffic calming by slowing vehicle turning movements as the move from higher speed arterial streets onto slower speed local streets. While not a common design in Portland at this time, raised crosswalks are used at arterial/local street intersections in cities across the world.

The Portland Protected Bicycle Lane Planning and Design Guide identifies sidewalk-level bikeways as one of Portland's preferred bikeway designs. Raised crossings can also be built as a part of these projects, offering safer roadway for multiple modes.

The City Traffic Engineer and Pedestrian Coordinator will develop design guidelines and criteria identifying where raised crosswalks should be considered when scoping and constructing capital projects. The Pedestrian Coordinator will integrate these criteria into the PBOT project development checklist to inform capital project scopes.

### Considerations

As non-traditional designs, raised crosswalks should be designed to be accessible and legible to disabled pedestrians.



*Raised Crosswalk*

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# STRATEGY 4

## Improve pedestrian safety and comfort at crossings and transit stations

Improving the safety and comfort at crossing locations and transit stations will improve the pedestrian experience for all. Actions related to increasing pedestrian safety and comfort included to implement this strategy include continuing to test passive detection technology at pedestrian crossings to eliminate the need for pedestrian push buttons and ensure adequate crossing time, evaluating current crosswalk design guidance, and developing City guidance for transit station design.

# Strategy 4

## Improve pedestrian safety and comfort at crossings and transit stations

Table 11: Index of Strategy 4 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **4.1** Continue to test passive pedestrian detection technology. | Implementing Action (policy adopted with PedPDX) | Policy | PBOT Signals and Street Lighting |
| **4.2** Evaluate the need to update crosswalk design guidelines at uncontrolled multi-lane crossings. | Implementing Action (policy adopted with PedPDX) | Policy | City Traffic Engineer; Vision Zero; PBOT Signals and Street Lighting |
| **4.3** Develop City design guidance for transit station platforms that maximize safety and comfort for people walking, biking, and taking transit. | Future Action | Infrastructure Policy | PBOT Complete Streets |

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# Strategy 4

## Improve pedestrian safety and comfort at crossings and transit stations

## ACTION 4.1

### Continue to test passive pedestrian detection technology.

Manual actuation and detection of pedestrian signals at crossings require a person to find, and physically push a pedestrian pushbutton to place a call for a pedestrian "WALK" phase in the traffic signal cycle. Pedestrian pushbuttons are often used at streets with high vehicle volumes, and when pushed activate the red signal for motor vehicles, allowing the pedestrian to cross the street on demand. However, many pedestrians do not activate pushbuttons when present. Furthermore, pushbuttons sometimes do not provide feedback to the user that the button has been activated and is operating property. If a person waiting to cross the street does not realize the need to push a button to activate the pedestrian crossing phase, the person may have to wait a full additional signal cycle for a "WALK" indication.

In areas with high pedestrian volumes, pedestrian crossing phases are typically automatically activated as part of every signal cycle. The automatic "WALK" phase obviates the need for a manual pushbutton and eliminates any uncertainty of detection. However, there are many instances in which a pedestrian actuated crossing may be preferable to an automatic "WALK" phase. In locations with high vehicle volumes, pedestrian actuated pushbuttons can decrease pedestrian waiting times over an automatic pedestrian "WALK" phase.

Passive pedestrian detection could help register the presence of a person wishing to cross the street without requiring the pedestrian to push a button, thereby making traffic signals automatically responsive to pedestrian crossing demand. A successful passive pedestrian




*Manual Pedestrian-Actuated "Walk" Pushbutton*

PEDPDX OBJECTIVES ADDRESSED




technology could also potentially detect in real time how quickly pedestrians are crossing the roadway, and adjust the "WALK" phase to adjust to the pedestrian rate of travel.

However, despite the promise and potential utility of passive pedestrian detection, a reliable technology has not yet been developed and tested and approved by PBOT Maintenance staff. PBOT Signals and Street Lighting staff have been consistently testing new technologies for detecting pedestrians at crossings, and will continue to monitor and evaluate this technology as it continues to develop.

## Considerations

When activated, APS features provide audible and tactile information about the crossing to pedestrians who are blind or have low vision. They provide a voice announcement indicating when to walk and when the crossing is in the don't walk condition.

Even at intersections without manual pedestrian detection, the US Access Board Public Right-of-Way Design Guidelines recommend that all signalized intersections provide Accessible Pedestrian Signals. The City of Portland currently has around 300 intersections equipped with some form of Accessible Pedestrian System. PBOT Signals and Street Lighting evaluates locations for audible pedestrian signals based on resident request.

Non-actuated WALK phases should be the preferred practice within Pedestrian Districts. When not provided a clear reason for doing otherwise should be provided.

# Strategy 4

## Improve pedestrian safety and comfort at crossings and transit stations

## ACTION 4.2

### Evaluate the need to update crosswalk design guidelines at uncontrolled multi-lane crossings.

Every intersection, and certain midblock locations, are legal crosswalks in Oregon (ORS 801.220). Crosswalks vary in their design; some are unmarked, while others have stop lines, median islands, rapid flashing beacons or other elements that can improve safety at pedestrian crossings.

PBOT's crosswalk design guidelines tailors each crosswalk's design to its location based on engineering studies. In general, roadways with more travel lanes, higher speeds and a greater number of people driving, walking and biking need extra elements to meet safety guidelines.

While engineering best practice may indicate that a marked crossing or flashing pedestrian beacon sufficiently meets safety criteria on roadways with multiple travel lanes, these types of crossing treatments may not always eliminate "double threat" situations for people trying to cross the street (City of Portland crash data does not show an increase in crashes where rapid flashing beacons have been installed on multi-lane roadways). A double threat exists on multi-lane crossings where a person crossing the roadway is blocked from the view of other approaching motorists by a stopped vehicle.

Crossing treatments that provide a full stop indication for vehicles, such as full signals, half signals, or pedestrian hybrid beacons could help address potential double threat crossings on multi-lane roadways. These devices can also be coordinated to help facilitate transit mobility and control travel speeds, and may be a better choice than rapid flashing beacons in locations where traffic



*RRFB with Median Refuge Island*




*Half Signal*



*Full Signal*

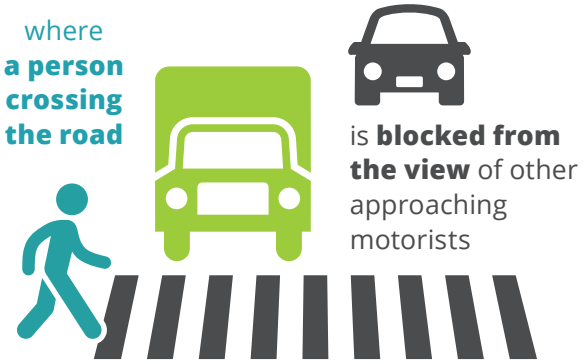
[3] NCHRP Report 562, "Improving Pedestrian Safety at Unsignalized Crossings," 2005, National Cooperative Highway Research Program

[4] FHWA-HRT-04-100, "Safety Effects of Marked Versus Unmarked Crosswalks at Uncontrolled Locations Final Report and Recommended Guidelines," 2005.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**A DOUBLE THREAT EXISTS ON MULTI-LANE CROSSINGS**




volumes are projected to increase over time. Median refuge islands, which allow pedestrians to cross one lane of traffic at a time, could also be appropriate at multi-lane crossings.

The City Traffic Engineer and Vision Zero and Signals and Street Lighting staff will evaluate whether existing PBOT crossing design guidelines should be updated to eliminate uncontrolled multi-lane crossings where a potential "double threat" condition occurs, either by reducing the number of vehicle lanes a person must cross at a time or by providing a full stop indication to vehicles.

## Considerations

Portland's crossing design guidelines stem from engineering research and national best practice [3] [4]. Any refinements to existing City of Portland design guidelines to require higher-order pedestrian infrastructure at multi-lane crossings would effectively go above and beyond current engineering best practice.

## CROSSWALK DESIGN BY ROADWAY TYPE*

| | VEHICLE ADT > 4,000 - 9,000 | | | VEHICLE ADT > 9,000 -12,000 | | | VEHICLE ADT > 12,000 -15,000 | | | VEHICLE ADT > 15,000 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ≤30 MPH | 35 MPH | 40+ MPH | ≤30 MPH | 35 MPH | 40+ MPH | ≤30 MPH | 35 MPH | 40+ MPH | ≤30 MPH | 35 MPH | 40+ MPH |
| TWO LANES | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| THREE LANES WITH RAISED MEDIAN | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| THREE LANES WITHOUT RAISED MEDIAN | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| MULTILANE WITH RAISED MEDIAN | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| MULTILANE WITHOUT RAISED MEDIAN | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

** All crossings must be scoped by an engineer to ensure recommended treatment is appropriate and ADA ramps and illumination are in place.*

- Marked Crosswalk
- Marked Crosswalk, island or curb extensions, enhanced signing and striping
- Marked Crosswalk and enhanced/active warning (islands and RRFB's)
- Marked Crosswalk and pedestrian hybrid or full signal

PBOT PORTLAND BUREAU OF TRANSPORTATION

*The City has developed crosswalk design guidance by roadway type which indicates the appropriate type of crosswalk to install based on the number of lanes, posted speed, and average daily traffic of a roadway. PedPDX assesses the design of existing marked crossings on priority streets to identify those that do not meet current guidelines.*

# Strategy 4

## Improve pedestrian safety and comfort at crossings and transit stations

## ACTION 4.3

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

### Develop City design guidance for transit station platforms that maximize safety and comfort for people walking, biking, and taking transit.

As Portland's population grows and the number of people walking, biking, and using transit increases, these three modes can sometimes compete for limited space in the right-of-way. One particular design challenge faced by planners and engineers is how to design transit stops that reduce conflict between people walking, biking, and taking transit. Portland has yet to develop strong design guidance for transit station design where bicycle lanes exist, but three main designs have emerged in recent years that warrant further refinement and standardization, including island transit platforms, bicycle bypasses, and bikes behind step out zone.

PBOT's design preference is always for clear separation between people walking and people bicycling. This includes at transit stops, where PBOT's preferred design is the island transit platform. Portland has already successfully implemented this design in a few locations along Moody Avenue. In this design, passengers board from and alight to a transit platform. A through bicycle lane, which can be either at street or sidewalk level, runs behind the platform and the sidewalk continues adjacent to building frontages. This design offers the highest level of protection and separation between modes and provides a space for waiting transit patrons that is separated from through-pedestrians on the sidewalk, but typically comes at the highest cost and uses the most right-of-way space.



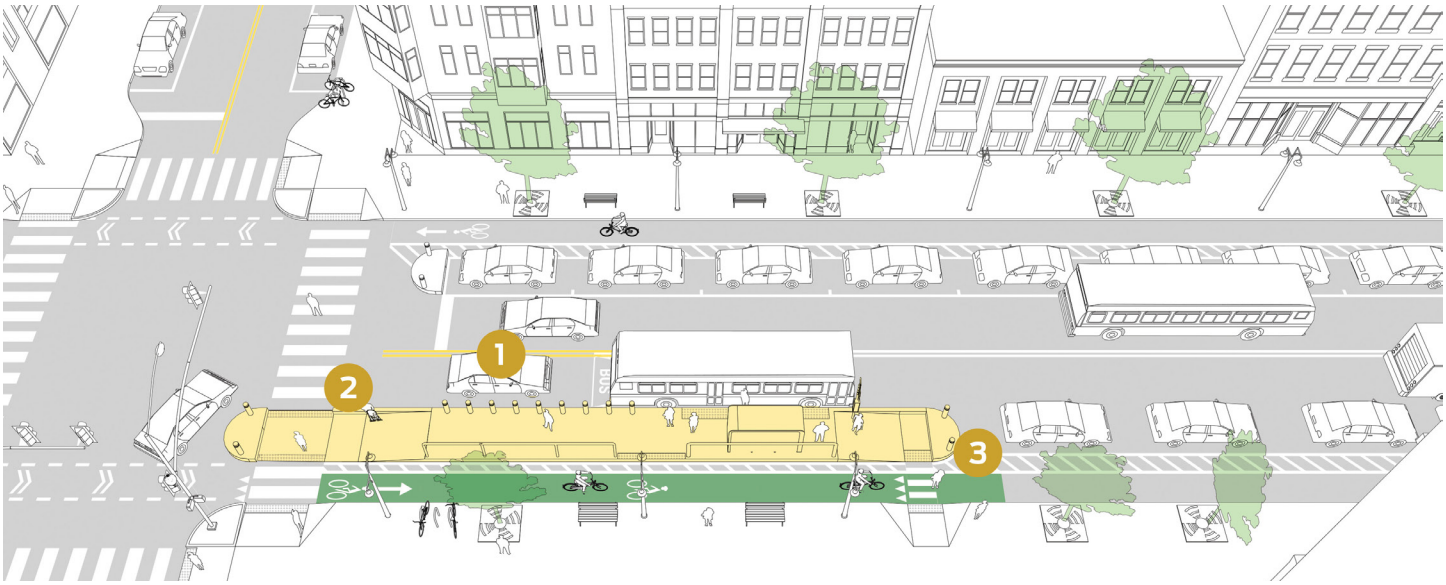
*Island Transit Platform in Portland on SW Moody Ave*



*Bicycle Bypass in Seattle*



*Bikes Behind Step Out in Toronto (Photo from NACTO)*




*Island Transit Platform (Image from NACTO  Transit Street Design Guide)*

Where right-of-way space is constrained, bicycle bypasses should be considered. This design is very similar to the island transit platform, with the difference being that the bike lane deflects to move around the transit station platform. With this design, it is especially important that objects like transit shelters, poles, and vegetation do not block sight lines and allow people biking and people stepping onto the platform to see each other.

The least preferred option is the bikes behind step out zone design, which eliminates the island, forcing transit passengers to board directly from the bike lane or onto a small "step out" zone. Transit stations are typically integrated into the sidewalk corridor. This design should only be considered where right-of-way or budget constraints do not allow for a full transit island or where volumes of people walking and biking are expected to be extremely low, as it does not denote clear separation between people walking or waiting for transit service and people biking.

As the City and the region continue to test and review the performance of these various transit station design types, the PBOT Complete Streets team will solidify any "lessons learned" into clear design guidance for transit stations in Portland. This design guidance will clarify that island transit platforms are the preferred treatment for pedestrian safety and comfort, as well as for people riding bicycles and taking transit.

## Considerations

Project budget and right-of-way constraints will typically be the determining factor in transit station design. Regional partners will need to come to a consensus about the detailed design elements for each of these station standards, as well as the order of preference for station types.

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# STRATEGY 5

## Seek cost-effective and creative solutions to provide pedestrian improvements

Thinking creatively can result in the installation of more sidewalks through the utilization of low-cost and interim solutions. Responses from the Walking Priorities Survey cited missing and poorly maintained infrastructure as key factors creating difficult walking conditions citywide. The PedPDX Advisory Committees voiced support for near-term strategies and actions to address infrastructural gaps to avoid long funding and design processes. Cost effective and creative solutions entail leveraging existing signals and infrastructure, and combine projects with planned infrastructure improvements.

# Strategy 5

## Seek cost-effective and creative solutions to provide pedestrian improvements

Table 12: Index of Strategy 5 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **5.1** Provide lower-cost pedestrian walkways. | Implementing Action (policy adopted with PedPDX) | Policy; Infrastructure | City Traffic Engineer; PBOT Civil Engineering Services; Safe Routes to School; Neighborhood Greenways; PBOT Pedestrian Coordinator; PBOT Capital Delivery Division; PBOT Maintenance |
| **5.2** Provide interim pedestrian improvements. | Future Action | Infrastructure | City Traffic Engineer; Safe Routes to School; Neighborhood Greenways; PBOT Pedestrian Coordinator; PBOT Maintenance |
| **5.3** Leverage paving projects for pedestrian improvements. | Implementing Action | Infrastructure | PBOT Pedestrian Coordinator; Safe Routes to School; Neighborhood Greenways; Vision Zero |
| **5.4** Convert existing fire signals to pedestrian crossings to help meet crossing spacing guidelines. | Implementing Action | Infrastructure | PBOT Signals and Street Lighting; PBOT Pedestrian Coordinator |
| **5.5** Leverage bicycle infrastructure to also serve pedestrians, including neighborhood greenways. | Future Action | Infrastructure | PBOT Pedestrian Coordinator; PBOT Bicycle Coordinator; Neighborhood Greenways |
| **5.6** Improve unimproved rights-of-way for pedestrian travel. | Implementing Action | Infrastructure | Portland Pathways; Safe Routes to School; PBOT Pedestrian Coordinator |

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 5.1

## Provide lower-cost pedestrian walkways.

The PedPDX needs analysis shows there are still approximately 350 linear miles of sidewalk missing on Portland's busy arterial and collector streets. These remaining sidewalk gaps are often some of our most expensive needs, as many of these locations also lack stormwater infrastructure and sufficient right-of-way width, and/or have substantial physical or environmental constraints that make traditional pedestrian infrastructure cost-prohibitive.

Because of the expense of traditional sidewalks, addressing this need with traditional concrete sidewalks will take many years, likely much longer than the 20-year horizon of this plan. A review of all sidewalk construction activity between 1998 through 2008 during the 20-year lifespan of Portland's original Pedestrian Master Plan found that during that time a total of approximately 250 miles of sidewalk were constructed or repaired. This includes all sidewalks constructed or repaired by the City and by private property owners and developers.

Portland residents cannot wait another 20 years or more to address gaps in the sidewalk network, particularly on our busiest streets. Providing lower-cost pedestrian walkways will allow us to provide critical pedestrian safety improvements sooner to more residents who need them now. In addition to costing less than a traditional concrete sidewalk with a full curb and gutter, lower-cost pedestrian walkways can also be a more context-sensitive approach for providing pedestrian walkways in neighborhoods.

Lower-cost and alternative walkway designs are not new to Portland. Most of the alternative walkway design types presented in this Toolbox were included in the 1998 Pedestrian Design Guide. PedPDX has worked together with PBOT Planning, the City Traffic Engineer, and the City Engineer to clarify the design elements for each of the alternative pedestrian design walkway types, as well as the roadway and traffic thresholds where these alternative designs are appropriate. Moving forward, PBOT programs providing pedestrian improvements (including Safe Routes to School, Vision Zero, Neighborhood Greenways, Neighborhood Streets, and the Pedestrian Network Completion Program) and PBOT's Civil Engineering Services will apply the alternative pedestrian walkway design types to sidewalk gaps in these programs' respective networks, as guided by the roadway and traffic criteria described for each. The pages appended to the end of this Toolbox describe the alternative pedestrian walkway design types that PBOT will apply to the pedestrian network, including key design elements, appropriate roadway types, and vehicle speed and volume thresholds for each.




### Considerations

The criteria described within each of the alternative pedestrian design types are intended to serve as guidelines. Local context will be considered during engineering and design. As non-traditional pedestrian walkways, each of these design types must accommodate and be legible to pedestrians with disabilities.

# Strategy 5

## Seek cost-effective and creative solutions to provide pedestrian improvements

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 5.2**

## Provide interim pedestrian improvements.

Concrete pedestrian infrastructure such as curb extensions and pedestrian refuge islands can be expensive. In some cases, a temporary or interim treatment provided with low-cost materials such as paint and delineator posts can help provide more pedestrian improvements in more locations while waiting for funding to provide permanent concrete infrastructure. These sorts of lower-cost treatments may also be used to test a configuration and allows us to make adjustments before a design is permanently constructed. Interim pedestrian infrastructure such as painted curb extensions can be initiated and provided by PBOT as part of a capital improvement or initiated by residents and implemented through PBOT's Portland in the Streets program (discussed further in Strategy 10).

The City Traffic Engineer will provide guidance to indicate where interim pedestrian infrastructure is appropriate and to clarify acceptable design treatments, including requirements for durable, slip resistant pavement markings. PBOT Safe Routes to School, Neighborhood Greenways, Vision Zero, and Pedestrian Network Completion programs will identify, fund, and implement low-cost pedestrian improvements as appropriate.

### Considerations

Interim painted pedestrian infrastructure should be considered supplemental to other treatments that are required to meet minimum safety requirements per engineering studies. Painted curb extensions or refuge islands should not be used to meet minimum safety requirements and must be designed to be accessible and legible to pedestrians with disabilities. Painted curb extensions and refuge islands will require on-going maintenance, including sweeping and clearing dust and debris, and occasional repainting.



*Interim Pedestrian Median Refuge*



*Painted Pedestrian Refuge*

# ACTION 5.3

PEDPDX OBJECTIVES ADDRESSED




## Leverage paving projects for pedestrian improvements.

When roads are repaved, maintenance crews install roadway striping and construct or improve corner curb ramps to meet current standard. Leveraging this new striping and expensive curb ramp work to also provide pedestrian crossing or walkway improvements in conjunction with paving projects allows us to stretch our dollar and provide more. There are also costs savings from taking advantage of work crews already being mobilized and on-site.

In the past, PBOT's Bicycle Missing Links Program has successfully leveraged paving projects to help fill small gaps in the bike network, but this same approach has not been used to identify needed marked crossings and other pedestrian improvements. Paving projects should be evaluated from a complete streets perspective, identifying opportunities to reconfigure newly paved roadways in ways that enhance safety for all road users. Moving forward, PBOT Safe Routes to School, Neighborhood Greenways, Vision Zero, and Pedestrian Network Completion programs will review PBOT paving projects to collaboratively identify, fund, and implement prioritized pedestrian improvements in conjunction with paving projects.

### Considerations

The PBOT Maintenance and Operations Division establishes the schedule for when roads will be paved. If needed improvements for paving projects become too large and require extensive public involvement, these projects should move to the Capital Delivery Division and become full capital projects.

# Strategy 5

## Seek cost-effective and creative solutions to provide pedestrian improvements

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 5.4**

## Convert existing fire signals to pedestrian crossings to help meet crossing spacing guidelines.

Portland is home to 31 fire stations, many with its own fire signal that allows emergency vehicles quick access out of the station when emergencies arise. These signals often do not have pedestrian crossing infrastructure but are readily equipped with much of the most costly infrastructure such as poles and signal cabinets that would be necessary to provide a signalized crossing. Providing pedestrian crossing infrastructure at each of these existing fire signals could help close crossing gaps in the pedestrian network for less cost than constructing an entirely new signal. PBOT Signals and Street Lighting staff have successfully converted several fire signals to pedestrian crossings across the city over the last several years. The PBOT Pedestrian Coordinator will identify the location of existing fire signals not yet converted to pedestrian crossings and will work with PBOT Signals and Street Lighting and PBOT capital project managers to develop a strategic plan for updating these to pedestrian crossings.

### Considerations

Converting fire signals to pedestrian crossings could occur as part of a PBOT capital project or could be initiated and funded through PBOT programs including by PBOT Signals and Street Lighting and/or the Pedestrian Network Completion Program. Converting fire signals to pedestrian crossings will require coordination with the Portland Fire Bureau. Revising existing fire station signals (many of which are old installations on span wires) to accommodate pedestrian crossings could lead to a full replacement of the signal equipment, new ADA corner curb ramps, and other infrastructure improvements to accommodate the new crossing.




*A fire signal was converted to serve as a pedestrian crossing on NE Sandy*

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 5.5

## Leverage bicycle infrastructure to also serve pedestrians, including neighborhood greenways.

Multi-modal design solutions provide added safety benefits and cost-efficient solutions for multiple modes. For example, bicycle signals that hold vehicle turning movements so people cycling can move through the intersection also provide a protected phase for pedestrians crossing the street. Similarly, infrastructure associated with protected bicycle lanes separates people cycling from moving vehicles, but can also serve as a pedestrian refuge island at intersections to help increase visibility of pedestrians and close crossing distances and pedestrian exposure time. The PBOT Bicycle Coordinator, Pedestrian Coordinator will collaborate during project development and design to maximize opportunities to provide bicycle and pedestrian infrastructure that jointly addresses the safety and comfort of both modes. Strategic coordination among PBOT staff that focus on each of these modes will create opportunities for leveraging investments and finding cost-efficient ways to integrate pedestrian improvements into bikeways.

PBOT's Neighborhood Greenways Program also presents an opportunity to develop safety improvements that serve both people walking and people riding bikes Neighborhood Greenways are residential streets with low volumes of auto traffic and low speeds where bicycles and pedestrians are given priority. Neighborhood Greenways improvements typically include reducing automobile speeds and volumes on designated streets using speed bumps and traffic diverters, providing pavement markings and signage alerting people driving to expect people bicycling, and providing crossing treatments at busy arterial and collector streets to help people walking and bicycling cross.

While Neighborhood Greenways provide traffic calming and crossing improvements that benefit people walking, due to cost the program has not traditionally provided new sidewalks where pedestrian walkways are missing on designated greenways. Because of their many walking benefits, PedPDX includes designated Neighborhood Greenways within the Pedestrian Priority Network as Neighborhood Walkways. Moving forward, the Neighborhood Greenways program and capital project managers in PBOT's Capital Delivery Division will evaluate opportunities to provide pedestrian walkways as part of Neighborhood Greenway improvements. This could include applying lower-cost, alternative pedestrian walkway design types.

### Considerations

Neighborhood Greenway improvements have traditionally been a low-cost tool for improving local streets for bicycle travel. Increasing the scope of Neighborhood Greenways project to also include pedestrian walkway improvements, even alternative pedestrian walkway treatments, may require an increase to project budgets. This is particularly true as Neighborhood Greenway projects continue to extend beyond inner Portland into East and Southwest Portland where there are significant gaps in the pedestrian network.




*Protected Bike Lane/ Pedestrian Refuge Island*

# Strategy 5

## Seek cost-effective and creative solutions to provide pedestrian improvements

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 5.6

# Improve unimproved rights-of-way for pedestrian travel.

Unimproved rights-of-way are street segments that have a dirt, gravel, or substandard pavement surface and typically lack curbs. Sometimes unimproved rights-of-way are completely unimproved and are merely platted "paper streets" with no walking or driving surface at all.

Unimproved rights of way that are too narrow or that are topographically challenged such that they cannot be improved to accommodate vehicles are often good candidates for sidewalk infill, pathways, stairways, or other alternative walkway treatments. These underutilized right-of-way segments can present low-cost opportunities to increase pedestrian connectivity, particularly in neighborhoods where the street grid is irregular or widely spaced and pedestrian connectivity is limited. Providing pedestrian walking improvements on these rights-of-way presents a cost savings over improving the street for all modes, including vehicle traffic. Since many of these unimproved rights-of-way tend to be narrow, they can often serve as designated, pedestrian-only paths.

PedPDX identifies several unimproved rights-of-way and pedestrian-only paths in the right-of-way as part of the Pedestrian Priority Network. As such, these designated Neighborhood Walkways are eligible for public funding as part of a PBOT led capital improvement. PBOT's Safe Routes to School and Pedestrian Network Completion program will consider these unimproved Neighborhood Walkways when prioritizing funding for capital improvements.

To support communities interested in developing neighborhood trails, the PBOT's Portland in the Streets Program provide a path by which community groups may propose, permit, build, and maintain pedestrian trails on public rights-of-way. Unimproved rights-of-way not identified as part of the PedPDX Pedestrian Priority Network may be improved by community partners using the Portland in the Streets permitting program and process.

### Considerations

As an alternative, low-cost treatment, design guidelines for pedestrian paths are presented in Action 5.1. Pedestrian paths should consider lighting needs, particularly when serving as walking route to school. Where topography is steep, a staircase may be provided when an accessible route is provided on the nearest full street connection.

Improving rights-of-way for pedestrian travel likely leads to a need for new lighting.



*Paved Pedestrian Path*

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# STRATEGY 6

## Provide adequate street lighting for pedestrians

Poor lighting is one of the top pedestrian difficulties in Portland, according to the Walking Priorities Survey and the Walking While Black Focus Group. The PedPDX Safety Analysis found that streetlights are present in crashes after dark, suggesting that existing streetlights alone are not sufficient to ensure motorists and pedestrians see each other. Since lighting may require construction to install, actions to integrate it as a component of development projects will work to improve lighting conditions incrementally. This can be paired with a separate lighting plan for under-served or high-crash areas, as well as design guidelines for implementation.

# Strategy 6
## Provide adequate street lighting for pedestrians

Table 14: Index of Strategy 6 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **6.1** Implement new lighting level guidelines in conjunction with capital projects and private development. | Implementing Action | Infrastructure | PBOT Signals and Street Lighting; PBOT Capital Delivery Division; PBOT Development Review |
| **6.2** Strategically improve street lighting conditions to increase visibility of (and for) pedestrians on our streets, focusing investment on High Crash Corridors and locations, Pedestrian Priority Streets, and underserved areas. | Future Action | Funding | PBOT Signals and Street Lighting; Vision Zero |
| **6.3** Address locations where street lighting is blocked by tree canopy. | Implementing Action | Maintenance | Urban Forestry; PBOT Signals and Street Lighting |

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# Strategy 6
## Provide adequate street lighting for pedestrians

## ACTION 6.1

### Implement new lighting level guidelines in conjunction with capital projects and private development.

During the PedPDX public outreach process, Portland residents voiced a strong desire to increase the amount of lighting on our streets. Dark streets and sidewalks can impact residents' sense of safety and personal security in the public realm, while dark crossings and intersections can significantly reduce visibility of people crossing the street and contributes to the rate and severity of pedestrian crashes. In particular, feedback from the "Walking While Black" focus group highlighted the impact that dark streets have not only on traffic safety, but on personal safety and security in the public realm. Participants identified poor lighting as the top barrier to walking in Portland. Focus group discussion about poor lighting conditions revealed that while increasing visibility of pedestrians at night for traffic safety is important, poor lighting on our streets also contributes to personal safety concerns in public spaces and during travel commutes, issues that speak to the unique experience of Black pedestrians in Portland.

The PedPDX safety analysis also shows that street lighting conditions significantly impact the rate and severity of pedestrian crashes in Portland. The PedPDX Safety Analysis found that in Portland crashes involving people walking are more frequent in the fall and winter months when hours of daylight are reduced. Visibility is an important issue for pedestrian safety in Portland, where there is a big swing in the number of daylight hours depending on the time of year. Increasing the amount of lighting at pedestrian crossings is therefore critical for preventing future pedestrian crashes. The Oregon Department of Transportation's Crash Reduction Factor Appendix cites a 42% crash reduction factor when intersection illumination is provided.

In response, PBOT Signals and Street Lighting staff has updated the City's street lighting level guidelines to ensure better lighting conditions are provided for people walking throughout the city, be it on a sidewalk, trail, path, or at a crossing. Historically PBOT's lighting guidelines were focused on the light output within the vehicle portion of the roadway between the curbs. The target values fluctuated by street classification, with higher values required at intersections. PBOT's new lighting level guidelines establish updated lighting criteria for street sections based on a wider variety of inputs, establishes minimum target light levels along sidewalks, and includes



Street Lighting

PEDPDX OBJECTIVES ADDRESSED

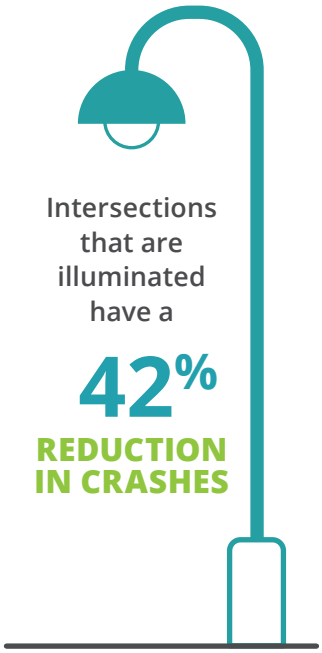
HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

target light levels and expanded analysis requirements for marked pedestrian crossings. The full lighting guidelines can be found in the appendix of this document.

Key pedestrian-related outcomes of PBOT's new lighting level guidelines include:

- Lighting level requirements that are directly tied to PedPDX classifications, with increased lighting levels called for on streets with higher pedestrian demand (for example, Pedestrian Districts and Major City Walkways).
- Guidelines for desired lighting levels for pedestrian facilities, not just for roadway spaces between curbs. This includes establishing minimum lighting levels for the sidewalk corridor behind the curb and for marked crossings and intersections.
- Context-sensitive lighting level guidelines that respond to the alternative pedestrian walkway design types presented in Action 5.1, including pedestrian paths, shared local streets, and shoulder walkways.
- Consideration for where pedestrian-scale lighting (as opposed to higher roadway lighting fixtures) is appropriate.

PBOT project managers will include a lighting analysis and address lighting gaps as part of capital projects. A lighting analysis is included in PBOT's Project Delivery Checklist that project managers use for scoping small and large projects to ensure that these new guidelines are implemented.




*Source: Oregon Department of Transportation's Crash Reduction Factor Appendix*

PBOT Development Review will also implement new lighting level guidelines as part of private frontage improvements. Lighting level reviews are conducted every time development occurs that constructs new sidewalk and path segments and this practice will continue with updated lighting guidelines.

## Considerations

As a new design guideline, changes to lighting conditions concurrent with capital projects and private development will be incremental. Including lighting needs as part of capital project scopes may require an increase to project budgets and/or a phased approach to addressing lighting deficiencies.

# Strategy 6
## Provide adequate street lighting for pedestrians

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 6.2

### Strategically improve street lighting conditions to increase visibility of (and for) pedestrians on our streets, focusing investment on High Crash Corridors and locations, Pedestrian Priority Streets, and underserved areas.

In addition to implementing new lighting level guidelines through capital projects and private development, PBOT Signals and Street Lighting and Vision Zero staff will evaluate current lighting levels across the city against new guidelines and will identify key crossings for retroactive lighting improvements, where there are not projects planned for the near future.

This analysis and prioritization will focus on high crash corridors, Pedestrian Priority Streets, and historically underserved areas. PBOT Signals and Street Lighting and Vision Zero staff will collaborate to develop a recommended strategic investment plan for addressing lighting gaps to PBOT management.



*Street Lighting*

### Considerations

New funding for strategic, citywide lighting level improvements will be required to move this action forward. Any new street lights provided creates future obligations for PBOT and the City, including more assets to maintain, higher energy costs and monthly power bills, and increased staff and equipment expenses for maintenance and relamping.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 6.3

## Address locations where street lighting is blocked by tree canopy.

Street trees provide many benefits to the community and to the pedestrian experience. However, in some instances large trees can present a safety problem when they block street lighting at night, particularly in Spring and Summer months when leaves return to trees.

Currently residents can report trees blocking street lighting to PBOT, and these street trees will eventually be trimmed by Urban Forestry or PBOT maintenance crews. However, Portland City Code 11.60.060 requires property owners to trim or remove trees on private property or on the adjacent street planting area in the right-of-way when trees branches block street lights, and specifies that private property owners are responsible for costs associated with such maintenance.

PBOT Signals and Street Lighting will coordinate with Urban Forestry to jointly clarify and refine the City's toolkit for addressing street tree and lighting conflicts. Updated practices may include clarifying bureau roles and tree-trimming practices, increasing communication and enforcement of pruning standards, and/or providing pedestrian-scale lighting below the tree canopy where appropriate.

### Considerations

Seasonal changes in foliage affect street lighting conditions. The amount of light that reaches the road and sidewalk surface increases during winter months because the leaves from many trees have fallen.

Additional lighting may increase the amount of tree trims needed. Funding for tree-trimming with projected lighting increases should be evaluated.



*Large tree canopies can block street lighting at night. This can be particularly problematic in Spring and Summer when leaves return to trees.*

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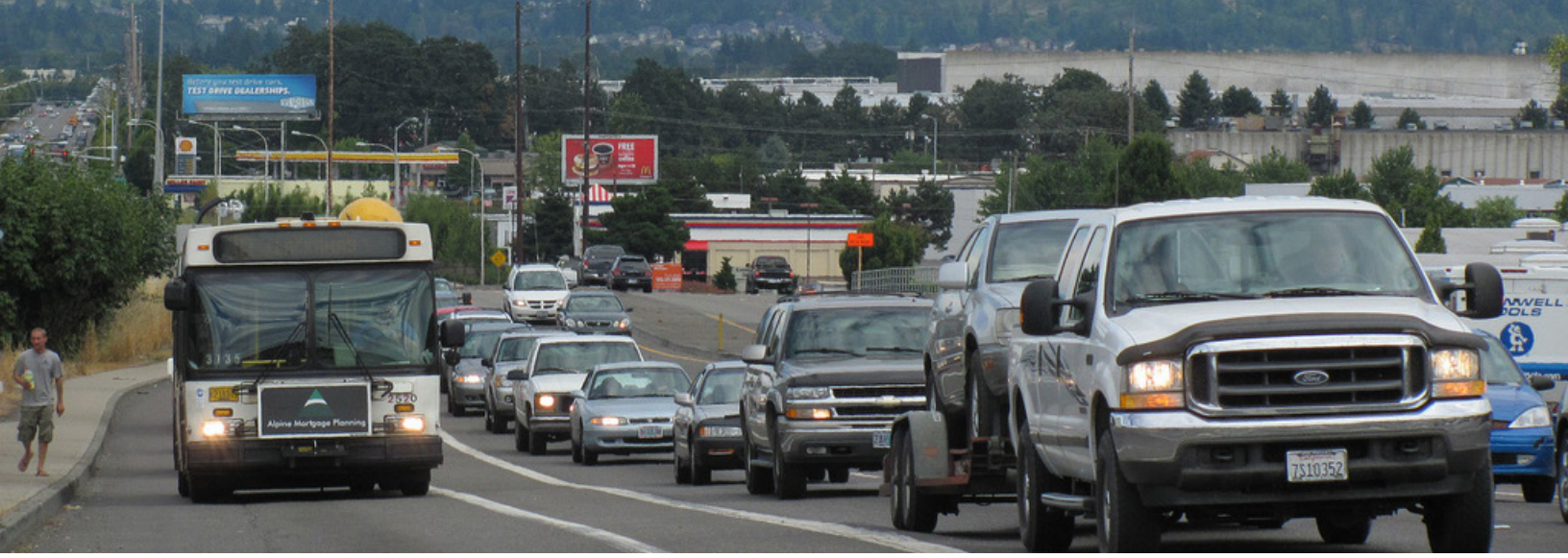


# STRATEGY 7

## Manage vehicle speeds and improve driver awareness

Maintaining safe driving speeds, through enforcement and driver education can help to make roadways safer for all. The Walking Priorities Survey found that "people driving too fast on residential streets" and "people driving too fast on busy streets" are two of the top five reasons walking is difficult in Portland. According to the PedPDX Safety Analysis, risk of a pedestrian crash is 180% higher on a street with a 35 mph posted speed than one with 30 mph. The analysis also showed that as the posted speed increases, the risk of a pedestrian crash resulting in death or serious injury also increases. Actions to reduce vehicle speed on roadways with a history of crashes, increase driver awareness and enforce traffic laws will help to implement this Strategy. Measures to address speed through education, enforcement, and outreach supports Portland's Vision Zero initiative, while working to address concerns about enforcement in communities of color.

# Strategy 7
## Manage vehicle speeds and improve driver awareness

Table 15: Index of Strategy 7 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **7.1** Set safe speeds on arterials and collectors. | Implementing Action | Infrastructure | PBOT Vision Zero; PBOT Traffic Operations |
| **7.2** Expand automated enforcement activities. | Future Action | Enforcement | PBOT Vision Zero; Portland Police Bureau |
| **7.3** Identify opportunities to retrofit signal timing along the High Crash Network to manage vehicle speeds. | Future Action | Infrastructure | PBOT Signals and Street Lighting; PBOT Vision Zero |
| **7.4** Expand crosswalk enforcement and education activities. | Future Action | Education; Enforcement | PBOT Vision Zero; Portland Police Bureau |
| **7.5** Explore traffic citation policy and structural changes to address inequitable impact of fines and fees on people with lower-incomes. | Future Action | Enforcement | PBOT Vision Zero |
| **7.6** Expand safety education/outreach efforts focusing on people driving. | Future Action | Education | PBOT Vision Zero; Portland Police Bureau |
| **7.7** Establish a program to provide traffic calming on neighborhood streets. | Future Action | Funding | PBOT Traffic Operations |

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# Strategy 7
## Manage vehicle speeds and improve driver awareness

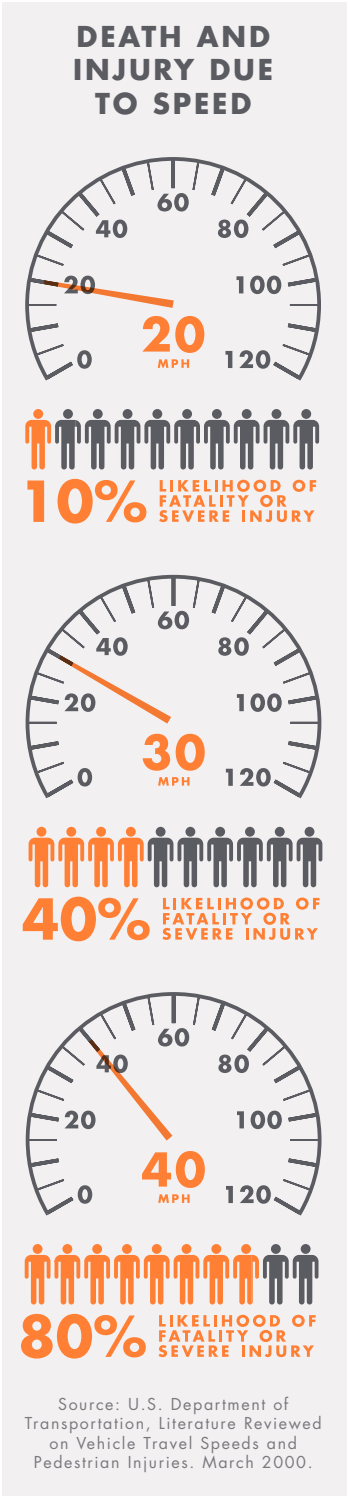
## ACTION 7.1

### Set safe speeds on arterials and collectors.

Portland's Vision Zero Action Plan identifies vehicle speed as a major factor in traffic deaths on our streets. Speed impacts the severity of a crash. A person walking struck by a person driving 40 mph is 8 times more likely to die than one struck by a person driving at 20 mph. People walking make up a disproportionate number of traffic deaths. While about 10% of people identify walking as their primary way to travel in Portland, pedestrians make up nearly one-third of all traffic-related deaths. Slowing vehicle speeds is critical to creating a safer city for walking.

PBOT's Vision Zero program actively pursues posted speed reductions in Portland. However, the City of Portland does not control posted speed limits on City streets. Currently in Oregon, the State sets speed limits on city streets, and cities must send a request to the Oregon Department of Transportation (ODOT) if they desire to change a speed limit. PBOT aggressively submits requests to ODOT for posted speed limit reductions in Portland in an effort to decrease speed-related traffic deaths on our streets, and will continue to do so.

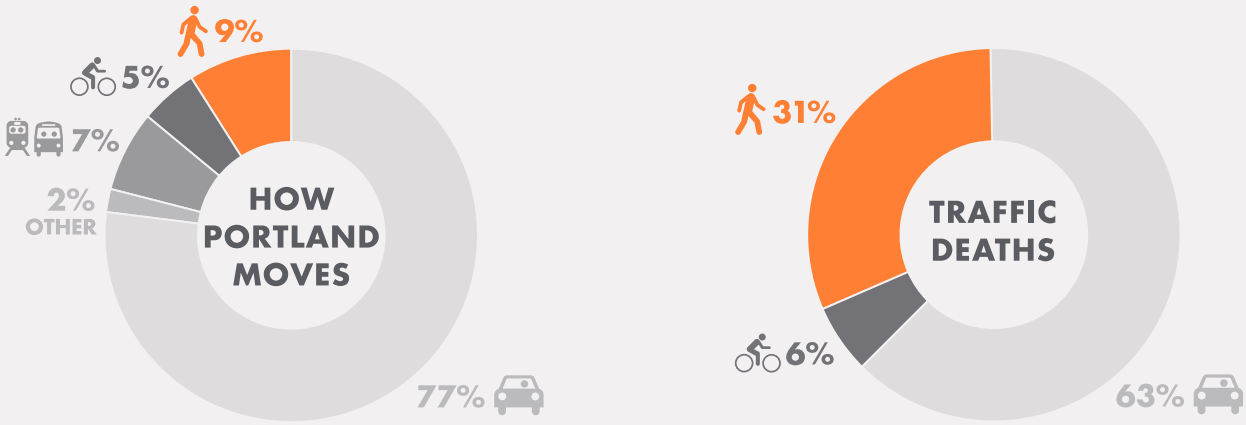
In 2017, the state legislature granted Portland authority to drop residential speed limits from 25 mph to 20 mph. These new speed limits took effect on April 1, 2018 and new sign installation began in February of 2018. PBOT and City staff are currently working at the State level to gain local authority for setting speeds on City of Portland streets, including high-speed arterial and collector streets.




Source: U.S. Department of Transportation, Literature Reviewed on Vehicle Travel Speeds and Pedestrian Injuries. March 2000.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE




**PORTLAND TRAFFIC DEATHS VS. TRAVEL MODE**
Source: 2004–2013 ODOT crash data; 2015 City of Portland Community Survey

## Considerations

There are four methods by which ODOT sets speed limits on City streets:

1) Traditional – This method is required on arterial streets, except on sections eligible for business district statutory speed limits. Requests to change speeds limits are typically time-consuming and resource-intensive, involving analysis of 85th percentile speeds, crash history, "roadside culture," traffic volumes, roadway alignment, width, and surface. These requests, when accepted, result in an updated speed zone order held by the state.

2) Alternative – This method was implemented in 2016 so that PBOT could submit requests more easily and applies to non-arterial streets with speed limits above 25mph. This method includes the following speed limit guidelines: 20 mph maximum on shared space streets, a 20-30mph maximum on streets with busy intersections and crash history, where sidewalks are unbuffered from driving lanes, or where bike lanes are immediately adjacent to driving lanes, and a 20-40 mph maximum on streets without a median barrier or where there is no physical separation between people traveling in motor vehicles and people traveling outside motor vehicles. These requests result in an updated speed zone order held by the state.

3) Statutory – These requests apply to alleys, narrow streets, school zones, residence districts, and business districts. Requests to rescind speed zone orders and lower speed limits in these areas are relatively simple and can be implemented quickly.

4) Special clauses – This method applies on low-traffic neighborhood greenways and certain residential streets and allows for 5 mph below statutory speed limits.

ORS 811.111 describes statutory (specified by law) speed limits for streets in particular areas, like in a business district, near schools and parks, and on especially narrow roadways. There are many streets in Portland that have speed limits that are different than the statutory speeds because they have speed zone orders. A speed zone order sets a speed limit (sometimes called a "designated" or "non-statutory" speed limit) that supersedes a statutory speed limit and is created by ODOT upon request by a local road authority. PBOT must request that a speed zone order be rescinded in order for a statutory speed limit to take effect on an eligible street.

# Strategy 7
## Manage vehicle speeds and improve driver awareness

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 7.2**

## Expand automated enforcement activities.

Speed safety cameras are a proven safety tool for reducing dangerous speeding in neighborhoods. Prior to 2015, state law only allowed the operation of photo radar systems in mobile vans for no more than four hours in one location with a uniformed police officer present. This resulted in inconsistent enforcement and a "decay effect" – travelers return to speeding once the van leaves. The newer fixed speed safety camera system provides more consistent and predictable speed control on Portland's most dangerous streets. PBOT has installed speed safety cameras on four of its High Crash Network streets -- SW Beaverton-Hillsdale Highway, SE Division Street, SE 122nd Avenue and NE Marine Drive -- as a part of a pilot program.

When people drive past the cameras while exceeding the posted speed limit, the cameras capture photos and video for review by Portland Police. The state law authorizing Portland to operate fixed speed safety cameras outlines signage requirements that inform drivers that traffic laws are photo enforced and provide supplemental feedback of a driver's current rate of speed. The number of speeders and those driving in excess of 10 mph over the speed limit has dropped compared to the "before" speed counts conducted near the camera systems. The number of violations mailed dropped following the initial 30-day warning period. More detailed information about the fixed speed safety camera systems can be found in the biennial report to the state legislature.

PBOT will expand its automated enforcement program in support of Vision Zero actions. Program expansion will consider the use of dual camera systems: photo enforcement of speed at red light running enforced intersections. HB 2409 authorizes any city to use cameras at signalized intersections to enforce red light running or speeding without the presence of a police officer.




*Automated Speed Safety System*

For over two decades, the City has been a leader in utilizing automated enforcement tools to bolster transportation safety. Operationalized in 2016, fixed photo enforcement of speed is the City's newest tool in the enforcement toolkit. Reducing speeding and reducing the number of people speeding aims to drive down the risk that speeding exposes all road users – especially those walking or cycling. Any revenue beyond the program costs will be dedicated to investing in traffic safety among the City's High Crash Network corridors. While several years remain to draw additional observations from a 5-year period of crash data, the nascent program's near-term positive results demonstrate that the program can support the goal of zero deaths and serious injuries on Portland's high crash network streets. PedPDX supports expansion and continuation of this program to reduce speeds and make walking safer on Portland's most dangerous roadways.

### Considerations

Expanding automated enforcement in Portland not only relies on crash data analysis or speed studies but also the staff and systems outside of PBOT: Portland Police Bureau, the Multnomah County Circuit Court (4th Judicial District, Oregon State Courts) and Department of Motor Vehicles (DMV).

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 7.3

## Identify opportunities to retrofit signal timing along the High Crash Network to manage vehicle speeds.

Traffic engineers can set the progression of signals as they shift from red to green along a given corridor to help manage traffic flow for efficient movement of vehicles, bikes, and pedestrians. Signal timing can also be used to establish safe vehicle speeds. In Downtown Portland for example, traffic signals are timed such that if a person in a car or bike (or a very talented runner!) traveled at roughly 13-16 mph, they would be met with green light after green light. If someone were to try to travel any faster, they would be stopped at each intersection along the corridor by a red light.

Portland's High Crash Network includes many arterial roadways with very high-speed limits and often even higher average vehicle speeds. One tool that PBOT can use to manage those speeds is to set signal timing to discourage people driving faster than the set speed limit. When coordinated signal timing is in place, people driving faster than the speed limit will be faced with red lights at every intersection, while people traveling at or below the speed limit will be met with green lights.

PBOT Signals and Streetlighting will conduct an analysis of signal timing on the High Crash Network to identify opportunities to lower vehicle speeds through signal timing modifications. As new posted speed limits are implemented, PBOT Signals and Streetlighting will adjust signal timing as appropriate to manage vehicle speeds.

### Considerations

Funding will be required to modify traffic signals on the High Crash Network.

Changing the signal timing at one location could lead to a ripple impact to dozens of nearby signals.

Successful implementation of countermeasures for speed management may include adding new detection or upgrading signal controllers at existing signals.




*Signal Timed Lights*

# Strategy 7
## Manage vehicle speeds and improve driver awareness

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 7.4**

## Expand crosswalk enforcement and education activities.

PBOT coordinates with Portland Police Bureau (PPB) Traffic Division and local pedestrian and bicycle groups to conduct "crosswalk education and enforcement actions" throughout the city. Each crosswalk education and enforcement action is an opportunity to educate community members about Oregon crosswalk laws and to enforce the law. During each crosswalk education and enforcement action, PPB officers can give violators an option to take a 2-hour Share the Road Safety Class. Once the Share the Road Safety Class is successfully completed, the fine and violation are removed from the individual's record.

Each crosswalk education and enforcement action includes a pedestrian decoy strategically positioned at a location that has marked or unmarked crosswalks and a fair amount of pedestrian activity and vehicle travel. Drivers that fail to stop for pedestrians in the crosswalk according to Oregon law can be issued a warning or given a citation that carries a presumptive fine of $260. Crosswalk enforcement actions are conducted several times across the city throughout the year.

Nominations for possible crosswalk education and enforcement action sites are submitted by community members, Portland Police Bureau (PPB) officers, PBOT engineers, and other PBOT staff. Most of the locations selected for a crosswalk education and enforcement action are on the Vision Zero High crash network.

Based on recent research indicating lower vehicle yielding rates for Black pedestrians attempting to cross the street, as well as feedback from the PedPDX "Walking While Black" focus group, PBOT will expand the program to also prioritize crossings that have been identified by communities of color as locations where drivers do not stop for them.



*Crosswalk*

Prior to each crosswalk education and enforcement action, PBOT hand delivers information about the crosswalk education and enforcement action and information about Oregon crosswalk laws to businesses within 2-3 blocks of the location, sends out electronic notifications to the neighborhood association where the action will take place and members of the media, and posts information about the event on PBOT's webpage.

Since 2005, PBOT and PPB have conducted over 100 crosswalk education and enforcement actions.

### Considerations

Crosswalk education and enforcement actions are reliant on Portland Police Bureau staffing availability.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 7.5

## Explore traffic citation policy and structural changes to address inequitable impacts of fines and fees on people with lower-incomes.

Traffic citations can sometimes have a regressive impact. While a flat fine or fee for a traffic violation may not substantially impact a middle- or high-income person, the same fine can sometimes significantly impact a low-income person.

As such, PBOT's Vision Zero team will explore systematic changes to move toward a more just citation system to ensure that consequences for traffic violations do not place an inequitable burden on lower-income people in Portland.

Some jurisdictions employ a sped camera fine system, which treats speed camera citations like parking tickets. A speed camera fine system can result in a lower fee and allow fine structures to be controlled directly by the City. This would allow the City to pursue ability to pay or income-based structures without needing to obtain authorization from the State legislature.

### Considerations

A new income-based citation or speed camera fine system would require State legislative action. A well-functioning ability to pay system will cost some money and may reduce revenue from citations.

# Strategy 7
## Manage vehicle speeds and improve driver awareness

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 7.6**

## Expand safety education/outreach efforts focusing on people driving.

Ninety-one percent of all fatal and serious traffic injuries in Portland involve speeding, impaired driving, and other dangerous driving behaviors. Educating community members about Oregon crosswalk laws, the relationship between speed and fatality rates, the impact of behaviors on vulnerable populations including seniors, children, and the disabled, Oregon distracted driving laws, and safety tips for being a safer driver can lead to safer streets for all.

PBOT currently engages in several efforts to help educate drivers:

- PBOT Vision Zero education campaigns include 1) The "Safe Ride Home" campaign to prevent impaired driving by offering reduced-cost rides home on targeted holidays with the goal of preventing drivers from driving under the influence, 2) The "Struck" campaign will continue with various iterations focusing on improving driver behaviors.
- PBOT educational programs include: 1) Scheduled in-classroom and "Walk & Talk" trainings that include an in-classroom training followed by a walk and discussion outside; trainings are available city-wide for all community members with a priority focus of promoting the trainings to community members located on or near Vision Zero high crash network streets and community members with limited English proficiency skills, 2) Viewing of PBOT educational online videos including Every Corner is a Crosswalk, Oregon Walks – Be Safe, and Beacon Buddies, 3) Promoting The Street Trust's "Oregon Friendly Driver" program and other traffic safety classes on the PBOT Traffic Safety Resources webpage.

**91%**
of all fatal and serious traffic injuries in Portland involve




- PBOT's Yard Sign Lender Program has free and $25 signs that community members can use (or keep) to display on their personal property. Each sign displays "SLOW DOWN" on one side and has one of three messages on the reverse side – "WATCH for people biking" or "STOP for people crossing" or "LOOK for kids and seniors."
- PPB driver safety classes for immigrant and refugee adults include in-classroom trainings and behind-the-wheel driver experiences. Each participant will receive training about Oregon traffic laws including Oregon crosswalk laws and how to be safer when walking and driving.

- Partnering with Families for Safe Streets to implement a World Day of Remembrance event each year to remember those that were killed or seriously injured in traffic crashes and to thank first responders to traffic crashes.

Portland Vision Zero staff will coordinate with Portland Police Bureau to substantially expand efforts to educate drivers to message the importance of safe driving speeds and spread awareness of Oregon law. This could include (but is not limited to) broad reaching media campaigns, expanding PBOT's SmartTrips education program beyond people who have just moved, required training for commercial drivers and private-for—hire drivers, working with PBOT Communications staff to reach broader audiences including non-native English speakers and vulnerable residents, and leveraging community partnerships.

## Considerations

Significantly expanding outreach and education efforts will require additional funding.




*SLOW! Signage*

# Strategy 7
## Manage vehicle speeds and improve driver awareness

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 7.7

# Establish a program to provide traffic calming on neighborhood streets.

Traffic calming measures such as speed bumps slow down vehicle speeds, making neighborhoods safer for walking and biking. Speed bumps in particular can be relatively inexpensive, and provide a big impact on vehicle speeds for a relatively small investment. While speed bumps and speed cushions are not allowed on major arterials or higher-volume collector streets, they can be used effectively on some neighborhood collectors and local streets to reduce vehicle speed.

In past years, PBOT had a Traffic Calming Program in place by which residents could request installation of speed bumps on neighborhood streets, as determined by an engineering analysis of vehicle speeds and volumes. However funding was cut for the program and was never reinstated. Given the impact of vehicle speed on pedestrian and bicycle crash severity and the relatively low-cost of speed bumps to help reduce speeds, there has been significant interest in reviving PBOT's Traffic Calming Program.

A new PBOT Traffic Calming Program would work in tandem with Action 11.4 which seeks to identify processes by which residents and neighborhoods not prioritized for City investment may self-fund improvements, including speed bumps. While many neighborhoods in Portland may be able to fundraise or collectively self-fund desired improvements such as speed bumps, less affluent neighborhoods may not. New self funding mechanisms for resident-requested traffic calming will require addressing these potential equity concerns.



*Speed bumps in Portland*

PBOT's Traffic Operations group and supporting staff will explore the feasibility of establishing a new traffic calming program to provide speed bumps and other traffic calming features on local service streets and some potential neighborhood collector streets where warranted by vehicle speeds and volumes.

Traffic calming should be prioritized on local and collector-level streets within the Pedestrian Priority Network, including designated Safe Routes to School, Neighborhood Greenways, other Neighborhood Walkways, and collector-level City Walkways.

## Considerations

Establishing a new PBOT program to respond to resident requests for traffic calming is predicated on obtaining new funding for staff time and program management.

If a request-based program is not feasible or not funded, traffic calming on local and collector streets may be integrated into existing pedestrian programs, such as Safe Routes to School and Pedestrian Network Completion. To ensure that improvements provided by these City programs are delivered equitably across the City, traffic calming improvements should be programmatically evaluated and prioritized based on vehicle speed and volume data.

Speed cushions may be provided on Secondary Response Routes. Speed cushions on Major Response Routes require Fire Bureau approval. TSP policy discourages the use of speed bumps or cushions on Major Transit Priority Streets.

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# STRATEGY 8

## Construct and maintain obstruction-free sidewalks

Buckled, cracked or uplifted sidewalks were reported to be one of the top pedestrian difficulties citywide in the Walking Priorities Survey.  Participants in the Disability Focus Group also cited sidewalks that do not meet Americans with Disabilities Act (ADA) standards, construction projects that do not re-route pedestrian pathways, and sidewalks impeded by vegetation, trash or debris. Addressing these obstructions and the poor condition of the paving itself would make walking enjoyable for all ages and abilities. Programs, practices, and coordination with other departments can help to address obstructions in a timely manner and maintain obstruction-free sidewalks.

An update to the City's sidewalk repair program could include proactive sidewalk inspection and could include strategies to identify financing options to help low-income households and other property owners address sidewalk repair. This strategy is particularly important for people with disabilities, as was heard in the Disability Focus Group.

# Strategy 8
## Construct and maintain obstruction-free sidewalks

Table 16: Index of Strategy 8 Actions

| | ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|---|
| **8.1** | Identify financing strategies and cost-saving opportunities to help low-income households and other property owners address sidewalk repair. | Future Action | Policy; Maintenance; Funding | Commissioner's Office; PBOT Utilities, Construction, and Inspection |
| **8.2** | Address sidewalk repair needs along City-owned properties. | Future Action | Maintenance; Funding | PBOT Utilities, Construction, and Inspection |
| **8.3** | Explore a proactive sidewalk inspection program. | Future Action | Policy; Maintenance | PBOT Utilities, Construction, and Inspection |
| **8.4** | Update coordination practices with Urban Forestry when trees are uplifting sidewalks and develop joint practices for addressing tree/sidewalk conflicts. | Future Action | Maintenance | PBOT Utilities, Construction, and Inspection |
| **8.5** | Expand property owner education regarding responsibility for maintaining sidewalks. | Future Action | Education | PBOT Utilities, Construction, and Inspection; PBOT Communications |
| **8.6** | Update right-of-way design standards to provide sufficient room for trees. | Future Action | Policy | Streets 2035 Project Manager; Urban Forestry; PBOT Modal Coordinators |
| **8.7** | Address utility poles creating obstructions in through zone of the sidewalk. | Future Action | Infrastructure | PBOT Capital Delivery Division; PBOT Utilities, Construction, and Inspection |
| **8.8** | Update clear zone requirements for outdoor dining and A-board signage based on new PedPDX pedestrian classifications. | Future Action | Policy | BDS Enforcement (A-board signs); PBOT Portland in the Streets (sidewalk cafes) |

| | ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|---|
| **8.9** | Locate utility vaults outside of pedestrian clear zones. | Implementing Action | Policy | PBOT Utility Permitting |
| **8.10** | Coordinate with street cleaners to help ensure that pedestrian facilities including curb ramps and crossings are debris-free. | Future Action | Maintenance | PBOT Maintenance; PBOT ADA Coordinator; |
| **8.11** | Improve enforcement and implementation of pedestrian access requirements around work zones, and establish a system for notifying residents of construction-related changes to pedestrian access. | Future Action | Policy | City Traffic Engineer; PBOT Utilities, Construction, and Inspection |
| **8.12** | Educate about parking violations at driveways and crossings. | Future Action | Education | PBOT ADA Coordinator |
| **8.13** | Work with the disability community to develop trip planning assistance. | Future Action | Education | PBOT ADA Coordinator |
| **8.14** | Develop a public reporting system and a process for addressing drainage issues at curb ramps with pooling water. | Future Action | Education | PBOT ADA Coordinator; PBOT Maintenance |

# Strategy 8
## Construct and maintain obstruction-free sidewalks

## ACTION 8.1

### Identify financing strategies and cost-saving opportunities to help low-income households and other property owners address sidewalk repair.

Maintaining sidewalks is critical to providing accessible walkways and preventing potentially dangerous tripping hazards, particularly for those with mobility challenges or sight impairments. Participants at the PedPDX Disability Workshop cited cracked and buckled sidewalks as a particular barrier to accessibility and mobility in Portland. While most pedestrians are able to maneuver around and avoid cracked sidewalks, pedestrians in wheelchairs often cannot. What's worse, wheelchairs and other mobility devices can be tipped and overturned by buckled sidewalks. Cracked and buckled sidewalks create tripping hazards for all people, particularly in dark conditions.

Per City Charter and City Code, property owners are responsible for constructing, maintaining, and repairing the sidewalks abutting their property. This obligation includes repairing sidewalks that are uplifted or cracked due to tree roots, the most common cause of sidewalk damage.

PBOT's Sidewalk Repair program investigates reports of cracked and buckled sidewalks as submitted by residents. When a City sidewalk inspector finds a safety hazard attributable to cracked or broken sidewalks, the owner of the adjacent property is notified and is required to repair the sidewalk. Historically, this authority has been referred to as "posting," because a notice requiring the repair of the sidewalk is posted on the property. According to City code, property owners have 60 days to complete repairs. If they don't, the City can hire a contractor to complete the repairs and bill the property owner. If they don't pay the bill, a lien will be placed on their property.



The **average cost of sidewalk repair for a full sidewalk frontage** currently ranges from

**$900-$1,200**



*Safe, Accessible Sidewalk*

PEDPDX OBJECTIVES ADDRESSED




The average cost of sidewalk repair for a full sidewalk frontage currently ranges from $900-$1,200. This cost can be a burden to low-income and other property owners.

To help ensure that Portland sidewalks are safe and accessible, particularly for vulnerable pedestrians, and to ease the financial burden on property owners, PBOT Utilities, Construction, and Inspection (who now oversees PBOT Sidewalk Repair) will coordinate with the Commissioner's Office to identify and initiate financing and cost-reduction strategies to help low-income households and other homeowners address sidewalk repair obligations. Such strategies could include (but are not limited to):

- Waiving all permit fees for voluntary sidewalk repair (currently permit fees are reduced for voluntary sidewalk repair)
- Requiring sidewalk repair when properties are sold as a condition of sale
- Establishing a revolving "micro-loan" fund, with options for deferred payment when properties change hands
- Developing voluntary, "opt-in," neighborhood-scale sidewalk repair efforts, allowing PBOT crews to help property owners address sidewalk maintenance. Batching sidewalk repairs across a neighborhood creates an economy of scale and potential cost savings over addressing sidewalk repair needs property by property. Property owners could voluntarily opt-in (in a manner similar to PBOT's former opt-in Leaf Day fee) to save money on required sidewalk repair obligations.
- Subsidizing City labor to provide sidewalk repair work for property owners

## Considerations

Any new City-funded financing structures would require a property lien and a funding source. Additional labor by City maintenance crews would also need a funding source.

# Strategy 8
## Construct and maintain obstruction-free sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 8.2**

## Address sidewalk repair needs along City-owned properties.

The obligation to repair buckled and cracked sidewalks adjacent applies to all property owners, including home owners, business owners, school, other large institutions, and City and government property owners. Like all property owners, the City of Portland must maintain sidewalks along frontages of City-owned property.

PBOT Utilities, Construction, and Inspection oversees PBOT's Sidewalk Repair Program, and will conduct an assessment of sidewalk conditions along all City-owned properties. Repair of all buckled and cracked sidewalks will subsequently be the responsibility of the respective City bureau owning the property.

### Considerations

(NOTE: NO CONSIDERATION CONTENT)



*Sidewalk Needs Repair*

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 8.3

## Explore a proactive sidewalk inspection program.

PBOT's Sidewalk Repair Program notifies private property owners when cracked or damaged sidewalks along their property frontage must be repaired. The program relies on Portland residents to notify PBOT when sidewalks are damaged. As staffing allows, sidewalk repair staff occasionally do some proactive inspections around newly installed ADA corners and paving segments done by Maintenance Operations crews.

A complaint-driven program presents equity concerns. The majority of complaints to the City tend to come from higher-income, inner Portland neighborhoods. Consequently, pedestrian conditions in outer neighborhoods (where a large proportion of disabled residents live) are less frequently addressed than in inner neighborhoods. A complaint-driven program also does not ensure that high-priority pedestrian streets are safe and well-maintained.

Upon establishing financing and cost-reduction strategies in Action 8.1 and addressing sidewalk repair needs along City-owned properties, PBOT Utilities, Construction, and Inspection will explore the feasibility of establishing a proactive, rather than complaint-driven, sidewalk repair program. A proactive sidewalk inspection program should prioritize locations with high levels of pedestrian activity, including Pedestrian Districts and Major City Walkways.

### Considerations

Any new proactive sidewalk inspection program must be coupled with financing and cost-saving strategies, as articulated in Action 8.1.



*Sidewalk Needs Repair*

# Strategy 8
## Construct and maintain obstruction-free sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 8.4

### Update coordination practices with Urban Forestry when trees are uplifting sidewalks and develop joint practices for addressing tree/sidewalk conflicts.

Tree roots are the most common cause for uplifted and damaged sidewalks. When trees are oversized for the planting area or do not have sufficient space for roots, the tree can uplift and crack sidewalks, streets, and curbs. Cracked and buckled sidewalks present a significant accessibility concern for pedestrians with disabilities, and potentially dangerous tripping hazards for all.

Portland City Charter and City code stipulate that property owners are responsible for maintaining and repairing sidewalks abutting their property. This obligation includes repairing sidewalks damaged by tree roots. Repairing cracked sidewalks without simultaneously addressing the core cause of the problem can result in a mere temporary fix, whereby the property owner will be responsible for repairing the sidewalk again in the future as tree roots continue to damage sidewalks.

The PBOT Sidewalk Repair Program will collaborate with Urban Forestry to develop joint practices for addressing tree and sidewalk conflicts to result in good solutions that prevent recurrent costly repairs for property owners. This should include a process for joint evaluation by PBOT and Urban Forestry staff when tree/sidewalk conflicts arise, and developing a joint solutions "toolkit" for addressing tree/sidewalk conflicts, potentially including but not limited to root pruning, expanding tree planting zones into on-street parking zones, expanding the right-of-way to relocate the sidewalk, grinding or raising sidewalks, and tree removal as needed.

### Considerations

Some potential joint solutions may include expanding the right-of-way or impacting on-street parking. As such the City Engineer and PBOT Parking may participate in developing new joint practices.



*Tree Sidewalk Conflict*

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 8.5

## Expand property owner education regarding responsibility for maintaining sidewalks.

Maintaining sidewalks is critical to providing accessible walkways, particularly for those with mobility challenges or sight impairments. While most pedestrians can maneuver around obstacles, pedestrians with visual impairments and those using wheelchairs and mobility devices often cannot avoid cracked sidewalks, pathways blocked by overgrown vegetation, garbage and recycling bins in the sidewalk, or impassable sidewalks due to snow, ice, or leaves. Participants in the PedPDX Disability Workshop cited blocked and poorly maintained sidewalks as a particular barrier to accessibility and mobility in Portland.

While private property owners are responsible for maintaining sidewalks, many Portlanders do not know this, nor are many aware of the impact that poorly maintained sidewalks have on disabled pedestrians and our fellow Portlanders.

PBOT Communications currently distributes seasonal reminders via social media, email, and print regarding the need to clear snow and ice and remove leaf litter from storm drains and sidewalks. PBOT Communications and PBOT Utilities, Construction, and Inspection will continue to expand communications and materials educating property owners about sidewalk maintenance responsibilities. Expanded education efforts may include coordination with neighborhood and business associations, leveraging PBOT's SmartTrips mailings, and expanded social media efforts.

### Considerations

Education and outreach efforts need to reach non-English speaking residents. Such efforts may include partnerships with chambers of commerce and minority-owned media outlets.



*Sidewalk Obstacles*

# Strategy 8
## Construct and maintain obstruction-free sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 8.6**

## Update right-of-way design standards to provide sufficient room for trees.

In addition to their many environmental benefits, Portland's urban forest contributes to a more comfortable and pleasant walking and rolling experience. Trees provide shade and a physical buffer from traffic and noise and contribute to Portland's quality of place.

Given the mobility, accessibility, environmental, and place-making demands on PBOT's streets and limited space to accommodate all of these needs, tradeoffs about how to design and allocate space within rights-of-way must be made. PBOT's Streets 2035 effort will establish decision-making frameworks for various street types to help clarify priorities when various demands on the right-of-way compete for space, including pedestrian and bicycle facilities, transit needs, vehicular mobility, on-street parking, stormwater infrastructure, and street trees.

Given limited space in the right-of-way, this may include increasing the size of the furnishing zone, providing trees within the curb zone intermittent with on-street parking, providing soil cells and/or continuous planting strips (rather than tree pits) to allow roots space to grow without disturbing infrastructure above.

### Considerations

Urban Forestry will work closely with the Streets 2035 project manager in clarifying right-of-way needs and tradeoffs regarding street trees, including reconciling against competing needs in the right-of-way. The location of underground utilities may impact the feasibility of locating street trees within on-street parking zones.





*Providing street trees within the curb zone intermittent with on-street parking can help maximize space within narrow rights-of-way*

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 8.7

## Address utility poles creating obstructions in the through zone of the sidewalk.

The Portland Pedestrian Design Guide establishes that the through pedestrian zone, the area of the sidewalk intended for pedestrian travel, "be entirely free of permanent and temporary objects." In contrast, the furnishing zone of the sidewalk is the area where elements such as street trees, signal poles, utility poles, street lights, controller boxes, hydrants, signs, hatch covers, etc. are properly located. The furnishing zone is therefore a critical component of the sidewalk as it helps ensure that walkways are clear of obstructions.

Oftentimes if a furnishing zone is not provided sidewalks are too narrow to fit signal poles and boxes, push button poles, utility poles, and other items that need to be in a sidewalk corridor. This can result in utility poles obstructing the required pedestrian through zone, sometimes not leaving enough room for a person using a mobility device to get through or creating an obstacle for people with low or no vision.

Franchise agreements with utility providers permit the City to require that utility poles be located in accordance with City right-of-way guidelines, with the cost for relocation of poles borne by utility providers. As such, as new sidewalk projects are delivered project managers in the PBOT Capital Delivery Division will require utility providers to relocate utility poles located within the pedestrian through zone. This may include requiring that utility poles be relocated to a suitable alternative location on public or private property, and/or altering the design of the sidewalk to provide a furnishing zone when feasible. Additionally, the PBOT Pedestrian Coordinator will evaluate opportunities to relocate utility poles resulting in substandard sidewalk widths outside of capital projects, and will work with PBOT's Utility group to require the relocation of poles creating obstructions.

### Considerations

If there is not a suitable above ground location for utility poles, providers may choose to locate utility infrastructure below ground. City Code 17.60 establishes six Underground Wiring Districts where overhead wires are not permitted. While locating utility infrastructure below ground remains an option for utility providers, establishing new required underground wiring districts will require the City to bear the cost of relocating utility infrastructure.



*Utility Pole Obstructing Sidewalk*

# Strategy 8
## Construct and maintain obstruction-free sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 8.8**

## Update through zone requirements for outdoor dining and A-board signage based on new PedPDX pedestrian classifications.

Outdoor dining is part of Portland's culture, social identity, and local economy. PBOT issues permits to applicants seeking to provide outdoor dining within the sidewalk. Permit requirements stipulate that outdoor café seating must maintain minimum pedestrian clear zones, depending on the overall width of the sidewalk. Maintaining adequate pedestrian through zones is important for ensuring that sidewalk mobility is not impacted in busy pedestrian districts or corridors where demand for walking space is high. It is also important for pedestrians in wheelchairs or mobility devices who cannot always maneuver in tight spaces.

Once pedestrian design guidelines are updated based on PedPDX, PBOT Street Use Permitting will review current requirements and determine whether clear zone requirements for café seating permits should be revised to reflect new design guidelines and PedPDX classifications. Future materials for applicants will include educational information explaining the importance of maintaining pedestrian clear zones, particularly for disabled pedestrians.



*Sidewalk Cafe with Tight Passage*

### Considerations

A-board signs are permitted and enforced by the Bureau of Development Services (BDS). PBOT will coordinate with BDS to ensure that A-Board signs maintain pedestrian clear zones.

PDX Reporter allows Portlanders to report problems and maintenance issues to City bureaus, including instances of non-compliant sidewalk cafes. PDX Reporter is available in app format as well as via web app at www.pdxreporter.org.

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# Strategy 8
## Construct and maintain obstruction-free sidewalks

## ACTION 8.9

### Locate utility vaults outside of pedestrian clear zones.

The 1998 Pedestrian Master Plan defines the through pedestrian zone as "the linear portion of the sidewalk corridor which contains no obstructions, openings, or other impediments that would prevent or discourage movement by pedestrians." The Portland Pedestrian Design Guide stipulates that this zone "should be entirely free of permanent and temporary objects," and that utility vaults should be located in the furnishing zone and are not permitted in the through pedestrian zone. The Pedestrian Design Guide further notes that if utility vaults do not fit within the furnishing zone, they should be located on private property.

Additionally, Federal ADA guidance stipulates that utility vault lids and meters should not be located within pedestrian movement corridors. The United States Access Board[5] states that utility meters and vaults should be located outside the pedestrian accessible corridor and should be placed in furniture or frontage zones on all sidewalks when there is at least twelve feet between curb and back of right-of-way[6].

As the scale of development has increased in Portland, utility vaults serving new buildings have increased in size, and have been pushed from private buildings into the right-of-way. In an increasing number of instances these utility vaults are too large to be fully accommodated within the furnishing zone of the sidewalk, and despite existing local policy and federal guidance, have in many instances intruded into pedestrian clear zones.

In response to pressures from utility providers and the development community, PBOT practice has been to





*People walking tend to veer around metal vault lids in the sidewalk even when they are treated with "slip resistant" coating, effectively narrowing sidewalk capacity and obstructing the pedestrian through zone.*

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

permit vaults in the pedestrian clear zone provided that vault lids are "slip resistant." However, the U.S. Access Board does not provide a minimum level of slip resistance (expressed as a coefficient of friction) for ground surfaces for ADA compliance "because a consensus method for rating slip resistance remains elusive. While different measurement devices and protocols have been developed over the years for use in the laboratory or the field, a widely accepted method has not emerged." Not only is the definition and measurement of "slip resistance" ill-defined, but the inability to visually perceive "slip resistance" results in an effective narrowing of the sidewalk when utility vaults are located within the pedestrian clear zone. People walking or rolling on sidewalks tend to veer around vault lids rather than walk across them and are typically not able to know by looking whether the metal lid in the sidewalk ahead is slip coated or not or will rattle or settle when stepped upon.

When vaults must be located within the pedestrian clear zone, vault lids should be concrete "lift out" panels or otherwise matching the material of the surrounding sidewalk. Metal lids should not be provided within the pedestrian clear zone on high-demand pedestrian streets.

## Considerations

Providing concrete panels or otherwise matching sidewalk materials within vault lids is common practice throughout the world. Requiring concrete lift out panels on vaults rather than metal lids will increase costs for utility providers and developers. Limiting the extent of this requirement to the highest-order pedestrian streets and districts per PedPDX (Pedestrian Districts and Major City Walkways) helps to limit financial impact while maintaining sidewalk function and capacity on streets with the highest levels of pedestrian activity. Cranes may be required to lift out concrete panels to maintain transformers.



*A concrete vault lid in the pedestrian through zone, matching the material of the surrounding sidewalk*

[5] The United States Access Board is the federal agency responsible for developing accessibility guidelines for public rights-of-way consistent with the Americans with Disabilities Act.

[6] US Access Board Special Report, "Accessible Public Rights-of-Way Planning and Design for Alterations," Chapter 5 Model Sidewalks. August 2007.

# Strategy 8
## Construct and maintain obstruction-free sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 8.10

### Coordinate with street cleaners to help ensure that pedestrian facilities including curb ramps and crossings are debris-free.

Debris in the roadway at corners and crosswalks interferes with pedestrian accessibility, whether it be leaves, mud, gravel, ice, or snow. Participants at the PedPDX Disability Workshop highlighted that for people with limited mobility such as those using walkers or wheelchairs, mud, leaves, and other debris at corners can create a real obstruction and impede their ability to cross the street.

The PBOT ADA Coordinator and Pedestrian Coordinator will coordinate with PBOT Maintenance to help ensure that pedestrian the City's street cleaning and maintenance activities extend to and include corners, curb ramps, and crossings.



*Crosswalk and Curb Ramp*

### Considerations

Expanded street cleaning activity to include corners and ramps must be coupled with new funding.

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# Strategy 8
## Construct and maintain obstruction-free sidewalks

## ACTION 8.11

### Improve enforcement and implementation of pedestrian access requirements around work zones, and establish a system for notifying residents of construction-related changes to pedestrian access.

PBOT Administrative Rule 8.12, adopted in 2016, details guidelines for providing safe accommodations for pedestrians through work zones. The associated temporary traffic control manual details City standards and expectations for safe pedestrian movement, including providing temporary ADA compliance where required. The policy is supported by a newly created enforcement program. Currently, City policy requires all those impacting the public rights-of-way (ROW) to notify adjacent businesses and residents.

Pedestrians with disabilities are particularly impacted by sidewalk closures. For a person with low or no vision or a person using a wheelchair or mobility device an unforeseen sidewalk closure on a frequently used route could leave them in a dangerous situation navigating in and around a construction site. Therefore, closure of a sidewalk shall be deemed the last resort in the absence of other practicable routing or accommodation options needed to assure pedestrian safety. Since the inception of Administrative Rule 8.12 we've seen a dramatic increase in projects with pedestrian walkways. There were only five active work zones with pedestrian walkways in 2016 versus 83 in 2018.



*Pedestrian Access during Construction*

PEDPDX OBJECTIVES ADDRESSED




The enforcement program seeks to increase compliance with policies through education and penalties. Since its inception in 2018 over 60% of all enforcement cases documented pedestrian travel as being affected by work that was unpermitted or in violation of issued permits. The enforcement program is primarily complaint driven. PDX Reporter allows Portlanders to report problems related to pedestrian access through and around work zones, resulting in inspection and enforcement. Pedestrians can report problems online at www.pdxreporter.org.

Development, Permitting and Transit (DPT) Group is currently working with traffic services such as Google maps to get ROW impacts out to the public, we are also actively working toward a public facing City-wide map detailing ROW impacts that could potentially have a subscription service for an area of interest. A notification system making residents aware of construction-related changes to pedestrian access, particularly for those with disabilities, would be a significant improvement.

## Considerations

Managing a City-wide online map of ROW impacts requires constant monitoring and updates by staff and getting down to the pedestrian level can be quite time consuming especially for short duration, less than a 2-hour, impact. There's also a dependency on those working in the ROW to notify or permit all impacts through DPT which can be difficult to enforce. Developing an acceptable level of performance is necessary knowing that we may not get to 100% compliance.

# Strategy 8
## Construct and maintain obstruction-free sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 8.12

# Educate about parking violations at driveways and crosswalks.

Vehicles parked in a driveway in a manner that obstructs pedestrian travel on the sidewalk, or that blocks access to crossings and curb ramps is not just an inconvenience to people walking, but an accessibility issue to people with disabilities. Cars parked across the sidewalk can force people in wheelchairs or blind pedestrians out into the roadway. Participants in the PedPDX Disability Workshop identified the need to better educate residents about the impacts that cars parked across sidewalks and crossings have on Portlanders with visual and mobility impairments.

The PBOT ADA Coordinator will explore avenues to increase awareness of the importance of keeping parked vehicles clear of sidewalks, crossings, and curb ramps. Potential methods may include providing educational materials for illegally parked cars about the importance of keeping the sidewalk clear for people walking and rolling.

### Considerations

PDX Reporter allows Portlanders to report problems and maintenance issues to City bureaus, including instances of illegal parking. PDX Reporter is available in app format as well as via web app at www.pdxreporter.org.



*Obstructed Sidewalk*

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 8.13

## Work with the disability community to develop trip planning assistance.

At the PedPDX Disability Workshop, participants noted that pedestrians with disabilities often do not know where the most accessible routes to destinations may be. Sometimes routes may be missing curb ramps or may not provide audible signals, or work zones may temporarily alter pedestrian access. Focus group participants noted that an online trip planning map or other interactive resource could help pedestrians with disabilities see where infrastructure is in place and help identify accessible routes.

The PBOT ADA Coordinator will collaborate with community groups and third-party developers to explore the feasibility of developing a trip planning app to assist disabled pedestrians with finding accessible routes.




*Non-Accessible Route*

### Considerations

While PBOT is not equipped to develop a trip planning app in house, the City can share data regarding the existence and location of curb ramps, sidewalks, marked crossings, and accessible signals.

# Strategy 8
## Construct and maintain obstruction-free sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 8.14

### Develop a public reporting system and a process for addressing drainage issues at curb ramps with pooling water.

Curb ramps with pooling water can create an inconvenience for pedestrians walking through or around large puddles, and what's worse, an obstruction for disabled pedestrians who may not be able to veer out of path to avoid pooling water at corners. Pooling water at curb ramps can sometimes occur at older ramps where roadways have been repaved many times, altering roadway slopes and drainage patterns.

PDX Reporter allows Portlanders to report problems and maintenance issues to City bureaus. Residents can report issues related to campsites blocking the right-of-way, debris in the roadway, illegal parking, plugged storm drains, potholes, sidewalk café violations, sidewalk tripping hazards, sidewalk vegetation, and work zone access concerns. PDX Reporter is available in app format as well as via web app at www.pdxreporter.org.

The PBOT ADA Coordinator will work with PBOT Communications to update PDX Reporter to include a category for residents to report curb ramp concerns, including pooling water at curb ramps, and will coordinate with PBOT Maintenance Operations to develop a program and dedicated funding to address drainage issues at curb ramps with pooling water as reported.



*Pooling Water at Curb Ramp*

### Considerations

PBOT Maintenance and Operations prioritizes resources for constructing new curb ramps in conjunction with maintenance paving projects or as requested by persons with disabilities. Increased focus on corner curb ramp maintenance may require additional funding and staffing to maintain PBOT's commitment to building new curb ramps.

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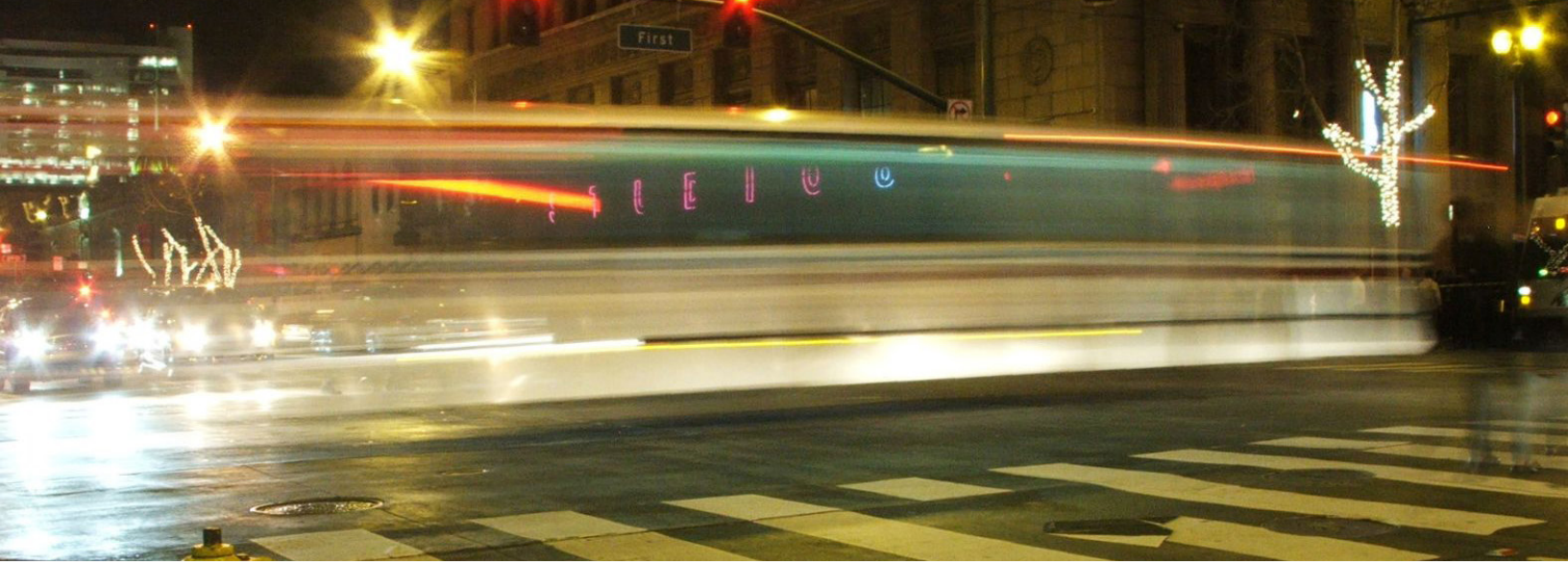



# STRATEGY 9

## Pro-actively leverage, manage, design for, and set policies for new and emerging technologies

Emerging technologies have the potential to enhance pedestrian experiences, and planning for these new forms of mobility can shape how they are integrated into the network. Understanding how people use the pedestrian network through regular and systematic data collection will help us to plan for near and long-term needs. Identifying gaps in data and opportunities to fill those gaps through new technologies and policies may be implemented through this strategy.

# Strategy 9

## Pro-actively leverage, manage, design for, and set policies for new and emerging technologies

Table 17: Index of Strategy 9 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **9.1** Articulate desired outcomes for pedestrians in the New Mobility Action Strategy. | Future Action | Policy | PBOT Policy, Innovation, and Regional Collaboration; PBOT Pedestrian Coordinator |
| **9.2** Develop regular pedestrian counting systems and practices. | Future Action | Policy | PBOT Pedestrian Coordinator |
| **9.3** Test new technologies and establish methods to collect better pedestrian data in Portland. | Future Action | Policy | PBOT Strategy, Innovation, and Performance; PBOT Policy, Innovation, and Regional Collaboration; PBOT Signals and Street Lighting |

# ACTION 9.1

PEDPDX OBJECTIVES ADDRESSED

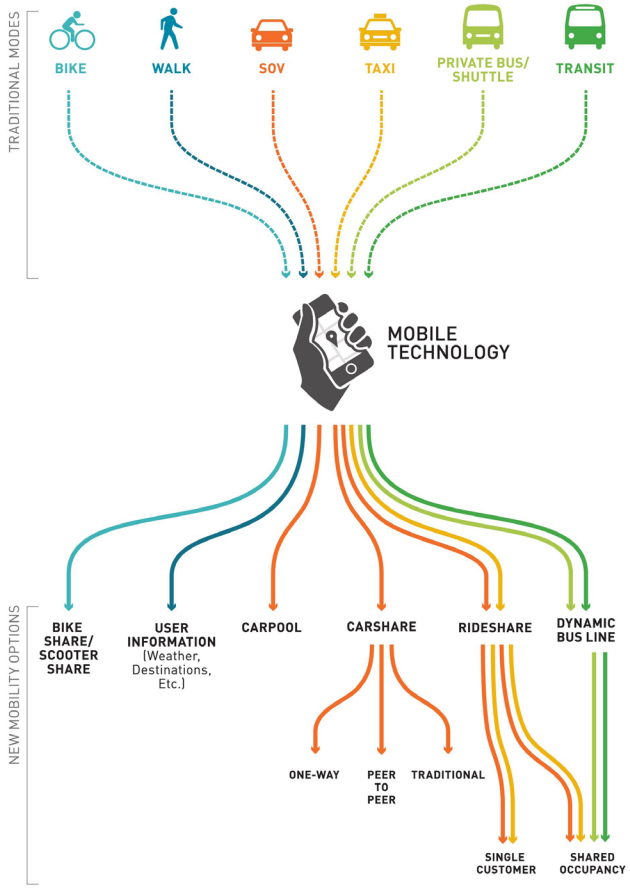
HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## Articulate desired outcomes for pedestrians in the New Mobility Strategy.

Consideration of pedestrian impacts should be a priority as new and emerging mobility options and technologies such as autonomous vehicles, electric scooters, and other new transportation modes are introduced in Portland. Limited curbside and sidewalk space means higher demand for that space, and it's important that pedestrian accessibility, comfort and safety remain top priorities as other modes compete for this space.

New modes and technologies contribute to complex interactions and behavioral dynamics among street users, introducing further challenges at intersection crossings, side streets, and driveways.

As an overarching strategic vision document for these new and emerging technologies, the New Mobility Action Plan will prioritize pedestrian needs throughout. In particular, management of and design for ride sourcing, scooter-share, bike share, and other mobility services, as well as testing and wide-scale deployment of autonomous vehicles, should reflect the City's existing policy to prioritize pedestrian safety, comfort, and accessibility in line with the City's adopted Transportation Strategy for People Movement (TSP Policy 9.6).




*New Mobility and Technology*

### Considerations

All demands on the right-of-way must be balanced. As new modes and technologies are introduced in Portland, PBOT will actively monitor and seek to mitigate any potential impacts on pedestrian safety and comfort.

# Strategy 9

## Pro-actively leverage, manage, design for, and set policies for new and emerging technologies

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

**ACTION 9.2**

## Develop regular pedestrian counting systems and practices.

PBOT needs a better understanding of how people are traveling on the roadways. Better data on how and where people are traveling is important and can inform:

- How PBOT allocates and manages limited rights-of-way (including curb space).
- Infrastructure needs and investment decisions (based on usage, demand, and mode share targets).
- The effectiveness of infrastructure investments and Transportation Demand Management (TDM) strategies in impacting modal choices.

The need for better travel behavior data is especially critical for pedestrians. PBOT does not currently have a process or a program in place for regularly counting pedestrians. Consequently, it is not known how many people use PBOT's sidewalks and crossings (across the city generally, or in a given location), how pedestrian volumes compare to other modes, how those trends may or may not be changing over time, or what the potential demand might be for improved pedestrian facilities.

Regular data for measuring progress toward increasing non-automotive mode share is limited, and what data there is tends to significantly undercount pedestrian activity. Census commute data captures only a very small proportion of all trips taken, and significantly under reports pedestrian trips which tend to be off peak, often both in terms of time of day and time of week. Furthermore, census-reported commute trip data only reports on the primary mode of commute travel. Because walking tends to be only a piece of the commute trip (e.g., walking to transit stops), actual pedestrian activity in the city may be further underreported.

In recognition of the limitations of census commute trip data, many communities engage in surveys, which ask respondents to self-record data on how they get around for all trips taken during a given reporting period. However, because these surveys can be expensive and cumbersome, they are not always conducted at the frequency desired, nor at regular intervals. The Oregon Household Activity Survey was last conducted in Portland in 2011. Before that, the most recent survey of comparable depth and quality was conducted in 1994. Furthermore, active transportation activity is highly influenced by seasonal changes. Point-in-time surveys do not account for these changes in travel behavior over time.



*Survey Pedestrian Counts*

The PBOT Pedestrian Coordinator will develop new pedestrian counting systems and practices for manually counting and regularly monitoring pedestrian activity in Portland. Priority locations for gathering regular pedestrian counts include high volume locations such as Pedestrian Districts and along Major City Walkways.

### Considerations

New PBOT pedestrian counting systems and practices should coordinate with ongoing pedestrian counting activity by partners. Metro currently organizes annual pedestrian and bicycle counts at regional trail locations, and the Portland Downtown Business Association conducts annual pedestrian counts during the December holidays.

PEDPDX OBJECTIVES ADDRESSED




# ACTION 9.3

## Test new technologies and establish methods to collect better pedestrian data in Portland.

New data collection technologies are emerging that could help fill the gap in pedestrian activity data while simultaneously providing a broader understanding of modal choices and travel behaviors across the city. For example, cameras and sensors may have the capacity to collect automated count data for all modes at a given location. GPS and mobile phone tracking may have the potential to provide robust data on travel routes, origins, and destinations by mode, including capturing trips on all streets (not just arterials), where bicycle and pedestrian activity is often underreported.

PBOT actively evaluates new data collection and detection technologies. PBOT Signals and Street Lighting regularly tests passive pedestrian detection devices to help reduce the need for manual pedestrian push buttons and reduce pedestrian wait times at crossings. PBOT's Traffic Safety Sensor Project is currently testing new sensor technology on three High Crash Corridors to count and measure activity by mode.

PBOT's Strategy, Innovation, and Performance team will continue to lead the Bureau in testing and evaluating the efficacy of these and other emerging technologies to help provide PBOT with more robust data to help us better understand travel choices and patterns in the city. Such information will help inform how PBOT manages the rights-of-way, prioritizes investments, and measures and reports on effectiveness.

### Considerations

Data gathered through cameras, sensors, and other technologies will be validated against manual traffic counts to determine the accuracy of these systems. PBOT has not yet confirmed the accuracy of any new passive detection or counting technologies, but will continue to evaluate new offerings as they become available.

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# STRATEGY 10

## Provide opportunities for an interesting and enjoyable pedestrian experience

Making walking in Portland a joyful experience is one of the six objectives of PedPDX. The Community Advisory Committee (CAC) consistently noted the value of a pedestrian environment that is inviting and that inspires a person to walk. The neighborhoods of Portland each have their own character, and walking through them can be interesting and enjoyable for residents and visitors. Elements, such as benches, "creative crosswalks," wayfinding signs, and pedestrian events can help make that overall walking experience a joyful one.

# Strategy 10

## Provide opportunities for an interesting and enjoyable pedestrian experience

Table 19: Index of Strategy 10 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **10.1** Establish a program for community implementation of "creative crosswalks." | Future Action | Policy; Infrastructure | Portland in the Streets; City Traffic Engineer |
| **10.2** Encourage seating in the right-of-way. | Future Action | Policy | Portland in the Streets |
| **10.3** Work with partners to update the City's pedestrian wayfinding system. | Future Action | Infrastructure | Portland in the Streets; PBOT Pedestrian Coordinator |
| **10.4** Encourage more programs, events, and projects that create a car-free environment. | Future Action | Policy | Portland in the Streets |
| **10.5** Integrate public art into capital improvement projects. | Future Action | Infrastructure | Portland in the Streets; PBOT Capital Delivery Division; Regional Arts and Culture Council |
| **10.6** Engage and work with community partners to co-promote walking events that help people take ownership over investments and use new infrastructure. | Future Action | Education; Infrastructure | PBOT Equity Manager |

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 10.1

## Establish a program for community implementation of "creative crosswalks."

Marked crosswalks provide clear indication of where people driving can expect pedestrians to cross the street. They may also provide a special opportunity for creative placemaking, harnessing the creative energy of the community, cultivating a sense of neighborhood identity, and activating the right of way beyond just a vehicle travel-way.

PBOT's Portland in the Streets Program helps residents activate public streets, sidewalks, and underutilized rights-of-way with community uses including play streets, "street seats," community events and farmers' markets, block parties, pedestrian plazas, street painting, and more. The program guides community members through the process for permitting community uses and place-making in the right-of-way and helps connect residents to grant resources to help fund community-initiated placemaking efforts.

In response to increasing number of requests from community members, the Portland in the Streets Program is in the process now of developing policies, processes, and design guidelines for community-initiated "creative crossings" including painted crosswalks and painted corner curb extensions. Requests for creative crossings will be reviewed and permitted through the Portland in the Streets Program.



*Creative Crosswalk*

### Considerations

Creative crossings need to consider the location and functional classification of the facilities involved. These locations should exclude school crossings, school zones, or crossings involved with the Safe Routes to School program. The City of Portland does not have a dedicated funding source for creative crossings. Therefore, the applicant will need to raise the funds necessary for procurement of materials, applications fees, and continuing maintenance. The creative crossing program will include a stewardship program to maintain areas that are inaccessible to normal street cleaning efforts.

# Strategy 10

## Provide opportunities for an interesting and enjoyable pedestrian experience

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 10.2

### Encourage seating in the right-of-way.

Street seating is an important pedestrian amenity that provides people with a place to wait, rest, eat/drink, and congregate. Street seating can contribute significantly to the vitality of a streetscape, enhancing local business, and social activity, increasing eyes on the street, and softening the streetscape as a place to be rather than pass through. Street seating is also important for aging residents, providing places to rest while walking.

PBOT currently provides an avenue for permitting sidewalk benches through an encroachment permit. However, this process may not be broadly-known, and business associations, community groups, business owners, and others who may be interested in providing benches may not know that the option exists. Furthermore, the existing permitting parameters make it difficult for creative bench designs.

PBOT's Portland in the Streets program will develop strategies for encouraging creative bench design and encouraging residents to sponsor and provide more benches in the right-of-way. Such strategies could mirror PBOT's successful "Street Seats" program in terms of process and design requirements.



*Creative Seating in Right-of-Way*

Considerations

ADA accessibility requirements may impact design requirements for creative benches.

PEDPDX OBJECTIVES ADDRESSED




# ACTION 10.3

## Work with partners to update the City's pedestrian wayfinding system.

The City of Portland pedestrian wayfinding signs were installed in downtown and the Lloyd District in the mid 2000's through a partnership with PBOT, Portland State University, Go Lloyd, the Portland Business Alliance, and Prosper Portland. At its inception, the wayfinding sign program relied on local business sponsorship money to maintain and update the signs. Those sponsorships were good for a period of two years and when it came time for the sponsorships to be renewed, very few businesses continued sponsorship. For many years now, there has not been a continuous funding source to maintain and update the signs as needed and they have fallen into disrepair or obscurity. Consequently, we have maps that have been sadly out of date, display incorrect information, and have been covered in graffiti for years.

The existing signs are not only out of date and incorrect but are also now redundant with the many recent TriMet, Portland Streetcar, and BIKETOWN wayfinding signs that can be found throughout the Central City. In addition to the many static wayfinding signs on the ground, the majority of people have smart phones with interactive map capabilities.

The City needs a new system that is multi-modal and facilitates easy transfer between walking, biking, taking transit, and driving. The nature of wayfinding has changed since Portland's signs were installed over a decade ago. The best wayfinding systems are designed not only to provide a map potentially redundant to the one found on a smart phone, but to facilitate multi-modal travel. In addition to identifying pedestrian routes and destinations, a good wayfinding system also increases the legibility of bike and transit routes to help facilitate transfers between these modes in recognition of the new multi-modal ways that people travel today. There are also emerging opportunities to integrate static maps within the right-of-way with an online digital interface.

Success for these types of wayfinding systems largely depends on establishing an ongoing program with dedicated funding to own and maintain the maps and furniture. There are opportunities to seek grant funding or partner with other organizations on funding, design, and planning for this effort.

PBOT staff will work with community partners, including BIKETOWN, TriMet, Portland Streetcar, the Portland Business Alliance, Travel Portland, Go Lloyd, and Neighborhood Associations wishing to install and maintain wayfinding signs to comprehensively update Portland's pedestrian wayfinding system and develop a management system for ongoing maintenance and management.

### Considerations

A successful wayfinding system requires a dedicated ongoing funding source and staff time for ongoing management. Establishing a working partnership to update Portland's wayfinding system will likely be a very large, multi-year task.

# Strategy 10

## Provide opportunities for an interesting and enjoyable pedestrian experience

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 10.4

### Encourage more programs, events, and projects that create a car-free environment.

Throughout the PedPDX process, residents have voiced strong interest in "reclaiming" street space for pedestrians through establishing "car-free" streets via programs, events and projects.

PBOT's Sunday Parkways program has been a national leader in temporarily closing streets to car traffic on designated days to allow car-free walking and biking and community events in the street.

PBOT's Portland in the Streets program provides avenues through which Portland resident may temporarily close streets to vehicle traffic for community uses, including play streets, community events, farmers markets, block parties, and the beautification/activation of an underutilized portion of the Right-of-Way. The program also provides an avenue through which car-free zone demonstration projects may be requested by the community and tested. Portland in the Streets programs "Pedestrian Plazas" and "Spaces to Places" provide permanent, car-free environments.

Portland in the Streets will work to expand community awareness of existing community-initiated "car-free" place-making opportunities, as well as identify opportunities for City-led demonstration projects, potentially integrated with capital projects.




*Car Free Streets*

### Considerations

All closure requests will be evaluated by City Staff to determine if they are appropriate locations. Closure of streets to vehicles must be approved by the City Traffic Engineer.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 10.5

## Integrate public art into capital improvement projects.

A great walking city is more than just sidewalks and crosswalks. It's also about quality of place and the multi-sensory experience of walking in the city. Art in the public realm enhances helps connect people to place. Art in the public realm can take many forms including street murals, surface treatments, unique lighting, decorative materials, sculptural elements, or even may be temporal or performance based.

PBOT occasionally works with the Regional Arts & Culture Council (RACC) to include public art installations in conjunction with capital improvement projects. It is City of Portland policy to dedicate two percent of total eligible costs of all improvement projects (including transportation projects) to a public art fund, which is managed by RACC. Use of these funds is not very common in conjunction with transportation capital projects, but better communication between PBOT and RACC and better informing PBOT project managers of the available funds and how to use them could help bring more art to Portland's streets.

The PBOT Capital Delivery Division will coordinate with Portland in the Streets to improve processes for integrating public art into capital projects. Process improvements may include bringing an artist-in-residence to PBOT. Additionally, Portland in the Streets will expand its programmatic offerings to encourage and permit community-initiated art in the right-of-way.

### Considerations

The mechanism for both allocating the funding to RACC and using the funding can be very confusing and tedious for project managers, which makes them less inclined to add art to their capital projects. Better communication and procedures are needed to make use of this program.



*Art in the public realm can make walking a more joyful experience (photo credit Regional Arts and Culture Council)*

# Strategy 10

## Provide opportunities for an interesting and enjoyable pedestrian experience

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 10.6

### Engage and work with community partners to co-promote events that help people take ownership over investments and use new infrastructure.

In historically underserved communities, investments in walking and biking infrastructure are sometimes associated with threats of gentrification, rising rents, and too little investment too late. While fear of future impacts should not deter us from making critical safety investments in neighborhoods that critically need them, pedestrian safety improvements should be seen as investments in existing residents, rather than forces for displacement.

The PBOT Equity Manager will work with community partners to organize events that encourage residents to embrace new infrastructure and build a sense of ownership and community around it. Block parties, community walks, demonstrations, and other events can be permitted and coordinated with the Portland in the Streets team and could help residents take ownership of City investments in their neighborhoods.



*Shared Infrastructure*

### Considerations

Finding messaging and partners to help build community ownership over new investments is a difficult task that will require intensive community building and outreach.

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# STRATEGY 11

## Work with developers, residents, and property owners to provide pedestrian improvements

The PedPDX Community Advisory Committees stressed the importance of near-term action to solve problems. Leveraging multiple sources of funding and opportunities for cost-efficiencies is a way to increase effectiveness, given limited resources. In Portland, pedestrian improvements are provided by a variety of programs and activities that require participation from developers, property owners, and residents.

Actions to make it easier and more affordable for sidewalks to be constructed will enable each group to contribute to enhancing the city's pedestrian network.

# Strategy 11

## Work with developers, residents, and property owners to provide pedestrian improvements

Table 20: Index of Strategy 11 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **11.1** Update the 1998 pedestrian design guidelines to guide future frontage improvements made in conjunction with private development. | Future Action | Policy | PBOT Pedestrian Coordinator |
| **11.2** Explore a fee program for development activity on arterial and collector streets as an alternative to building required sidewalk improvements where individual frontage improvements may not be practicable. | Future Action | Policy | PBOT Policy, Innovation, and Regional Collaboration; PBOT Development Permitting and Transit |
| **11.3** Update our approach to local improvement districts and waivers of remonstrance. | Future Action | Policy | PBOT LID Manager |
| **11.4** Provide a pathway for residents, property owners, and businesses to self -fund pedestrian improvements not prioritized for City investment. | Future Action | Policy | PBOT Active Transportation Division |
| **11.5** Update design guidelines to require pedestrian improvements on unimproved rights-of-way as part of the development review process. | Future Action | Policy | PBOT Development Review; PBOT Bridges and Structures |

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 11.1

## Update the 1998 pedestrian design guidelines to guide future frontage improvements made in conjunction with private development.

PBOT's Development Review group reviews and permits all street and frontage improvements associated with private development. In Portland, private development is typically required to make street frontage improvements along the property in the course of a development project. This includes providing or improving sidewalks in a manner consistent with the City's Pedestrian Design Guide.

The Pedestrian Design Guide integrates a range of pedestrian design criteria and practices into a coherent set of guidelines that, over time, promote a walkable city. It establishes sidewalk design criteria, including requirements for minimum sidewalk widths, street tree placement, and street corner design at crossings. Every sidewalk or crossing designed and built in the City of Portland is required to conform to these guidelines. These are the guidelines the City of Portland uses in our own capital projects, and they are the same guidelines required of private development. City staff ensure these guidelines are met by private development through the development review process.

Largely impacting frontage improvements, the Pedestrian Design Guide provides a critically important mechanism for leveraging privately-funded pedestrian improvements in the city over time. A large proportion of new sidewalks constructed or improved in Portland over time have been provided in conjunction with private development activities.

Subsequent to the adoption of PedPDX, the PBOT Pedestrian Coordinator will lead the effort to update Portland's Pedestrian Design Guide to reflect PedPDX.

### Considerations

The Pedestrian Design Guide has successfully leveraged pedestrian improvements from private development activities over the last 20 years. Whether integrated into a comprehensive set of right-of-way design guidelines or a standalone document, future pedestrian design guidelines should not dilute the influence of the 1998 Pedestrian Design Guidelines.




*Sidewalk Frontage Improvements*

# Strategy 11

## Work with developers, residents, and property owners to provide pedestrian improvements

PEDPDX OBJECTIVES ADDRESSED




## ACTION 11.2

### Explore a fee program for development activity on arterial and collector streets as an alternative to building required sidewalk improvements where individual frontage improvements may not be practicable.

Per City charter and City Code, property owners are responsible for constructing, maintaining, and repairing the sidewalks abutting their property. This applies to home owners, business owners, schools and other large institutions. Traditionally the requirement to construct sidewalks where they are missing or deficient is triggered when development or redevelopment projects occur. As part of the development, PBOT requires property owners to construct or improve the sidewalks fronting their property in accordance with City standards. This is how the majority of sidewalks have historically been built in the City of Portland. The mature sidewalk system in inner Portland that was constructed with development (often over 100 years ago) still serves residents today.

However, in some locations it is not always practicable to build sidewalks on a frontage-by-frontage basis. In Southwest Portland, the hilly terrain combined with the lack of stormwater infrastructure in the right-of-way makes a few feet of sidewalk construction on a corridor lacking pedestrian or stormwater facilities extremely costly.

Historically when faced with these types of constraints, PBOT has allowed development to proceed but with the expectation that the property will be responsible for making sidewalk improvements when a local improvement district (LID) is formed. As a result, in some locations new development has not provided new pedestrian infrastructure to serve those developments. In particular, many of Southwest Portland's busy arterial and collector streets still lack pedestrian walkways.

In response to this problem, PBOT has implemented a new Local Transportation Infrastructure Charge (LTIC) for new infill development on local streets within single-dwelling residential zones. The LTIC fee program allows developers to pay a fee commensurate with the cost of constructing required frontage improvements. PBOT then uses these fees to construct comprehensive sidewalks and street improvements on local streets.

While the LTIC helps address environmental and feasibility constraints of building sidewalks on local streets, it does not apply to busy arterial streets where there is even greater demand for safe pedestrian walkways. Many of these busy streets are classified as Major City Walkways and City Walkways, and provide pedestrian access to transit and schools.

PBOT's Development Permitting and Transit Group will explore establishing a fee program for developers on arterial and collector streets to pay into as an alternative to building frontage improvements. Staff will also evaluate the possibility of expanding the existing LTIC fee program to neighborhood collector streets.

### Considerations

A new fee program as an alternative to building frontage improvements will require City Council approval.

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# Strategy 11

## Work with developers, residents, and property owners to provide pedestrian improvements

## ACTION 11.3

### Update our approach to local improvement districts and waivers of remonstrance.

Historically when sidewalk construction is deemed infeasible or impracticable due to environmental constraints or lack of infrastructure to connect to, PBOT requires a "waiver of remonstrance" from the developer or property owner in lieu of requiring a street improvement. These waivers mean that a property is automatically counted as a "yes" vote to establish a future Local Improvement District (LID) to fund street improvements, and waives their right to remonstrate (or object) against the formation of an LID. Waivers also serve an important function in that they disclose to property owners their future responsibility to share in the cost of street improvements when those LIDs are formed. Waivers of remonstrance follow the property from owner to owner and are passed down from developers.

An LID is a method by which a group of property owners shares in the cost of street improvements including building sidewalks, paving streets, and providing stormwater infrastructure. Property owners opting in (or who have agreed to waive their right to object) make payments on the street improvements for up to 20 years.

LIDs are most commonly used to improve unpaved streets. LIDs have also been successfully used to provide sanitary sewer, water main improvements, traffic signal and utility undergrounding improvements in conjunction with street improvements for economies of scale to provide comprehensive and complete infrastructure solutions to neighborhoods.

Over the last century, Portland has expanded by annexing unincorporated land from Multnomah County. Most of the annexed area had already been developed prior to being added to the City and sidewalks were often not constructed as part of that development. Many of these annexed areas still retain some of their rural character, and they continue to have insufficient infrastructure to meet the needs of people walking.

The City has many waivers of remonstrance on record that date back several decades. However, as currently structured, residential LIDs are often not affordable for property owners, even when the cost of the infrastructure is spread out over 20 years.

PBOT staff will continue to evaluate opportunities to update our approach to LIDs in order to expand the application of this tool for building sidewalks and other street improvements in neighborhoods with inadequate pedestrian infrastructure. Potential updates to our approach to LIDs could include evaluating opportunities to reduce the cost of new infrastructure, and/or coupling property owner LID financing with City subsidy. Additionally, PBOT staff will work with elected officials to determine how to address existing waivers of remonstrance.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE



*Sidewalk Construction*

## Considerations

Some existing waivers of remonstrance are decades old and current property owners may not be in favor of paying the costs associated with LID street improvements. Lower-cost street improvements applying the alternative pedestrian walkways described in Action 5.1 may help reduce the costs of providing pedestrian infrastructure in some areas.

LIDs must be approved by City Council, and Council may not approve new LIDs if there is enough opposition from property owners, even if those property owners have waivers of remonstrance associated with their property.

# Strategy 11

## Work with developers, residents, and property owners to provide pedestrian improvements

PEDPDX OBJECTIVES ADDRESSED




## ACTION 11.4

### Provide a pathway for residents, property owners, and businesses to self -fund pedestrian improvements not prioritized for City investment.

Given the immense need for pedestrian improvements in Portland, PedPDX establishes a prioritization to ensure that public funds are allocated to locations with the greatest need first. However, needs not prioritized for near-term City investment are still needs. While not always a City safety priority, PedPDX acknowledges residents' desires to provide traffic calming, crossing improvements, sidewalk repairs, and other walking improvements on the streets they use every day.

The PBOT Active Transportation Division will lead an initiative to develop a pathway for residents, property owners, and business to self-fund pedestrian improvements not prioritized for City investment. This may include distributing resources to help residents seek grants or fundraise, developing better systems that allow PBOT crews to construct privately-funded improvements, working with City officials to establish financing mechanisms for small-scale improvements where LIDs are not practicable, and working with the Commissioner's office to set up revolving "micro-loans."

### Considerations

While many neighborhoods in Portland may be able to fundraise or collectively self-fund desired improvements, less affluent neighborhoods may not. Establishing new pathways to facilitate self-funded pedestrian improvements will require addressing these equity concerns. One approach may be to model new programs on Portland Public Schools, which allows local PTA's and school foundations to self-fund various school programs and resource needs, provided that a percentage of funds are set aside for low-income schools.

# Strategy 11

## Work with developers, residents, and property owners to provide pedestrian improvements

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 11.5

# Update design guidelines to require pedestrian improvements on unimproved rights-of-way as part of the development review process.

Unimproved rights-of-way are street segments that have a dirt, gravel, or substandard pavement surface. Sometimes unimproved rights-of-way are completely unimproved and are merely platted "paper streets" with no walking or driving surface at all.

Narrow unimproved rights of way are often good candidates for paths or stairways. These underutilized right-of-way segments can present low-cost opportunities to increase pedestrian connectivity, particularly in neighborhoods where the street grid is irregular or widely spaced and pedestrian connectivity is limited.

PedPDX identifies several unimproved or pedestrian-only paths in the right-of-way as part of the Pedestrian Priority Network as Neighborhood Walkways. Historically PBOT Development Review has not required pedestrian or other frontage improvements along unimproved "paper streets" where there is no vehicular access or terrain is steep.

Moving forward, PBOT Development Review will require frontage improvements on adjacent unimproved rights-of-way included as Neighborhood Walkways in the PedPDX network when properties redevelop. Such frontage improvements may include pedestrian paths and/or stairs.

### Considerations

Design guidelines for pedestrian paths are presented in Action 5.1. Pedestrian paths should consider lighting needs, particularly when serving as a walking route to school or at locations used by seniors. Where topography is steep, a staircase may be provided when an accessible route is provided on the nearest full street connection.



*Unimproved Street*

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# STRATEGY 12

## Address public safety and security concerns for people walking on City sidewalks

Addressing issues of safety and security in the pedestrian network is particularly important in areas where people do not have other transportation options and in areas that have historically been underserved. Actions focused on under-served communities reinforce our commitment to equity and eliminating disparate outcomes due to race. Walking While Black Focus Group participants, and the Walking Stories documented as part of this Plan, highlighted the issues people of color face on a daily basis.

# Strategy 12

## Address public safety and security concerns for people walking on City sidewalks

Table 21: Index of Strategy 12 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **12.1** Increase lighting per new street lighting level guidelines, focusing investment in underserved communities. | Future Action | Infrastructure; Funding | PBOT Signals and Street Lighting |
| **12.2** Partner with other agencies and City bureaus to advance the well-being and personal security of vulnerable communities as they use Portland transportation infrastructure. | Future Action | Policy; Education | PBOT Equity Manager |
| **12.3** Continue research on racial bias and driving behavior. | Future Action | Education | PBOT Equity Manager |

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 12.1

## Increase lighting per new street lighting level guidelines, focusing investment in underserved communities.

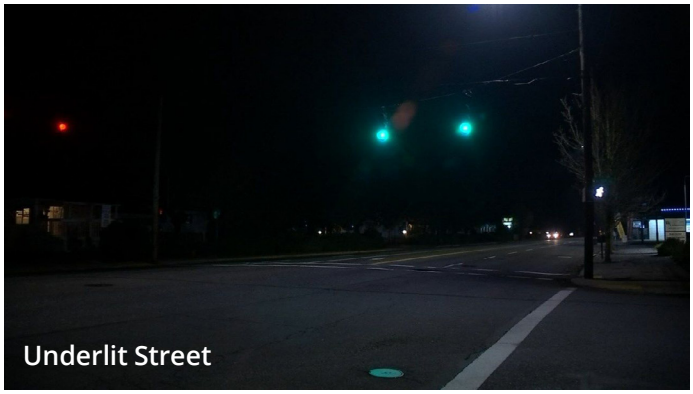
Street lighting is critical in terms of helping pedestrians navigate sidewalks and crossings and being seen by people driving in low-light conditions. Beyond improving traffic safety however, street lighting also helps provide a greater sense of personal safety and security for people walking. Focus group discussion about lighting led to a deeper understanding about concerns for personal safety in public spaces and during travel commutes. Participants shared the choices they make on a daily basis to travel on routes that make them feel safe and visible, even if the travel route is longer or the travel option is more expensive

Participants at the PedPDX "Walking While Black" focus group strongly voiced a need for more and better street lighting. The number one barrier to walking identified by participants was poor lighting. In response to this strong advocacy for more street lighting in communities of color, PBOT Signals and Street Lighting has updated the City's street lighting level guidelines. Those updated lighting guidelines will result in more well-lit streets, sidewalks, and crossings.

Recognizing that underserved communities in Portland evidence higher rates of pedestrian crashes and a greater need for intervention, lighting investments will be prioritized in areas identified through the PBOT Equity Matrix and the PedPDX composite network prioritization. As described in Action 6.2, PBOT will develop a strategic investment plan to improve lighting conditions and pedestrian visibility on our streets. Efforts will focus on High Crash Corridors and intersections, Pedestrian Priority Streets, and in historically underserved areas.

*"Lighting is very important if we really want to protect Black lives, not everyone has shiny clothes on them. Proper lighting especially helps people with dark skin. If we had enough light everywhere, it would be safer citywide to walk while Black. White drivers don't see Black people, even in [the] daytime. "*

- Walking While Black Focus Group participant



Underlit Street

### Considerations

Increasing light levels may encounter some opposition from groups advocating for darker skies. LED street lights have largely eliminated uplight, the light shining directly upward, but light reflected from the pavement will still impact dark skies.

Dark sky advocates may request color temperatures of 3000K or below, yet the best color contrast currently available to identify pedestrians using LED streetlights is 4000K. New developments in LED technology may improve color rendering at lower color temperatures.

# Strategy 12

## Address public safety and security concerns for people walking on City sidewalks

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 12.2

### Partner with other agencies and City bureaus to advance the well-being and personal security of vulnerable communities as they use Portland transportation infrastructure.

While much of PBOT's work is related to preventing crashes and improving traffic safety in the right-of-way, the element of personal safety and security is often ignored by transportation professionals. We know from community outreach, however, that concerns about personal safety and security significantly impact the transportation choices of many non-white residents.

Feedback from PedPDX's "Walking While Black" focus groups suggested ways PBOT can help people, especially minorities, feel safe from street harassment when using the street. Many people discussed how they are afraid of walking in their own neighborhoods after being harassed in the right-of-way. Since 2016, Oregonians have reported over 30 "hate incidents," a higher rate than any other state, according to Southern Poverty Law Center data. In May 2017, two White men were stabbed to death, and another seriously injured, when they intervened to protect victims from an act of racist violence on a MAX train. The targets of the White, male perpetrator were two young, Black teenage women, one wearing a hijab.

In response, the Portland United Against Hate Coalition (PUAH) was formed to closely track incidents of hate and elevate concerns on community safety. The PBOT Equity Manager will identify opportunities to coordinate with community groups and other partner agencies, including PUAH and the Office of Civic Life crime prevention team, to develop actions, programs, tools, and resources to address street harassment in Portland and educate the public about what to do when they feel threatened in the right-of-way. These tools and resources could be distributed at PBOT events, through SmartTrips and Safe Routes to School programs, and online.



### Considerations

PBOT has no legal authority over public harassment complaints in the public realm. This action will require the Portland Police Bureau's help to enforce current laws. This action will require extensive community and partner agency input to develop the tools and resources in support of anti-hate work.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 12.3

## Continue research on racial bias and driving behavior.

A 2005 study performed by researchers at Portland State University found that drivers are less likely to stop for Black pedestrians waiting in a crosswalk than for White pedestrians [9]. The study found that Black male pedestrians were passed by twice as many cars as, and waited 32% longer than, White male pedestrians. A later study found that at unmarked crosswalks, drivers' stopping compliance was very low but few differences emerged based on pedestrian race and gender. At marked crosswalks, drivers were more likely to stop, but exhibited a racial/gender bias and were less likely to stop for Black pedestrians. When they did stop, they were more likely to stop closer to the Black pedestrian.

The vision of PedPDX is to make Portland a great walking city for all. Accomplishing this requires us to have a better understanding of the different set of challenges faced by non-white people walking on Portland streets. The PBOT Equity Manager will advocate for and coordinate with community partners to for continued research to better understand discrepancy in driver behavior toward non-white pedestrians and develop tools and policies to increase driver compliance at crosswalks when people of color are present.



Black male pedestrians were

**PASSED BY TWICE AS MANY CARS**

AND

**WAITED**

**32%** longer to cross the street

than white male pedestrians.

*Source: 2005 Portland State University Study [9]*

### Considerations

This action will require the PBOT's Equity Manager to coordinate with university and other researchers.

[9] Tara Goddard, Kimberly Barsamian Kahn, Arlie Adkins, Racial bias in driver yielding behavior at crosswalks, Transportation Research Part F: Traffic Psychology and Behaviour, Volume 33, 2015, Pages 1-6, ISSN 1369-8478, https://doi.org/10.1016/j.trf.2015.06.002

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# STRATEGY 13

## Use education and outreach to help Portlanders keep themselves safe while walking

Outreach and education programs complement infrastructure design to keep Portlanders safe while walking. Project stakeholders expressed the need for more expansive education efforts for all roadway users and highlighted the need for extensive messaging, communication, and education, as was heard in the Walking While Black and Disability Focus Groups. Actions are tailored to address safety for vulnerable users and all ages and abilities.

# Strategy 13

## Use education and outreach to help Portlanders keep themselves safe while walking

Table 22: Index of Strategy 13 Actions

| ACTION | IMPLEMENTING VS. FUTURE ACTION | CATEGORY | LEADING ROLE |
|---|---|---|---|
| **13.1** Expand safety education/outreach focusing on people walking. | Future Action | Education | PBOT Vision Zero |
| **13.2** Expand pedestrian safety education programs targeted to seniors. | Future Action | Education | PBOT Vision Zero |
| **13.3** Expand pedestrian safety education programs targeted to school children. | Future Action | Education | Safe Routes to School |

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# Strategy 13

## Use education and outreach to help Portlanders keep themselves safe while walking

## ACTION 13.1

### Expand safety education and outreach focusing on people walking.

While PBOT is committed to providing safer infrastructure on our roadways and increasing safe driving behaviors, educating Portlanders about how to keep themselves safe while walking could also help avoid death and injury on our streets. It is important that people walking know how to anticipate driver movements, know how and when they are/are not visible to drivers, and understand how to keep themselves safe in dangerous situations (including in dark conditions, when pedestrian crashes increase in Portland). These sorts of "defensive walking" tactics are not "victim blaming," but practical and potentially life-saving strategies that people walking on Portland streets should be equipped with as we continue to make strides creating safer streets and increasing driver awareness.

PBOT currently supports an array of pedestrian safety programs, such as TriMet's "Be Seen. Be Safe." campaign. The SmartTrips program encourages walking through guided walks and supplying maps to help guide pedestrians. Other pedestrian outreach and education efforts PBOT currently participates in or leads include:

- PBOT Street Team outreach and education efforts include positioning two or more staff and community volunteers at locations that have a high amount of pedestrian activity and handing out Vision Zero safety information and pedestrian safety and flashing lights to people walking on the sidewalk, getting on or off the bus, and people crossing the street. Locations that are on a Vision Zero high crash network street are prioritized over non-high crash network streets.
- Scheduled in-classroom and "Walk & Talk" trainings that includes an in-classroom training followed by a walk and discussion outside. Trainings are available city-wide for all community members with a priority focus of promoting the trainings to community members located on or near Vision Zero high crash network streets and community members with limited English proficiency skills.
- PBOT educational online videos including Every Corner is a Crosswalk, Oregon Walks – Be Safe, and Beacon Buddies.
- Promoting The Street Trust's "Oregon Friendly Driver" program and other traffic safety classes on the PBOT Traffic Safety Resources webpage.



*Be Safe Training*

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

- Portland Police Bureau driver safety classes for immigrant and refugee adults include in-classroom trainings and behind-the-wheel driver experiences. Each participant receives training about Oregon traffic laws including Oregon crosswalk laws and how to be safer when walking and driving.

PBOT Vision Zero will significantly expand current pedestrian safety education efforts and seek to reach a broader audience. This will include reaching out to populations at highest risk for pedestrian crashes and non-native English speakers. This could include (but is not limited to) broad reaching media campaigns, expanding PBOT's SmartTrips education program, site-specific educational efforts within sidewalks and at crossings, and collaborating with community partners.



*Educational Tour*

## Considerations

Significantly expanding outreach and education efforts will be reliant upon available funding.

# Strategy 13

## Use education and outreach to help Portlanders keep themselves safe while walking

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

## ACTION 13.2

### Expand pedestrian safety education programs focusing on seniors.

Pedestrians ages 65 and older accounted for 19% of all pedestrian deaths in the USA and an estimated 13% of all pedestrians injured in 2015. (National Highway Traffic Safety Administration. Traffic Safety Facts 2015 Data). As we age, our peripheral vision and hearing diminishes, our balance can be compromised, stiff joints and muscles can make it harder to check traffic before we step out, and we are less quick to respond to and less likely to heal from a crash.

Outreach programs for seniors helps to address the needs of this specific group of pedestrians. Opportunities for older adults may not be well known to the older adults themselves. Education about the benefits of and safety strategies for walking can help to encourage and increase these activities. Public relations campaigns can increase awareness of safe pedestrian pathways for older adults and the laws related to pedestrians for bicyclists and drivers. Seminars for older adults can increase understanding and awareness of recent developments in infrastructure design, policies, or programs to support safe walking.

Current encouragement and education programs that the City offers for seniors will be continued and expanded. This could include encouragement programs and activities, working collaboratively with community and non-profit partners such as Parks and Recreation and AARP, and working with older residents to identify places in the street network where they do not feel comfortable (for example, intersections where seniors feel there is not enough time to cross the street) and PBOT can provide improvements.

Pedestrians ages 65 and older accounted for

**19%**

**OF ALL PEDESTRIAN DEATHS IN THE USA**

AND AN ESTIMATED

**13%**

**OF ALL PEDESTRIANS INJURED IN 2015**



*Source: National Highway Traffic Safety Administration. Traffic Safety Facts 2015 Data*

### Considerations

Many (if not most) of the infrastructure, design, and policy changes introduced in PedPDX will increase safety and comfort for all pedestrians, including older adults. Targeted safety and education efforts can help supplement these efforts and help ensure older adults feel safe walking in Portland.

PEDPDX OBJECTIVES ADDRESSED

HISTORIC UNDERINVESTMENT | CONNECT TO DAILY NEEDS | FUNDING | VISION ZERO | PUBLIC SAFETY | JOYFUL EXPERIENCE

# ACTION 13.3

## Expand pedestrian safety education programs focusing on school children.

Portland youth tend to be more multi-modal than their parents. Many young Portlanders are already navigating the city on foot and bike, by bus and MAX, and in cars. Beyond driver's education, traffic safety education for students is limited. Many young people mature enough to travel alone or with friends often have not had any safety training at all.

PBOT's Safe Routes to School program provides roadway safety improvements to make walking and biking to school safer for children. The PedPDX prioritization incorporates Safe Routes to School Primary Investment Routes and the Pedestrian Network Completion Program will support and complement Safe Routes to School program funding for safe walking infrastructure.

In addition to safety infrastructure, PBOT's Safe Routes to School program also encourages and incentivizes walking and bicycling to school and engages in safety education efforts teaching young people how to travel safely. Such efforts currently include:

- Meeting with youth to discuss transportation topics and personal safety in the right-of-way,
- Distributing safety education materials via schools and directly to families through the SmartTrips to School program,
- And working with schools to design education programs that work best for their school community.

Expanding safety training opportunities and ages receiving education will teach more young Portlanders how to travel on Portland streets. Maintaining consistent messaging from grades K-12 will help solidify these skills as second nature. PBOT's Safe Routes to School program will expand these student safety education efforts.

### Considerations

Expanding Safe Routes to School trainings and educational efforts may rely upon available funding.




*School Crossing*

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# ALTERNATIVE PEDESTRIAN WALKWAYS

Alternative Pedestrian Walkways are additional tools in the Implementation Toolkit that provide an alternative to sidewalks, when space, geography, topography, cost, or neighborhood preference do not allow or require a full sidewalk to be constructed.

# Pedestrian Path Connection




This illustration depicts a 6-10 ft wide pedestrian path.

## DESCRIPTION

A Pedestrian Path Connection creates short walkway segment in a public right-of-way, independent from motor vehicular traffic. At narrow widths, these paths are appropriate for pedestrian-only use. Where topography is steep, a staircase may be used. Where additional width is available, the connection may be designed for bicycle and pedestrian use.

| WORKS BEST WHERE | |
|---|---|
| Roadway classification | Local |
| Max vehicle volume | N/A |
| Max posted speed | N/A |
| Safe Routes applicability | Yes |
| Traffic calming may be required | N/A |

## CONSIDERATIONS

In areas of steep slopes and topographical constraints, a staircase may be appropriate to establish a pedestrian connection. Designs should meet accessibility guidelines to the maximum extent possible. Consider the use of wheel runnels for bicycle accommodation.

## KEY DESIGN ELEMENTS

1. A pedestrian-only connection should be designed to support side-by-side pedestrian use:
   - 10 ft width preferred;
   - 6 ft width minimum;
2. Adequate lighting is recommended along transportation pathways, for safety and security.
3. When intended for use by bicyclists, increased width is required
   - User separation is preferred over shared use in potential high-demand corridors.
   - Long distance shared use paths should meet national and local bikeway design guidelines.

## OPTIONAL DESIGN ELEMENTS

4. Pay special attention to roadway crossings, including assignment of user priority, crossing enhancements and geometric design to create appropriate behavior.
5. Consider strategies to discourage unwanted use by motor vehicles.

## PRECEDENT IMAGES

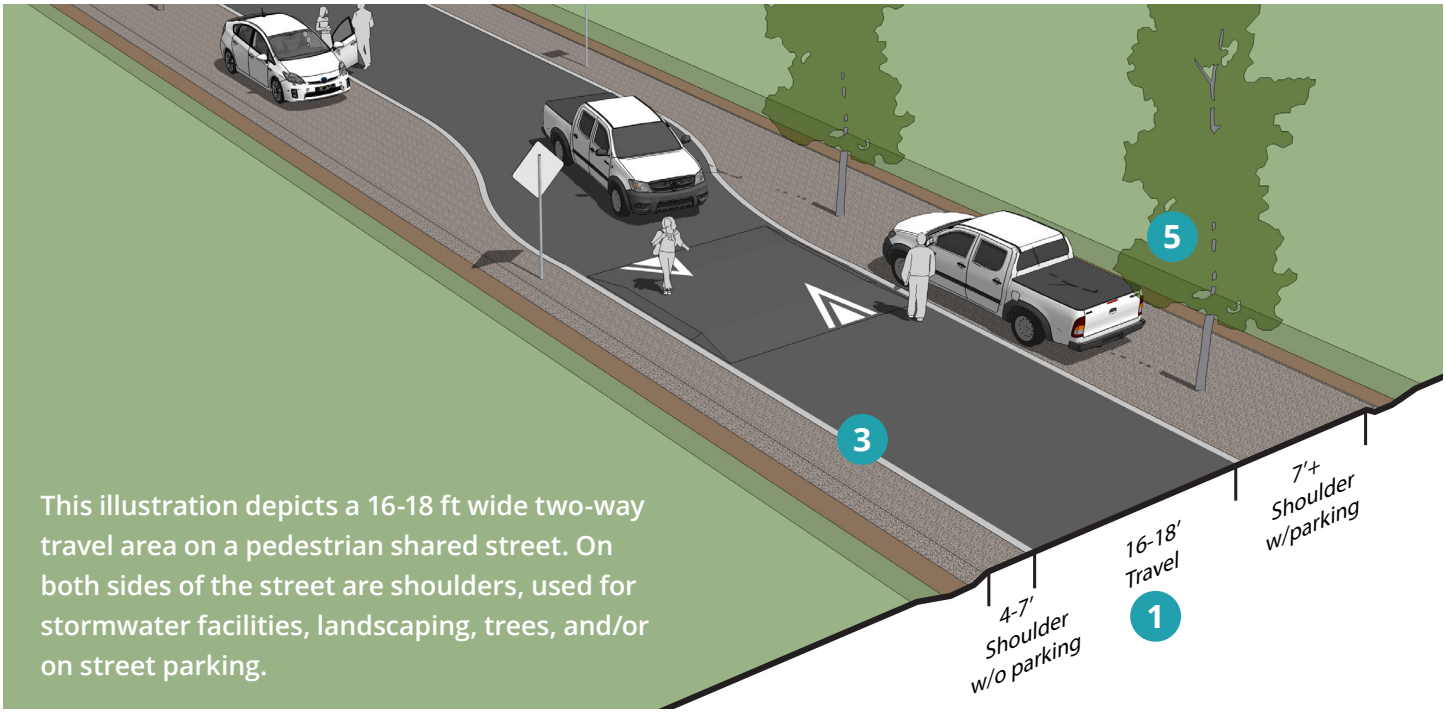



*NE Klickitat St Esplanade in NE Portland crosses multiple streets to connect into Irving Park.*




*Staircase off SW Terwilliger Blvd in Southwest Portland provides a direct connection for pedestrians to reach OHSU. An accessible route is provided on the nearest full street connection.*

# Pedestrian Shared Street




This illustration depicts a 16-18 ft wide two-way travel area on a pedestrian shared street. On both sides of the street are shoulders, used for stormwater facilities, landscaping, trees, and/or on street parking.

## DESCRIPTION

A Pedestrian Shared Street is designed to serve pedestrians, bicyclists, and motor vehicle traffic on a shared low-speed travel area. On very low-volume and low-speed streets, pedestrians and bicyclists are comfortable using the roadway with the occasional vehicle.

## WORKS BEST WHERE

| | |
|---|---|
| Roadway classification | Local, Residential |
| Max vehicle volume | 500 vehicles per day |
| Speed limit | 15 mph |
| Safe Routes applicability | Yes |
| Traffic calming may be required | Yes |

## CONSIDERATIONS

Pedestrian shared streets should be designed to match the requirements of a "Shared Residential Street" as defined by City Ordinance #185759 and a "Narrow Residential Roadway" as defined by ORS 801.368.

## KEY DESIGN ELEMENTS

1. Total edge of pavement to edge of pavement width may vary from 16 ft to 18 ft to require slow speed user interaction.
2. These streets should meet or exceed lighting requirements.
3. Markings and signs should encourage appropriate slow-speed travel behavior
   - The street should be designed for 15 MPH travel, speed limit signs may be posted.
   - A PBOT "Shared Street" signs should be used at the beginning and end of the pedestrian shared street segment.
   - No centerline marking should be used on pedestrian shared streets.
4. Traffic calming tools such as speed humps or horizontal shifts in the roadway may be necessary to create slow operating conditions.

## OPTIONAL DESIGN ELEMENTS

5. Stormwater, landscaping and trees may be planted within the shoulder area at regular intervals to visually and physically narrow the corridor, add to the aesthetic environment, and encourage slow speeds.

## PRECEDENT IMAGES



*SW Brugger St is a de facto pedestrian shared street in Southwest Portland. While this street may meet performance and design guidelines, an engineering analysis and revisions to markings, signs and design would be necessary to formalize this connection.*

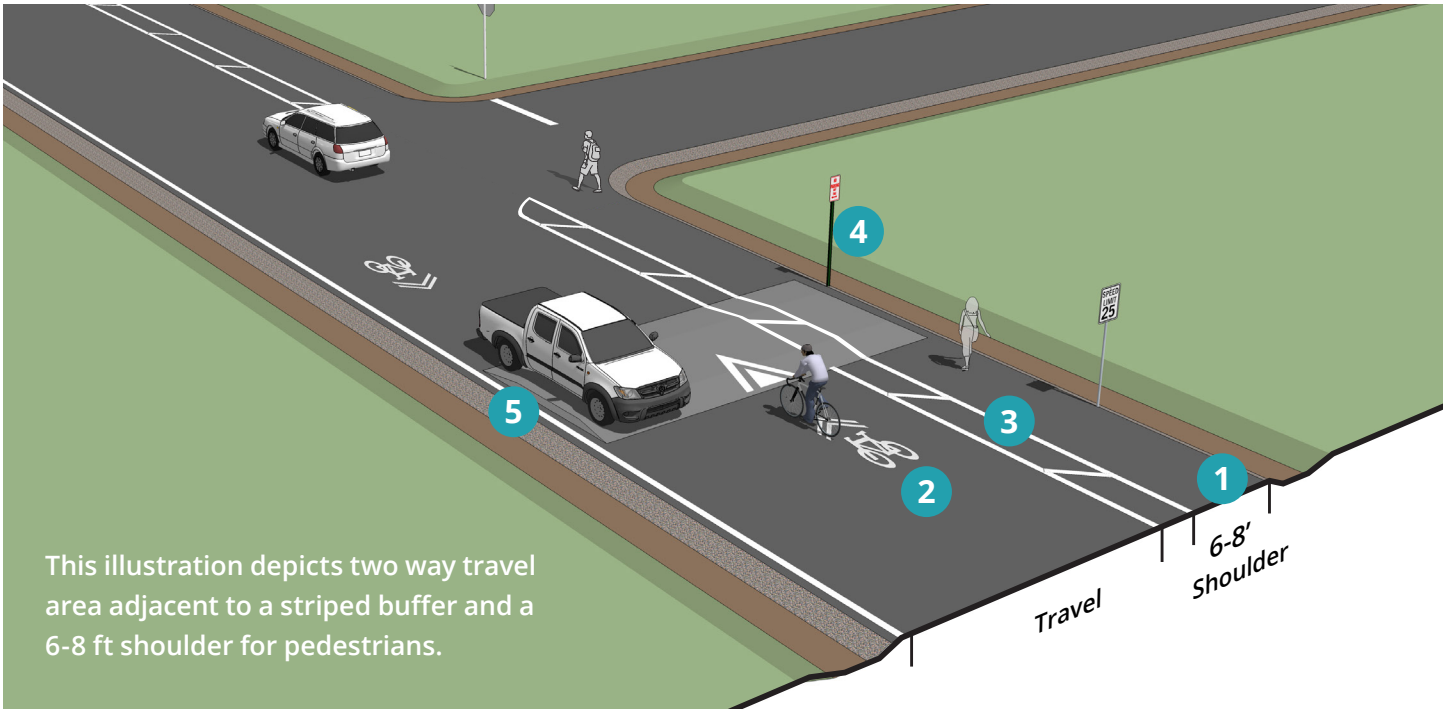


*SE Mill St is a de facto pedestrian shared street. While this street may meet performance and design guidelines, an engineering analysis and revisions to markings, signs and design would be necessary to formalize this connection.*




*SW 19th Ave is a new pedestrian shared street in Southwest Portland. This street is designed and signed for 15 mph travel, and includes PBOT "Shared Street" signs.*

# Slow Safer Shoulder




This illustration depicts two way travel area adjacent to a striped buffer and a 6-8 ft shoulder for pedestrians.

## DESCRIPTION

A Slow Safer Shoulder is a paved roadway shoulder delineated with lane striping, intended to provide interim or temporary pedestrian accommodation separated from moving traffic. This treatment is appropriate on local streets and works best paired with traffic calming to create slow operating conditions.

| WORKS BEST WHERE | |
|---|---|
| Roadway classification | Local |
| Max vehicle volume | 3000 vehicles per day |
| Max posted speed | 20 mph |
| Safe Routes applicability | 500 vehicles per day |
| Traffic calming may be required | Yes |

## CONSIDERATIONS

Where speeds and volumes are high, or on collector and arterial streets, physical separation is desirable to maintain comfort and safety. Refer to Protected Safer Shoulder in this guide.

This facility is generally not appropriate in areas classified as Pedestrian Districts.

## KEY DESIGN ELEMENTS

1. Safer Shoulders should be designed to support side-by-side walking within the lane. Because of the lack of physical separation, additional width beyond this should be included for comfort where possible.
   - 8 ft width preferred;
   - 6 ft width minimum.
2. Bicyclists are expected to travel in the roadway with motor vehicles. Shared lane markings are used on streets when developed as neighborhood greenways.
3. Mark a double white line between travel lanes and shoulder walkway. Where extra space is available, mark as buffer separation.
4. Prohibit vehicles from parking on safer shoulders through signs and markings.

## OPTIONAL DESIGN ELEMENTS

5. Provide traffic calming elements when speed and volume thresholds are not met e.g. posted speed reductions, removing center lines, narrowing travel lanes.
6. Tactile warning surface indicators may be used to indicate intersection crossing areas.

## PRECEDENT IMAGES

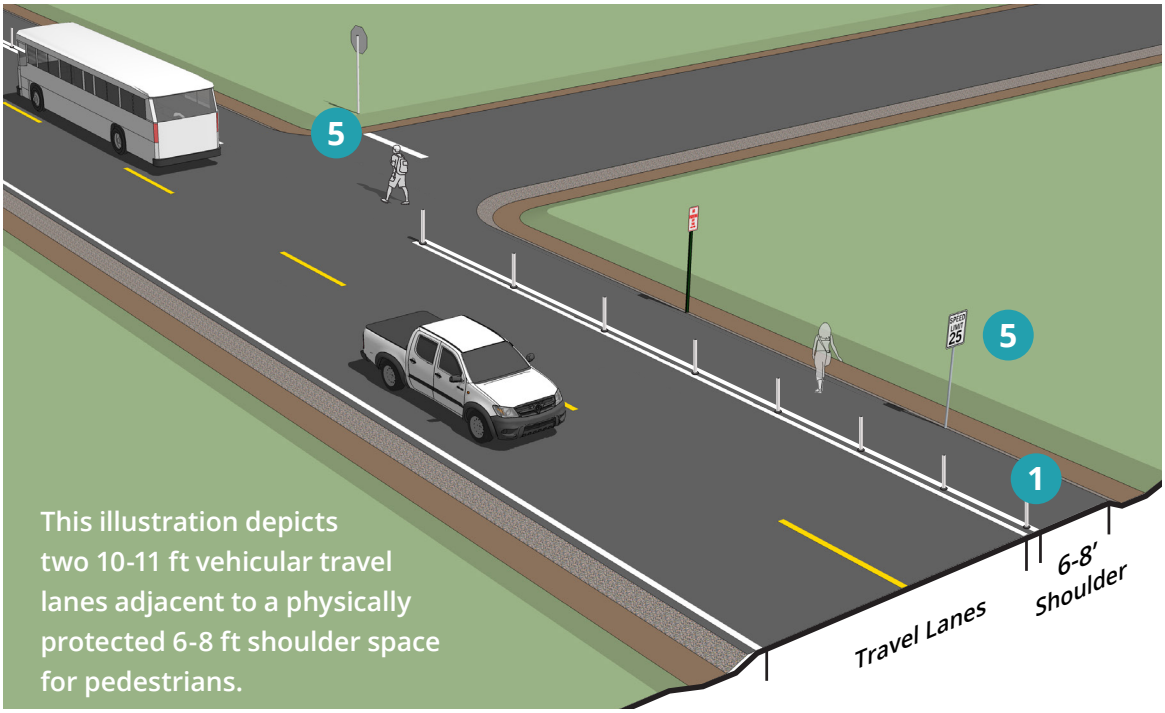



*SE Maplewood Rd in Southwest Portland combines a slow safer shoulder with a neighborhood greenway route. Bicyclists and motor vehicles operate in a shared travel area. Pedestrians travel on the striped shoulder.*



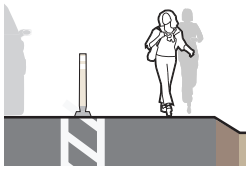
*SE Maplewood Rd in Detroit, OR uses a pedestrian shoulder as an alternative to sidewalks.*

# Protected Safer Shoulders

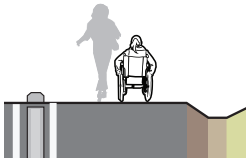



**2 SEPARATION OPTIONS**

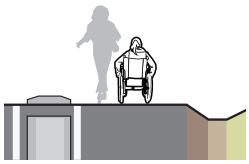
DELINEATOR POSTS



WHEEL STOPS



TRAFFIC SEPARATOR



## DESCRIPTION

Protected Safer Shoulders are paved roadway shoulders, delineated with lane striping and separated from moving traffic with a physical barrier, similar to protected bike lanes.

| WORKS BEST WHERE | |
|---|---|
| Roadway classification | Collector, Arterial |
| Max vehicle volume | N/A |
| Max posted speed | 35 mph |
| Safe Routes applicability | with posted speed of 20 mph |
| Traffic calming may be required | No |

## CONSIDERATIONS

On busy streets with no bicycle facilities, bicyclists are likely to us the protected safer shoulder space. Where this is likely or expected, provide additional width to minimize conflicts. Refer to the Portland Protected Bike Lane Planning and Design Guide for information on preferred dimensions.

This facility is generally not appropriate in areas classified as Pedestrian Districts.

## KEY DESIGN ELEMENTS

1. Safer Shoulders should be designed to support side-by-side walking within the lane.
   - 8 ft width preferred;
   - 6 ft width minimum.

2. A wide variety of separation methods exist, depending on right-of-way width, drainage, and cost.
   - Physical elements such as parking wheel stops, delineator posts, or traffic separators may establish physical separation within a space of 1-3 ft.

3. Mark a double white line between travel lanes and the safer shoulder. Where extra space is available, mark as buffer separation.

4. Prohibit vehicles from parking on safer shoulders through signs and markings.

## OPTIONAL DESIGN ELEMENTS

5. Tactile warning surface indicators may be used to indicate intersection crossing areas.

## PRECEDENT IMAGES




*A protected safer shoulder walkway on SW Vermont St just outside of the city of Portland boundaries.*

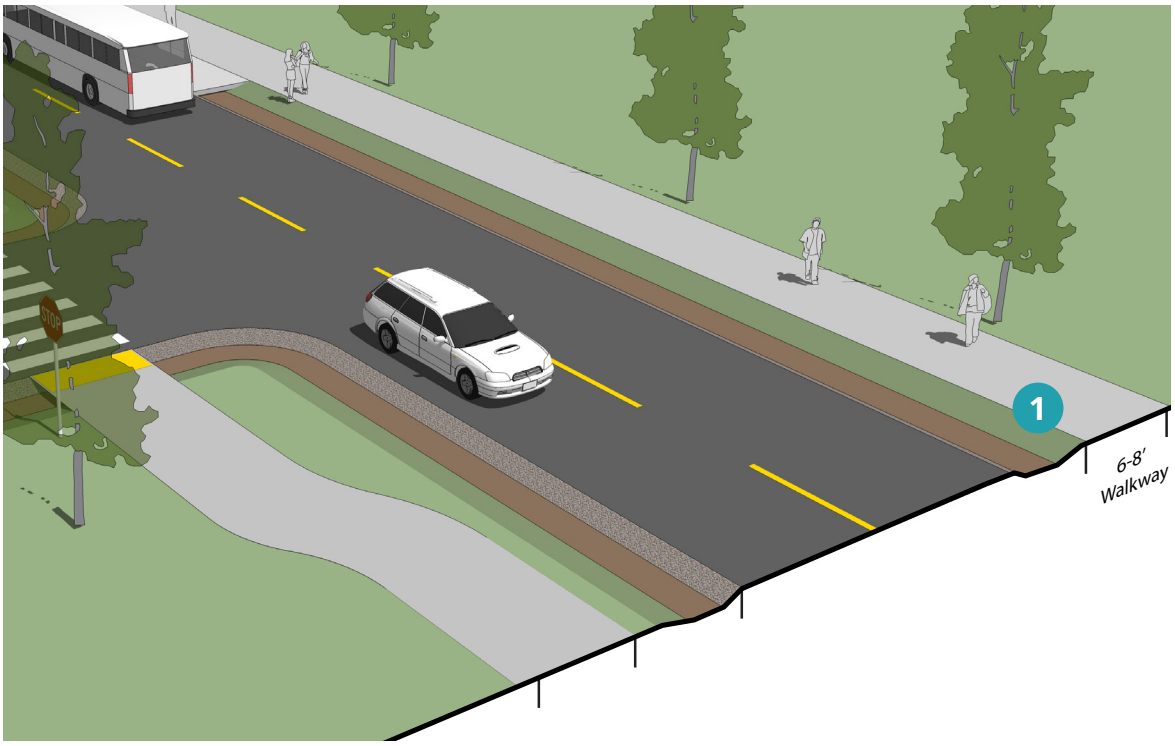


*Curb protected walkway in Seattle, WA*



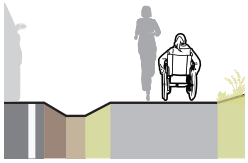
*Curb protected walkway in Seattle, WA*

# Separated Walkway

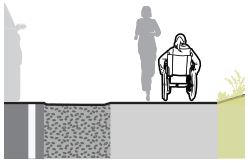



**3 BUFFER OPTIONS**

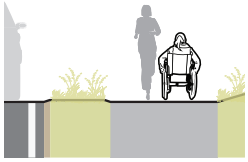
SWALE OR DITCH



GRAVEL SHOULDER



LANDSCAPING



## DESCRIPTION

On streets without curbs, a Separated Walkway provides an exclusive pedestrian walkway separated from the roadway with an unpaved area. The separation area may integrate a swale, ditch or landscaping.

## WORKS BEST WHERE

| | |
|---|---|
| Roadway classification | Local, Collector, Arterial |
| Max vehicle volume | N/A |
| Max posted speed | N/A |
| Safe Routes applicability | Yes |
| Traffic calming may be required | Not required |

## CONSIDERATIONS

(NOTE: NO CONSIDERATION CONTENT)

## KEY DESIGN ELEMENTS

1. The Separated Walkway should be designed to support side-by-side walking:
   - 8 ft width preferred;
   - 6 ft width minimum.

2. When intended for use by bicyclists, increased width is required
   - User separation is preferred over shared use.
   - Long distance shared use paths should meet national and local bikeway design guidelines.

3. Unpaved separation, such as a gravel shoulder, vegetated shoulder, or stormwater facilities may provide separation within 4 to 7 ft or greater.

## OPTIONAL DESIGN ELEMENTS

4. On-street parking may be provided in the roadway, adjacent to, or integrated with the physical separation.

## PRECEDENT IMAGES



*NE 72nd Ave in Northeast Portland provides a separated walkway with integrated landscaping, stormwater facilities and on-street parking.*



*McVey Ave in Lake Oswego, OR. A landscape separated walkway.*




*SW Taylors Ferry Rd in Southwest Portland. This historic example doesn't meet minimum widths, but provides an unpaved separation from the roadway.*

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# 7. IMPLEMENTING THE PLAN

In Portland, pedestrian improvements are provided by a variety of programs and activities. While PBOT's Pedestrian Network Completion Program is directly charged with expanding the city's network of sidewalks, walking paths, and crossings, multiple City programs and bureaus help contribute toward making Portland a more walkable city. This section describes the various ways that pedestrian improvements are provided in Portland, and how these programs and activities will be guided by PedPDX. This will provide an understanding of the various City programs and activities that will help to implement the Plan.

# Sidewalk and Crossing Improvements

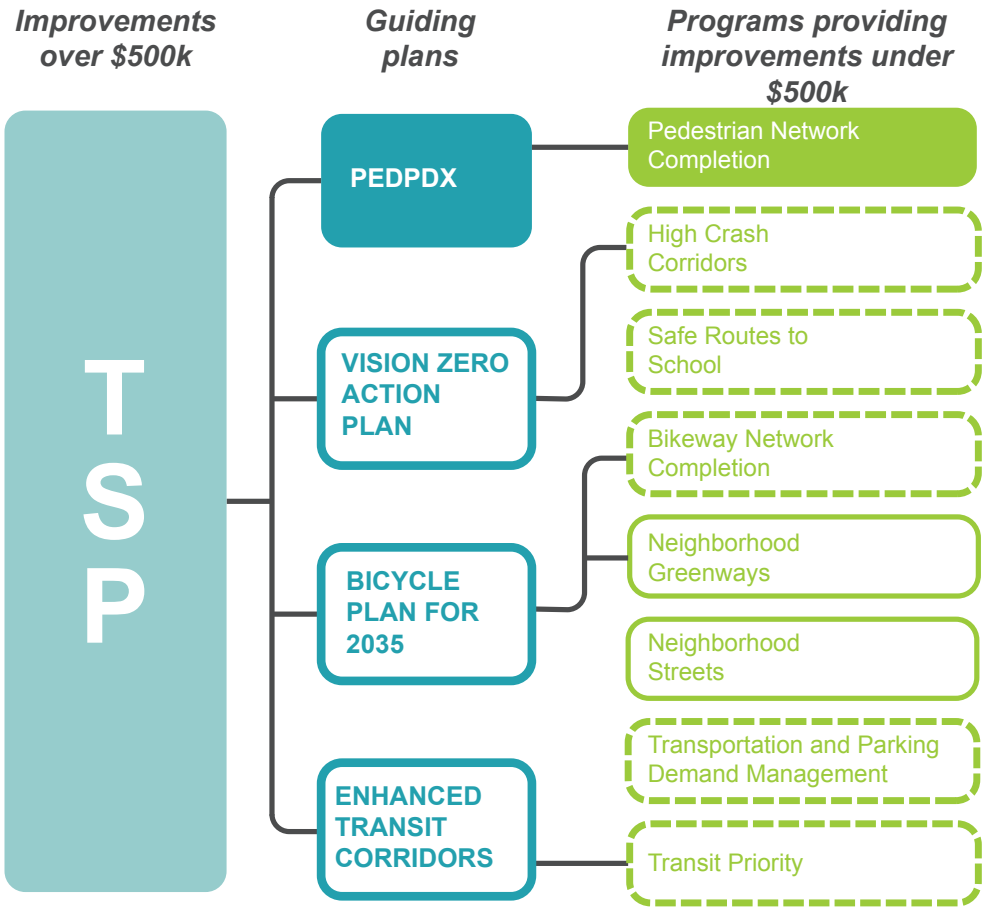
## Pedestrian Network Completion Program

Gaps and deficiencies in Portland's pedestrian network present significant barriers to pedestrians. Many of these can be remedied through modest expenditures to address the most critically needed improvements. The Pedestrian Network Completion Program provides pedestrian improvements (typically under $500k) including sidewalk gap infill, sidewalk improvements, shared streets, pathways, trails, crossing improvements, wayfinding improvements, and signal modifications.

PedPDX identifies priority crossing gaps, where marked crossings are not provided at the frequency required by the City's new Crossing Spacing Guidelines, as well as potential crossing deficiencies where an existing crossing may not meet current design guidance. The Plan also identifies and prioritizes gaps in the sidewalk network. Prioritized needs on the PedPDX Pedestrian Priority Network are eligible for funding through the Pedestrian Network Completion program, which is directly charged with expanding the city's network of sidewalks, walking paths, and crossings.

The Pedestrian Network Completion Program will develop bi-annual implementation plans to identify high priority crossing and sidewalk improvements to be funded and constructed through the program. The Pedestrian Network Completion Program will apply the PedPDX prioritization methodology every two years to identify priorities based on current safety, equity, and demand data. While the Pedestrian Network Completion Program will be driven by the PedPDX prioritization, other factors will also be considered when developing program priorities, including project readiness, project feasibility, available funding, leverage opportunities, and key pedestrian destinations/generators within prioritized locations.

Figure 52: The TSP Framework




*The PedPDX prioritization will influence pedestrian-related selected for the implementation from the TSP. It will also directly guide the work of the pedestrian network completion program.*

## Transportation System Plan (TSP) Major Projects

The City of Portland's Transportation System Plan (TSP) is a 20-year plan that guides transportation investments in Portland. It houses key goals and policies for the City's transportation system and provides a list of major transportation projects the City intends to implement over the next 20 years to help realize the vision of the Comprehensive Plan.

Transportation improvements over $500,000 are listed individually as major projects within the TSP. These major projects are identified from individual planning processes such as modal plans (like PedPDX) or local area plans. Pedestrian-related projects in the TSP may include broad multi-modal "complete streets" corridor improvements that include pedestrian elements in their descriptions and cost

estimates, or they may be specific large-scale projects with a pedestrian emphasis, such as pedestrian district improvements, large sidewalk or trail projects, or bicycle/ pedestrian bridges. There are currently 427 Major Projects identified in the TSP. Of these, 241 projects include pedestrian elements.

In addition to directly guiding the work program for the Pedestrian Network Completion Program, PedPDX priority needs will also influence pedestrian projects selected from the TSP for implementation and grant opportunities. All TSP projects are prioritized into two "bands" for implementation. Projects are prioritized for 1-10 year implementation, or 11-20 year implementation. PedPDX does not influence the TSP's methodology for prioritizing projects into these broad implementation bands. However, the PedPDX prioritization will be used to help determine how pedestrian-related projects are prioritized for implementation within these broad bands as funding opportunities arise.

## Other Pedestrian-Related TSP Programs

In addition to identifying major capital project priorities, the TSP also creates a series of programs intended to deliver smaller-scaled transportation improvements, generally under $500,000. One of these programs is the Pedestrian Network Completion Program. Citywide programs help the public and staff understand, track, and promote small-scale transportation investments, which can be quite effective.

Figure 52 illustrates the various pedestrian-related programs identified in the TSP. Each program's investment priorities are guided by adopted plans and strategies associated with that program, including modal plans.

While PedPDX will directly guide the Pedestrian Network Completion Program, it may also influence other PBOT programs that also provide pedestrian-related improvements. Each of these TSP programs and their relationship to PedPDX is described in more detail in the following pages.

## High Crash Corridors Program

In 2015, City Council adopted Vision Zero, a commitment to eliminating fatalities and serious injuries on Portland streets by 2025. The comprehensive strategy to get there, Portland's Vision Zero Action Plan, includes specific actions aimed at achieving the City's aggressive 2025 target. In addition to the actions identified in the Vision Zero Action Plan, many other programs within and outside of PBOT integrate safety as a key tenant and are jointly working to achieve the Vision Zero goal.

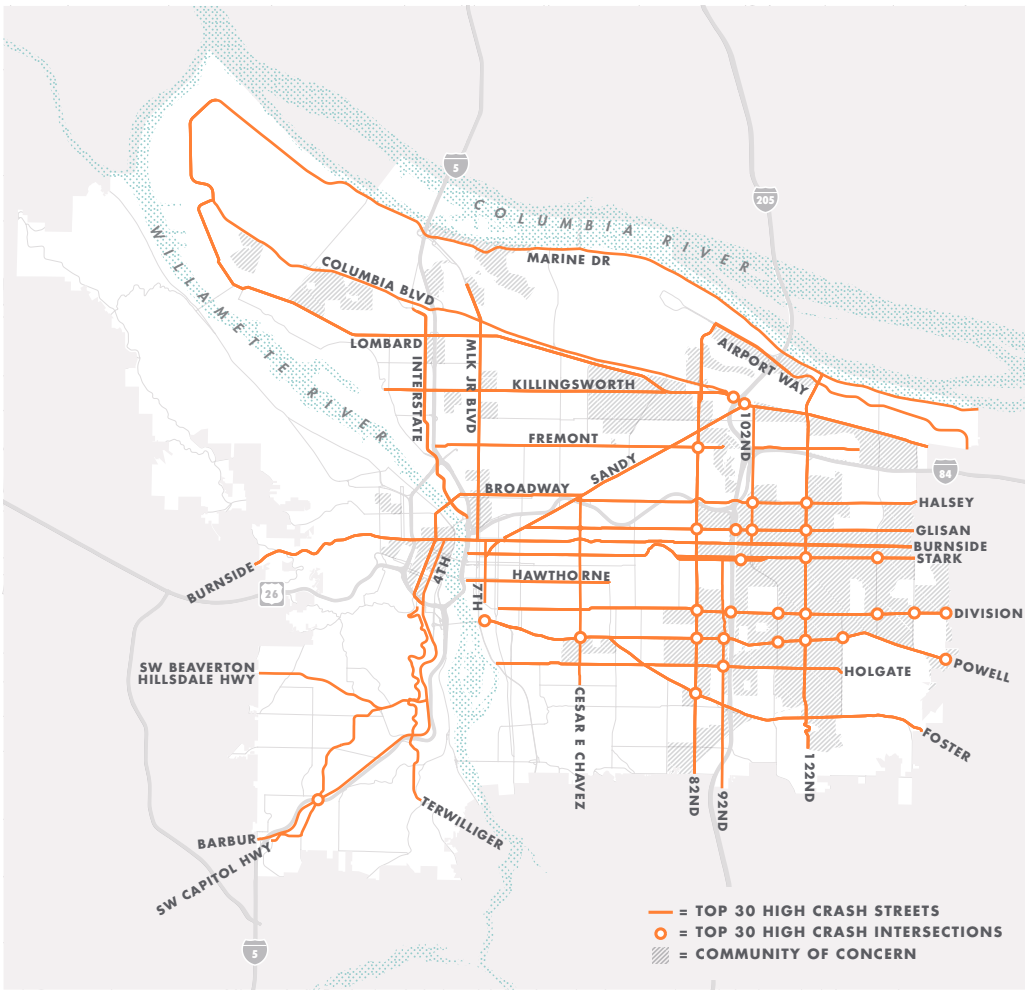
PBOT's High Crash Corridors program has identified a list of major projects (over $500,000) in the TSP, as well as a list of "smaller" projects (under $500,000) and education and enforcement actions to be implemented under the High Crash Corridors Program.

All Vision Zero projects (both large and small) are specifically limited to streets identified as part of Portland's "High Crash Network."

Figure 53 shows the High Crash Network map. This network is comprised of the top 30 high crash streets and the top 30 high crash intersections in the city by mode -pedestrian, bicycle, and motor vehicle- where they intersect with Communities of Concern (places where higher concentrations of people of color and low-income Portlanders live). Vision Zero pedestrian improvements will therefore be limited to these specific, identified corridors.

Vision Zero has its own Task Force comprised of members of the public to review actions and progress, advise on implementation, track equity impacts, and oversee performance measure reporting.

Figure 53: Portland's High Crash Network Map




## RELATIONSHIP TO PEDPDX

PedPDX and the Pedestrian Network Completion Program may identify as a priority and direct funding to projects that improve pedestrian safety citywide, outside of the High Crash Network. By prioritizing locations where pedestrian crashes have happened or are likely to occur, PedPDX underscores the High Crash Network as an investment priority, and as such helps to magnify and direct additional funding to these needs. While the High Crash Corridors Program is guided by the Vision Zero Action Plan, and will not be directly driven by PedPDX, the Vision Zero program will work in parallel to the Pedestrian Network Completion Program and other pedestrian-related programs to help accomplish the goals, objectives, and infrastructure priorities of PedPDX.




*Students at a Safe Routes to School event.*

## Safe Routes to School Program

Portland's Safe Routes to School (SRTS) program is a partnership of the City of Portland, local schools, neighborhoods, community organizations and agencies that advocates for and implements programs that make walking and biking around our neighborhoods and schools fun, easy, safe and healthy for all students and families while reducing our reliance on cars.

The SRTS program provides the "six E's": Education, Encouragement, Engineering, Enforcement, and Evaluation in an Equitable manner to support students in schools to be safe, have fun, grow healthy and get there.

### RELATIONSHIP TO PEDPDX

PBOT's SRTS program recently underwent a detailed process to identify designated walking and biking routes to school, and to prioritize a list of safety improvements along these routes. While the SRTS program will not be directly driven by PedPDX, the program will work in parallel to the Pedestrian Network Completion Program and other pedestrian-related programs to help accomplish the goals, objectives, and infrastructure priorities of PedPDX.

In including designated SRTS as components of the Pedestrian Priority Network, PedPDX underscores these SRTS as an investment priority, and helps magnify and direct additional funding to these needs.




*A bikeway downtown that uses striping on the sidewalk to keep bikes and pedestrians separated.*

## Bikeway Network Completion Program

Gaps and deficiencies in Portland's bikeway network present significant barriers to people bicycling. Many of these can be remedied through projects focused on addressing the most critically needed improvements. Example projects include new protected and other bicycle lanes, wayfinding improvements, and intersection treatments, including colored bike boxes and signal modifications. This program often coordinates with paving projects to implement new striping designs in conjunction with paving.

### RELATIONSHIP TO PEDPDX

Bikeway projects have the potential to provide benefits to people walking. Protected bike lanes, for example, can help separate pedestrians on the sidewalk from people bicycling, creating fewer bicycle/pedestrian conflicts while also providing additional buffer space between people walking on sidewalks and motor vehicles. Improvements to bikeways may also include lighting and signal improvements that enhance pedestrian safety and security at the same time as serving people on bicycles. The PedPDX Toolbox calls for mutually beneficial projects, such as those that separate bicycle and pedestrian uses in key congestion areas.




*Neighborhood Greenways provide improvements that help pedestrians cross busy streets.*

## Neighborhood Greenways

Portland's neighborhood greenways are residential streets designed to prioritize bicycling and enhance conditions for walking. In Portland, there are currently more than 90 miles of neighborhood greenways, with another 27 miles funded. The neighborhood greenway system is a subset of Portland's overall bikeway network. Neighborhood greenways provide a network of safe and comfortable streets for all users by lowering vehicle speeds, reducing automobile volumes, creating safer crossings of busy streets, and providing wayfinding. Example project elements include speed bumps, shared lane markings, signage, automobile diverters, curb ramps, increased lighting, and improved crossings.

### RELATIONSHIP TO PEDPDX

Neighborhood greenways provide crossing improvements and traffic calming that make walking as well as bicycling safer and more comfortable on these routes. The Neighborhood Greenway Program has traditionally been guided by the Bicycle Master Plan. However, given that these routes help to connect people to neighborhood destinations on low-speed, low stress neighborhood streets, greenways can also make for attractive walking routes. PedPDX identifies greenways as art of the Pedestrian Priority Network. As such, the Implementation Toolkit calls for providing walkways and crossings on neighborhood greenways where pedestrian infrastructure is lacking. As neighborhood greenways continue to expand across the city onto streets lacking pedestrian walkways, the scope of these greenway projects should likewise be expanded to provide pedestrian infrastructure with PedPDX and in recognition of the role these streets play in the citywide pedestrian network.




*The Neighborhood Streets Program improves gravel and dirt streets like the one shown above, including providing walking improvements.*

## Neighborhood Streets Program

Many streets in Portland do not meet full City standards. Unimproved and substandard streets cause safety, access and mobility challenges and fail to manage stormwater runoff. The Neighborhood Streets Program will address under improved streets in single-family residential neighborhoods. This may include paving gravel streets and making stormwater improvements, and/or providing pedestrian improvements on residential streets lacking sidewalks.

To help expand the number of streets the Neighborhood Streets Program is able to address, the program will consider lower-cost alternative design treatments (such as "pedestrian shared streets") that enhance safety, access, and mobility when funds are lacking for more extensive upgrades.

### RELATIONSHIP TO PEDPDX

The Neighborhood Streets Program will prioritize improvements on residential streets that meet the program's prioritization criteria. One of these criteria includes prioritizing streets that serve a key transportation function, as identified by modal plans and neighborhood plans. PedPDX identifies neighborhood walkways as high priority local streets within the Pedestrian Priority Network. As such, PedPDX will help guide the investment priorities of the Neighborhood Streets Program to these designated neighborhood walkways.




*TDM seeks to encourage walking, biking, and taking transit.*

## Transportation and Parking Demand Management

Transportation & Parking Demand Management (TDM) seeks to better utilize existing capacity in the transportation system and parking supply by reducing single-occupant automobile trips through demand management strategies. This is achieved by encouraging people through education, outreach, incentives and pricing to choose other modes, share rides, travel outside peak times, and telecommute, among other methods. TDM program elements include SmartTrips outreach, TDM Plan requirements for new development, and parking management planning and implementation. TDM is often implemented through partnerships with community organizations, neighborhood and business associations, developers and property managers. For example, the SmartTrips program sends new Portlanders welcome packets with information about car-free travel.

### RELATIONSHIP TO PEDPDX

TDM programs encourage active modes of transportation, including walking. PedPDX will prioritize projects that will make walking easier and encourage more people to use walking as their primary mode of transportation.




*The transit priority program includes transit-only lanes.*

## Transit Priority Program

The Transit Priority Program improves transit speed, reliability, safety, and access along major transit corridors. Example projects include bus bulbs, stop improvements, stop consolidation or relocation, signal priority, queue jumps, and transit-only lanes. The program will coordinate with TriMet and other transit agencies to identify and implement these improvements.

### RELATIONSHIP TO PEDPDX

Pedestrian access to transit s a key factor underlying the Pedestrian Priority Network. Transit and Frequent Transit Streets are included in the Pedestrian Priority Network as City Walkways and Major City Walkways. In recognition of these overlapping investment priorities, PedPDX will work with the Transit Priority program to identify mutually beneficial projects that increase access to transit.

# PBOT Pedestrian Programs and Activities

In addition to TSP programs that provide pedestrian-related capital improvements, many PBOT programs and activities also contribute toward making Portland a more walkable city. These include programs related to pedestrian realm maintenance and repair; education, encouragement, and enforcement activities; public realm activation programs; and other programs and activities that help to address pedestrian safety and comfort. Figure 54 illustrates all of these programs and the City Bureaus that manage them.

The PedPDX Implementation Toolbox includes many new guidelines, policies, and recommendations. As such, PedPDX will directly influence the work programs of each of the pedestrian-related programs and activities described in this section.

Figure 54: PBOT and other City and partner agency programs




*PBOT and other City and partner agency programs provide pedestrian improvements and activities in Portland. These programs are described in detail throughout the rest of this section.*

## Curb Ramp Improvements

The City of Portland is committed to providing accessible rights-of-way for all. Curb ramps are a critical element in allowing people with disabilities to have full and complete access to the public right-of-way. Without Americans with Disabilities Act (ADA) compliant curb ramps, people with disabilities may be unable to safely navigate our streets and sidewalks. Title II of the ADA requires an accessible public right-of-way, including access to City and government facilities and programs, public transportation, places of employment, schools, medical facilities, and places of commerce.

Title II of the Americans with Disabilities Act and the City of Portland's long-term transportation development plans prioritize and require public entities responsible for the public right-of-way to make pedestrian crossings accessible to people with disabilities and to provide accessible curb ramps.

There are four primary ways PBOT currently installs and upgrades curb ramps:

### CAPITAL IMPROVEMENTS

PBOT provides new or upgraded curb ramps along any street when it is repaved or anytime major capital improvements are made (such as when new sidewalks are built, or when multimodal improvements are provided along a corridor). In these instances, the new curb ramps are integrated into the scope of the paving or capital project, and are fully funded by that project. The number of ramps installed in a given year depends on the number of paving projects and capital projects in that year.

### CORNER REPAIR PROGRAM

While private property owners are responsible for maintaining sidewalks, the City maintains and repairs cracked and damaged corners. PBOT's Corner Repair Program is able to provide a small number of curb ramp repairs every year in response to resident notification or field inspection. These repairs are typically locations where ramps are cracked or broken and present a safety hazard (typically because of tree roots damaging sidewalks and corners). This program is administered by PBOT's Maintenance Operations Division.

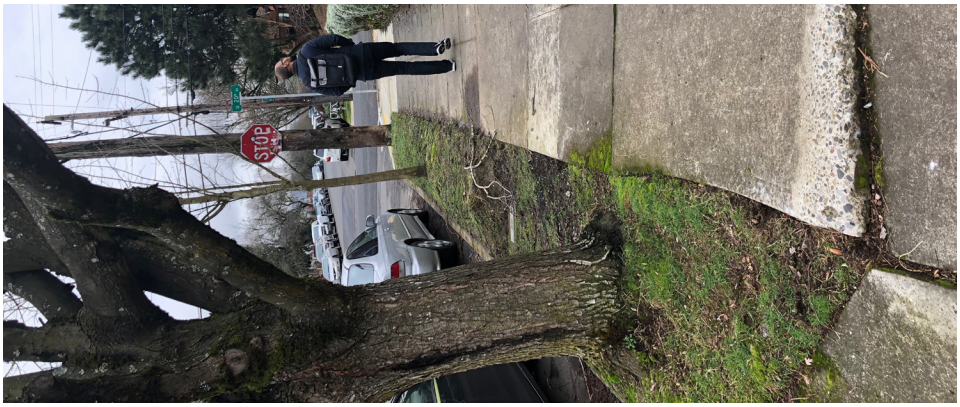
### ADA CURB RAMP REQUEST PROGRAM

To help supplement this work, the ADA Curb Ramp Request Program builds and improves curb ramps as requested by people (or on behalf of a person) with disabilities for routes to important destinations not already included in other City of Portland annual install or paving lists. A person with a disability may request a curb ramp connecting to key destinations such as their residence, a City facility, a transportation service, or their places of work. PBOT staff evaluates requests from Portlanders throughout the year. Due to limited funding for this request-based program, requests by or on behalf of a person with a disability (as defined by the Americans with Disability Act) are prioritized. Requests made by other Portland residents are evaluated for citywide prioritization by the in-progress ADA Right-of-Way Transition Plan effort.

### PUBLIC RIGHT-OF-WAY ADA TRANSITION PLAN

The Public Right-of-Way ADA Transition Plan will inventory all barriers to accessibility in the city's public rights-of way, and develop a strategy for transforming the city's sidewalks into fully accessible public facilities. The ADA Transition Plan will develop a schedule for removing accessibility barriers citywide, including addressing missing and substandard curb ramps not addressed by paving or capital projects.

Both PedPDX and PBOT's ADA Transition Plan include a prioritization framework for addressing infrastructure deficiencies. While curb ramp deficiencies will continue to be addressed by PBOT's ADA program (and thus is not directly addressed within PedPDX), the two planning efforts work cooperatively to ensure that the framework for prioritizing new sidewalks and crossing investments within PedPDX and the criteria for prioritizing curb ramp improvements in the ADA Transition Plan are mutually supportive, such that the two programs work in tandem to improve pedestrian mobility in high priority locations.




*Cracked and buckled sidewalks create hazards for people walking*

## Sidewalk Repair Program

Maintaining sidewalks is critical to providing accessible walkways and preventing tripping hazards, particularly for those with mobility challenges or sight impairments. As such, several actions within the PedPDX Implementation Toolkit relate to the work of the Sidewalk Repair Program.

Portland City Code stipulates that private property owners are responsible for sidewalk maintenance and repair. This obligation includes repairing sidewalks that are uplifted or cracked due to tree roots, the most common cause of sidewalk damage. By Code, property owners have 60 days to complete repairs. If they don't, the City can hire a contractor to complete the repairs and bill the property owner. If they don't pay the bill, a lien will be placed on their property.

The Sidewalk Repair Program (housed within PBOT's Maintenance Operations Division) notifies private property owners when cracked or damaged sidewalks along their property frontage must be repaired. This notification (called "posting") is currently complaint-driven. The program relies on Portland residents to notify PBOT when sidewalks are damaged. As staffing allows, sidewalk repair staff occasionally do some proactive inspections around newly installed ADA corners and paving segments done by Maintenance Operations crews. These proactive inspections, however, may cease or be temporarily suspended based on the volume of complaints received.



*Street light in the setting sun*

## Local Improvement Districts

A Local Improvement District (LID) is a means by which the City can assist a group of property owners with constructing streets, sidewalks, and stormwater management systems. With LIDs, property owners are responsible for paying for the cost of the street and sidewalk improvements, typically on streets not prioritized for public investment. Because City investment priorities are often on busy arterial and collector streets, LIDs can be a good option for property owners who would like to improve streets and sidewalks on local residential streets. With an LID, the City assists by setting up financing and payment structures, and by assisting with project design, engineering, and delivery. LIDs must be approved by City Council.

In the past 15 years, 35 LIDs have built sidewalks on both sides of approximately 7 miles of new and improved roadways.

## Street Lighting Program

PBOT Signals and Street Lighting Group oversees the provision and maintenance of all streetlights on City streets.

PBOT Signals and Street Lighting staff developed new street lighting guidelines, as part of PedPDX. These new guidelines respond directly to safety and visibility concerns raised by residents during the PedPDX public outreach process, particularly during our "Walking While Black" focus groups. The new guidelines establish updated recommended minimum light levels for roadways and will be used, along with data gathered from field visits, to identify roadways that are under-lit. PedPDX pedestrian classification is a factor in determining recommended minimum light levels.

The new street lighting guidelines will help to prioritize lighting improvements on under-lit, high-crash corridors, in support of Vision Zero.




*New sidewalk constructed as a part of new development on Everett Ct.*

## Development Review

PBOT's Development Review group reviews and permits all street and frontage improvements associated with private development. In Portland, private development is typically required to make street frontage improvements along the property in the course of a development project. This includes providing or improving sidewalks in a manner consistent with the City's Pedestrian Design Guide.

The Pedestrian Design Guide integrates a range of pedestrian design criteria and practices into a coherent set of standards that, over time, promote a walkable city. It establishes sidewalk design criteria, including requirements for minimum sidewalk widths, street tree placement, and street corner design at crossings. Every sidewalk or crossing designed and built in the City of Portland is required to conform to these guidelines. These are the standards the City of Portland uses in our own capital projects, and they are the same standards required of private development. City staff ensure these standards are met by private development through the development review process. Largely impacting frontage improvements, the Pedestrian Design Guide provides a critically important mechanism for leveraging privately-funded pedestrian improvements in the city over time. A large proportion of new sidewalks constructed or improved in Portland over time have been provided in conjunction with private development activities.

While PedPDX does not include changes to the Pedestrian Design Guide, a body of work subsequent to the adoption of PedPDX will update the Pedestrian Design Guide. As such, the content of PedPDX will inform these future refinements to pedestrian design requirements in Portland. Several other actions in the PedPDX Implementation Toolkit also relate directly to the work done by the PBOT Development Review group.



*Farmers Markets are one of many ways Portland in the Streets reclaims streets for pedestrian use.*

## Community-Initiated Improvements and Activation

In recognition that many of our best public realm improvements in Portland are community owned and community driven, PBOT provides avenues through which residents may propose and permit various activation or public realm improvements within the right-of-way. These permitting programs help Portlanders take advantage of the public right-of-way as public space, and provide an avenue by which community-driven improvements in the public right-of-way may be realized.

The PedPDX Implementation Toolbox includes several actions to help empower Portlanders to create an interesting and enjoyable pedestrian experience. The Portland in the Streets Program will lead these efforts.

### PORTLAND IN THE STREETS

Portland in the Streets encourages people to get creative and re-imagine their streets, parking spaces, plazas, and alleys as places to enjoy and engage the surrounding community. Portland in the Streets provides a simple process for permitting community uses within the public right-of-way, including block parties, street paintings, play streets, street fairs, street seats, pedestrian plazas and more. The program aims to empower communities across Portland to create and activate their own spaces. Program areas include:

- Community events: Public events on residential or commercial streets that attract people from the entire neighborhood or the greater community.
- Block parties: Small-scale events on residential streets that pull



*The Portland Pathways program provides an avenue by which community groups may permit and construct trails in their neighborhood*

from the immediate block or neighborhood.

- Street Paintings: Giant murals painted by residents onto local streets that help travelers engage in the community and show neighborhood character.
- Pedestrian plazas: Creating open space out of underutilized streets, alleys, or other roadways for the public to use and activate.
- Street Prototyping: Testing new street or intersection designs, collecting data and using the experience to inform future design decisions.
- Spaces to Places: Installing community desired amenities on gravel, dirt and underdeveloped, low volume streets or alleyways.

Participants in this program are required to submit a maintenance agreement to ensure that more permanent improvements, like murals are maintained.

**PORTLAND PATHWAYS**

Portland has unimproved rights-of-way in many parts of the city that some residents are interested in turning into pedestrian trails. While many of the identified unimproved rights-of-way are located in Southwest Portland, urban trails can be found across the City. To support communities interested in developing neighborhood trails, the Portland Pathways program process provides a path by which community groups may propose, permit, build, and maintain pedestrian trails on public rights-of-way in locations that are not prioritized for public investment. As a community-initiated improvement, a Portland Pathways permit requires the sponsoring community organization to assume maintenance of the trail.

For more information on additional programs, visit www.portlandinthestreets.com




*Vision Zero yard signs alert drivers to slow down and look for pedestrians*

## Pedestrian Safety and Education Programs

In conjunction with the Vision Zero Program, PBOT's Active Transportation and Safety Division currently offers safety and education programs to community members, businesses, and organizations. PBOT's Pedestrian Safety and Education programs are funded through the Vision Zero Program.

The PedPDX Implementation Toolbox includes several actions to expand current education and outreach efforts to help Portlanders keep themselves safe while walking, as well as actions to expand current educational efforts focused on driving. PBOT's Vision Zero program is charged with leading these PedPDX actions.



*People biking and walking at Sunday Parkways*

## Encouragement Programs

Encouragement programs provide information and opportunities to residents to help encourage Portlanders to travel by bus, bike, or by foot.

### SMART TRIPS

The Smart Trips Program offers advice for traveling in Portland by different modes, including resources for walking in Portland such as maps, walking information, and guided walk events that include PBOT's Ten Toe Express Walks and co-sponsored AARP Neighbor Walks events. New residents to Portland are mailed order forms, where they can select from a variety or maps, brochures, and incentives to be delivered to their door by PBOT staff on a bike.

### SUNDAY PARKWAYS

The City of Portland's Sunday Parkways presented by Kaiser Permanente promotes healthy active living through a series of free events opening the city's largest public space - its streets - to walk, bike, roll, and discover active transportation. It is a way for communities to foster civic pride, stimulate economic development, and showcase business and government investments in Portland's vitality, livability, and diversity. The events are held in different areas of the city and are popular, with 73,000 participants recorded in 2016.

# Pedestrian Programs & Activities By Other Bureaus and Agencies

While PBOT is primarily responsible for providing safe, comfortable, and accessible pedestrian facilities as manager of the public right-of-way, activities by other City bureaus also contribute to improving the pedestrian experience in Portland. PedPDX includes actions and priorities that relate to these various programs and activities to help advance the Plan's vision, goals, and objectives.

## Pedestrian-Related Zoning Code Requirements

While PBOT addresses pedestrian needs within the right-of-way, the City of Portland zoning code regulates development on private property, and includes many requirements that influence the pedestrian realm and help to create a pedestrian-friendly city. The Planning and Zoning Code includes language that specifies building setbacks, requires that developers build sidewalks and landscaping to encourage pedestrian use, and details standards for street-facing building facades, among many other things.

The zoning code is written by the Bureau of Planning and Sustainability, and is implemented by the Bureau of Development Services.

## Code Enforcement

The Bureau of Development Services (BDS) investigates and enforces a variety of code violations in the right-of-way. In most cases, investigation of code violations and enforcement action happens when a resident reports a potential violation. Types of violations that are typically reported include vegetation in the right-of-way and sidewalk obstructions.



*Bioswales filter water through native plants into the City's stormwater system, and introduce landscape elements to the right-of-way.*

## Stormwater Management Features in the Right-of-Way

To help manage the city's stormwater system, the Bureau of Environmental Services (BES) provides targeted infrastructure improvements that reduce negative stormwater impacts while improving streetscapes. This can include providing bioswales and stormwater planters in the right-of-way that make streets more sustainable as well as more pedestrian friendly. BES sometimes provides stormwater planters in conjunction with new curb extensions, which can help to improve visibility and reduce crossing distances for pedestrians.

BES also provides incentives to plant trees in priority and hard-to-plant areas. The BES Tree Program manages a "Treebate" Program that credits utility bills for residential property owners who plant trees, and partners with the non-profit organization Friends of Trees to help plant trees in the right-of-way to help with stormwater management.




*Trees along provide a physical buffer between vehicles and people walking, and create a pleasant pedestrian environment by providing shade and cooling and by visually softening the streetscape.*

## Street Trees

Street trees help to create a more walkable city in many ways. Trees provide pedestrians with a physical buffer and a sense of separation from moving vehicles in the street. They provide shade and cooling in hot summer months, visually soften hard streetscapes, and generally create a more pleasant walking experience.

However, while street trees certainly enhance the walking experience, they can also create some challenges for pedestrians. Without sufficient space for tree roots or appropriate tree installation and species selection, tree roots from large trees can uplift and crack sidewalks, creating tripping hazards and potential ADA compliance issues, as well as sidewalk repair expenses for private property owners. When insufficiently pruned or sited, large street trees can block street lights and decrease visibility of people walking in dark conditions.

Portland Parks & Recreation's (PPR) Urban Forestry Program manages Portland's urban forest infrastructure, including 220,000 street trees. They issue permits for planting, pruning, and removal of all trees within the right-of-way, and respond to tree emergencies. It is the responsibility of the adjacent property owner to maintain trees in the public right-of-way.

## ODOT

The Oregon Department of Transportation (ODOT) provides and maintains pedestrian infrastructure on many of its facilities (e.g., sidewalks on urban highways, shoulders on rural highways, shared use paths parallel to freeways). On some corridors in the City of Portland, ODOT owns and maintains the roadway between the curbs, but the City owns the sidewalk and right-of-way behind the curb. ODOT also constructs ADA improvements for all new construction and during alterations of existing facilities.

In Portland, sidewalk maintenance is the responsibility of the adjacent property owners on both City streets and State Highways. In the City of Portland, developers are often required to provide right of way and frontage improvements in front of their property when they redevelop. The Bureau of Development Review Services, in coordination with PBOT and ODOT, works with developers to request that appropriate pedestrian improvements triggered by the redevelopment are provided. Many sidewalks on or adjacent to ODOT highways get built this way. ODOT also has permitting authority when driveway access to an ODOT facility is at issue.

ODOT has a Sidewalk Improvement Program (SWIP) that dedicates approximately $1.25 million of State Highway Funds per year for pedestrian and bicycle improvements on state highways in Region 1. This small pot of money can be used for small standalone pedestrian improvements, but is typically used to leverage improvements in conjunction with paving and other capital projects. ODOT also has a capital improvement program for state and federally-funded projects, known as the Statewide Transportation Improvement Program (STIP). The STIP for 2021 to 2024 is currently in development and will include funding for Safety, Non-Highway (active transportation), Enhance, and Local Programs projects that could enhance the pedestrian network.

In October 2017, ODOT recommended allocating $51 million in Non-Highway discretionary funding to five areas statewide:

- Active Transportation Leverage - to add bicycle, pedestrian and transit features to "Fix-It" projects such as paving, signal replacements, etc. ($21 million statewide, $ 7.5 million for Region 1)
- Off-System Bicycle/Pedestrian – to improve trail connections ($6 million)
- Safe Routes to School Education – for non-infrastructure Safe Routes to School programs ($3 million)
- Transportation Options – to support transportation demand management programs and promote alternatives to driving alone ($3 million)
- Americans with Disabilities Act Curb Ramps ($18 million)

ODOT previously managed a statewide Safe Routes to School funding program, but the program shrunk significantly after dedicated Federal funding for the program was discontinued. Beginning in 2018, HB2017 will provide $10 million per year for a new Safe Routes to School infrastructure program, which will be administered by ODOT. A Safe Routes to School Rulemaking Advisory Committee has been formed to advise ODOT and the Oregon Transportation Commission on the how the infrastructure funding program should be structured. This funding will likely be available on a competitive basis for improvements near schools, generally with a 40% cash match required.




*The Hawthorne Bridge is owned and managed by Multnomah County. As such, the County owns and maintains the pedestrian facilities on the Hawthorne and other Willamette River bridges.*

## Multnomah County

Multnomah County owns and operates all of the Willamette River bridges, many of which have sidewalks or shared use paths. These river crossings are critical links in Portland's pedestrian network and provide a venue both for travel and recreational walking. The County does have an adopted Capital Improvement Plan for future maintenance, including multimodal improvements, however future improvements to pedestrian facilities on the bridges could be influenced by PedPDX as the connected pedestrian network grows and changes, and as design standards evolve. The County currently is in the early stages of planning an upgrade to the Burnside Bridge.

There is also a 1994 Willamette River Bridges Accessibility Plan that resulted in many of the sidewalks, bikeways, crosswalks, and curb ramps that are currently in place. The county sought funding to update the plan earlier last year without success.

In addition to the Willamette River bridges, Multnomah County also maintains a large number of roads on urban pockets of land that are understood to be annexed into Portland eventually. In 2006, a shared Transportation System Plan for the Urban Pockets of Unincorporated Multnomah County was adopted by Portland City Council. This document outlines where these pockets of land are and includes a list of projects, many of which involve pedestrian improvements. It also establishes common street classifications that allow administration of City zoning regulations and County road standards.

## Metro

Trails are a very important part of Portland's pedestrian network, both for recreational opportunities and as crucial connections in parts of town where the street network is lacking. Metro, Portland's regional government, owns and/or manages a fair amount of Portland's trail network. In many cases, Metro acquires land that has been identified by a municipality as a place that they hope to build a trail. Metro usually buys the land from property owners or works with them to grant an easement for a trail on the property. Metro and the City of Portland have a policy against using eminent domain for these purposes. In most cases, Metro then grants the municipality public easements on this land, where the City can build and maintain a trail with public access. This usually takes the form of an intergovernmental agreement between Metro and the City of Portland. Metro also typically builds and manages trails that are within Metro Parks, Natural Areas, and historic cemeteries such as those around Smith and Bybee Lakes in North Portland.



*Metro owns the right of way for many trails, like the Marine Drive Path, that see hundreds of people per day*

Metro also administers the Regional Flexible Funds and Regional Travel Options Grants. These grants are funded through federal dollars and allocated regionally by Metro. Eligible applicants include government agencies, educational institutions and nonprofit organizations, and projects must be carried out within the urbanized areas of Clackamas, Multnomah and Washington counties. Regional Flexible Funds is a particularly important source of funding for pedestrian projects - over $25 million was allocated for active transportation projects in the most recent funding cycle.

Metro also is responsible for the Regional Transportation Plan. This plan includes four policies regarding the regional pedestrian network vision as well as a pedestrian network map with functional classifications. These classifications include pedestrian parkways, regional pedestrian corridors, local pedestrian connectors, and pedestrian districts.




*Pedestrian improvements are important for providing access to transit*

## TriMet

TriMet sometimes funds and constructs pedestrian improvements at transit stops, such as paved ares for people to wait for the bus. They also frequently work with the City of Portland to apply for and use grant and other funding for pedestrian access to transit projects. Because people need to walk to access transit stops, TriMet will also often work with the City to collocate stops around pedestrian crossings. TriMet also has to work with the City to ensure that bus stops and shelters are located in places that do not impede the pedestrian through zone in any way.

TriMet also does a lot of marketing campaigns that promote walking, biking, and taking transit. One example of this is the "Be Seen, Be Safe" campaign. TriMet has messaging on buses telling people to wear bright and reflective clothing when walking and biking at night, and has reflectors and lights that they give out at events.

## Oregon State Parks

There are three Oregon State Parks within Portland that include hiking trails managed by the State Parks system. These parks include Tryon Creek State Natural Area, the Willamette Stone State Heritage Site, and Government Island State Recreation Area. While these areas are small and mostly for recreation, they are still an important part of Portland's pedestrian network.

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*Metro owns the right of way for many trails, like the Marine Drive Path, that see hundreds of people per day*

In addition to providing land for trails, Metro also administers the Regional Travel Options Grants. Every two years, the program elicits project proposals to fund projects that create safe, vibrant and livable communities by increasing the use and understanding of travel options. For the 2017-2019 grant cycle, a total of $2.5 million will be awarded. These grants are funded through federal dollars and allocated through the regional flexible funds process. Eligible applicants include government agencies, educational institutions and nonprofit organizations, and projects must be carried out within the urbanized areas of Clackamas, Multnomah and Washington counties.

Metro also is responsible for the Regional Transportation Plan. This plan includes five policies regarding the regional pedestrian network vision as well as a pedestrian network map with functional classifications. These classifications include pedestrian parkways, regional pedestrian corridors, local pedestrian connectors, and pedestrian districts.




*Pedestrian improvements are important for providing access to transit*

## TriMet

TriMet typically does not directly provide pedestrian improvements. They do, however, frequently work with the City of Portland to apply for and use grant and other funding for pedestrian access to transit projects. Because people need to walk to access transit stops, TriMet will also often work with the City to collocate stops around pedestrian crossings. TriMet also has to work with the City to ensure that bus stops and shelters are located in places that do not impede the pedestrian through zone in any way.

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# Plan Performance Measures

Performance measures can help us measure and track our progress toward achieving our plan goals and objectives, determine if the methods being used to achieve our goals are working, and report about progress to the community. Performance measures can be any metric that can be compared year to year and that help tell the story of whether or not we are achieving our goals or making progress toward completing an action item. Common pedestrian elements measured include miles of sidewalk built, number of crossings improved, decrease in pedestrian crashes and fatalities, or implementation of a new policy or practice.

PedPDX has assigned measures of success to each of the Plan goals and action items. These measures will be evaluated and reported on periodically by the PBOT Pedestrian Coordinator online where members of the public can check in on the progress made as we implement PedPDX.

## Types of Performance Measures

Performance measures typically fall under two distinct categories: outcome-based and programmatic. Outcome-based performance measures are typically more strongly tied to overarching plan goals and outcomes that the plan hopes to achieve. These measures often are the answer to the question, "why do we want more people to walk?" Programmatic performance measures, on the other hand, are benchmarks along the way to achieving outcome-based performance measures. An example of this concept is that an increase in the number of pedestrian crossings and miles of sidewalks (programmatic measures) should bring about a decrease in the number of pedestrian crashes or an increase in the number of people walking to work (outcome-based measures). Another way of looking at it could be that programmatic performance measures address items that PBOT can actively work to change. PBOT can't increase walk

mode share or decrease traffic crashes without implementation of programs, policies, and infrastructure that help people feel safe and comfortable walking.

The following outcome-based measures will be tracked and regularly monitored on the PBOT website. These PedPDX outcome-based performance measures will include:

- Percent of Portland commuters walking to work (as reported in the 5-year American Community Survey estimates)
- Number and rate (per capita) of pedestrian crashes resulting in fatal or serious injuries
- Number and rate (per capita) of pedestrian crashes overall

Upon instituting new reliable pedestrian count methods per Actions 9.2 and 9.3 in the Implementation Toolbox, these measures may expand to include pedestrian counts at select locations to report on changes to pedestrian volume and the number of people walking, and/or "all trips" walking mode share.

Programmatic performance measures address how we achieve the outcome-based performance measures. Some of the programmatic performance measures that will be reported on regularly through the pedestrian program website will include:

- Implementation or adoption of new policies and guidelines in the PedPDX Implementation Toolbox
- Percentage of the Pedestrian Priority Network with sidewalk gaps / miles of walkway built
- Percentage of the Pedestrian Priority Network with crossing gaps / number of crossings improved

## Measuring PedPDX Goals

Measuring progress toward PedPDX's four goals will be vital in ensuring that PBOT is working to implement the PedPDX action items and making Portland a great walking city. The measures used to evaluate our success in achieving the PedPDX goals will be both outcome-based and programmatic. The performance measures in Table 23 will be key to measuring PBOT's success in achieving PedPDX goals.

Table 23: PedPDX Goals, Performance Measures, and Desired Targets or Trends

| PEDPDX GOAL | PERFORMANCE MEASURE | DESIRED TARGET OR TREND |
|---|---|---|
| **Equitable + Inclusive:** Make Portland walkable and accessible for all, no matter who you are or where you live. | Percentage of the Pedestrian Priority Network with sidewalk gaps citywide and in areas identified through PBOT's Equity Matrix with high concentrations of communities of concern<br><br>Percentage of the Pedestrian Priority Network with crossing gaps citywide and in areas identified through PBOT's Equity Matrix with high concentrations of communities of concern | Decrease in percentage of the Pedestrian Priority Network with sidewalk gaps citywide and in areas identified through PBOT's Equity Matrix with high concentrations of communities of concern<br><br>Decrease in percentage of the Pedestrian Priority Network with crossing gaps citywide and in areas identified through PBOT's Equity Matrix with high concentrations of communities of concern |
| **Safe + Secure:** Make walking in Portland safe and secure for everyone. | Citywide number of pedestrian crashes of all injury types<br><br>Pedestrian crashes resulting in death or serious injury | Decrease in number of pedestrian crashes of all types per capita<br><br>Zero pedestrian crashes resulting in death or serious injury |
| **Comfortable + Inviting:** Provide a comfortable, inviting, and connected pedestrian network that supports walkable neighborhoods and strengthens community. | Percentage of the Pedestrian Priority Network with sidewalk gaps<br><br>Percentage of the Pedestrian Priority Network with crossing gaps | Decrease in the percentage of the Pedestrian Priority Network with sidewalk gaps<br><br>Decrease in the percentage of the Pedestrian Priority Network with crossing gaps |
| **Healthy People + Environment:** Increase walking for transportation and recreation in Portland as a means of achieving improved health outcomes for all people and for the environment. | Percent of Portland commuters walking to work (American Community Survey) | Increase in percent of Portland commuters walking to work<br><br>*Upon instituting new reliable pedestrian count methods per Actions 9.2 and 9.3 in the Implementation Toolbox,this measure may expand to include counts at locations with high pedestrian activity* |

## Measuring PedPDX Action Items

The PedPDX Implementation Toolbox's many action items will also be assessed periodically to monitor progress. The following tables include numerous measures that are both outcome-based and programmatic. There are many action items with measures that simply address whether we implemented the action item or not. These are typically programmatic measures surrounding new policies, guidelines, or designs that would be difficult to analyze with data but should still be monitored for completion. These measures will be evaluated periodically to ensure that the PBOT Pedestrian Program is working toward implementing each of the identified action items.

**Table 24: Strategy 1 - Address gaps in the Pedestrian Priority Network**

| ACTION | CATEGORY | IMPLEMENTING VS FUTURE | MEASURE OF SUCCESS |
|---|---|---|---|
| **ACTION 1.1:** Fund and construct high priority crossing and sidewalk needs identified through PedPDX. | Infrastructure<br>Funding | Implementing Action (policy adopted with PedPDX) | Decrease in the percentage of the Pedestrian Priority Network with sidewalk gaps<br>Decrease in the percentage of the Pedestrian Priority Network with crossing gaps<br>Number of sidewalk miles constructed<br>Number of crossings constructed |
| **ACTION 1.2:** Apply new marked crossing spacing guidelines as part of PBOT capital projects. | Policy<br>Infrastructure | Implementing Action (policy adopted with PedPDX) | Decrease in the percentage of the Pedestrian Priority Network with crossing gaps |
| **ACTION 1.3:** Explore options to enable and encourage off-site pedestrian improvements by private development. | Policy<br>Infrastructure | Future Action | Evaluation conducted for new mechanisms encouraging off-site pedestrian improvements by private development |

Table 25: Strategy 2 - Improve visibility of pedestrians at crossings

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 2.1:** Implement vision clearance guidelines at uncontrolled crossings in conjunction with PBOT capital projects, development review, and paving projects. | Policy | Implementing Action (policy adopted with PedPDX) | Process in place for ensuring PBOT capital projects, development review, and paving projects consistently implement vision clearance guidelines |
| **ACTION 2.2:** Identify key intersections for retroactive vision clearance improvements by Safe Routes to School, Neighborhood Greenways, Vision Zero, and Pedestrian Network Completion programs. | Infrastructure | Future Action | Analysis conducted and parking removed accordingly |
| **ACTION 2.3:** Evaluate the need for vision clearance guidelines at controlled crossings and on local streets. | Policy | Future Action | Analysis conducted for vision clearance guidelines addressing controlled crossings and local streets |
| **ACTION 2.4:** Provide high visibility crosswalks at all marked crossings when restriping or providing new crosswalks. | Policy | Implementing Action (policy adopted with PedPDX) | Updated design guidelines in the Traffic Design Manual indicating continental crosswalks as citywide practice |
| **ACTION 2.5:** Clarify design guidance for tree location within the right-of-way. | Policy | Future Action | Existing city code language regarding tree location within the right-of-way updated |
| **ACTION 2.6:** Update PBOT design guidance to maximize the use of curb extensions, floating curb extensions, and interim painted curb extensions within the Pedestrian Priority Network at both controlled and uncontrolled crossings. | Policy | Future Action | Developed design guidance for curb extensions, painted curb extensions, and floating curb extensions in the Pedestrian Design Guide |

Table 26: Strategy 3 - Reduce turning movement conflicts at intersections

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 3.1:** Develop guidelines and practices for separating permissive left turns concurrent with pedestrian walks and incorporate signal timing analysis into capital project scopes. | Policy | Implementing Action (policy adopted with PedPDX) | Developed new guidelines for separating vehicle turning phases concurrent with pedestrian walks, implemented as a directive from the City Traffic Engineer or update to the Traffic Design Manual |
| **ACTION 3.2:** Develop a pilot to study prohibiting "turn-on-red" within Pedestrian Districts and at High Pedestrian Crash Intersections. | Policy<br>Infrastructure | Implementing Action (policy adopted with PedPDX) | Pilot study conducted examining prohibiting turn-on-red |
| **ACTION 3.3:** Reduce uncontrolled left turn conflicts at arterial/non-arterial intersections along Major City Walkways, City Walkways, and High Crash Corridors in conjunction with capital projects. | Policy<br>Infrastructure | Implementing Action (policy adopted with PedPDX) | Decrease in pedestrian crashes overall<br>Zero pedestrian crashes resulting in death or serious injury<br>*If data is available, decrease in pedestrian crashes walking along the Pedestrian Priority Network and High Crash Network* |
| **ACTION 3.4:** Identify and fund key intersections for signal timing improvements to separate pedestrian crossing and vehicle turning movements, prioritizing High Crash Intersections. | Infrastructure | Future Action | Intersections identified and projects funded for signal timing improvements at High Crash Intersections |
| **ACTION 3.5:** Use raised crosswalks to slow automobile turning movements at arterial/non-arterial intersections. | Infrastructure | Future Action | New design guidelines for raised crosswalks adopted into Traffic Design Manual and PBOT Standard Specifications |

Table 27: Strategy 4 - Improve pedestrian safety and comfort at crossings

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 4.1:** Continue to test passive pedestrian detection technology. | Policy | Implementing Action (policy adopted with PedPDX) | Tests conducted as new passive pedestrian technologies are introduced |
| **ACTION 4.2:** Evaluate the need to update crosswalk design guidelines at uncontrolled multi-lane crossings | Policy | Implementing Action (policy adopted with PedPDX) | Evaluation conducted pertaining to crosswalk designs at uncontrolled multi-lane crossings and, if warranted, update to crosswalk design guidelines |
| **ACTION 4.3:** Develop City guidance for transit station platforms that maximize safety and comfort for people walking, biking, and taking transit | Infrastructure Policy | Future Action | Design guidance created detailing transit station platform design elements and order of preference for station types |

**Table 28: Strategy 5 Seek cost-effective and creative solutions to provide pedestrian improvements**

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 5.1:** Provide lower-cost pedestrian walkways. | Policy<br><br>Infrastructure | Implementing Action (policy adopted with PedPDX) | Design guidance for alternative walkways incorporated into memorandum from City Traffic Engineer (interim) and in design guidance provided in the Pedestrian Design Guide and City Standard Specifications<br><br>Miles of alternative pedestrian walkways constructed (not standard sidewalks) |
| **ACTION 5.2:** Provide interim pedestrian improvements. | Infrastructure | Future Action | Designs for painted curb extensions and refuge islands added to Traffic Design Manual<br><br>Miles of alternative pedestrian walkways constructed (not standard sidewalks) |
| **ACTION 5.3:** Leverage paving projects for pedestrian improvements. | Infrastructure | Implementing Action (policy adopted with PedPDX) | Implemented formal process for evaluating paving projects for pedestrian improvements |
| **ACTION 5.4:** Convert existing fire signals to pedestrian crossings to help meet crossing spacing guidelines. | Infrastructure | Implementing Action (policy adopted with PedPDX) | Number of fire signals converted to pedestrian crossings |
| **ACTION 5.5:** Leverage bicycle infrastructure to also serve pedestrians, including neighborhood greenways. | Infrastructure | Future Action | Updated practices for scoping neighborhood greenway and bikeway improvements |
| **ACTION 5.6:** Improve unimproved rights-of-way for pedestrian travel. | Infrastructure | Implementing Action (policy adopted with PedPDX) | Updated frontage improvement requirements for private development in the Pedestrian Design Guide and in *Creating Public Streets and Pedestrian Connections through the Land Use and Building Permit Process (the "Blue Book")* |

Table 29: Strategy 6 Provide adequate street lighting for pedestrians

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 6.1:** Implement new lighting level guidelines in conjunction with capital projects and private development. | Policy<br>Infrastructure | Implementing Action (policy adopted with PedPDX) | Number of street light improvements citywide<br>Decrease in pedestrian crashes after dark |
| **ACTION 6.2:** Strategically improve street lighting conditions to increase visibility of (and for) pedestrians on our streets, focusing investment on High Crash Corridors and locations, Pedestrian Priority Streets, and underserved areas. | Funding | Future Action | Number of street light improvements on High Crash Corridors, Pedestrian Priority Streets, and in underserved areas<br>Decrease in pedestrian crashes after dark |
| **ACTION 6.3:** Address locations where street lighting is blocked by tree canopy. | Maintenance | Implementing Action (policy adopted with PedPDX) | Improved process in place for responding to resident complaints regarding tree trimming<br>Decrease in pedestrian crashes after dark |

Table 30: Strategy 7 - Manage vehicle speeds and improve driver awareness

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 7.1:** Set safe speeds on arterials and collectors. | Policy | Implementing Action (policy adopted with PedPDX) | PBOT gains local authority for setting speed limits on City of Portland streets<br>Decrease in pedestrian crashes involving speeding vehicles<br>Miles of roadway with speed limits lowered |
| **ACTION 7.2:** Expand automated enforcement activities. | Enforcement<br>Infrastructure | Future Action | Number of speed cameras and red light cameras in place<br>Decrease in pedestrian crashes involving speeding vehicles<br>Decrease in pedestrian crashes involving vehicles disregarding traffic control devices |
| **ACTION 7.3:** Identify opportunities to retrofit signal timing along the High Crash Network to manage vehicle speeds. | Infrastructure | Future Action | Decrease in pedestrian crashes involving speeding vehicles on High Crash Network |
| **ACTION 7.4:** Expand crosswalk enforcement and education activities. | Education<br>Enforcement | Future Action | Number of crosswalk education and enforcement actions per year<br>Number of street team events held per year<br>Decrease in pedestrian crashes due to driver failing to yield to pedestrian |
| **ACTION 7.5:** Pursue traffic citation policy and structural changes to address inequities of fines and fees on people with lower-incomes | Enforcement | Future Action | New system in place addressing inequities of fines and fees on people with lower incomes |
| **ACTION 7.6:** Expand safety education/ outreach efforts focusing on people driving. | Education | Future Action | Campaigns focusing on safety for people driving<br>Number of pedestrian/driver safety trainings per year<br>Decrease in pedestrian crashes overall |
| **ACTION 7.7:** Establish a program to provide traffic calming on neighborhood streets. | Funding | Future Action | Program established to provide traffic calming on local streets |

**Table 31: Strategy 8 - Construct and maintain obstruction-free sidewalks**

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 8.1:** Identify financing strategies to help low-income households and other property owners address sidewalk repair. | Policy<br>Maintenance<br>Funding | Future Action | Financing strategies identified and initiated for low-income households to address sidewalk repair |
| **ACTION 8.2:** Address sidewalk repair needs along City-owned properties. | Infrastructure | Future Action | Square footage of sidewalk fronting City-owned properties that have been repaired |
| **ACTION 8.3:** Explore a proactive sidewalk inspection program. | Maintenance<br>Infrastructure<br>Funding | Future Action | Evaluation of establishing a proactive sidewalk repair program completed |
| **ACTION 8.4:** Update coordination practices with Urban Forestry when trees are uplifting sidewalks and develop joint practices for addressing tree/sidewalk conflicts. | Maintenance | Future Action | Joint PBOT and Urban Forestry practices regarding tree roots uplifting sidewalk have been updated and are in place |
| **ACTION 8.5:** Expand property owner education regarding responsibility for maintaining sidewalks. | Education | Future Action | Number of communications educating public about sidewalk maintenance |
| **ACTION 8.6:** Update right-of-way design guidelines to provide sufficient room for trees. | Policy | Future Action | Right-of-way design guidelines updated in the Pedestrian Design Guide |
| **ACTION 8.7:** Address utility poles creating obstructions in the through zone of the sidewalk. | Policy | Future Action | Pedestrian Coordinator citywide evaluation of locations where utility poles obstruct pedestrian through zone<br><br>Evaluation of potential utility pole obstructions of minimum required pedestrian through zone integrated into Complete Streets Checklist |
| **ACTION 8.8:** Update clear zone requirements for outdoor dining and A-board signage based on new PedPDX pedestrian classifications. | Policy | Future Action | Requirements for café seating and A-board signage evaluated and updated |

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 8.9:** Locate utility vaults outside of pedestrian clear zones. | Policy | Implementing Action (policy adopted with PedPDX) | New Administrative Rule for vault lids created and in practice |
| **ACTION 8.10:** Coordinate with street cleaners to help ensure that pedestrian facilities including curb ramps and crossings are debris-free. | Maintenance | Future Action | Coordination and best practices developed for street cleaning regarding pedestrian facilities<br><br>Secure dedicated funding to expand the street cleaning activities to include curb ramps and crossings |
| **ACTION 8.11**: Improve enforcement and implementation of pedestrian access requirements around work zones, and establish a system for notifying residents of construction-related changes to pedestrian access. | Policy | Future Action | Public facing construction mapping system in place as a resource to residents |
| **ACTION 8.12:** Educate about parking violations at driveways and crossings. | Education | Future Action | Educational materials created and distributed regarding clearance requirements |
| **ACTION 8.13:** Work with the disability community to develop trip planning assistance. | Education | Future Action | Trip planning map or app developed for people with disabilities |
| **ACTION 8.14:** Develop a public reporting system and a process for addressing drainage issues at curb ramps with pooling water. | Maintenance | Future Action | Category for curb ramp concerns integrated into PDX Reporter<br><br>Dedicated funding to address reported curb ramp concerns secured |

Table 32: Strategy 9 - Proactively leverage, manage, design for, and set policies for new and emerging technologies

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 9.1:** Articulate desired outcomes for pedestrians in the New Mobility Action Plan. | Policy | Future Action | Outcomes for pedestrians articulated in New Mobility Action Plan |
| **ACTION 9.2:** Develop regular pedestrian counting systems and practices. | Policy<br>Infrastructure | Future Action | Standard practices for manually and/or automatically counting pedestrians in place |
| **ACTION 9.3:** Test new technologies and establish methods to collect better pedestrian data in Portland. | Policy<br>Infrastructure | Future Action | Research paper written summarizing experience with new technology to collect pedestrian data |

Table 33: Strategy 10 - Provide opportunities for an interesting and enjoyable pedestrian experience

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 10.1:** Establish a program for community implementation of "creative crosswalks". | Policy<br>Infrastructure | Future Action | Creative crosswalks program implemented<br>Number of creative crosswalks and number of painted curb extensions installed through community creative crosswalks program |
| **ACTION 10.2:** Encourage seating in the right-of-way | Policy | Future Action | Number of encroachment permits for seating in the right-of-way, including TriMet and private development |
| **ACTION 10.3:** Work with partners to update the City's pedestrian wayfinding system. | Infrastructure | Future Action | Study conducted to determine feasibility of updating pedestrian wayfinding system |
| **ACTION 10.4:** Encourage more programs, events, and projects that create a car-free environment. | Policy | Future Action | Number of open streets events per year<br>Number of car-free streets (temporally or permanently closed to cars) |
| **ACTION 10.5:** Integrate public art into capital improvement projects. | Infrastructure | Future Action | Number of public art projects installed through PBOT Capital Delivery Division and through permits |
| **ACTION 10.6:** Engage and work with community partners to co-promote walking events that help people take ownership over investments and use new infrastructure. | Education<br>Infrastructure | Future Action | Number of walking events held in conjunction with capital projects |

**Table 34: Strategy 11 - Work with developers, residents, and property owners to provide pedestrian improvements**

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 11.1:** Update the 1998 pedestrian design guidelines to guide future frontage improvements made in conjunction with private development. | Policy | Future Action | Updated Pedestrian Design Guidelines |
| **ACTION 11.2:** Explore a fee program for development activity on arterial and collector streets as an alternative to building required sidewalk improvements where individual frontage improvements may not be practicable. | Policy | Future Action | Evaluation of establishing a fee program for properties on arterial and collector streets conducted |
| **ACTION 11.3:** Update our approach to local improvement districts and waivers of remonstrance. | Policy<br>Infrastructure | Future Action | Number of LIDs approved by City Council |
| **ACTION 11.4:** Provide a pathway for residents, property owners, and businesses to self -fund pedestrian improvements not prioritized for City investment. | Policy | Future Action | Program in place allowing private property owners to self-fund pedestrian improvements, including dedicated funding and staff support |
| **ACTION 11.5:** Update design guidelines to require pedestrian improvements on unimproved rights-of-way as part of the development review process. | Policy | Future Action | Pedestrian Design Guide and *Creating Public Streets and Pedestrian Connections through the Land Use and Building Permit Process ("Blue Book")* updated requiring pedestrian improvements on unimproved rights of ways |

Table 35: Strategy 12 - Address public safety and security concerns for people walking on City sidewalks

| ASSOCIATED ACTIONS | CATEGORY | IMPLEMENTING VS FUTURE | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 12.1:** Increase lighting per new street lighting level guidelines, focusing investment in underserved communities. | Infrastructure<br>Funding | Future Action | Decrease in pedestrian crashes at night in areas identified through PBOT's Equity Matrix as having high concentrations of communities of concern<br>Number of street light improvements in total and in areas of concern |
| **ACTION 12.2:** Partner with other agencies and City bureaus to advance the well-being and personal security of vulnerable communities as they use Portland transportation infrastructure. | Policy<br>Education | Future Action | Partnerships formed with other agencies to address personal safety concerns in the right of way |
| **ACTION 12.3:** Continue research on racial bias and driving behavior. | Education | Future Action | Collaboration with universities to research racial bias in transportation behavior |

Table 36: Strategy 13 - Use education and outreach to help Portlanders keep themselves safe while walking

| ASSOCIATED ACTIONS | CATEGORY | | MEASURES OF SUCCESS |
|---|---|---|---|
| **ACTION 13.1:** Expand safety education/ outreach focusing on people walking. | Education | Future Action | Number of events attended and communication materials developed promoting walking and pedestrian safety |
| **ACTION 13.2:** Expand pedestrian safety education programs targeted to seniors. | Education | Future Action | Decrease in pedestrian crashes for older adults<br><br>Number of events attended and communication materials developed promoting walking and pedestrian safety for seniors |
| **ACTION 13.3:** Expand pedestrian safety education programs targeted to school children. | Education | Future Action | Decrease in pedestrian crashes involving school aged children<br><br>Increase in percentage of kids walking to school |

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# APPENDICES

These appendices provide additional context, background, and information on the concepts and ideas presented in this report.

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J. Prioritization Memo

K: PBOT Lighting Level Guidelines

# APPENDIX A:

## Public Involvement Plan




# PedPDX: Portland's Citywide Pedestrian Plan

Public Involvement Plan

August 23, 2017

**For more information:**

Email: PedPDX@portlandoregon.gov

Call: 503.823.5282

Visit: portlandoregon.gov/transportation/PedPDX

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by Moving Ahead for Progress in the 21st Century (MAP-21), local government, and State of Oregon funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

The City of Portland complies with all non-discrimination, Civil Rights laws including Civil Rights Title VI and ADA Title II. To help ensure equal access to City programs, services and activities, the City of Portland will reasonably modify policies/procedures and provide auxiliary aids/services to persons with disabilities. Call 503.823.5282, TTY 503.823.6868 or Oregon Relay Service: 711 with such requests, or visit http://bit.ly/13EWaCg

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# I. Introduction

This public involvement plan will guide the planning process for Ped PDX. The overarching goal of the public involvement is to inform recommendations that address pedestrian network needs citywide, particularly focusing on identifying needs and developing solutions that work for stakeholders who are typically less well-represented in planning processes. **This public involvement plan is a working document. The content herein is not the final accounting of everything that occurred, but the framework that was planned from.**

# II. Project Overview

Portland is projected to add 140,000 new jobs and 260,000 new residents over the next 20 years. If in 2035 the percentage of people who drive alone to work remains the same as it is now (nearly 60 percent), traffic, climate pollution, and household spending on vehicles and fuel will all worsen significantly. To accommodate this growth, our transportation system must provide Portlanders safer and more convenient ways to walk, bike, and take transit for more trips.

To remain relevant and effective, the City of Portland pedestrian master plan, "Ped PDX," needs to be updated to reflect policy changes, incorporate modern design best practices, address the need for context-sensitive solutions, consider an emerging understanding of transportation equity, and include a Vision Zero approach to pedestrian safety. Ped PDX will ensure that the City of Portland continues to lead the way in walkability, and will allow the City to absorb rapid population and employment growth in a sustainable way that includes a high walking mode share whether for commuting, shopping, going to school, or recreation. Ped PDX will build on the newly adopted Comprehensive Plan and the updated Transportation System Plan (TSP), and will serve as the Pedestrian modal plan for the TSP. It will also complement other modal plans like the more recently adopted Freight Master Plan (2006), Bicycle Plan for 2030 (2010), and the in-process Growing Transit Communities Plan and Enhanced Transit Corridors Plan.

The Project consists of developing the updated modal plan, including PMP Goals and Objectives, Performance Measures, Pedestrian Classifications, Existing Conditions, Needs Analysis, Prioritization Framework, and Project List and Map, and will result in an adoptable pedestrian master plan for consideration by the Planning and Sustainability Commission and City Council.

# III. Past Public Outreach

Multiple planning efforts have informed consistent investment in the pedestrian network, each with integrated public involvement. These efforts include:

- Existing 1998 Pedestrian Master Plan
- City of Portland Comprehensive Plan
- Transportation Systems Plan (TSP)
- City Zoning and Development Code (Title 33 of the City Code) and City right-of-way standards (Title 17 of City Code)
- Vision Zero Action Plan

- Oregon Bicycle and Pedestrian Plan
- Transportation Planning Rule (TPR)
- Regional Transportation Plan (RTP)
- Regional Active Transportation Plan (RATP)
- Regional Transportation Functional Plan (RTFP)
- City equity policies, goals, and objectives

## IV. Equity Considerations

The City of Portland recognizes that equity is realized when identity -- such as race, ethnicity, gender, age, disability, national origin, sexual orientation-- has no detrimental effect on the distribution of resources, opportunities, and outcomes for group members in society. The City is committed to the fair treatment and meaningful involvement of all people, regardless of income or identity, with respect to the development, implementation and enforcement of plans, policies and procedures during the bureaus' work.

Fair treatment means that no group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment or health; (2) the public's contribution can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected.

PBOT acknowledges historical injustice and context of local decision-making and supports the equitable distribution of the benefits and burdens of decisions to ensure that those most impacted from decisions have an opportunity to meaningfully participate. PBOT's commitment to non-discriminatory engagement includes supporting special efforts to engage minority, low-income, women, people with disabilities, people with Limited English Proficiency, senior and youth populations.

PBOT's public engagement plans, policies and practices are guided by and in conformance with the City of Portland Title VI Civil Rights Program and Plan.

In June 2013, the City Council unanimously adopted the Civil Rights Title VI Plan which included the Environmental Justice Policy and Analysis Guidelines. The City of Portland also adopted, by Ordinance, the above Non-Discrimination Policy Statement and the Non-Discrimination Agreement for Certified Local Agencies. All the above support implementation of the City of Portland's Civil Rights Code, located in Chapter 23.01 Civil Rights, which was adopted on October 3, 1991 by Ordinance Number 164709.

In crafting a Pedestrian Master Plan and public involvement strategy that meets the City's equity and inclusion policies, it is important to recognize geographic patterns and historic trends in infrastructure distribution. While many areas of Portland have high-quality pedestrian facilities (particularly the city's more central neighborhoods), significant gaps and deficiencies remain and much of the city still does not have a balanced, interconnected, ADA-accessible, or a safe pedestrian network. An incomplete

pedestrian network limits the City's ability to absorb growth and meet the livability and access needs of residents, including safe walking access to public transit and essential services for all people.

Figure 1 shows Portland's busy streets (arterial and collector streets) that currently lack sidewalks on either one or both sides of the street. The map shows that most Portland's arterial and collector streets that lack sidewalks on one or both sides are primarily in outer East Portland in in Southwest Portland. These are neighborhoods that were initially developed under County development regulations, and then annexed into the city in the 1970's and 1980's. Because these neighborhoods were not developed under City of Portland regulations, many streets were built without sidewalks.

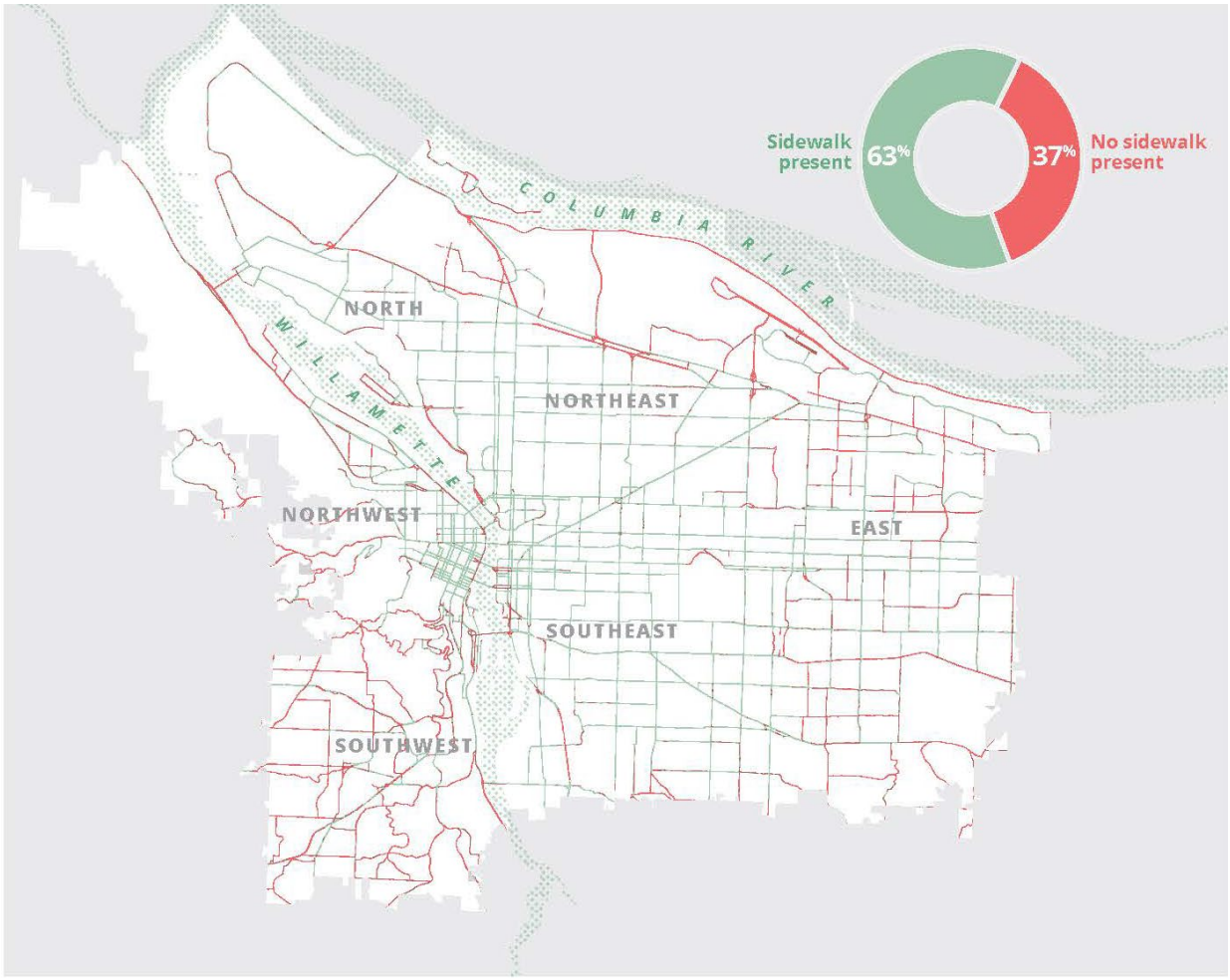


*Figure 1: Sidewalk coverage (by property frontage) on arterial and collector streets.*

Walking -with or without mobility aid- is something all people need to do to get around. However, some people rely more heavily upon our pedestrian infrastructure than others -especially low-income and/or transit-dependent populations, youth and seniors, and those with mobility, vision, and/or hearing impairments. **Many of the areas of Portland most deficient in pedestrian infrastructure are also where the highest concentrations of underserved communities live or work.** As housing costs rise in the

desirable inner neighborhoods, an increasing number of low-income and minority households are moving to places with less transit service and deficiencies in accessible pedestrian infrastructure. Figure 2 maps the percent change in population of communities of color from 2000-2010, showing a significant increase in East Portland in particular.

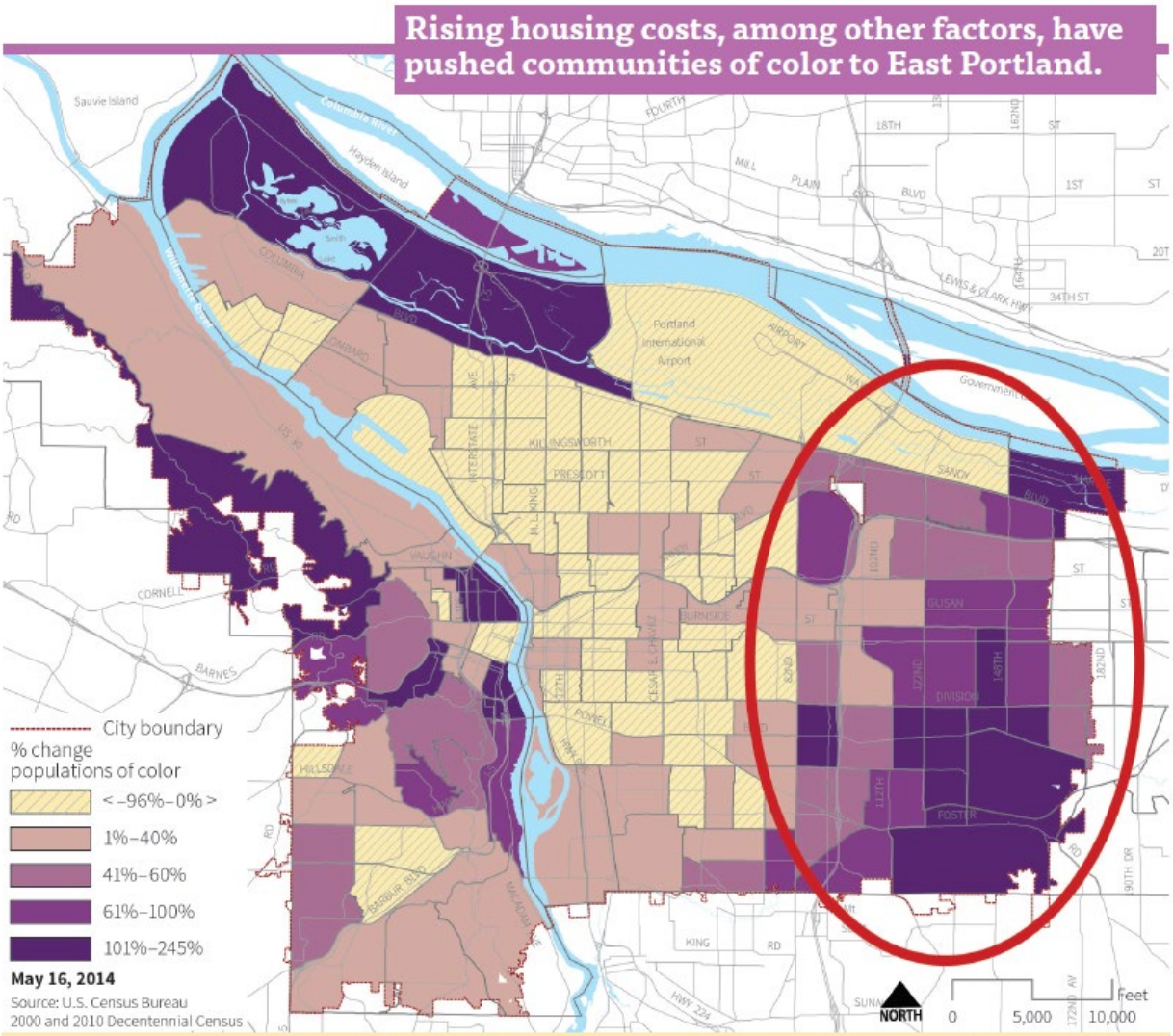


*Figure 2: From City of Portland 2035 Comprehensive Plan*

This Public Involvement Plan recognizes the overlap of these demographic and infrastructure patterns. In developing a plan for equitable community outreach and engagement, the City is committed to reaching out to populations who have historically not been well represented in past decision-making.

## A. Demographic Profile

Over the last thirty years, Portland's population gained more than 200,000 residents. Most of this growth occurred in the 1980s and 1990s, when Portland annexed large portions of east Portland and some additional areas in west Portland. For most of its recent history, Portland was an overwhelmingly white city, but as population increased, so has Portland's racial and ethnic diversity.

**Population**

The total population in Portland in 2015 was 633,373[1]. Table 1 shows that of that population, 28% reside in Outer East Portland, 20% reside in Inner Southeast Portland, and 17% reside in Inner Northeast Portland. The remaining population resides in North Portland, Southwest Portland, Northwest Portland, and Downtown/South Waterfront, in that order.

| | **Approximate population** | **Percent of total PDX population** |
|---|---|---|
| Downtown/South Waterfront | 22,323 | 4% |
| Inner NE | 109,169 | 17% |
| Inner SE | 126,187 | 20% |
| North | 82,004 | 13% |
| NW | 33,328 | 5% |
| Outer East (east of 82nd) | 176,878 | 28% |
| SW | 76,075 | 12% |
| **TOTAL** | **633,373** | **100%** |

*Table 1: City of Portland Population, by district[2]*

[1] American Community Survey, 2011-2015.

[2] Ibid

**Race**

Table 2 shows that citywide, 28% of Portland residents are non-white[3].

| | Approximate population | Percent of total PDX population |
|---|---|---|
| White alone | 448,758 | 72% |
| Hispanic/Latino | 61,396 | 10% |
| Black | 36,311 | 6% |
| Asian/Pacific Islander | 46,672 | 7% |
| Other | 25,525 | 4% |
| Mixed race | 31,169 | 5% |
| **TOTAL** | **633,373** | **100%** |

*Table 2: City of Portland Population, by race[4]*

However, this population is not evenly distributed throughout the city. Figure 3 shows that census tracts and neighborhoods in East and North Portland are home to a substantially higher percentages of people of color than other areas of the city. The map shows all of Portland's census tracts divided evenly into five quintiles, with an even number of census tracts in each quintile[5].

[3] American Community Survey, 2011-2015.

[4] Ibid

[5] A quintile is a statistical value of a data set that represents 20% of a given population, so the first quintile represents the lowest fifth of the data (1-20%); the second quintile represents the second fifth (21%-40%) and so on.

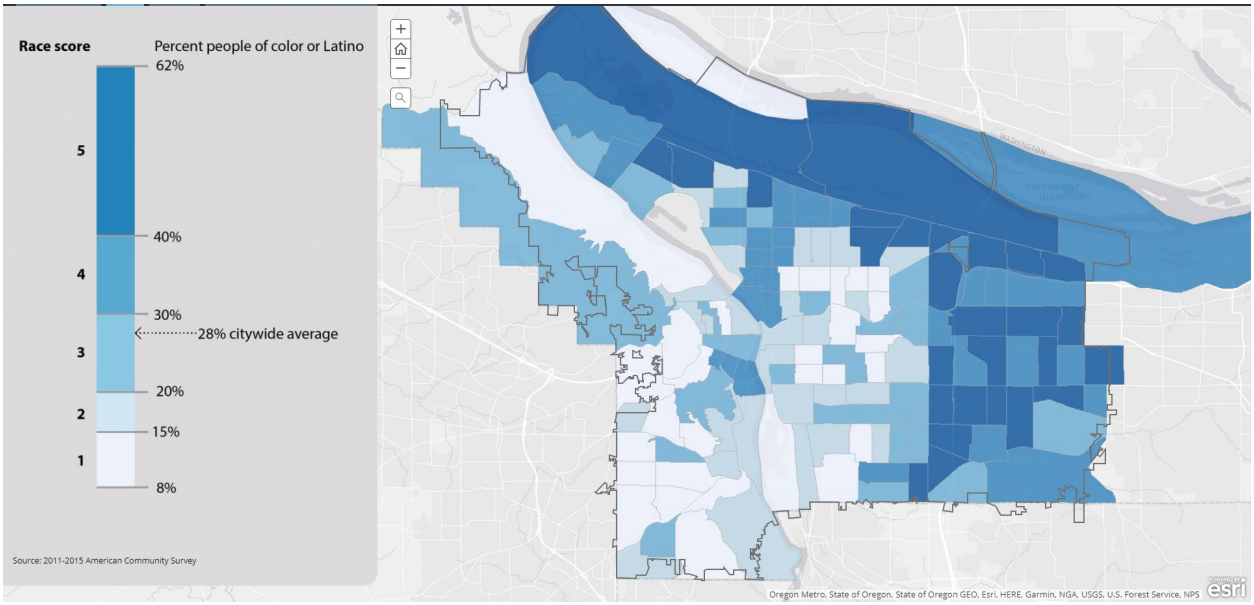


*Figure 3: Percent people of color by census tract*

In all categories, the Eastside is more racially diverse than the Westside. Hispanics are most concentrated in North Portland at nearly 15% of the population. NE Portland has the highest concentration of African Americans at 30%. The concentration of Asians in Portland are mostly within NE, SE, and outer East Portland, with a percent population of 11%, 10%, and 9% respectively. Whites are the most common race group citywide.

**Education**

Southwest Portland has the most college graduates at 59%, while East Portland has the least at just under 15%. 20% of the population in North Portland and East Portland do not have a high school diploma. About 30% of the population city wide has had some college or has an Associate's degree.**Foreign born population**

All but one census tract with over 20% foreign born concentrations are on the East side. East Portland has both the greatest concentration and the largest population of foreign born people. SE Portland also has a high foreign born population of 17,570. Although Central NE does not have a particularly large total population of foreign born people, the concentration by census tract is relatively high. Both NE Portland and NW/ Downtown Portland have fairly low foreign born populations and concentrations.

**Income**

Portland's citywide median household income is $55,000[6]. Figure 4 maps household income by census tract for all areas of the city. Breaks between income quintiles are provided such that an equal number of census tracts is represented within each break.

[6] 2011-2015 American Community Survey.

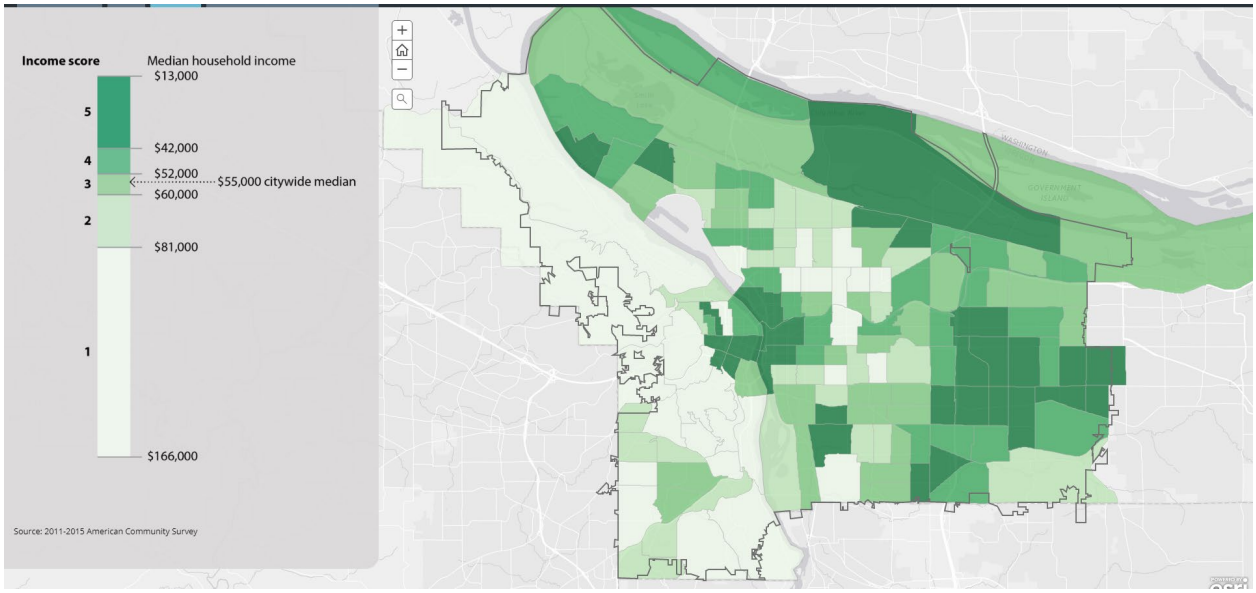


*Figure 4: Median household income by census tract*

SE Portland has the most number of households living below the poverty level, while Central NE has the least. A large portion of those families living in poverty in NE and East Portland are female-headed households. Citywide, nonfamily households are those most often below the poverty level. Again, SE has the most number of households in poverty, however, NW/downtown has the highest poverty rate at 19%. It should be noted that these data are from the year 2000, when the Pearl District redevelopment was just beginning, and that the NW area includes both a high concentration of single occupancy units, low-income and affordable housing, and also now condominiums.

SE and outer East Portland have the most number of people living in poverty; over 16,000 for each. However, poverty is most concentrated along both sides of the Willamette near the Steel Bridge: in Old Town and also in the Boise/Eliot NE neighborhoods. These census tracts have over 25% of their populations living below poverty.[7]

**Disability**

The U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates indicate that 6.4% of the general population of Portland have ambulatory difficulty, and ambulatory difficulty is more highly represented in our senior population. About 12.3% of Portlanders are estimated to have a disability which may or may not impact their mobility.

**Language**

There are over 120 languages spoken in the City of Portland, with the most variety of languages spoken in East Portland. The City of Portland recognizes ten safe harbor languages including:

[7] The data in this section is from the Portland Plan, adopted in 2012.

1. Spanish: Español
2. Vietnamese: Tiếng Việt
3. Chinese: 中文
4. Russian: Русский
5. Romanian: Română
6. Ukrainian: Українська
7. Japanese: 日本語
8. Somali: Soomaali
9. Arabic: عربي
10. Laotian: ລາວ

Figure 5 illustrates where Portland residents with limited English proficiency (LEP) reside[8]. Citywide, 4.1% of Portland residents report to have limited English proficiency. However, census tracts in East Portland have much higher percentages of LEP households than the citywide average, with anywhere from 7% to 27% of households reporting limited English proficiency. As with race and income, LEP households tend to be located in areas of the city with incomplete pedestrian infrastructure.

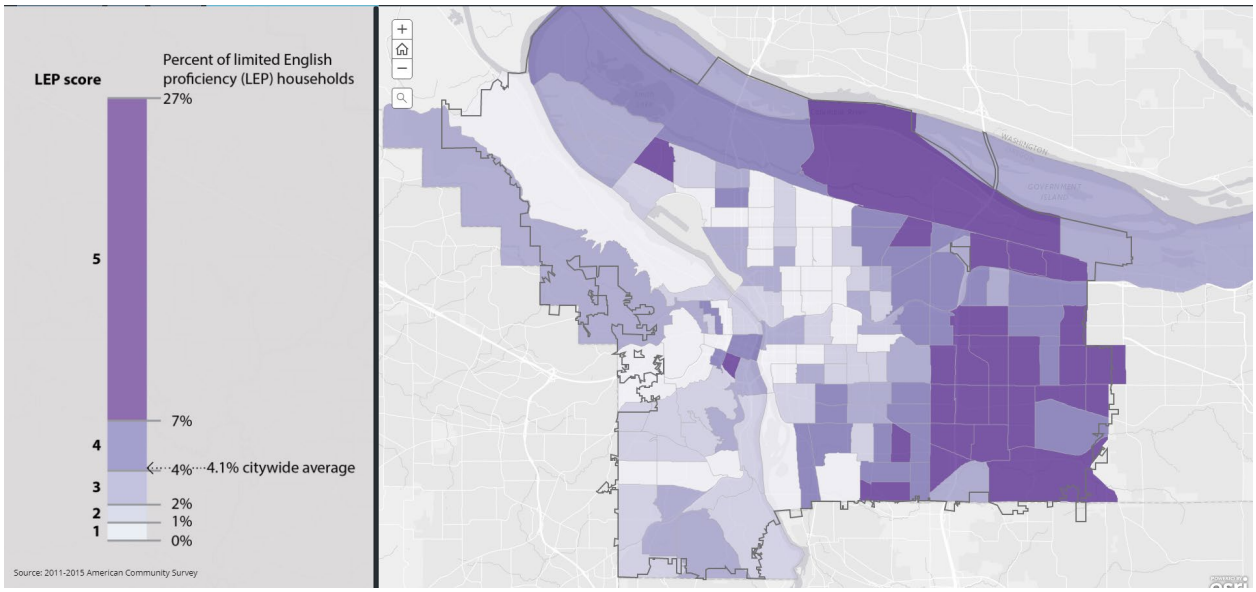


*Figure 5: Limited English proficiency by census tract*

## B. Public Involvement Principles

The process will further be guided by the City of Portland Public Involvement Principles, adopted by the Portland City Council in August 2010. The principles, below, represent a road map to guide government officials and staff in establishing consistent, effective and high quality community engagement across Portland's City government ( http://www.portlandoregon.gov/oni/article/312804 ):

[8] 2001-2015 American Community Survey

- *Partnership:* Community members have a right to be involved in decisions that affect them. Participants can influence decision-making and receive feedback on how their input was used. The public can recommend projects and issues for government consideration.
- *Early Involvement:* Public involvement is an early and integral part of issue and opportunity identification, concept development, design, and implementation of City policies, programs, and projects.
- *Building Relationships and Community Capacity:* Public involvement processes invest in and develop long-term, collaborative working relationships and learning opportunities with community partners and stakeholders.
- *Inclusiveness and Equity:* Public dialogue and decision-making processes identify, reach out to, and encourage participation of the community in its full diversity. Processes respect a range of values and interests and the knowledge of those involved. Historically excluded individuals and groups are included authentically in processes, activities, and decision- and policy-making. Impacts, including costs and benefits, are identified and distributed fairly.
- *Good Quality Process Design and Implementation:* Public involvement processes and techniques are well-designed to appropriately fit the scope, character, and impact of a policy or project. Processes adapt to changing needs and issues as they move forward.
- *Transparency:* Public decision-making processes are accessible, open, honest, and understandable. Members of the public receive the information they need, and with enough lead time, to participate effectively.
- *Accountability:* City leaders and staff are accountable for ensuring meaningful public involvement in the work of city government.

# V. Concurrent Efforts and Coordination

Outreach efforts and content messaging for this project will be coordinated with several ongoing and related public planning projects, including:

**Connected Centers in Eastern Neighborhoods.** This PBOT project will develop street access/circulation plans for two designed centers east of 82nd Avenue, the Jade District and Rosewood, to improve the ability of residents to reach local businesses, transit stops, schools and other neighborhood destinations. The plans and related implementation approaches will serve as models for subsequent street plans for other centers citywide. This project will be undertaken in conjunction with BPS's Improving Multi-Dwelling Development Project and will utilize the same public involvement opportunities.

**Safe Routes to School/ Fixing Our Streets.** On May 17th, 2016, Portland voters passed Measure 26-173, Portland's first local funding source dedicated to fixing our streets. Measure 26-173 will raise an estimated $64 million over four years. PBOT will invest this money in a wide variety of street improvement and safety projects across the entire city. Fixing Our Streets will help PBOT expand preventive street maintenance that saves money and prevents potholes. It will support our work to

make it safer for children to walk to school. It will allow us to build more sidewalks, traffic signals, street lights and bike lanes. Through PBOT's Fixing Our Streets program, Safe Routes to School is expecting to make a large investment in safety improvements around Portland schools in the next few years.

**Enhanced Transit Corridors Plan.** The Enhanced Transit Corridors (ETC) Plan will, for the first time, establish clear and objective operational performance measures and thresholds to define what success looks like for our most important frequent transit lines. These will be used on an ongoing basis by the City of Portland and TriMet to guide the prioritization of capital and operational investments in the newly-defined enhanced transit corridors. The second major benefit of this project is that it will assess both current and projected future performance of frequent service lines in the City of Portland through analysis of projected growth in transit demand and how well that demand can be absorbed by planned levels of transit service. This analysis will provide crucial information that will allow the City and TriMet to identify the lines most in need of investment in both short-term and long-term timeframes, depending on the timing of growth. The ETC Plan will also develop conceptual investment plans for several near-term corridors, with projects identified for inclusion in the next Transportation System Plan (TSP) update and ready to pursue for funding. Finally, the ETC Plan will lay out a process for ongoing performance monitoring and performance maintenance over time, including establishment of a funded City of Portland program to invest in relatively small-scale, low-cost transit priority improvements as needed, consistent with the new Transit Priority program in the adopted TSP update.

**ADA Transition Plan.** The Plan includes strategy for barrier removal, curb ramp prioritization, review of published rules and regulations, and the development of internal guidance policy. Shifting our efforts to a more coordinated approach to identify and address ADA barriers allows PBOT to create/improve programs and activities that provide better access to all Portland residents. This also provides PBOT with the opportunity to assess its baseline services at a time where ADA infrastructure across the country is coming under increased scrutiny. The Plan will outline facilities, programs, and policy (changes and updates) that will ensure that all Portland residents with disabilities can take part and benefit from the programs and services that the City has to offer.

**Southwest In Motion (SWIM)**. The Plan will engage the Southwest Portland community to identify a realistic 5-year active transportation implementation strategy that provides basic walking and bicycling connectivity as well as access to transit improvements, where they are needed most.

**Other partnerships.** In addition to the projects outlined above, the project will coordinate outreach efforts and content messaging with existing PBOT pedestrian programs and activities that may include:

- Vision Zero Program
- Neighborhood Greenways Program
- Safe Routes to School
- Livable Streets Program
- Education and encouragement programs including Sunday Parkways
- Capital projects

## VI. Advisory Bodies to the Plan

The City shall establish a Technical Advisory Committee (TAC) and a Community Advisory Committee (CAC) in the development of the Project. The TAC and CAC will review Plan deliverables and provide feedback and data. In addition to providing ongoing project input, the TAC will ensure consistency with

State and regional policy and plans as well as City policy priorities in an advisory role. The Planning and Sustainability Commission and City Council will be the final decision-makers in the adoption of the plan.

## A. Community Advisory Committee (CAC)

While the CAC will help steer the development of PedPDX, participation in the committee will by no means be the only opportunity for public engagement and participation. PedPDX will include robust public engagement activities throughout the process, and will offer multiple opportunities for as many Portlanders as possible to participate in the development of the Plan and to engage with staff.

To help guide development of the plan, PBOT solicited a recruitment for Portlanders to apply to serve on the PedPDX Community Advisory Committee (CAC). An email solicitation was distributed widely throughout PBOT's email lists and newsletters and reposted to our social media accounts, including Nextdoor.com.

In the twenty days between March 28 and April 16, 2017, staff received **over 260 applications** citywide from members of the public wishing to serve on this advisory committee.

### 1. CAC Selection Criteria

Given the size of the applicant pool and the number of high quality applications we received, it was difficult to make final selections for committee membership. We aimed to select CAC members that would bring a diversity of interests and viewpoints to the committee, and to evenly represent as much of Portland's geographic diversity as possible while also fulfilling additional preference criteria. To make committee selection decisions, we used the following objectives and selection criteria:

- **Demographic diversity:** Staff applied a racial equity lens intended to ensure we have broad demographic representation on the committee, in terms of race, gender, and ability.
- **Geographic diversity:** Because one's walking experience in Portland varies greatly depending on which part of the city one lives, works, or attends school, we sought to create a geographically balanced committee, with even representation from various parts of the city.
- **Offering engagement opportunities to new participants:** Additionally, we prioritized applicants who have not yet had an opportunity to engage with City processes in an advisory manner, with the exception of dedicated liaison roles from applicants representing Oregon Walks, our PBOT Pedestrian Advisory Committee (PAC), and our PBOT Bureau & Budget Advisory Committee (BBAC).

Additionally, preference was given to applicants who:

- live, work, or go to school in the City of Portland
- express a willingness to take a holistic systems perspective for the benefit of all Portlanders
- exhibit a passion for/commitment to improving walking conditions in Portland
- contribute to a diversity of pedestrian-related perspectives on the committee, such as any combination of the following demonstrated interests/perspectives:
    - commercial/ business/ economic development knowledge
    - disability experience/ awareness of the different ways people "walk"
    - safety advocacy
    - social or racial justice experience
    - recreational user (such as leisure walking, running/ jogging, dog walking)

- transit (bus, MAX, etc.) ridership/advocacy
- children/ education/ youth engagement
- service to vulnerable communities/ underserved Portlanders

### 2. Outcomes of Selection Process

Although staff originally advertised to recruit 15 CAC members, due to the large number of exceptional applications we received, we expanded our committee membership and accepted a total of **24** applicants that provide a harmonizing balance of the selection criteria and objectives outlined above. A summary of the demographic makeup of those selected for committee membership is below:

Demographics of selected CAC members:

| **Gender*** | |
|---|---|
| Female | 15 |
| Male | 9 |
| **Race/ ethnicity** | |
| White/Caucasian only | 12 |
| Other races | 12 |
| **Disability**** | |
| Yes | 4 |
| No | 20 |

*Transgender/ other/ none not represented in selection

**Disabilities represented includes both mobility and vision impairments

To ensure that the CAC represents balanced voices from across Portland, we selected three representatives from each portion of the city. Based on the selection criteria and objectives outlined above, we selected the following individuals for participation on the PedPDX CAC (pending acceptance of our invitation):

1. North Portland:
    a. Peggy Alter
    b. Ryan Misjan
    c. Dylan McDermott Boroczi
2. East Portland:
    a. Eugenia Andreev
    b. Silvia Gomez
    c. Robert Schultz
3. Inner NE:
    a. Matthew Steven Cramer
    b. Alex Saro Youssefian

    c. Shelly Garteiz
4. Downtown/ S. Waterfront:
    a. Matthew Denney
    b. Traci Chenette
    c. David Loftus
5. NW:
    a. Jennifer Chi
    b. Jennifer Loferski
    c. Stephen Sverre Gunvalson
6. SW:
    a. Janet C. Hawkins
    b. Beth Omansky
    c. Lucy Brehm
7. Inner SE:
    a. Eric Koszyk
    b. Debra P. Monzon
    c. Kelly Chanopas
8. Liaisons:
    a. BBAC: Meesa Long
    b. PAC: Eve Nilenders
    c. Oregon Walks: Claire Vlach

## B. Technical Advisory Committee (TAC)

The TAC will include key staff from ODOT, Metro, TriMet, Oregon Department of Land Conservation and Development, as well as internal City staff and PBOT management.

## C. Pedestrian Advisory Committee (PAC)

The PAC is an existing and ongoing public advisory body to the Bureau. Staff sought guidance from the PAC on how they wish to be engaged in the Plan. The PAC informed staff that members are interested in tracking and participating in providing feedback on the Plan, however they recommended the advisory committee to the Plan be more geographically, socially, and racially equitable in membership representation than the PAC and recommended a separate CAC to ensure this balance, with at least one PAC liaison. The PAC's recommendation resulted in the afore mentioned search and selection process. The CAC will be advisory directly to staff for the Plan, while the PAC will be informed throughout the planning process and ultimately asked to provide comments and feedback on the Plan.

## D. Friends of PedPDX

Those who applied to the CAC and were not selected, as well as existing interested PBOT Active Transportation Ambassador Program volunteers, will be invited to help steer the Plan as members of "Friends of PedPDX." Friends of PedPDX will be notified of PedPDX engagement/participation opportunities which may include helping to table at local events to gather public feedback, distributing outreach materials at walking events and hot walking spots, greeting and directing the public at events where we are gathering public feedback, walking with staff and advisory body volunteers in parades and key events, beta testing online

engagement tools, and helping to get the word out about opportunities for the public to provide feedback. Friends of PedPDX is not an advisory body, per se, but an involved audience set, and a volunteer resource for contributing to enhanced community outreach and engagement citywide.

# VII. Public Involvement Process

To inform staff, consultants, the CAC and TAC, the public will be robustly engaged to provide feedback on public priorities and needs and Plan work products and outcomes. All community involvement will specify why feedback is needed, how it will be used to impact the Plan, and how feedback will be reported out.

## A. Levels of Participation

The community involvement opportunities will be organized to allow people to engage across a spectrum of interest levels[9]:

- **Inform:** Some members of the public will want to know about the Plan, others will then be interested to track the process and stay up to date on the latest project news. Staff will use multiple methods of outreach to inform the public about the Plan and allow interested individuals to stay informed. Staff will provide balanced and objective information to assist the public in understanding the issues and alternatives throughout the planning process and Plan information will be made broadly accessible through multiple means, channels, and sources.
- **Consult:** Some members of the public will want to make sure the process and outcomes are broadly addressing the topics they are interested in and generally going in the right direction. These individuals will desire to weigh in and provide feedback at key points in the process and every effort will be given to provide opportunities for the Plan to obtain their public feedback on Plan priorities, alternatives, and outcomes.
- **Involve:** Some members of the public, such as Friends of PedPDX, PAC, Portland Planning & Sustainability Commission, and video interviewees, will be interested to contribute concerns and issues. Staff will listen to and acknowledge these concerns and seek to directly reflect them in the alternatives developed, and explain how their input influenced the Plan outcomes. Friends of PedPDX will also be able to be involved in outreach activities to help gather public feedback.
- **Collaborate:** The CAC will be deeply involved in the ongoing Plan work, closely tracking the process and providing thoughtful and meaningful input into the products all along the way. Staff will look to the CAC for direct advice and innovation in formulating solutions, and will incorporate their advice and recommendations into the Plan outcomes to the maximum extent possible.

[9] From the IAP2 Spectrum of Public Participation available at IAP2USA.org

- **Empower:** The final decision-making will be in the hands of the elected representatives of the Portland City Council.

## B. Activities

The following activities are highlighted for PedPDX public engagement:

| **Level of Participation** | Inform | Consult | Involve | Collaborate |
|---|---|---|---|---|
| **Goal of Participation** | To raise awareness and visibility of the Plan while stimulating public engagement/ feedback response rates for engagement opportunities. | To gather feedback from the public that will impact the planning process, materials, and outcomes. | To gather new ideas, understand concerns, and consider input throughout process. | To gather direct advice and innovation from the public. |
| **Tools of Participation** | Web updates<br>Public presentation<br>Handouts<br>Promotional items<br>PowerPoints<br>Advertising<br>Email<br>Social media<br>PBOT blog<br>Tabling at local events<br>Intercept outreach<br>Canvassing<br>Earned media<br>Display stand<br>Easel sign | Online survey of priorities<br>i-pad survey engagement<br>Live priority jar activity<br>Language-based engagement<br>Email<br>Language-based hard copies of priority survey<br>MapApp | Youth engagement activity/ workshop<br>Community-lead walking tour<br>Open house workshop<br>Video storytelling<br>Online open house/ storymap | CAC meeting<br>TAC meeting |

| | | | | |
|---|---|---|---|---|
| | Posters<br>Walk in parade/ walking event<br>Photography<br>Graphic design<br>Language translation<br>Prize incentives<br>Staff email tagline | | | |

## C. Process Schedule

| **Q4: April-June 2017**<br>**Project Schedule Task 1**<br>**Goal: Establish a public advisory body, begin Plan.**<br>**Public involvement tasks: Recruit Community Advisory Committee members, kick-off committee and Plan, begin building interested parties email lists.** | |
|---|---|
| **Event/ Task** | **Activities** |
| Design committee structure and candidate preference criteria | - |
| Design online application | Survey |
| Solicit applications for CAC | Social media<br>Earned media<br>PBOT blog<br>Web updates<br>Email<br>Staff email tagline |
| Select membership based on criteria | - |
| Communicate results of search to the public | Web updates<br>Email |

| | |
|---|---|
| Design and launch online survey #1 | Survey<br>Social media<br>PBOT blog<br>Handouts<br>Promotional items<br>Prize incentives |
| Plan and perform kick-off event | Walk in parade/ walking event<br>Handouts<br>Intercept outreach<br>Tabling at events<br>Promotional items<br>Graphic design<br>Photography |
| Convene first committee meeting | CAC meeting |
| **Q1: July -Sept 2017**<br>**Project Schedule Tasks 1-2**<br>**Goal: Gather public feedback on priorities the types of improvements that are most important and the general locations where they are needed most.**<br>**Public involvement tasks: Coordinate summer outreach, launch online survey, conduct language-based engagement, perform youth engagement, and maximize marketing.** | |
| **Event/ Task** | **Activities** |
| Language-based outreach and engagement | Language translation<br>Language-based engagement<br>Survey<br>Handouts<br>Web updates<br>Facebook advertising |
| Youth engagement on priorities | Youth engagement activity/ workshop<br>Photography |

| | |
|---|---|
| | Handouts<br>Promotional items |
| Schedule and perform summer outreach at events | All inform and consult activities (except MapApp) |
| Reach out to and brief neighborhood coalitions on project and survey | Public presentation<br>Handouts |
| **Q2: Oct-Dec 2017**<br>**Project Schedule Tasks 3**<br>**Goals: Report public feedback from efforts in Q1 (to impact draft pedestrian needs prioritization map, list, and tool development). Communicate to the public "what we heard" (public feedback results) during Q1 efforts. Verify needs analysis.**<br>**Public involvement tasks: Inform interested parties of survey results, gather feedback on needs.** | |
| **Event/ Task** | **Activities** |
| Inform survey participants and interested parties of survey results | Web updates<br>Emails<br>Graphic design<br>Handouts<br>CAC meetings |
| Translate report and email to language-based interested parties lists | Language translation<br>Graphic design<br>Handouts<br>Emails<br>Web updates |
| Online survey #2 | Language translation<br>Web updates<br>Emails<br>Social media<br>Handouts<br>MapApp<br>Promotional items |

| | |
|---|---|
| | Prize incentives |
| **Q3: Jan-Mar 2018**<br><br>**Project Schedule Tasks 3** | **Goals: Inform the public about the different ways people "walk", different pedestrian needs, and diversity of perspectives while promoting whole-system thinking and compassionate community engagement.**<br><br>**Public involvement tasks: Video interviews/ storytelling project** |
| **Event/ Task** | **Activities** |
| Video interviews to tell diverse walking stories (w/ translated closed captioning) | Video storytelling<br><br>Language translation<br><br>Web updates<br><br>Emails<br><br>Social media |
| **Q4: April-June 2018**<br><br>**Project Schedule Tasks 4-5**<br><br>**Goal: Show the public how their input impacted draft pedestrian needs prioritization map, list, and tools. Gather public feedback about how public input was applied and refinements to draft pedestrian needs prioritization map, list, and tools.**<br><br>**Public involvement tasks: Coordinate citywide tour open houses, language-based focus groups, launch online survey #3, record and distribute YouTube presentations about planning process + feedback opportunities, and conduct language-based focus groups.** | |
| **Event/ Task** | **Activities** |
| YouTube presentation about planning process + feedback opportunities | Video storytelling<br><br>Language translation<br><br>Web updates<br><br>Emails<br><br>Social media |
| Online survey #3 | Language translation<br><br>Language-based engagement<br><br>Web updates |

| | |
|---|---|
| | Emails<br>Social media<br>Handouts<br>Promotional materials<br>Prize incentives |
| Citywide tour of open houses (7) | Open house workshops<br>Handouts |
| **Q1 2018: July-Sept 2018**<br>**Project Schedule Task 3**<br>**Goals: Inform the public about the different ways people "walk", different pedestrian needs, and diversity of perspectives while promoting whole-system thinking and compassionate community engagement.**<br>**Public involvement tasks: Social media walking stories campaign.** | |
| **Event/ Task** | **Activities** |
| Launch social media campaign to encourage members of the public to answer specific questions to tell their walking stories | |
| **Q2: Oct-Dec 2018**<br>**Project Schedule Tasks 6-7**<br>**Goal: Show the public how their input impacted the Draft Plan. Gather public feedback on Draft Plan.**<br>**Public involvement tasks: Online open house/ storymap** | |
| **Event/ Task** | **Activities** |
| Inform the public about the planning process and public involvement, gather final feedback on the Plan before it goes to City Council | Online open house/ storymap<br>Youtube video<br>Web updates<br>Emails<br>Social media<br>Graphic design<br>Translation |

# APPENDIX B:

## MVGO Cross Tabulation

# MEMORANDUM

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To: Michelle Marx, City of Portland Bureau of Transportation
Lidwien Rahman, Oregon Department of Transportation
From: Jean Crowther, Alta Planning and Design
Date: January 25, 2019
Re: PedPDX Mission Vision Goals Objectives Memo (Deliverable 2C)

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## Overview

The PedPDX vision, mission, goals, and objectives will guide all subsequent content of the Plan. They will provide a critical foundation for the Plan's pedestrian network needs analysis, prioritization criteria, implementing strategies and actions (the "toolbox"), and performance measures.

To help guide the development of the vision, mission, goals, and objectives, the PedPDX Community Advisory Committee (CAC) completed a "PedPDX vision, goals, and objectives exercise" in advance of their November 29, 2017 meeting. At the meeting, committee members shared the future state that they envision for Portland, and what Portland should be, do, and have in order to become a truly great walking city. Staff collected the responses from the CAC and grouped them into core themes that naturally appeared from the sum of the feedback. Staff then drafted goals and objectives from the themes and subthemes that emerged and crafted draft vision and mission statements to reflect the spirit of the sum of the goal statements.

The draft vision, mission, goals, and objectives were reviewed and refined by the PedPDX Technical Advisory Committee, made up of partner agency, bureau, and department technical specialists. The drafts were then brought to the City of Portland's Pedestrian Advisory Committee for additional feedback and refinement.

## Plan Vision ("know where you want to go"):

A Vision statement concisely introduces a future that the Plan is intended to achieve. It offers the broadest expressions of a community's desires, providing overarching direction for the long term, and often describing ideal situations.

### PedPDX Vision:

Portland is a truly great walking city for all

## Plan Mission ("what is our purpose?"):

A mission statement is a short description of the purpose of an entity, organization, or campaign. It succinctly summarizes aims and values to define what the group is going to do and why it is going to do that. Mission statements account for the "big picture" while being practical and action-oriented.

### PedPDX Mission:

PedPDX affirms walking as a fundamental right and the most fundamental means of transportation. PedPDX will make walking safe, accessible, and attractive for everyone in Portland by putting pedestrians at the forefront of City policy, design, and investments.

## Plan Goals ("define your priorities"):

A goal is a broad statement that sets preferred courses of action in support of the vision and mission. Goals are intended to carry out the vision in the foreseeable future and should be specific enough to help determine whether or not a proposed project, program, or course of action will advance the community values expressed in the goals.

### PedPDX Goals:

- Safe + Secure: Make walking in Portland safe and secure for everyone.
- Comfortable + Inviting: Provide a comfortable, inviting, and connected pedestrian network that supports walkable neighborhoods and helps make great places.
- Equitable + Inclusive: Make Portland walkable and accessible for all, no matter who you are or where you live.
- Healthy people + Environment: Increase walking in Portland as a means of achieving improved health outcomes for all people and for the environment.

## Plan Objectives ("understand what it takes to get there"):

Objectives are specific statements of action that support achieving the goals. Objectives help assess incremental progress toward advancing the broader outcomes expressed in the vision and goals.

Once the big, broad ideas of the vision and goals are channeled into objectives that offer a practical, workable approach, their strategies and action items provide the basis for a workplan.

### PedPDX objectives:

1. Complete and maintain a Priority Pedestrian Network that promotes and encourages walking for people of all ages, languages, and abilities, and connects people to their essential daily needs
2. Commit to funding pedestrian network improvements in the Priority Pedestrian Network
3. Support the City's Vision Zero commitment to eliminate traffic-related deaths and serious injuries
4. Protect the public safety and personal security of people walking

5. Prioritize investment in areas with the greatest historic underinvestment in pedestrian infrastructure and with historically under-served populations to reduce disparities in access to safe pedestrian facilities
6. Make walking in Portland a joyful experience that helps people connect with their community

## Cross-Tabulation of PedPDX Goals and Objectives with adopted City goals:

| PedPDX Goals<br>Relevant City Policies | Equitable + Inclusive | Safe + Secure | Comfortable + Inviting | Healthy People + Environment | Nexus with PedPDX Objectives |
|---|---|---|---|---|---|
| **Transportation Strategy for People Movement.** Implement a prioritization of modes for people movement by making transportation system decisions according the following ordered list:<br>• Walking<br>• Bicycling<br>• Transit<br>• Fleets of electric, fully automated, multiple passenger vehicles<br>• Other shared vehicles<br>• Low or no occupancy vehicles, fossil-fueled non-transit vehicles (Policy 9.6) | X | X | X | | Objective 2<br>Objective 3 |
| **Pedestrian safety and accessibility.** Improve pedestrian safety, accessibility, and convenience for people of all ages and abilities. (Policy 9.19) | X | X | X | X | Objective 4<br>Objective 5<br>Objective 6 |
| **Accessible and age-friendly transportation system:** Ensure that transportation facilities are accessible to people of all ages and abilities, and that all improvements to the transportation system (traffic, transit, bicycle, and pedestrian) in the public right-of-way comply with the Americans with Disabilities Act of 1990. Improve and adapt the transportation system to better meet the needs of the most vulnerable users, including the young, older adults, and people with different abilities. (CP Policy 9.9) | X | X | | | Objective 2 |
| **System management:** Give preference to transportation improvements that use existing roadway capacity efficiently and that improve the safety of the system for all users. (CP Policy 9.45)<br>• 9.45.a Support regional equity measures for transportation system evaluation. | X | | | | Objective 1<br>Objective 2<br>Objective 5 |

| | | | | | |
|---|---|---|---|---|---|
| **Age-friendly public facilities:** Promote public facility designs that make Portland more age-friendly. (CP Policy 8.38) | X | X | | | Objective 2 |
| **Interconnected network:** Establish a safe and connected rights-of-way system that equitably provides infrastructure services throughout the city. (CP Policy 8.39) | X | | X | | Objective 1<br>Objective 2<br>Objective 3 |
| **Eastern Neighborhoods active transportation.** Enhance access to centers, employment areas, and other community destinations in Eastern Neighborhoods by ensuring that corridors have safe and accessible pedestrian and bicycle facilities and creating additional secondary connections that provide low-stress pedestrian and bicycle access. A. Prioritize new sidewalk connections. Prioritize adding sidewalks where there are none over expanding/ widening existing connections. B. North-South transit. Support development of, access to, and service enhancement for North-South transit. (Policy 3.98) | X | X | X | | Objective 1<br>Objective 2<br>Objective 3 |
| **Western Neighborhoods active transportation.** Provide safe and accessible pedestrian and bicycle connections, as well as off-street trail connections, to and from residential neighborhoods. (Policy 3.100) | | X | X | X | Objective 2<br>Objective 3 |
| **Western Neighborhoods trails.** Develop pedestrian-oriented connections and enhance the Western Neighborhoods' distinctive system of trails to increase safety, expand mobility, access to nature, and active living opportunities in the area. C. Focus for active transportation. Primarily focus sidewalk and bicycle route improvements in (and in close proximity to) the designated Centers and Corridors of the Comp Plan. designated Centers and Corridors of the Comp Plan. D. Filling gaps in connections. Fill gaps in important access connections, including exploring traditional ROW acquisition and partnerships with other City bureaus. E. Accessible routes. Improve accessibility/create parallel routes in some cases (for motor vehicles, bicycles and pedestrians, and/or both). Explore what existing facilities and connections most merit upgrades or secondary accessible routes. (Policy 3.103) | | X | X | X | Objective 2<br>Objective 3<br>Objective 6 |
| **Street Design Classification.** Maintain and implement street design classifications consistent with land use plans, environmental context, urban design pattern areas, and the | | | X | | |

| | | | | | |
|---|---|---|---|---|---|
| Neighborhood Corridor and Civic Corridor Urban Design Framework designations. (Policy 9.1) | | | | | |
| **Streets for Transportation and Public Spaces.** Integrate both placemaking and transportation functions when designing and managing streets by encouraging design, development, and operation of streets to enhance opportunities for them to serve as places for community interaction, environmental function, open space, tree canopy, recreation, and other community purposes. (Policy 9.14) | | | X | X | Objective 6 |
| **Pedestrian networks**. Create more complete networks of pedestrian facilities and improve the quality of the pedestrian environment. (Policy 9.18) | | | X | | Objective 2<br>Objective 3 |
| **Connectivity.** Establish an interconnected, multimodal transportation system to serve centers and other significant locations. Promote a logical, direct, and connected street system through street spacing guidelines and district-specific street plans found in the Transportation System Plan and prioritize access to specific places by certain modes in accordance with policies 9.6 and 9.7. (Policy 9.47)<br>• 9.47.d Provide street connections with spacing of no more than 530 feet between connections except where prevented by barriers such as topography, railroads, freeways, or environmental constraints. Where streets must cross over protected water features, provide crossings at an average spacing of 800 to 1000 feet, unless exceptional habitat quality of length of crossing prevents a full street connection<br>• 9.47.e Provide bike and pedestrian connections at approximately 330 feet intervals on public easements or rights-of-way when full street connections are not possible, except where prevented by barriers s such as topography, railroads, freeways, or environmental constraints. Bike and pedestrian connections that cross | | X | X | | Implementation strategies for Objective 2 |

| | | | | | |
|---|---|---|---|---|---|
| protected water features should have an average spacing of no more than 530 feet, unless exceptional habitat quality or length of connection prevents a connection. | | | | | |
| **Repurposing street space:** Encourage repurposing street segments that are not critical for transportation connectivity to other community purposes. (CP Policy 9.15) | | | X | X | Objective 6 |
| **Community uses:** Allow community use of rights-of-way for purposes such as public gathering space, events, food production, or temporary festivals, as long as the community uses are integrated in ways that balance and minimize conflict with the designated through movement and access roles of rights-of-ways. (CP Policy 8.44) | | | X | X | Objective 6 |
| **Pedestrian amenities:** Encourage facilities that enhance pedestrian enjoyment, such as transit shelters, garbage containers, benches, etc. in the right of way. (CP Policy 8.45) | | | X | | Objective 6 |
| **Flexible design:** Allow flexibility in right-of-way design and development standards to appropriately reflect the pattern area and other relevant physical, community, and environmental contexts and local needs. (CP Policy 8.47) | | | X | | Objective 6 |
| **Pedestrian-oriented design:** Enhance the pedestrian experience throughout Portland through public and private development that creates accessible, safe, and attractive places for all those who walk and/or use wheelchairs or other mobility devices. (CP Policy 4.5) | X | X | X | | Objective 2<br>Objective 6 |
| **Alleys:** Encourage the continued use of alleys for parking access, while preserving pedestrian access. Expand the number of alley-facing accessory dwelling units. (CP Policy 4.8) | | | X | | Implementation strategy for Objective 2 |
| **Walkable scale:** Focus services and higher-density housing in the core of centers to support a critical mass of demand for commercial services and more walkable access for customers. (CP Policy 4.20) | | | X | | |
| **Street environment:** Encourage development in centers and corridors to include amenities that create a pedestrian-oriented environment and provide places for people to sit, spend time, and gather. (CP Policy 4.21) | | | X | | Objective 6 |
| **Design for pedestrian and bicycle access**: Provide accessible sidewalks, high-quality bicycle access, and frequent street connections and crossings in centers and corridors. (CP Policy 4.23) | X | X | X | | Objective 2<br>Objective 3 |

| | | | | | |
|---|---|---|---|---|---|
| **Inner Neighborhoods active transportation.** Use the extensive street, sidewalk, and bikeway system and multiple connections to the Central City as a key part of Portland's active transportation system. (Policy 3.91) | | | X | | Objective 2<br>Objective 3 |
| **Access to Transit.** Transit stations should be designed to accommodate a high level of safe multimodal access within a half-mile radius of the station. (Policy 6.6A) | | X | X | | Objective 2<br>Objective 5 |
| **Access to Transit.** Provide safe and convenient access for pedestrians and bicyclists to, across, and along Major Transit Priority Streets. Provide safe and accessible pedestrian crossings at all transit stops along Major Transit Priority Streets. (Policy 6.6B) | | X | X | | Objective 2<br>Objective 5 |
| **Access to Transit.** Provide safe and convenient pedestrian and bicycle access to transfer points and stops and along Transit Access Streets. Provide safe and accessible pedestrian crossings at all transit stops along Transit Access Streets. (Policy 6.6C) | | X | X | | Objective 2<br>Objective 5 |
| **Mode share goals and vehicle miles travelled (VMT) reduction:** Increase the share of trips made using active and low-carbon transportation modes. Reduce VMT to achieve targets set in the most current Climate Action Plan and Transportation System Plan, and meet or exceed Metro's mode share and VMT targets. (Policy 9.5) | | | | X | |
| **Design with nature:** Promote street and trail alignments and designs that respond to topography and natural features, when feasible, and protect streams, wildlife habitat, and native trees. (CP Policy 9.16) | | | | X | Objective 6 |
| **Pedestrian transportation:** Encourage walking as the most attractive mode of transportation for most short trips, within neighborhoods and to centers, corridors, and major destinations, and as a means for accessing transit. (CP Policy 9.17) | | | X | X | Objective 2<br>Objective 6 |
| **Trees in rights-of-way:** Integrate trees into public rights-of-way to support City canopy goals, transportation functions, and economic, social, and environmental objectives. (CP Policy 8.43) | | | X | X | Objective 6 |

# MEMORANDUM

711 SE Grand Ave.
Portland, OR 97214
(503) 230-9862
www.altaplanning.com

To: Michelle Marx, City of Portland Bureau of Transportation
Lidwien Rahman, Oregon Department of Transportation

From: Jean Crowther, Alta Planning and Design

Date: January 25, 2019

Re: PedPDX Mission Vision Goals Objectives Memo (Deliverable 2C)

---

## Overview

The PedPDX vision, mission, goals, and objectives will guide all subsequent content of the Plan. They will provide a critical foundation for the Plan's pedestrian network needs analysis, prioritization criteria, implementing strategies and actions (the "toolbox"), and performance measures.

To help guide the development of the vision, mission, goals, and objectives, the PedPDX Community Advisory Committee (CAC) completed a "PedPDX vision, goals, and objectives exercise" in advance of their November 29, 2017 meeting. At the meeting, committee members shared the future state that they envision for Portland, and what Portland should be, do, and have in order to become a truly great walking city. Staff collected the responses from the CAC and grouped them into core themes that naturally appeared from the sum of the feedback. Staff then drafted goals and objectives from the themes and subthemes that emerged and crafted draft vision and mission statements to reflect the spirit of the sum of the goal statements.

The draft vision, mission, goals, and objectives were reviewed and refined by the PedPDX Technical Advisory Committee, made up of partner agency, bureau, and department technical specialists. The drafts were then brought to the City of Portland's Pedestrian Advisory Committee for additional feedback and refinement.

## Plan Vision ("know where you want to go"):

A Vision statement concisely introduces a future that the Plan is intended to achieve. It offers the broadest expressions of a community's desires, providing overarching direction for the long term, and often describing ideal situations.

### PedPDX Vision:

Portland is a great walking city for all

## Plan Mission ("what is our purpose?"):

A mission statement is a short description of the purpose of an entity, organization, or campaign. It succinctly summarizes aims and values to define what the group is going to do and why it is going to do that. Mission statements account for the "big picture" while being practical and action-oriented.

### PedPDX Mission:

Through PedPDX, the City of Portland affirms walking as a fundamental human right and the most fundamental means of transportation. PedPDX ensures walking is a safe, accessible, and attractive experience for everyone in Portland by putting pedestrians at the forefront of City policy, investments, and design.

## Plan Goals ("define your priorities"):

A goal is a broad statement that sets preferred courses of action in support of the vision and mission. Goals are intended to carry out the vision in the foreseeable future and should be specific enough to help determine whether or not a proposed project, program, or course of action will advance the community values expressed in the goals.

### PedPDX Goals:

- **Equitable + Inclusive**: Make Portland walkable and accessible for all, no matter who you are or where you live.
- **Safe + Secure:** Make walking in Portland safe and secure for everyone.
- **Comfortable + Inviting**: Provide a comfortable, inviting, and connected pedestrian network that supports walkable neighborhoods and strengthens community.
- **Healthy People + Environment**: Increase walking for transportation and recreation in Portland as a means of achieving improved health outcomes for all people and for the environment.

## Plan Objectives ("understand what it takes to get there"):

Objectives are specific statements of action that support achieving the goals. Objectives help assess incremental progress toward advancing the broader outcomes expressed in the vision and goals.

Once the big, broad ideas of the vision and goals are channeled into objectives that offer a practical, workable approach, their strategies and action items provide the basis for a workplan.

### PedPDX objectives:

1. Complete and maintain a Priority Pedestrian Network that encourages walking for people of all ages, cultures, and abilities, and connects people to their essential daily needs.
2. Commit to funding pedestrian network improvements in the Priority Pedestrian Network
3. Support the City's Vision Zero commitment to eliminate traffic-related deaths and serious injuries
4. Protect the public safety and personal security of people walking

5. Prioritize investment in areas with the greatest historic underinvestment in pedestrian infrastructure and with historically under-served populations to reduce disparities in access to safe pedestrian facilities
6. Make walking in Portland a joyful experience that helps people connect with their community

## Cross-Tabulation of PedPDX Goals and Objectives with adopted City goals:

| PedPDX Goals<br>Relevant City Policies | Equitable + Inclusive | Safe + Secure | Comfortable + Inviting | Healthy People + Environment | Nexus with PedPDX Objectives |
|---|---|---|---|---|---|
| **Transportation Strategy for People Movement.** Implement a prioritization of modes for people movement by making transportation system decisions according the following ordered list:<br>• Walking<br>• Bicycling<br>• Transit<br>• Fleets of electric, fully automated, multiple passenger vehicles<br>• Other shared vehicles<br>• Low or no occupancy vehicles, fossil-fueled non-transit vehicles (Policy 9.6) | X | X | X | | Objective 2<br>Objective 3 |
| **Pedestrian safety and accessibility.** Improve pedestrian safety, accessibility, and convenience for people of all ages and abilities. (Policy 9.19) | X | X | X | X | Objective 4<br>Objective 5<br>Objective 6 |
| **Accessible and age-friendly transportation system:** Ensure that transportation facilities are accessible to people of all ages and abilities, and that all improvements to the transportation system (traffic, transit, bicycle, and pedestrian) in the public right-of-way comply with the Americans with Disabilities Act of 1990. Improve and adapt the transportation system to better meet the needs of the most vulnerable users, including the young, older adults, and people with different abilities. (CP Policy 9.9) | X | X | | | Objective 2 |
| **System management:** Give preference to transportation improvements that use existing roadway capacity efficiently and that improve the safety of the system for all users. (CP Policy 9.45)<br>• 9.45.a Support regional equity measures for transportation system evaluation. | X | | | | Objective 1<br>Objective 2<br>Objective 5 |

| | | | | | |
|---|---|---|---|---|---|
| **Age-friendly public facilities:** Promote public facility designs that make Portland more age-friendly. (CP Policy 8.38) | X | X | | | Objective 2 |
| **Interconnected network:** Establish a safe and connected rights-of-way system that equitably provides infrastructure services throughout the city. (CP Policy 8.39) | X | | X | | Objective 1<br>Objective 2<br>Objective 3 |
| **Eastern Neighborhoods active transportation.** Enhance access to centers, employment areas, and other community destinations in Eastern Neighborhoods by ensuring that corridors have safe and accessible pedestrian and bicycle facilities and creating additional secondary connections that provide low-stress pedestrian and bicycle access. A. Prioritize new sidewalk connections. Prioritize adding sidewalks where there are none over expanding/ widening existing connections. B. North-South transit. Support development of, access to, and service enhancement for North-South transit. (Policy 3.98) | X | X | X | | Objective 1<br>Objective 2<br>Objective 3 |
| **Western Neighborhoods active transportation.** Provide safe and accessible pedestrian and bicycle connections, as well as off-street trail connections, to and from residential neighborhoods. (Policy 3.100) | | X | X | X | Objective 2<br>Objective 3 |
| **Western Neighborhoods trails.** Develop pedestrian-oriented connections and enhance the Western Neighborhoods' distinctive system of trails to increase safety, expand mobility, access to nature, and active living opportunities in the area. C. Focus for active transportation. Primarily focus sidewalk and bicycle route improvements in (and in close proximity to) the designated Centers and Corridors of the Comp Plan. designated Centers and Corridors of the Comp Plan. D. Filling gaps in connections. Fill gaps in important access connections, including exploring traditional ROW acquisition and partnerships with other City bureaus. E. Accessible routes. Improve accessibility/create parallel routes in some cases (for motor vehicles, bicycles and pedestrians, and/or both). Explore what existing facilities and connections most merit upgrades or secondary accessible routes. (Policy 3.103) | | X | X | X | Objective 2<br>Objective 3<br>Objective 6 |
| **Street Design Classification.** Maintain and implement street design classifications consistent with land use plans, environmental context, urban design pattern areas, and the | | | X | | |

| | | | | | |
|---|---|---|---|---|---|
| Neighborhood Corridor and Civic Corridor Urban Design Framework designations. (Policy 9.1) | | | | | |
| **Streets for Transportation and Public Spaces.** Integrate both placemaking and transportation functions when designing and managing streets by encouraging design, development, and operation of streets to enhance opportunities for them to serve as places for community interaction, environmental function, open space, tree canopy, recreation, and other community purposes. (Policy 9.14) | | | X | X | Objective 6 |
| **Pedestrian networks**. Create more complete networks of pedestrian facilities and improve the quality of the pedestrian environment. (Policy 9.18) | | | X | | Objective 2<br>Objective 3 |
| **Connectivity.** Establish an interconnected, multimodal transportation system to serve centers and other significant locations. Promote a logical, direct, and connected street system through street spacing guidelines and district-specific street plans found in the Transportation System Plan and prioritize access to specific places by certain modes in accordance with policies 9.6 and 9.7. (Policy 9.47)<br>• 9.47.d Provide street connections with spacing of no more than 530 feet between connections except where prevented by barriers such as topography, railroads, freeways, or environmental constraints. Where streets must cross over protected water features, provide crossings at an average spacing of 800 to 1000 feet, unless exceptional habitat quality of length of crossing prevents a full street connection<br>• 9.47.e Provide bike and pedestrian connections at approximately 330 feet intervals on public easements or rights-of-way when full street connections are not possible, except where prevented by barriers s such as topography, railroads, freeways, or environmental constraints. Bike and pedestrian connections that cross | | X | X | | Implementation strategies for Objective 2 |

| | | | | | |
|---|---|---|---|---|---|
| protected water features should have an average spacing of no more than 530 feet, unless exceptional habitat quality or length of connection prevents a connection. | | | | | |
| **Repurposing street space:** Encourage repurposing street segments that are not critical for transportation connectivity to other community purposes. (CP Policy 9.15) | | | X | X | Objective 6 |
| **Community uses:** Allow community use of rights-of-way for purposes such as public gathering space, events, food production, or temporary festivals, as long as the community uses are integrated in ways that balance and minimize conflict with the designated through movement and access roles of rights-of-ways. (CP Policy 8.44) | | | X | X | Objective 6 |
| **Pedestrian amenities:** Encourage facilities that enhance pedestrian enjoyment, such as transit shelters, garbage containers, benches, etc. in the right of way. (CP Policy 8.45) | | | X | | Objective 6 |
| **Flexible design:** Allow flexibility in right-of-way design and development standards to appropriately reflect the pattern area and other relevant physical, community, and environmental contexts and local needs. (CP Policy 8.47) | | | X | | Objective 6 |
| **Pedestrian-oriented design:** Enhance the pedestrian experience throughout Portland through public and private development that creates accessible, safe, and attractive places for all those who walk and/or use wheelchairs or other mobility devices. (CP Policy 4.5) | X | X | X | | Objective 2<br>Objective 6 |
| **Alleys:** Encourage the continued use of alleys for parking access, while preserving pedestrian access. Expand the number of alley-facing accessory dwelling units. (CP Policy 4.8) | | | X | | Implementation strategy for Objective 2 |
| **Walkable scale:** Focus services and higher-density housing in the core of centers to support a critical mass of demand for commercial services and more walkable access for customers. (CP Policy 4.20) | | | X | | |
| **Street environment:** Encourage development in centers and corridors to include amenities that create a pedestrian-oriented environment and provide places for people to sit, spend time, and gather. (CP Policy 4.21) | | | X | | Objective 6 |
| **Design for pedestrian and bicycle access**: Provide accessible sidewalks, high-quality bicycle access, and frequent street connections and crossings in centers and corridors. (CP Policy 4.23) | X | X | X | | Objective 2<br>Objective 3 |

| | | | | | |
|---|---|---|---|---|---|
| **Inner Neighborhoods active transportation.** Use the extensive street, sidewalk, and bikeway system and multiple connections to the Central City as a key part of Portland's active transportation system. (Policy 3.91) | | | X | | Objective 2<br>Objective 3 |
| **Access to Transit.** Transit stations should be designed to accommodate a high level of safe multimodal access within a half-mile radius of the station. (Policy 6.6A) | | X | X | | Objective 2<br>Objective 5 |
| **Access to Transit.** Provide safe and convenient access for pedestrians and bicyclists to, across, and along Major Transit Priority Streets. Provide safe and accessible pedestrian crossings at all transit stops along Major Transit Priority Streets. (Policy 6.6B) | | X | X | | Objective 2<br>Objective 5 |
| **Access to Transit.** Provide safe and convenient pedestrian and bicycle access to transfer points and stops and along Transit Access Streets. Provide safe and accessible pedestrian crossings at all transit stops along Transit Access Streets. (Policy 6.6C) | | X | X | | Objective 2<br>Objective 5 |
| **Mode share goals and vehicle miles travelled (VMT) reduction:** Increase the share of trips made using active and low-carbon transportation modes. Reduce VMT to achieve targets set in the most current Climate Action Plan and Transportation System Plan, and meet or exceed Metro's mode share and VMT targets. (Policy 9.5) | | | | X | |
| **Design with nature:** Promote street and trail alignments and designs that respond to topography and natural features, when feasible, and protect streams, wildlife habitat, and native trees. (CP Policy 9.16) | | | | X | Objective 6 |
| **Pedestrian transportation:** Encourage walking as the most attractive mode of transportation for most short trips, within neighborhoods and to centers, corridors, and major destinations, and as a means for accessing transit. (CP Policy 9.17) | | | X | X | Objective 2<br>Objective 6 |
| **Trees in rights-of-way:** Integrate trees into public rights-of-way to support City canopy goals, transportation functions, and economic, social, and environmental objectives. (CP Policy 8.43) | | | X | X | Objective 6 |

# APPENDIX C:

## Public Survey Report

# PedPDX

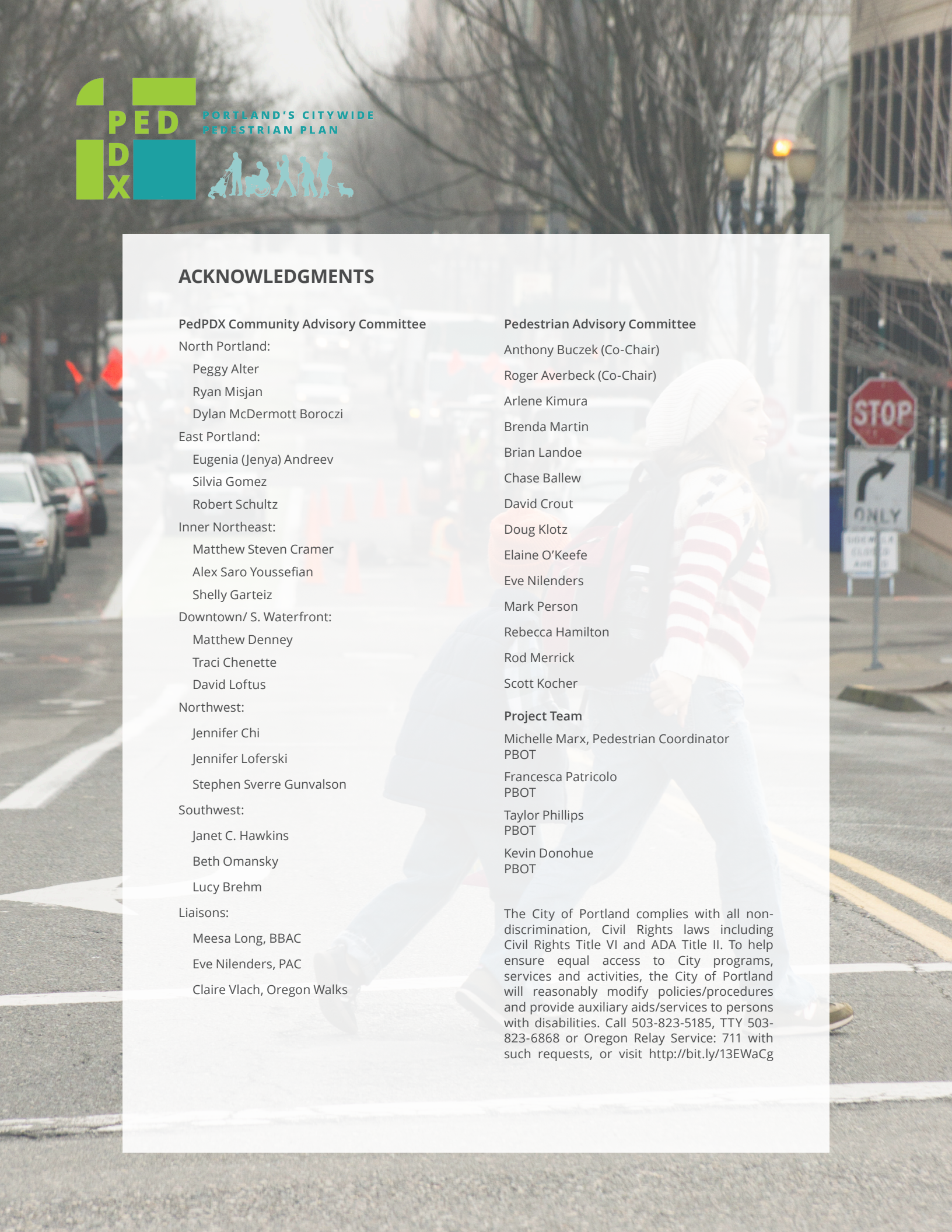
PORTLAND'S CITYWIDE PEDESTRIAN PLAN




PBOT
PORTLAND BUREAU OF TRANSPORTATION

NOVEMBER 22, 2017

## DRAFT WALKING PRIORITIES SURVEY REPORT




## ACKNOWLEDGMENTS

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- Ryan Misjan
- Dylan McDermott Boroczi

East Portland:

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- Silvia Gomez
- Robert Schultz

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- Alex Saro Youssefian
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- Matthew Denney
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Northwest:

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- Jennifer Loferski
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- Eve Nilenders, PAC
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Roger Averbeck (Co-Chair)

Arlene Kimura

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# Overview

## About PedPDX

PedPDX is Portland's citywide pedestrian plan. It will prioritize sidewalk and crossing improvements and other investments to make walking safer and more comfortable across the city. The plan will identify the key strategies and tools we will use to make Portland a truly great walking city.

PedPDX is an update of the 1998 Pedestrian Master Plan. Since 1998, the Pedestrian Master Plan has guided pedestrian-friendly design and policies in Portland, and has served as a model across the country. The 1998 Pedestrian Master Plan developed pedestrian policies and projects that have guided investment over the past 18 years.

However, there is more we can do to make Portland a great walking city. Despite consistent investment in the pedestrian network, significant gaps and deficiencies remain, and new policy questions have emerged. An incomplete pedestrian network limits the City's ability to absorb growth and meet the livability and access needs of residents, including safe walking access to public transit and essential services. The 1998 Pedestrian Master Plan has served inner Portland well, but has often struggled to provide adequate guidance for areas such as East Portland and Southwest Portland that present environmental challenges and right-of-way constraints.

PedPDX will reflect changes to pedestrian policy and design best practices that have emerged since the original Pedestrian Master Plan was adopted, including an emerging understanding of transportation equity and a Vision Zero approach to pedestrian safety. The updated plan will ensure that the City continues to lead the way in walkability, and will allow Portland to absorb growth in a sustainable way that encourages residents to walk, whether for commuting, shopping, going to school, or recreation.




*Online Survey Advertisement*

## The *Walking Priorities* Survey

A key piece of the PedPDX public involvement strategy is the community-wide survey asking Portlanders to tell us their priorities for making Portland a more walkable city. Community responses to the public survey will help the project team understand the types of improvements that are most important to help address barriers to walking in Portland, as well as the general locations where these improvements are most important to residents.

The project team will use this feedback to identify pedestrian-related needs and to develop a method for prioritizing pedestrian improvements across the city. Additionally, responses to these questions will be used to help develop implementing strategies and actions for improving walking conditions in Portland.

This survey identifying barriers and priorities for walking improvements is one of three major PedPDX outreach efforts. Additional public engagement, both in person and online, will occur throughout the course of the project.

# Distribution + Engagement

## Online Survey

The *Walking Priorities* survey was posted online for approximately 17 weeks, spanning the summer season from June 8, 2017 to October 2, 2017. It was available online and in paper form in English, Spanish, Chinese, Vietnamese, and Russian -the top languages spoken citywide.

Staff worked with Spanish, Chinese, Vietnamese, and Russian Community Engagement Liaisons (CELs), who helped advertise the online survey opportunity among these language-specific audiences, and gathered translated paper "hard-copy" survey responses.

The survey was advertised and distributed using social media outlets, earned online media, targeted print advertising, 1/4 sheet flyer handouts, direct community engagement, and email distribution. Additionally, staff worked directly with community organizations to help spread the word about the PedPDX *Walking Priorities* survey to their constituencies, and provided briefings to PBOT modal committees, neighborhood coalitions, local community groups and organizations throughout the city.

To incentivize participation in the survey, staff offered the chance to win a Fitbit Charge 2 as well as other prizes that included PedPDX t-shirts, walking tours donated by Slabtown Tours and Portland Walking Tours, water bottles, bumper stickers, umbrellas, pedometers, buttons, and pencils.

To kick-off PedPDX and the *Walking Priorities* survey, staff provided 100 tickets to "Friends of PedPDX" public volunteers to walk in Portland's Grand Floral Walk on June 10, 2017. Participant volunteers were given free PedPDX t-shirts to wear in the four-mile walk from the Memorial Coliseum to Downtown. As they walked, volunteers handed out PedPDX logoed flash light carabiners and 1/4 sheet flyers advertising the

*Walking Priorities* survey to hundreds of bystanders and encouraged them to take the online survey.

To increase public visibility and awareness of PedPDX, members of the PedPDX Community Advisory Committee (CAC), Pedestrian Advisory Committee, and PBOT Bureau and Budget Advisory Committee were also given PedPDX t-shirts, flashlight carabiners and 1/4 sheet flyers to help distribute to the public.

## Public Event Activity

In addition to soliciting online and paper survey responses, the project team, CAC members, and Friends of PedPDX public volunteers administered the survey questions in person at public events across Portland via an interactive exercise. The activity asked participants to rank walking barriers and investment priorities by placing strips of paper into each of eleven buckets, indicating which issues were most (1) and least (11) important to them.

To encourage Friends of PedPDX volunteers to assist with public event activities, those who filled shifts were given PedPDX t-shirts. To promote public participation in the activity, participants were given PedPDX logoed flashlight carabiners.

The in-person outreach events included:

- 9 Safe Routes to School open houses
- 2 Fixing Our Streets open houses,
- 3 Sunday Parkways events
- Rosewood National Night Out
- Multnomah Days
- Division Midway Festival of Nations

## Youth Engagement Activity

In an effort to reach young Portlanders, staff facilitated an engagement activity with 22 high school students participating in the City of Portland Teen Force program. As a physical manifestation of the online survey, staff asked students to stand next to signs numbered 1 through 6 to indicate their biggest barriers to walking, and the types of places that are most important to improve. After each prompt, students engaged in a brief discussion about why some of the students gave the responses they did. These responses were incorporated into the *Walking Priorities* survey analysis.




*Above: Members of the PedPDX Community Advisory Committee and other "Friends of PedPDX" participated in the Grand Floral Walk in June 2017, handing out PedPDX flyers advertising the walking priorities survey to hundreds of bystanders.*

# Who We Heard From

## First Impressions

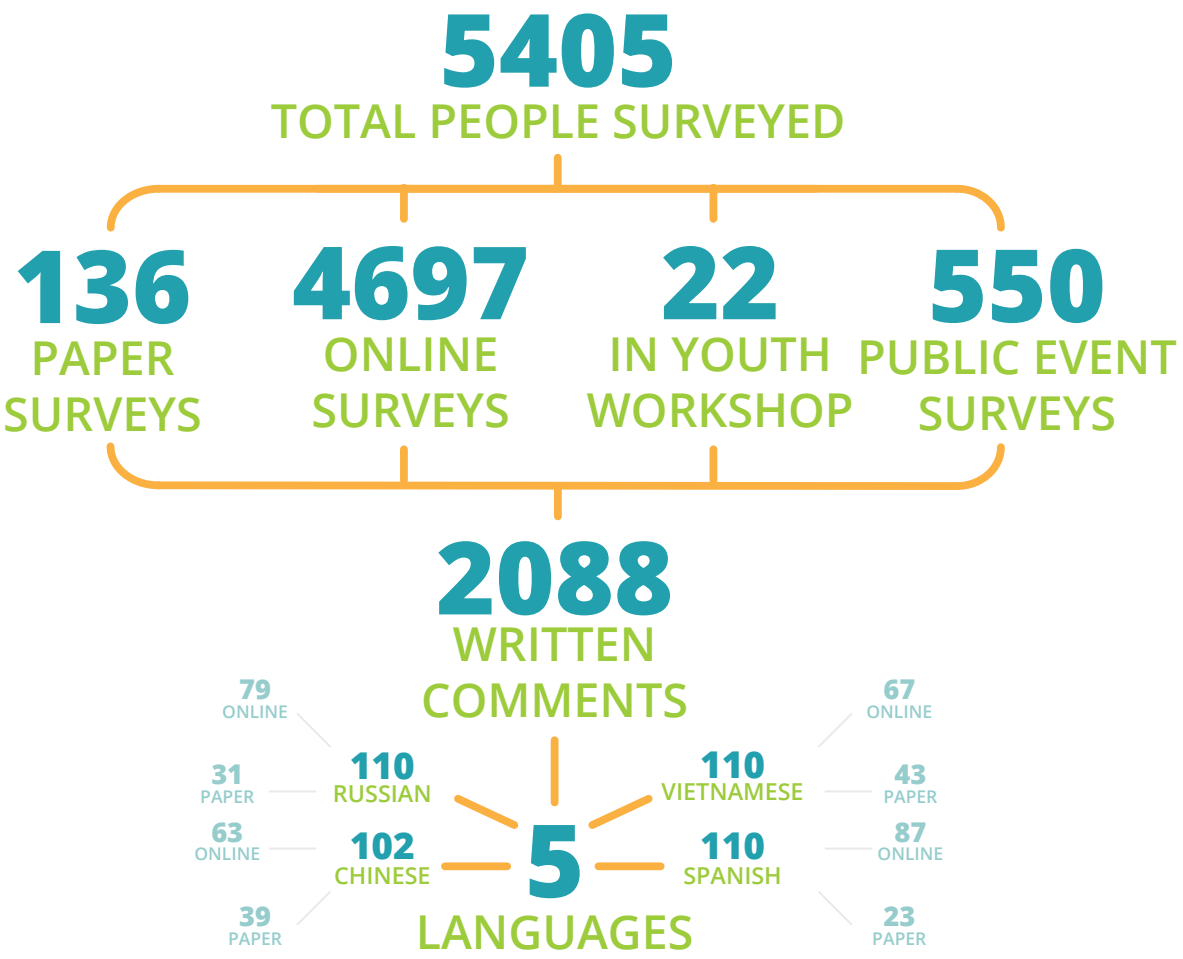
The online and hard copy surveys elicited 4,855 total responses in 5 languages, including 2,088 comments to open-ended questions. We received 432 non-English language surveys between online and hard copies combined. In addition to the online and paper surveys, staff held an engagement activity with 22 youth and surveyed approximately 550 public event participants.



*Above: A young girl participating in the interactive survey activity at Sunday Parkways.*

To evaluate whether the project team heard from a representative sample of Portlanders, we compared survey responses to the racial and geographic distribution of the city's population as a whole. Staff used this analysis on a rolling basis throughout the survey period to help drive public outreach, targeting outreach towards underrepresented respondent groups. Specifically, staff worked with community organizations to reach out to people of color and residents of East Portland to help garner as many survey responses from these underrepresented groups as possible. Staff shared mid-course demographic and geographic data with the PedPDX CAC and acted on their feedback about strategic groups and organizations to reach out to in order to help ensure the survey represents the full spectrum of Portland's residents.

**Targeted outreach efforts resulted in increased survey response numbers from people of color and East Portland residents.**








*Above: PedPDX CAC Members doing outreach at Sunday Parkways*

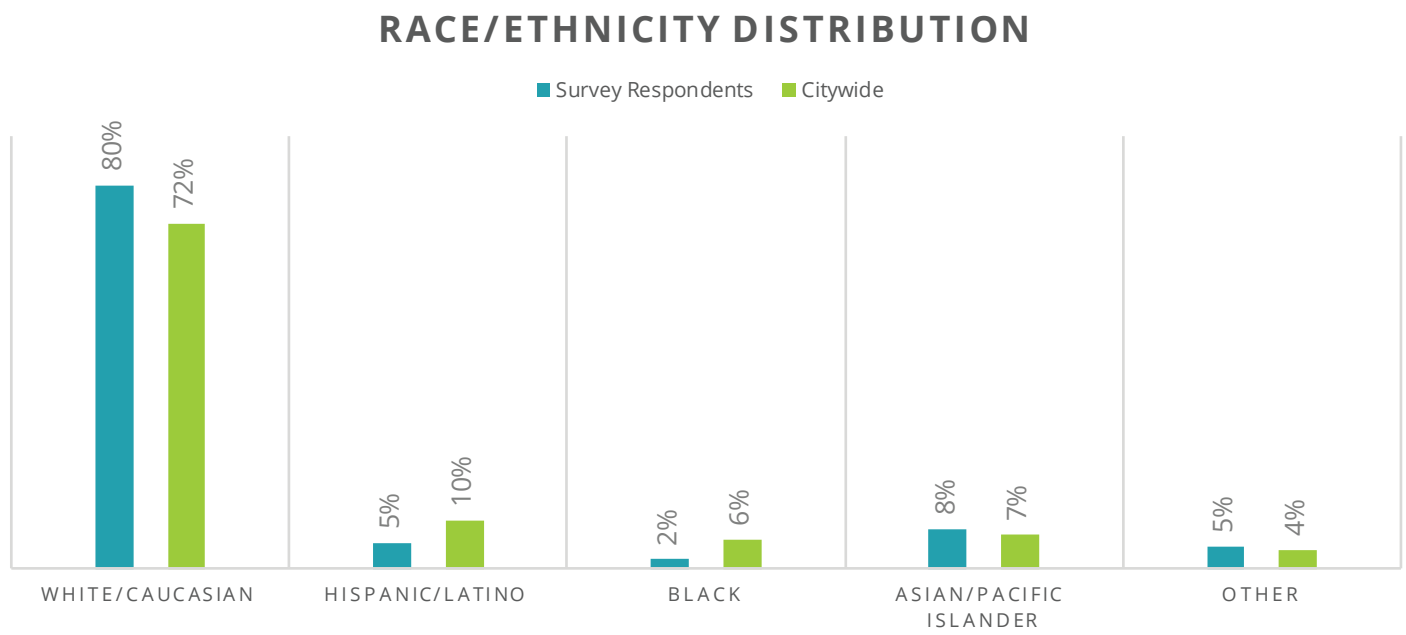



*Figure 1: Race/Ethnicity Distribution of Survey Respondents (figure is described in text below)*

## Race/Ethnicity Distribution

Figure 1 illustrates the total number of survey responses received by race, compared to the total city population (per the 2011-2015 American Community Survey). The figure shows that we heard from a slightly higher number of white Portlanders (80% of survey responses) than their proportion of the city's population (72%). The number of survey responses received from Asian/Pacific Islanders (8% of respondents) and "Other" races (5% of respondents) generally matches these groups' proportion of the city's population (7% and 4%, respectively). The total number of responses received from Hispanic/ Latinos (5% of respondents) and from Black/ African American Portlanders (2% of respondents) was lower than their overall proportion of the City's population (10% and 6%, respectively).

In recognition of the low response rate from Black/ African American Portlanders in the *Walking Priorities* survey, the project team is organizing *Walking While Black* focus groups to better listen to and understand the walking priorities, barriers to walking, and other concerns about walking, directly from Black and African American community members. These focus groups will be facilitated by Black and African American public involvement staff at PBOT who are interested in this subject, and connected with Portland's Black and African American communities through Africa House, the Urban League of Portland, and other organizations that focus on supporting Black and African American Portlanders.

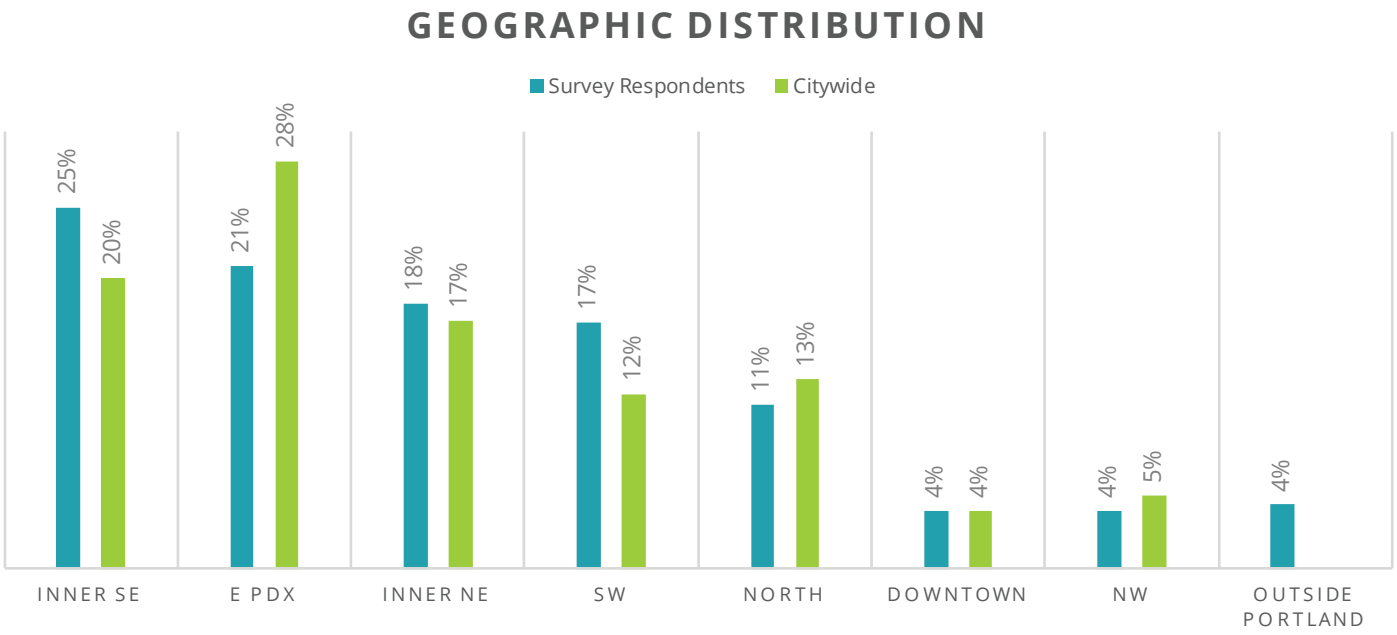



*Figure 2: Geographic Distribution of Survey Respondents (figure is described in text below)*

## Geographic Distribution

Figure 2 illustrates the total number of survey responses received by district, as compared to the city's overall population distribution. The figure illustrates high survey response rates from Southwest Portland (17% of survey responses) and inner Southeast Portland (25% of survey responses) compared to the population of these districts (12% and 20% of the citywide population, respectively).

The figure also illustrates a need for even more focused outreach in East Portland moving forward. While East Portland residents make up 28% of the city's population, only 21% of survey responses were from East Portland residents (though targeted outreach efforts throughout the course of the survey period increased the East Portland response rate by approximately seven percentage points). Survey response rates for other districts were generally in line with their proportion of the population.

The survey also asked respondents if they live with a disability, to which 12% of respondents reported some form of disability.



*Above: People participating in the Grand Floral Walk*

# What We Heard



*Above: Teen youth participate in the youth walking priorities engagement activity, standing next to easels with numbered priorities posted on them.*

## Question #1: Barriers to Walking

The PedPDX Walking Priorities survey asked two main questions about walking in Portland. The first question asked "what makes walking difficult in Portland?" and prompted respondents to rate a variety of potential barriers from one (1) to six (6), with one (1) indicating "not a problem" and six (6) indicating an "absolute barrier to walking."

Citywide responses to question one are tabulated in Figure 3, presented by weighted average for each answer option (with a score value ranging from one to six).

**Citywide, the barrier to walking that received the highest ranking was "Sidewalks/walking paths missing on busy streets"** (4.66 weighted average).

This was followed by "Not enough safe places to cross busy streets" (4.46), "People driving too fast on residential streets (4.44), and "Drivers not stopping for pedestrians crossing the street" (4.44).

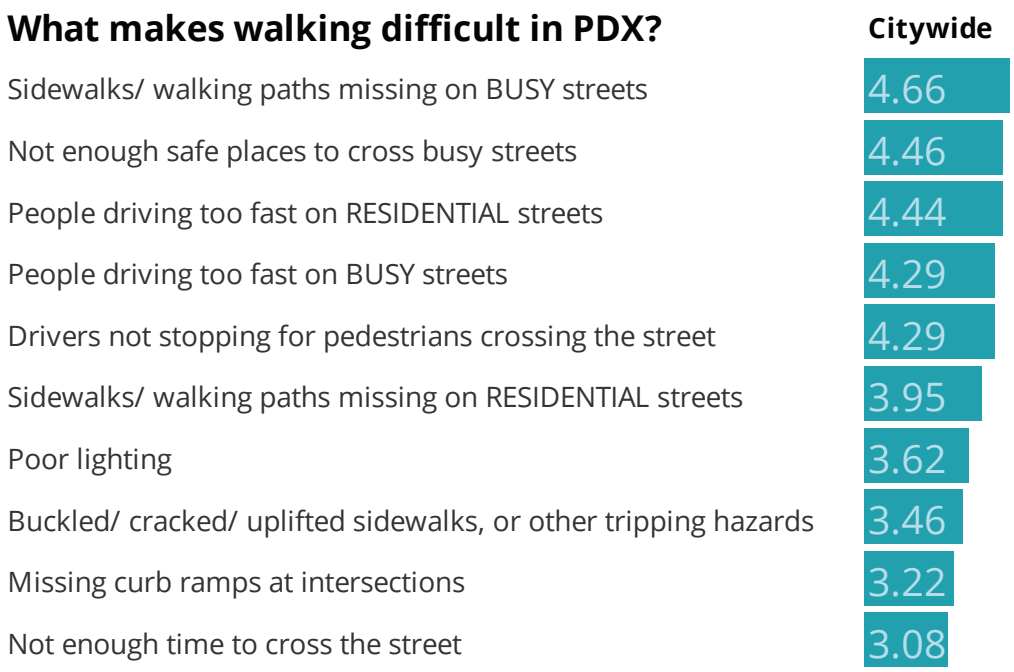



*Figure 3: Barriers to Walking - Citywide Average Point Values (from 1-6). The figure shows that the top barriers to walking identified by survey respondents citywide are "Missing sidewalks on busy streets," "Not enough safe places to cross busy streets," "People driving too fast on residential streets," and "People driving too fast on busy streets."*

In addition to tallying survey responses citywide, the project team also analyzed survey responses according to district, in recognition of the variety of walking barriers experienced across various neighborhoods of Portland. Figure 4 (page 12) illustrates the top three barriers to walking identified by respondents from Southwest Portland, Northwest, Downtown/ South Waterfront, North Portland, Inner Northeast, Inner Southeast, and East Portland.

**Residents from almost every district of the city identified the same top three issues**, though at times in somewhat different orders:

- Sidewalks/walking paths missing on busy streets
- Not enough safe places to cross busy streets
- People driving too fast on residential streets (though residents of Downtown/South Waterfront and Northwest identified "People driving too fast on busy streets" as a barrier instead)

These responses are consistent with citywide responses. The exception to this pattern is Downtown/South Waterfront residents, who did not identify missing sidewalks or crossings as a barrier, but whose top barriers focused on behavior rather than infrastructure. Staff believe this is likely due to the quality of the infrastructure in place in these areas.

For the full table of responses by area of residence, see appendix A.

# WHAT MAKES WALKING DIFFICULT IN PORTLAND?

TOP 3 ANSWERS BY GEOGRAPHY

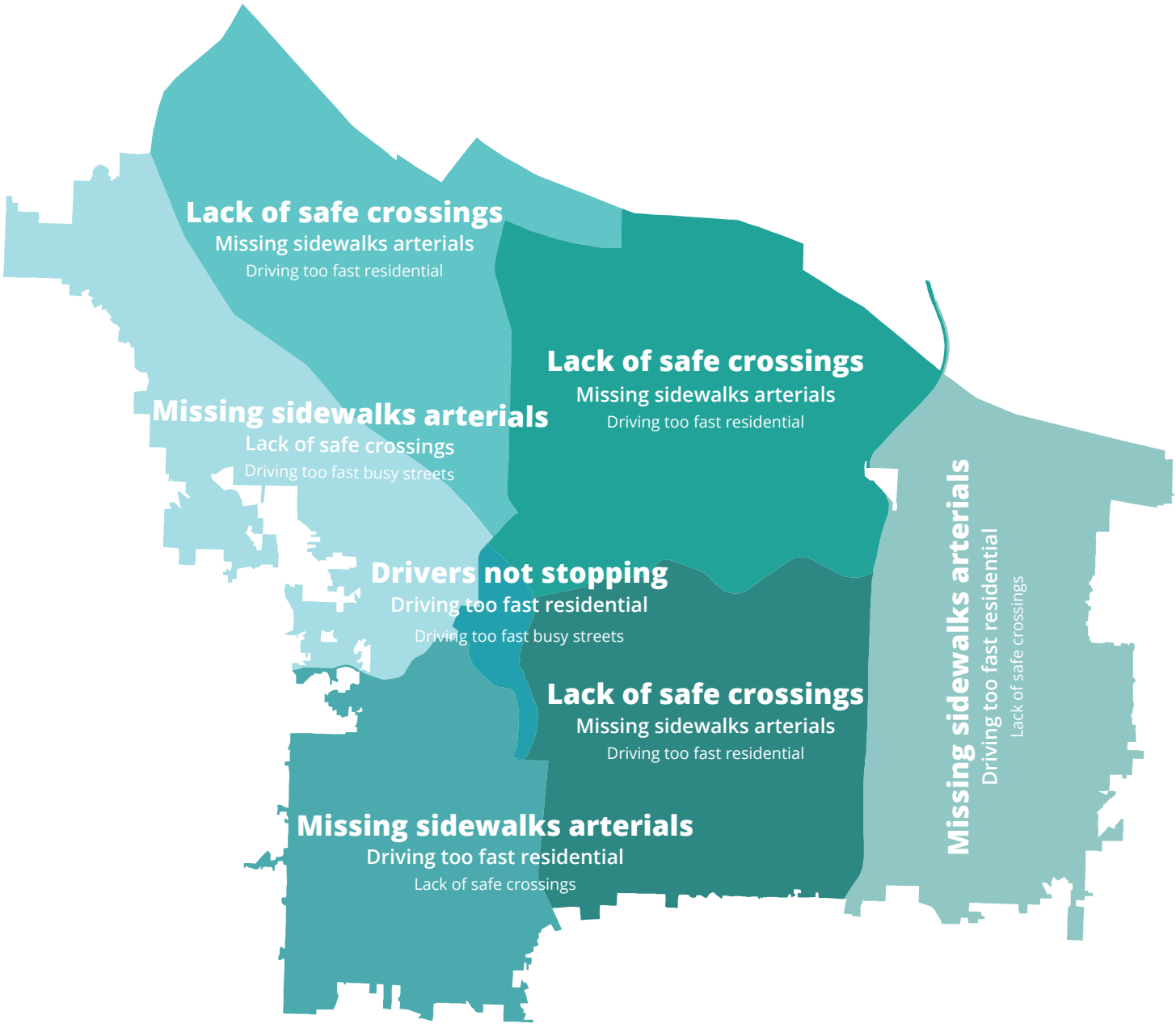



*Figure 4: Top 3 Barriers to Walking, by Geography (figure and responses described on page 11)*

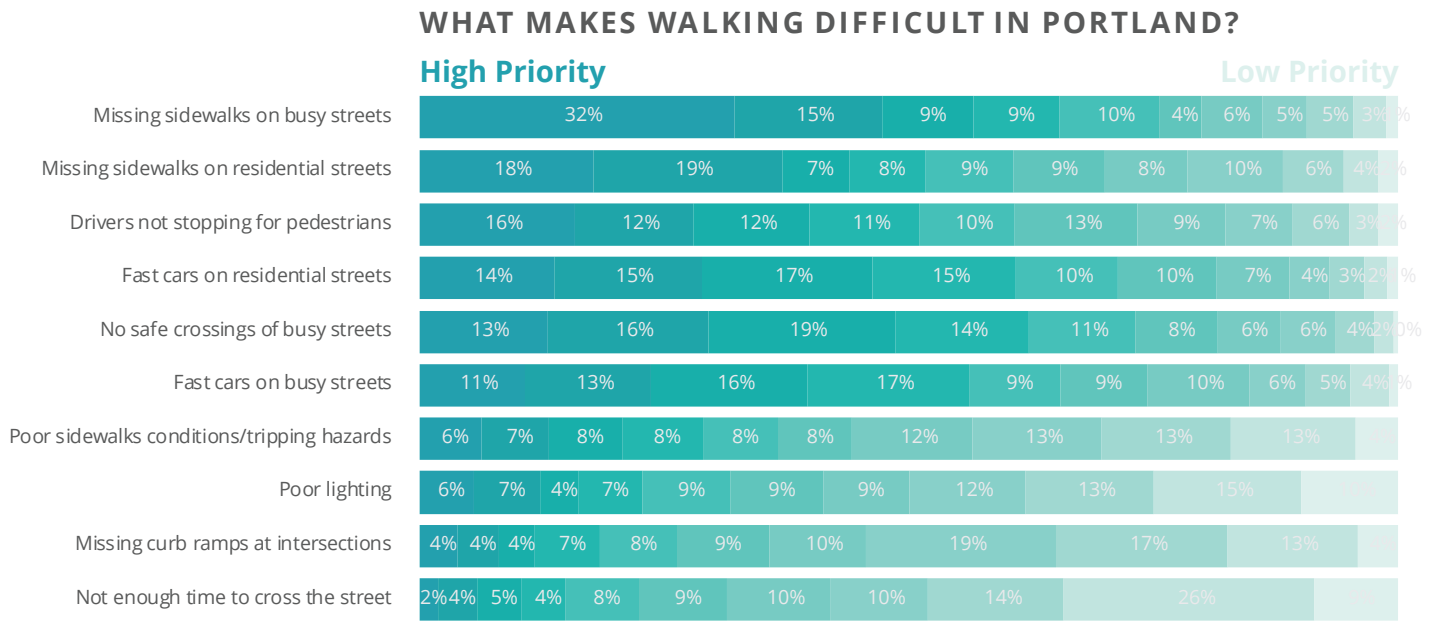



*Figure 5: Barriers to Walking - Open House Exercise Results. The figure shows that the top three barriers to walking identified by open house participants are "Missing sidewalks on busy streets," "Missing sidewalks on residential streets," and "Drivers not stopping for pedestrians."*

In addition to the digital and paper surveys, the project team also asked attendees at various public events to engage in an interactive prioritization exercise, ranking these same answer options to help identify important barriers to walking. Participants were asked to rank each barrier from first priority to eleventh priority. Staff received a total of 550 responses to this interactive exercise. The results are shown in Figure 5, above. The answer options are presented in order of rank, with those barriers receiving the most number of first priority votes at the top.

**The walking barrier that received the most high priority votes was "missing sidewalks on busy streets,"** followed by "missing sidewalks on residential streets," "drivers not stopping for pedestrians," and "fast cars on residential streets." While the most important priority identified in the interactive exercise reflects the feedback heard from the citywide digital and paper surveys, there is some variation in these responses, particularly in the identification of missing sidewalks on residential streets as a priority barrier. This may be explained by the format of the exercise. A large proportion of the interactive surveys were received from participants attending Safe Routes to School open houses, for whom protected walking routes on residential streets may be a greater priority than for survey respondents as a whole.

Responses to this question about barriers to walking helps the PedPDX project team understand Portlanders' priorities regarding the types of walking improvements that are most important. PedPDX will incorporate this feedback into the plan's prioritization process and toolbox.




*Figure 6: Places to Improve - Citywide Average Point Values (from 1-6). The figure shows that the top priorities identified by respondents citywide are "Areas that serve people who need to rely on walking the most," "Streets where people walking have been killed or injured," and "Streets connecting people to transit/bus stops."*

## Question #2: Priority Locations for Walking Improvements

Question 2 asked, "which kinds of places are the most important to improve for walking in Portland?" Respondents were asked to rate various places from one (1) to six (6) again, with one (1) indicating "not very important" and six (6), indicating "extremely important." Citywide responses to question 2 are shown in Figure 6, in order of point value.

**Answers to question 2 indicated an overall preference for improving areas that serve people who need to rely on walking the most** (5.11 average point value), streets where pedestrians have been killed or injured (5.08), and transit connections (5.06).

Figure 7 illustrates the top three priorities for improvement identified by area of residence. **Residents from almost every district identified the same top three issues**, though at times in somewhat different orders, which is consistent with citywide responses:

- Places where people rely on walking
- Streets where people walking have been killed or injured
- Transit connections

For Downtown/South Waterfront and Northwest Portland, connections to transit were a more highly rated option than they were in the rest of the city, likely due to higher density of transit lines in the downtown area. Another statistic of note was SW Portland's preference for better school connections, compared to the rest of the city.

For the full table of responses by area of residence, see appendix A.

# WHAT KINDS OF PLACES ARE MOST IMPORTANT TO IMPROVE FOR WALKING IN PORTLAND?

TOP 3 ANSWERS BY GEOGRAPHY




*Figure 7: Places to Improve by Geography (figure and responses described on page 14)*

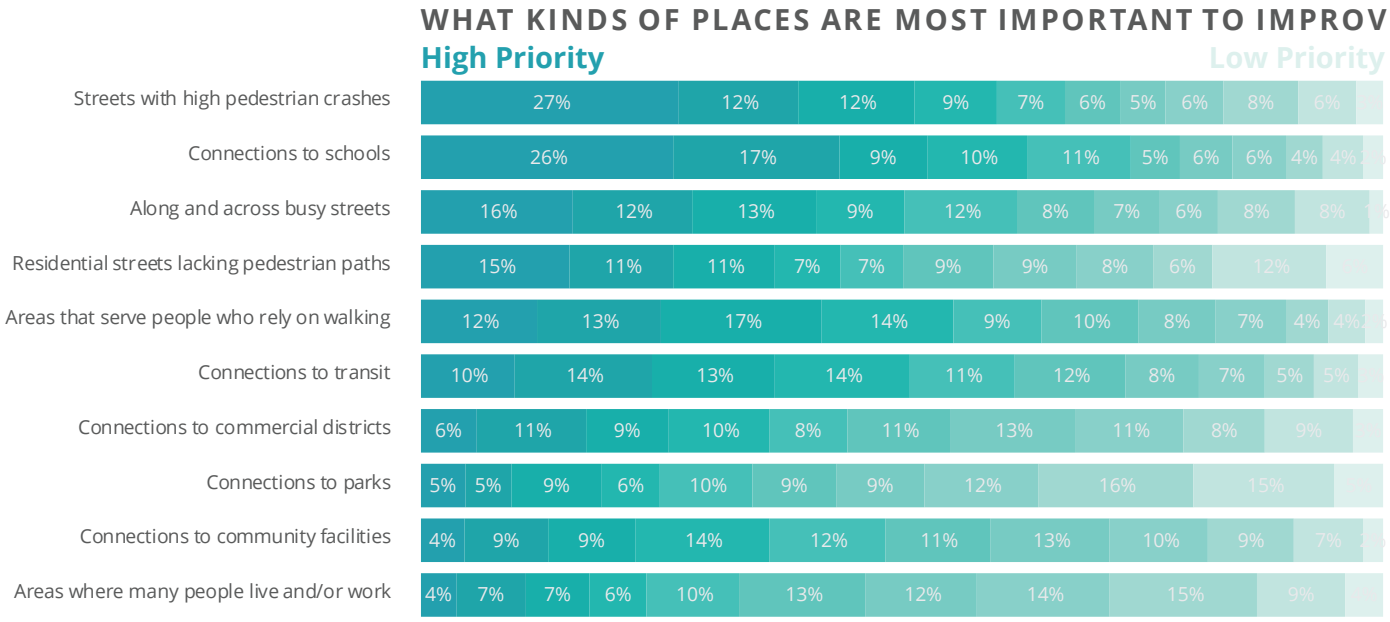



*Figure 8: Places to Improve - Open House Exercise Results. The figure shows that the top three priority locations identified by open house participants are "Streets with high pedestrian crashes," "Connections to schools," and "Along and across busy streets."*

Question 2 was also asked of public event attendees, in the same format as previously described. Results of this exercise are shown in Figure 8, above. The answer options are presented in order of rank, with those barriers receiving the most number of first priority votes at the top.

**The highest priorities from the interactive survey exercise were "streets with high pedestrian crashes," "connections to schools," and "along and across busy streets."** It is again important to note that most of the public events where this survey was conducted were Safe Routes to School open houses, which may explain the higher priority on school connections and routes along busy streets in this exercise compared to the online survey results.

Responses to the question about types of places Portlanders would like to see improved helps the PedPDX project team understand Portlanders' priorities regarding the types of locations where walking improvements are most important. PedPDX will incorporate this feedback into the plan's prioritization process and toolbox.

## Open-Ended Questions

The survey also included two open-ended questions, asking respondents if 1) there was anything else that was a barrier to walking and 2) if there were any other places that were important to improve for walking in Portland. Staff received 2,088 written comments in response to these two questions.

Themes that emerged from the open-ended question, "what makes walking difficult in Portland?" included, in no particular order;

- Lack of sidewalks
- Homelessness
- Conflicts between cyclists and pedestrians
- People driving unsafely/speeding
- Poor drainage causing flooding
- ADA non-compliance
- Construction projects not re-routing pedestrian pathways
- Sidewalks impeded with vegetation and/or garbage
- Equity concerns
- Transit access
- Pedestrian conflict with turning vehicles at intersections
- Poor lighting
- Need for wider sidewalks
- Signal timing conflict causing excessive wait times for pedestrians
- Lack of destinations within walking distance

Similar themes emerged in the open ended responses to the question, "which kinds of places are the most important to improve for walking in Portland. These responses included themes such as;

- Places without sidewalks (residential and busy streets)
- Unimproved roads
- Places where bikes and pedestrians share space
- East Portland (various locations)
- SW Portland
- At rail crossings
- Near medical facilities
- Streets with higher speed limits
- Connections to industrial areas
- Near on/off ramps and freeway crossings
- Places where homeless population makes people feel unsafe
- Connections to grocery stores

# Next Steps



*Above: A pedestrian crosses the street at a newly painted crosswalk at NE Burnside.*

The results of this survey will be used to help identify walking needs and priorities, and will be used to inform the Plan's prioritization methodology and recommended strategies. Additional public outreach demonstrating how this feedback was applied will be conducted in early 2018.

To be included on the project email list and keep up with the latest PedPDX news, please visit www.pedpdx.com.

# Appendix A: Survey Results by Geography



## What makes walking difficult in PDX?

| | Citywide | Downtown | East Portland | Inner NE | Inner SE | North | NW West of I-405 | SW Outside of Downtown | Outside of the City of Portland |
|---|---|---|---|---|---|---|---|---|---|
| Sidewalks/ walking paths missing on BUSY streets | 4.66 | 4.40 | 4.78 | 4.53 | 4.62 | 4.53 | 4.34 | 5.24 | 4.36 |
| Not enough safe places to cross busy streets | 4.46 | 4.37 | 4.41 | 4.56 | 4.75 | 4.60 | 4.13 | 4.23 | 4.28 |
| People driving too fast on RESIDENTIAL streets | 4.44 | 4.58 | 4.53 | 4.47 | 4.55 | 4.46 | 4.09 | 4.27 | 4.28 |
| People driving too fast on BUSY streets | 4.29 | 4.58 | 4.25 | 4.28 | 4.46 | 4.36 | 4.09 | 4.17 | 4.19 |
| Drivers not stopping for pedestrians crossing the street | 4.29 | 4.66 | 4.23 | 4.36 | 4.53 | 4.40 | 3.99 | 3.99 | 4.12 |
| Sidewalks/ walking paths missing on RESIDENTIAL streets | 3.95 | 3.73 | 4.36 | 3.75 | 3.89 | 3.67 | 3.45 | 4.19 | 3.88 |
| Poor lighting | 3.62 | 3.61 | 3.92 | 3.58 | 3.63 | 3.54 | 3.37 | 3.38 | 3.85 |
| Buckled/ cracked/ uplifted sidewalks, or other tripping hazards | 3.46 | 3.74 | 3.43 | 3.46 | 3.58 | 3.56 | 3.08 | 3.12 | 3.63 |
| Missing curb ramps at intersections | 3.22 | 3.14 | 3.22 | 3.32 | 3.41 | 3.29 | 2.95 | 2.93 | 3.24 |
| Not enough time to cross the street | 3.08 | 3.42 | 3.03 | 3.15 | 3.20 | 3.22 | 2.64 | 2.83 | 3.21 |

*Barriers to Walking - Average Point Value (from 1-6)*

## Which kinds of places are the most important to improve for walking in Portland?

| | Citywide | Downtown | East Portland | Inner NE | Inner SE | North | NW West of I-405 | SW Outside of Downtown | Outside of the City of Portland |
|---|---|---|---|---|---|---|---|---|---|
| Areas that serve people who need to rely on walking the most | 5.11 | 5.14 | 5.10 | 5.17 | 5.21 | 5.11 | 5.05 | 4.93 | 5.14 |
| Streets where people walking have been killed or injured | 5.08 | 5.12 | 5.00 | 5.11 | 5.15 | 5.10 | 5.01 | 5.03 | 5.13 |
| Streets connecting people to transit/ bus stops | 5.06 | 5.19 | 4.91 | 5.00 | 5.14 | 5.05 | 5.13 | 5.17 | 4.96 |
| Along and across busy streets | 4.99 | 5.08 | 4.90 | 5.00 | 5.00 | 5.02 | 4.84 | 5.16 | 4.84 |
| Streets connecting families and children to schools | 4.99 | 4.73 | 4.91 | 4.89 | 5.06 | 4.95 | 4.98 | 5.20 | 4.89 |
| Streets connecting people to neighborhood commercial districts | 4.73 | 4.84 | 4.57 | 4.70 | 4.79 | 4.72 | 4.78 | 4.84 | 4.70 |
| Streets connecting people to community facilities like libraries | 4.66 | 4.77 | 4.56 | 4.59 | 4.72 | 4.65 | 4.62 | 4.71 | 4.71 |
| Areas where the most people live and/ or work | 4.55 | 5.03 | 4.36 | 4.58 | 4.62 | 4.54 | 4.72 | 4.41 | 4.64 |
| Residential streets lacking sidewalks or walking paths | 4.54 | 4.48 | 4.75 | 4.49 | 4.44 | 4.37 | 4.39 | 4.57 | 4.69 |
| Streets connecting people to parks | 4.52 | 4.61 | 4.45 | 4.45 | 4.56 | 4.51 | 4.49 | 4.55 | 4.63 |

*Places to Improve - Average Point Value (from 1-6)*

# Appendix B: Survey Questions



## PedPDX.com/survey

**Tell us your priorities for making Portland a more walkable city!**

PedPDX will prioritize sidewalks, crossing improvements, and other investments that will make walking safer, more comfortable, and more accessible in Portland. We want to ensure that we are directing funding to locations with the greatest needs first. To help with this, **we need your input!** Your response to this survey will help us understand the types of walking improvements that are **most important** and the general locations where they are needed most.

The survey should take no more than 3 minutes. At the end, you will have an opportunity to enter for a chance to win one of several prizes, including a Fitbit Charge 2!

**Question 1: What makes walking difficult in Portland?**

Please rank each of the following **CONDITIONS** that can make it difficult or unpleasant for people to walk. Please try to think of the city as a whole in your response.

### Poor lighting

1 = Not a problem  6 = Absolute barrier to walking

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

### Sidewalks/ walking paths missing on BUSY streets

1 = Not a problem  6 = Absolute barrier to walking

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Sidewalks/ walking paths missing on RESIDENTIAL streets

1 = Not a problem  6 = Absolute barrier to walking

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## People driving too fast on BUSY streets

1 = Not a problem  6 = Absolute barrier to walking

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## People driving too fast on RESIDENTIAL street

1 = Not a problem  6 = Absolute barrier to walking

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Drivers not stopping for pedestrians crossing the street

1 = Not a problem  6 = Absolute barrier to walking

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Not enough safe places to cross busy streets

1 = Not a problem  6 = Absolute barrier to walking

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Missing curb ramps at intersections

1 = Not a problem  6 = Absolute barrier to walking

| ○ | ○ | ○ | ○ | ○ | ○ |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

## Buckled/ cracked/ uplifted sidewalks, or other tripping hazards

1 = Not a problem  6 = Absolute barrier to walking

| ○ | ○ | ○ | ○ | ○ | ○ |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

## Not enough time to cross the street

1 = Not a problem  6 = Absolute barrier to walking

| ○ | ○ | ○ | ○ | ○ | ○ |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

## Optional

Did we miss a barrier? Please write-in another type of barrier to walking and then rank it: _____.

Please rank your write-in barrier from above or just skip this if you left it blank.

1 = Not a problem  6 = Absolute barrier to walking

| ○ | ○ | ○ | ○ | ○ | ○ |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |

**Question 2: Which kinds of places are the most important to improve for walking in Portland?**

Please rank how important each of the following **LOCATIONS** are for walking improvements. Try to think of the city as a whole in your response.

### Streets connecting families and children to schools

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

### Streets connecting people to transit/ bus stops

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

### Areas that serve people who need to rely on walking the most (for example, low-income and transit-dependent residents)

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

### Streets where people walking have been killed or injured

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

### Streets connecting people to neighborhood commercial districts

## (neighborhood shops and services)

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Areas where the most people live and/ or work

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Streets connecting people to parks

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Streets connecting people to libraries, community centers, and other community facilities

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Along and across busy streets

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Residential streets lacking sidewalks or walking paths

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

## Optional

Did we miss a type of location? Please write-in another type of location to walking and then rank it: _____.

Please rank your write-in location from above or just skip this if you left it blank.

1 = Not very important  6 = Extremely important

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ |

**In which area of the city do you live?**

- ○ North Portland
- ○ East Portland (E of 82nd)
- ○ Inner NE (W of 82nd)
- ○ Downtown/ S. Waterfront/ Pearl Dist./ PSU
- ○ NW (W of I-405)
- ○ SW (Outside of Downtown/ S. Waterfront/ PSU)
- ○ Inner SE (W of 82nd)
- ○ I live outside the City of Portland

**In which area of the city do you work or go to school?**

- ○ North Portland
- ○ East Portland (E of 82nd)
- ○ Inner NE (W of 82nd)
- ○ Downtown/ S. Waterfront/ Pearl Dist./ PSU
- ○ NW (W of I-405)
- ○ SW (Outside of Downtown/ S. Waterfront/ PSU)
- ○ Inner SE (W of 82nd)
- ○ I work or go to school outside the City of Portland
- ○ I do not work or go to school

**Optional: Tell us about you**

The following demographic questions are optional and help our planning team to continually aim for more balanced and diverse involvement in our planning processes. By answering the questions, you are helping us to advance social and racial equity and inclusion. We will be able to monitor these statistics and determine whether we're hearing from a diverse representation of Portlanders and then make adjustments in our outreach and engagement as-needed. Thank you for your help.

**What is your age?**

- ○ under 18
- ○ 18-24
- ○ 25-34
- ○ 35-44
- ○ 45-54
- ○ 55-64
- ○ 65 or more

**What is your gender?**

- ○ Female
- ○ Male
- ○ Both/ transgender/ other/ none

**What is your highest level of education?**

- ○ High school degree or less
- ○ Some college/ technical/ community college/ 2-year degree
- ○ College degree/ 4-year degree
- ○ Post graduate

**What is your race or ethnicity? Please select all that apply.**

- ☐ African
- ☐ American Indian/ Native American/ Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ Black/ African American
- ☐ Hispanic/ Latino
- ☐ Slavic
- ☐ White/ Caucasian
- ☐ Middle Eastern
- ☐ Other (please specify)

  _____.

**Do you live with a disability? Please select all that apply.**

- ☐ No
- ☐ Yes, hearing-related
- ☐ Yes, vision-related
- ☐ Yes, mobility-related
- ☐ Yes, cognitively or intellectually-related
- ☐ Yes, other (please specify)

  _____.

**THANK YOU: Enter for the chance to win prizes!**

Thank you for taking the time to help us shape PedPDX to make Portland a truly great walking city.

# APPENDIX D:

## “Walking While Black” Focus Group Report

# PedPDX

## PBOT WALKING WHILE BLACK FOCUS GROUP REPORT

*BLACK COMMUNITY INPUT ON PEDPDX AND RECOMMENDATIONS FOR TRANSPORTATION POLICY AND INVESTMENTS*



PBOT
PORTLAND BUREAU OF TRANSPORTATION

OCTOBER 2018
WALKING WHILE BLACK FOCUS GROUP REPORT

PORTLAND'S CITYWIDE PEDESTRIAN PLAN

## ACKNOWLEDGEMENTS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Black Parent Initiative

Immigrant and Refugee Community Organization (IRCO) Africa House

June Key Delta Community Center (owned by Portland Alumnae Chapter, Delta Sigma Theta Sorority, Inc.)


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# Executive Summary

In 2017 the Portland Bureau of Transportation (PBOT) launched a community-informed process to update PedPDX, Portland's Citywide Pedestrian Plan. PedPDX will prioritize sidewalk and crossing improvements and other investments to make walking safer and more comfortable across the city. A key element of the early PedPDX public involvement strategy included a survey asking Portlanders to tell PBOT their priorities for making Portland a more walkable city. The PedPDX survey distribution and engagement strategies focused on online survey, language-based engagement, public events and youth engagement activities.

Initial demographic analysis revealed challenges garnering survey responses from communities of color, and in particular, Black (African American African immigrant and/or of African decent) communities. As a result, PBOT hosted two focus groups to more intentionally elevate the voice of Black Portlanders in PedPDX. Facilitators provided a space for Black Portlanders to speak candidly about their Walking While Black experience in Portland.

Based on the themes of the focus group discussions, follow-up conversations and feedback provided during other PBOT outreach and engagement efforts in the Black community, the following general recommendations are being put forward to address the input and concerns that were elevated:

1. **Ensure that PedPDX investments and strategies address the infrastructure concerns raised by Black Portlanders**
2. **Strengthen Black community partnerships + leadership development opportunities**
3. **Further research focused on understanding the Black experience in Portland**
4. **Collaborate with City and regional partners to address hate and racially-motivated behavior as a transportation issue**
5. **Develop tools that evaluate and address community impacts, promote community benefits and mitigate unintended outcomes**



The following report discusses PedPDX and the Walking While Black focus group findings in more detail, including:

- I. Introduction: About PedPDX and Early Engagement Results
- II. Background: Resilience Despite a Tumultuous History
- III. Methodology: Empowering Black Voices in PedPDX
- IV. Registrant Demographics: Diversity Within the Black Experience
- V. Focus Group Findings Part I: Priorities Survey
- VI. Focus Group Findings Part II: Insights Into The Black Pedestrian Experience
- VII. Moving Forward: Recommendations for PBOT Policy, Initiatives and Investments

This report will be added as an appendix to PedPDX , which will be presented to and adopted by City Council.

# Introduction: About PedPDX and Early Engagement Results

PedPDX Mission Statement: Through PedPDX, the City of Portland affirms walking as a fundamental human right and the most fundamental means of transportation. PedPDX will ensure that walking is safe, accessible and attractive experience for everyone in Portland by centering pedestrians at the forefront of City policy, investments and design.

PedPDX envisions Portland as a great walking city for all and includes the following goals:

- **Equitable + Inclusive:** Make Portland walkable and accessible for all, no matter who you are or where you live.
- **Safe + Secure**: Make walking in Portland safe and secure for everyone.
- **Comfortable + Inviting**: Provide a comfortable, inviting, and connected pedestrian network that supports walkable neighborhoods and strengthens community.
- **Healthy People + Environment**: Increase walking for transportation and recreation in Portland as a means of achieving improved health outcomes for all people and for the environment.

The Plan will identify the key strategies and tools the City will use to make Portland a great walking city for all. A key piece of the PedPDX public involvement strategy was a community-wide survey asking Portlanders to share their priorities for making Portland a more walkable city.

PedPDX survey distribution and engagement strategies focused on public events, language-based engagement and youth engagement activities. There were 5,405 total participants surveyed, including 136 paper surveys, 4,697 online surveys, 22 youth in a workshop and 550 participants at public events. Surveys were provided in five different languages: English, Russian, Vietnamese, Chinese and Spanish.



*Above: A pedestrian crosses the street at a newly painted crosswalk at NE Burnside.*

Survey responses revealed the challenges of garnering responses from communities of color, and in particular, the Black, African American and African communities.

Out of the 5,405 total survey respondents, 2% of total respondents identified as Black (African American, African immigrant or of African decent), while 80% of survey respondents identified as White; 8% identified as Asian/Pacific Islander; and 5% identified as Hispanic/Latino.

The Black community is currently 5.7% of Portland's overall population. To address the gap in responses from this population, PBOT staff worked with community partners from the Portland African American Leadership Forum (PAALF), Black Parent Initiative (BPI) and Immigrant and Refugee Community Organization (IRCO) Africa House to host two focus groups to secure more input from the Black community and to better understand how their walking experience may be different because of their racial and ethnic identities.

To learn more about citywide survey responses, review the Draft Walking Priorities Survey Report online at www.portlandoregon.gov/transportation/pedpdx.

# Background: Resilience Despite a Tumultuous History

The history of racism in Portland has been cumulative and deep . Over many generations, the Black community has been subject to public policies and underinvestments that continue to impact their access to and safety within Portland's tranposrtation system today.

"Bleeding Albina: A History of Community Disinvestment, 1940-2000" authored by Karen J. Gibson, PhD, is one of many reports that outlines the history and discriminatory policies that created a concentrated African American community in North Portland, including formal and "informal" real estate redlining, predatory lending and housing speculation. In response, the Black community developed a concentration of Black home ownership, thriving Black business districts and supportive community networks and social institutions. Then, in the 1950's, at the height of Portland Black home ownership and entrepreneurship, local transportation and land use decisions resulted in the demolition of more than 1,550 homes and businesses within the community in order to build the Memorial Coliseum, I-5, Hwy 99, and an Emanuel Hospital expansion[1].

Over time, the cumulative impact of these decisions, in the name of urban renewal, has resulted in the displacement of Black Portlanders to other areas of the metro region. More recently, rising housing costs for both homeowners and renters has contributed to the further migration of the Black community to East Portland and outside of the City limits to neighboring counties.  This is important to note in the context of PedPDX because East Portland was annexed into the City of Portland in 1981 and has significant transportation infrastructure deficiencies, including lack of sidewalks, a high concentration of gravel roads, and inadequate crossings and bike lanes. Despite efforts to prioritize investments in this part of town, East Portland has twice the number of pedestrian fatalities per capita compared to the city overall areas citywide[2].

> "While pedestrians make up nearly one-third of all traffic-related deaths in Portland, gentrification and changing demographics have forced low-income, transit-dependent residents into neighborhoods where walking is especially dangerous."
>
> *-Portland's Vision Zero Action Plan*

"Race-based discrimination—both interpersonal and institutional—gets "under the skin" of African-Americans and contributes to the racial disparities in health. This happens through internal processes of the physiological stress response system, and also through limited access to the healthy environments and lifestyles found in some neighborhoods (clean air, healthy homes, walkable streets). The combination of internal physiological responses, coping responses, and segregation in disadvantaged social and physical environments have a significant impact on health outcomes."

*The African American Community in Multnomah County: An Unsettling Profile*

*1 Loving, Lisa. "Portland gentrification: The North Williams Avenue that was—1956". The Skanner. December 11, 2015. Accessed February 05, 2018. http://www.theskanner.com/article/view/section/2/id/11409*

*2 PBOT Equity Matrix: 2011-2015 American Community Survey*

Portland is known as a liberal and progressive city, but there is still ample evidence illustrating racism is not just a thing of the past - it is indeed embedded into local institutions and influencing individual behavior patterns. The Black community continues to be subject to personal attacks that are impacting their physical safety and overall wellbeing in public spaces. For example:

- A 2015 Portland study of racial bias in driver yielding behavior at crosswalks showed that Black pedestrians were twice as likely as Whites to be passed by two or more cars and Black pedestrians experienced 32% longer waits before drivers yielded[3].
- Black Portland area pedestrians are stopped by police at higher rates than Whites or other races[4].
- Since 2016, Oregonians have reported over 30 "hate incidents," a higher rate than any other state, according to Southern Poverty Law Center data. In response, the Portland United Against Hate Coalition was formed to closely track incidents and elevate concerns on community safety.
- In May 2017, two White men were stabbed to death, and another seriously injured, when they intervened to protect victims from an act of racist violence on a MAX train. The targets of the White, male perpetrator were two young, Black teenage women, one wearing a hijab.

On June 4, 2017 the Oregonian wrote an article to highlight the experiences of Black Portlanders on public transportation entitled "Portland's people of color felt under attack long before MAX Stabbings[5]. "The gentrification of Black communities and lack of political representation in public office continues to add to the sentiment of feeling undervalued and isolated. Zahir Janmohamed, the former policy director for the Asian Pacific American Network of Oregon, wrote in a CNN op-ed in 2017 that he has "lost count of how many Muslims, especially teenage Black Muslim women, have confided in me that they have been threatened on public transportation, that they have had their head scarves pulled while walking home at night, that they have been called 'ISIS lovers' while walking on their public high school campuses[6]."

The article also mentioned Black and Latino experiences of being overpoliced on the MAX Train. "What police presence on the MAX has afforded our communities is a drastically higher arrest rate of Black and Latino community members for not having proper fare," Joshi said. "That hasn't afforded any safety for our communities. It only increases the amount of aggression that we experience by just accessing this public good, which is transit. It just means more of our folks will be pulled off trains."

It feels important to elevate this historical context and these present-day experiences because, as you will read, they were central to the themes elevated in the Walking While Black Focus Groups.

*3 Tara Goddard, Kimberly Barsamian Kahn, Arlie Adkins, Racial bias in driver yielding behavior at crosswalks, Transportation Research Part F: Traffic Psychology and Behaviour, Volume 33, 2015, Pages 1-6, ISSN 1369-8478, https://doi.org/10.1016/j.trf.2015.06.002*

*4 Stops Data Collection, Portland Police Bureau Strategic Services Division*

*5 Oregonian/OregonLive, Jim Ryan | The. "2 killed in stabbing on MAX train in Northeast Portland as man directs slurs at Muslim women, police say." OregonLive.com. May 27, 2017. Accessed February 05, 2018. http://www.oregonlive.com/portland/index.ssf/2017/05/police_responding_to_ne_portla.html*

*6 CNN, Zahir Janmohamed | "Portland isn't as liberal as you think." CNN.com. May 29, 2017. Accessed October 17, 2018. https://www.cnn.com/2017/05/29/opinions/portland-not-so-liberal-opinion-janmohamed/index.html*

# Methodology: Empowering Black Voices in PedPDX

In recognition of the low response rates from Black Portlanders in comparison to their counterparts and the need for a deeper understanding of the concerns, interests, and needs specific to the Black community, PedPDX project leads sought assistance for facilitating additional outreach efforts.

PBOT Communications and Public Involvement staff members Irene Schwoeffermann Marion, Public Involvement Coordinator, and Tosin Abiodun, Constituent Services Coordinator, volunteered to organize and facilitate two focus groups titled "Walking While Black" to better understand walking priorities, transportation barriers and experiences that are unique to their racial and ethnic identities as Black Portlanders.

Key elements that contributed to the success of these sessions included:

- Focus group development and facilitation being led by Black City of Portland staff;
- An event title and promotional materials that were inviting to the Black community and emphasized interest in their specific experience;
- Partnership with popular community organizations that could extend invitations to community members;
- The focus groups being held at Black owned/operated community spaces and dinner being provided by Black owned caterers;
- A pre-survey of focus group registrants collected demographic information so that facilitators could have a deeper understanding of the diversity of experiences within the Black Portland;
- Seeking participant responses to and dialogue on the citywide survey, as well as additional discussion questions that sought more information on their pedestrian experience as Black Portlanders; and
- Participants were provided with $25 gift cards for grocery stores and a local Black restaurant as a token of appreciation for their time and contributions. Partnering organizations received a small donation for their assistance with outreach.

Focus groups were held on November 28th, 2017 at the June Key Delta Community Center in North Portland, and on December 9th, 2017 at IRCO Africa House in East Portland. The original goal was for each focus group to have 8-12 participants. A total of 60 community members registered to attend. Close to 50 community members participated between both sessions.

# Registrant Demographics: Diversity Within the Black Experience

The Black community is not monolithic and the rich diversity of the Black community was well represented within the focus groups. To better understand the various background and experiences that were represented, here is a snapshot of the demographic information was collected during the registration process:

**Age**: registrants ranged from ages 21-69 with a fairly even split between those under 40 and those over 40. It is important to note that during the IRCO Africa House focus group, many youth and students dropped in, but their demographic information was not secured.

**Gender**: 41 registrants identified as women; 18 identified as men; 1 person identified as gender nonconforming.

**Racial/Ethnic Background + Country of Origin**: all registrants identified as Black; 20 identified as African American and 17 specified being immigrants and refugees from the African diaspora. Countries of origin included Central Africa (country unspecified), Belize, Chad, Democratic Republic of Congo, Ethiopia, Kenya, Panama and Somali. Those with mixed Black heritage specified Latino, Native American and White.

**Education level**: education level among registrants included: 33% university; 30% graduate school; 26.7% community college; 6.7% high school; 1% primary; and 1% PhD.

**Employment**: registrants included 30% employed full time; 28.3% employed part

**Time**: 15% students; 11% unemployed; and 5% stay at home parents.

**Place of Residence**: 20 registrants live in Northeast Portland; 9 in North Portland; 8 in Southeast Portland; 7 in Northwest; 7 in Southwest; one in Vancouver; and one in Hillsboro.

**Places most traveled to**: overwhelmingly, registrants said they traveled to Northeast and North Portland most frequently. Close to two-thirds of registrants indicated that they travel to three or more parts of Portland frequently. Many registrants travel frequently to Downtown and Outer East Portland. The furthest frequent travel destinations were Dundee, OR and Vancouver, WA.

**Modes of Transportation**: when asked how registrants travel on a typical day, 21 registrants said they utilize 3 or more modes of transportation on a typical day. 9 registrants said they only drive. One registrant said they only bike. 68.3% of the registrants said they take public transportation; 65% drive; 61.7% walk; 11.7% bike; 8.3% utilize private-for-hire transportation (rideshare companies); and 1.7% utilize rides from friends.

**As the City of Portland deepens its commitment to racial equity, PBOT is continuing to evolve its collection, use and understanding of data that will help the Bureau refine program and policy priorities. Analysis of data by race will be a key research area for the bureau moving forward - see this report's recommendations section for more details.**

# Focus Group Findings Part I: Responses to the Citywide Priorities Survey

During the focus group sessions, facilitators opened the focus groups with a brief presentation on information about Portland's transportation system and the role the Portland Bureau of Transportation (PBOT) plays in building, maintaining and managing the system.

Participants were then asked to respond to a paper survey that focused on the PedPDX questions so that PBOT could see how their priorities and concerns aligned or differed from the citywide responses.

**The Priorities Survey questions were:**

1. **What are your top transportation priorities or concerns?**
2. **What makes walking difficult in Portland?**
3. **Which kinds of places are the most important to improve for walking in Portland?**

## What are your top transportation priorities or concerns?

Participants mentioned the following concerns as their top transportation priorities and concerns:

**Traffic and congestion**

- Influx of new residents to the Portland region bringing more cars to Portland has intensified commutes and congestion
- Communities displaced due to gentrification having to spend more time commuting because where they can't afford to live near the places they travel to daily

**Pedestrian Infrastructure Issues**

- Lack of sidewalks and poor sidewalk conditions in East Portland
- Lack of pedestrian wayfinding
- Uplifted/buckled sidewalk tripping hazards
- Branches in sidewalk path impeding site lines making passage difficult
- Cars parked at or too close to the corners impeding passage and making site lines difficult

**Public Transit Issues**

- Lack of bus shelters
- Bus reliability
- Challenges using the Vancouver Vine transit system
- MAX delays and unreliable timing

**Personal Safety**

- Experiences of racism and discrimination in public spaces, right of way, and on public transit
- Poor lighting
- Inconsiderate drivers
- Unmaintained bike lanes
- Habitat encroachment exposing pedestrians to coyotes and other wildlife, especially in East Portland

*Places to Improve - Average Point Value (from 1-6)*

| WHAT MAKES WALKING DIFFICULT IN PORTLAND? | WALKING WHILE BLACK | CITYWIDE |
|---|---|---|
| Poor Lighting | 5.00 | 3.62 |
| Sidewalks / walking paths missing on BUSY streets | 4.94 | 4.66 |
| People driving too fast on BUSY streets | 4.82 | 4.29 |
| Not enough safe places to cross busy streets | 4.78 | 4.46 |
| People driving too fast on RESIDENTIAL streets | 4.74 | 4.44 |
| Sidewalks / walking paths missing on RESIDENTIAL streets | 4.71 | 4.29 |
| Drivers not stopping for pedestrians crossing the street | 4.47 | 4.29 |
| Buckled / cracked / uplifted sidewalks, or other tripping hazards | 4.47 | 3.46 |
| Missing curb ramps at intersections | 4.00 | 3.22 |
| Not enough time to cross the streets | 3.91 | 3.08 |

*Figure 1. Which kinds of places are the most important to improve for walking in Portland?*

Participant comments:

- *"People treat people who are Black, or girls who wear hijabs differently."*
- *"I don't usually walk or ride the MAX without having my brother with me because of the 2017 MAX incident."*
- *"I have had many experiences walking down the street or crossing at an intersection where a car will slow down or stop and the driver yells at me, telling me to go back to my country or calling me derogatory names."*

## What makes walking difficult in Portland?

Focus group participants were asked to rate a variety of barriers on a scale from 1 to 6, with 1 indicating "not important" and 6 indicating "really important." Participant answers were captured, and average rankings were compared to the citywide data.

Figure 1 notes the difference of walking experiences for Black Portlanders who attended the focus groups compared to data collected from Citywide survey participants. Black community members expressed their unpleasant and often time difficult experiences as pedestrians in their communities. Participants mentioned the following difficulties:

### Poor lighting

The most prominent difference between results from the focus groups compared to the PedPDX citywide survey responses was the impact of poor lighting. Focus group participants rated this the highest, with an average rating of 5.0, while it was ranked significantly lower than in the citywide survey responses.

*Participant comments:*

- *"Lighting is good for safety. It gets dark in Portland during the winter and it is hard to see pedestrians walking, and it's especially hard for drivers to see people when they're walking across the street. If it's raining, sometimes people run*

*across the street; at night this is really dangerous."*

- *"After they take away the Christmas lights downtown it is too dark. [We] need more pedestrian-scale lighting."*
- *"Lighting is very important if we really want to protect Black lives, not everyone has shiny clothes on them. Proper lighting especially helps people with dark skin. If we had enough light everywhere, it would be safer citywide to walk while Black. White drivers don't see Black people, even in [the] daytime."*
- *Participants noted that wearing something reflective or with a light will save black lives.*

**Sidewalks and walking paths missing on busy streets**

*Participant comments:*

- *"It's scary to cross busy streets."*
- *"When you're walking on there's no sidewalk, or it stops abruptly, it's dangerous and more likely you'll get hurt if you're walking."*
- *"There are no sidewalks on outer Powell"*
- *"Streets without sidewalks are dangerous. City reacts when something happens instead of preventing [it in the first place]. City does something when a White person is killed. White children go missing, amber alert, Black children go missing, not the same treatment. Make me think if a black person is hit, the City won't go do anything.*

**People driving too fast on busy streets**

*Participant comments:*

- *"Speeding on residential streets where there are no sidewalks is very dangerous. SW Barnes starting around 84th, there is a sidewalk on one side, but not the other, then you have to cross to the other side to stay on a sidewalk but it's unmaintained."*

**Not enough safe places to cross busy streets**

*Participant comments:*

- *"Division 122nd to 162nd there is not a week where there are no crashes, there are crashes daily. 127th there are so many crashes, they put different crossing treatments, but people do not respect the treatments. 142nd is dangerous, there are crashes when cars that are stopping in inconvenient or illogical locations and should be relocated.*

**Missing curb ramps at intersections**

*Participant comments:*

- *"Curb ramps [are] important for people in wheelchairs. I've seen someone fall out of their wheelchair. Some refugees are medically fragile, some are in wheelchairs."*

**Other barriers/ concerns/ priorities:**

**Personal safety**

A discussion about poor lighting led to a deeper understanding about concerns for personal safety in public spaces and during travel commutes. Participants shared that the choices they make on a daily basis is what travel route to prioritize travel routes that make them feel safe and visible, even if the travel route is longer or the travel option is more expensive.

During the focus groups, the 2017 MAX incedent was elevated as having a lasting impact on feelings of safety in public spaces and during travel commutes, but there was acknowledgment that while this was an extreme event, many participants quoted experiences on public transit or in public spaces that made them feel exposed and vulnerable to racially-motivated attacks. Participants cited both the conditions of their neighborhood transportation infrastructure and lack of City officials understanding the Black Portland experience as the result of historic and structural racism.

**Threatening driver behavior**

*Participant comments:*

- *"Drivers are speeding, not slowing down for pedestrian crossing, sometimes speed up to threaten the pedestrian."*
- *"When your crossing cars don't wait until you're across into the next lane, they start turning right at your back."*
- *"Pedestrian laws are not being followed by drivers, risking pedestrian safety."*
- *"Cars stop more when there are rapid flashing lights."*

**Maintenance of the right of way**

*Participant comments:*

- *"Leaves and ice make sidewalks slippery and dangerous."*
- *"Clogged storm drains discourage walking."*
- *"Sidewalks need to be free debris, glass, needles, etc."*

## Which kinds of places are the most important to improve for walking in Portland?

Responses to this question were mostly aligned with citywide responses (see Figure 2). Themes that surfaced during the discussion included:

**Streets connecting families and children to schools**

*Participant comments:*

- *"135th near Lincoln Elementary, unsafe, no crossing for the children. Children and families have to walk to 136th, go over the bridge to come back. The safe route is way out of the way so they are put in a dangerous situation. "*
- *"Access to parks are important"*

**Streets connecting people to transit/ bus stops**

*Participant comments:*

- *"Sidewalks need to go from the stop, to where you need to go. Cars speed when*

*Places to Improve - Average Point Value (from 1-6)*

| WHICH KINDS OF PLACES ARE THE MOST IMPORTANT TO IMPROVE FOR WALKING IN PORTLAND? | WALKING WHILE BLACK | CITYWIDE |
|---|---|---|
| Streets where people walking have been killed or injured | 5.03 | 5.08 |
| Areas that serve people who need to rely on walking the most (for example low income) | 4.97 | 5.11 |
| Residential streets lacking sidewalks or walking paths | 4.53 | 4.54 |
| Along and across busy streets | 4.35 | 4.99 |
| Streets connecting families and children to school | 4.29 | 4.99 |
| Streets connecting people to transit / bus stops | 4.27 | 5.06 |
| Streets connecting people to neighborhood commercial districts (neighborhood shops) | 4.06 | 4.73 |
| Areas where the most people live and / or work | 4.03 | 4.55 |
| Streets connecting people to parks | 3.81 | 4.52 |
| Streets connecting people to libraries, community centers, and other community facilities) | 3.66 | 4.66 |

*Figure 2. Which kinds of places are the most important to improve for walking in Portland?*

*the sidewalk ends. Sidewalk is crucial."*

- *"Every bus stop needs a crossing."*
- *"103rd and Washington is unsafe, bus driver didn't wait for pedestrians to cross. Drivers of bus and MAX make choices of who to stop for –they see them, but still White drivers sometimes choose not to stop."*
- *"Sometimes pedestrians are unsafe because they need to hurry to catch the bus."*

### Areas that serve people who need to rely on walking

*Participant comments:*

- *"I have concerns for people who only rely on walking because they have to take risks. Drivers don't always give you the right of way."*
- *"Making sure newcomers understand our traffic laws and what the different signals mean. Drivers wait for White people to cross but not Black people."*

# Focus Group Findings Part 2: Insights Into the Black Pedestrian Experience

In addition to answering the PedPDX survey questions, the facilitators wanted to capture more about the unique experiences of the Black community to better understand their transportation concerns and barriers. Community members shared the following concerns, experiences, and recommendations during the two focus groups which have been organized into the following themes:

### Personal Safety

- *"When you're Black [anywhere in Portland], you have to make sure that you are extra careful when crossing the street or using the crosswalk."*
- *"Fear of getting in trouble for jaywalking, always feeling the extra pressure to follow the law and go to the right crossing, which can be hard to do. This is like having to keep your receipt on you when you go shopping because you might get stopped for no reason and have to prove yourself. Head coverings draw more attention, want to be doing the exact right thing, crossing in the right place."*
- *"I won't allow my husband to run at night as a tall Black man, for I fear he won't come home."*
- *"I pay a large amount of money for my son's car insurance because it is safer for him to drive than to be exposed."*
- *"I want to lose weight by walking but can't walk after 5 pm because I am afraid to exercise when it gets dark. I feel vulnerable, so I stay home or drive and it is impacting my health."*
- *"I feel scared on the MAX, I'm always looking around to see if people look suspicious. I carry mace, but I have to take the MAX to and from school."*
- *"When there are no lights, I feel very unsafe. I don't have the choice, I have to take the MAX, I have to walk."*
- *"We need infrastructure and facilities that protect our most vulnerable community members and make them feel both safe and personally secure."*
- *"Homeless people are on every corner. I feel insecure around them when leaving the house.*

### Prejudice Encounters and Perceptions of Enforcement

- *"The political climate has become more hostile for Black people. A Somali woman was crossing at a green light, people were yelling at her for no reason."*
- *"Being the target of racial slurs when crossing the street. I press the button to get the green light, then someone yells racial slurs at me because they have a vehicle and don't like that they were made to wait for me".*
- *"I left Africa House and was verbally and physically assaulted. I was really, really scared."*
- *"There is racial profiling on TriMet regarding ticketing for fare evasion."*
- *"Crosswalk enforcement is a good thing, but needs to be conducted by more Black people to test inequitable driver yielding behavior."*
- *"Not all [White people] are bad, however there are racist people in the police force."*
- *"Sometimes witnesses to crashes don't stop for Black people or are unreliable. We don't see the outcome of the police report when there is a crash. You think you're right and the accident isn't your fault, and then your insurance goes up."*

### Microaggressions in our Streets

- *"White people not sharing the sidewalk, expecting Black people to step out of their way instead of moving right to make space mutually, respectfully."*

- *"Crosswalk White girl magic - where cars stop for White women, not for Black people."*
- *"I'm offended, saddened, and disappointed being a Black person walking in Portland."*
- *"Black people have to be mindful about how we even exercise on the sidewalk"*

### Perceptions of PBOT's Priorities

Focus group participants questioned the intentions of the City of Portland as it makes further transportation investments in communities that already have "good" infrastructure, instead of prioritizing areas where community members with lower socioeconomic status have less infrastructure. Focus group participants mentioned the following observations:

- *"Less infrastructure and lack of investment is apparent in East Portland and East Multnomah County where there are now higher populations of Black people. "*
- *"More and better infrastructure improvements are needed in East County and should be comparable to the types of improvements seen in the Pearl District, and South Waterfront."*
- *"Signal timing appears more refined in Central City areas and problematic further out in the Portland metro area."*
- *"It is clear that the City cares about bike lanes. They are everywhere, but East Portland. Lack of bike lanes in East Portland causes people who bike to impede on pedestrian walkways. "*
- *"There are more bus stops in higher socioeconomic neighborhoods. "*
- *"More and better street lighting is available in areas of town where there are fewer Black people residing. "*

### Observations about PBOT Outreach and Communications

Participants from both focus groups were asked how PBOT and/or the City of Portland should be sharing information and updates with community members and for recommendation on how PBOT should be engaging Portland's Black community. Participants shared the following observations and experiences:

- *"Communication about safety doesn't get to us, we are always getting skipped and don't know who to call when we have questions. When PBOT has information, it doesn't get to our people."*
- *"I'm the only minority on the Outer-Powell Planning Community Advisory Committee and I'm asked to speak on behalf of all communities, which is not possible."*
- *"I signed up to receive PBOT email updates, but when there was street construction in my neighborhood, I didn't get a notification."*
- *"Illustrations and videos are helpful for educating community members. Public education, issues like hate crimes and pedestrian laws should be prioritized."*
- *"I do not always receive information that is important to me. Flyers and emails are a good way to get information from PBOT."*
- *"It has been ten years since PBOT has visited Africa House. We want to see you more regularly at our community organizations."*
- *"I receive most information through word of mouth, not directly from the City."*
- *"We want to see more benefits coming to the Black community. More jobs and contracting opportunities. I don't know where to find that information."*

Despite these reflections on PBOT's general outreach and communications effectiveness in the Black community, all participants appreciated the opportunity to participate in the focus groups. They appreciated that the discussion emphasized seeking to understand their specific experiences as Black Portlanders. Many participants expressed interest in participating in future transportation-focused discussions and encouraged PBOT to continue the efforts.

# Recommendations for PBOT Policy and Invesments

PBOT takes the City of Portland's commitment to addressing racial inequities seriously and will use the themes of the Walking While Black Focus Groups to transform the way we develop transportation policy and plan for a more equitable transportation system.

### The City of Portland is commited to the following Racial Equity Goals:

1. **We will end racial disparities within city government, so there is fairness in hiring and promotions, greater opportunities in contracting, and equitable services to all residents.**
2. **We will strengthen outreach, public engagement, and access to City services for communities of color and immigrant and refugee communities, and support or change existing services using racial equity best practices.**
3. **We will collaborate with communities and institutions to eliminate racial inequity in all areas of government, including education, criminal justice, environmental justice, health, housing, transportation, and economic success.**

Based on the focus group discussions, follow-up conversations and feedback provided during other outreach and engagement efforts in the Black community (which have become more regular as a result of the 2017 focus group discussions), PBOT will begin to act on the following recommendations to address the input and concerns that have been elevated:

### 1. Ensure that PedPDX investments and strategies address the infrastructure concerns raised by Black Portlanders

- Research innovative transportation infrastructure, education, enforcement and other programmatic that are being implemented in communities of color in other cities to address public safety and infrastructure concerns.
- Include an emphasis on lighting needs and infrastructure deficiencies in communities with the highest concentrations of Black Portlanders.
- Consider how transportation infrastructure triggers behavior that impedes on the safety of Black Portlanders (as discussed in Racial Bias in Drivers' Yielding Behavior at Crosswalks: Understanding the Effect) and seek roadway designs, enforcement practices and educational campaigns that address this behavior.
- Follow up with focus group participants to report on how their participation contributed to PedPDX.

### 2. Strengthen community partnerships + leadership development opportunities for Black Portlanders

- Acknowledge the role that the City of Portland, and PBOT specifically, have played in furthering disparate impacts on the economic, health, educational and overall wellness outcomes that have impacted Black Portlanders for multiple generations.
- Develop public involvement strategies that support deeper engagement with community-

based organizations led by and serving the Black community.

- Identify opportunities to amplify Black leadership roles across PBOT, including employment and public advisory body appointments.
- Ensure that community partnerships and leadership development opportunities provide and leverage resources that incentivize and sustain engagement over time.
- Continue to prioritize outreach and communications focused on engaging, empowering and informing the Black community.

### 3. Further research focused on understanding the Black experience in Portland

- Disaggregate and analyze demographic data available from multiple sources, ranging from the U.S. Census to PBOT's community surveys.
- Review and develop strategies that respond to community-led research and policy recommendations, including the PAALF People's Plan, the Urban League of Portland's State of Black Oregon and the Coalition of Communities of Color's Unsettling Profiles Research Papers on African American and African Immigrant and Refugees in Multnomah County.
- Identify gaps in data and opportunities to partner with research institutions, community based organizations and other government agencies.
- Ensure that PBOT staff is regularly informed by multidisciplinary research, including housing and public health, so that transportation investments and outcomes contribute to overall community wellness and resilience.
- Conduct more community engagement activities like PedPDX walks.

### 4. Collaborate with City and regional partners to address hate and racially-motivated behavior as a transportation issue

- Formalize partnership with the Office of Community and Civic Life and the Portland United Against Hate Coalition to align strategies and share data.
- Track and report how PBOT programs and desired outcomes are impacted by upticks in hate and racially-motivated events happening in community.
- Reinforce that PBOT is a safe place for diverse communities and diverse staff within its workforce.

### 5. Develop tools that evaluate and address community impacts, promote community benefits and mitigate unintended outcomes

- Provide clarity on how PBOT defines and is working towards a more equitable transportation system.
- Work with City and community partners to develop tools that track and evaluate the impacts and outcomes of core PBOT programs and projects in communities of color.
- Develop a plan that clearly communicates community benefits, including job contracting , and community grant opportunities.

Do you have other ideas for PBOT and PedPDX?
Contact: PedPDX@portlandoregon.gov

FOR MORE INFORMATION ABOUT PEDPDX VISIT: PORTLANDOREGON.GOV/TRANSPORTATION/PEDPDX

# APPENDIX E:

Policy Framework Memo

# MEMORANDUM

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To: PedPDX Technical Advisory Committee
Michelle Marx, City of Portland Bureau of Transportation
Lidwien Rahman, Oregon Department of Transportation

From: Jean Crowther and Katie Mangle, Alta Planning + Design
Cathy Corliss, Angelo Planning Group

Date: November 30, 2017

Re: PedPDX Policy Framework Memo (DRAFT Deliverable 2A)

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## Plan and Policy Framework

The PedPDX Portland Citywide Pedestrian Plan (PedPDX) will serve as a modal transportation plan for the City of Portland and an update the 1998 Portland Pedestrian Plan, which is an adopted plan by City ordinance. As such, PedPDX fits within a specific planning and policy framework linked to other City plans and to relevant regional and state transportation plans. As a means of articulating that framework, this memorandum identifies related planning and policy documents, summarizes their elements that directly relate to the process and/or outcomes of PedPDX, and highlights the implications of those elements as either policy mandates or guidance. The scan of planning and policy documents includes:

- State Level
    - Oregon Crosswalk Statute
    - 2011 (last amended) Statewide Planning Goals
    - 2012 Oregon Transportation Planning Rule
    - 2016 Oregon Bike and Pedestrian Plan
    - 2016 Oregon Transportation Safety Action Plan
- Regional Level
    - 2014 Regional Transportation Plan
    - 2012 Regional Transportation Functional Plan
    - 2014 Regional Active Transportation Plan
    - 2012 Regional Transportation Safety Strategy
    - 2012 TriMet Pedestrian Network Analysis
- City Level
    - 2012 Portland Plan
    - 2018 City of Portland Comprehensive Plan
    - 2017 (Pending) Transportation System Plan
    - 1998 Pedestrian Master Plan
    - 2017 City Code of Ordinances
    - 2016 Vision Zero Action Plan

City equity policies are identified within the summaries of relevant City plans. While street classifications are noted as important policy concepts of the Metro Regional Transportation Plan and City Transportation System Plan, evaluation of their applicability is deferred to *Task 4.4 Classifications Recommendations Memo* of the PedPDX master planning process.

The following graphic (**Figure 1**) provides an illustration of the interrelatedness of planning and policy documents that inform the PedPDX Citywide Pedestrian Plan.

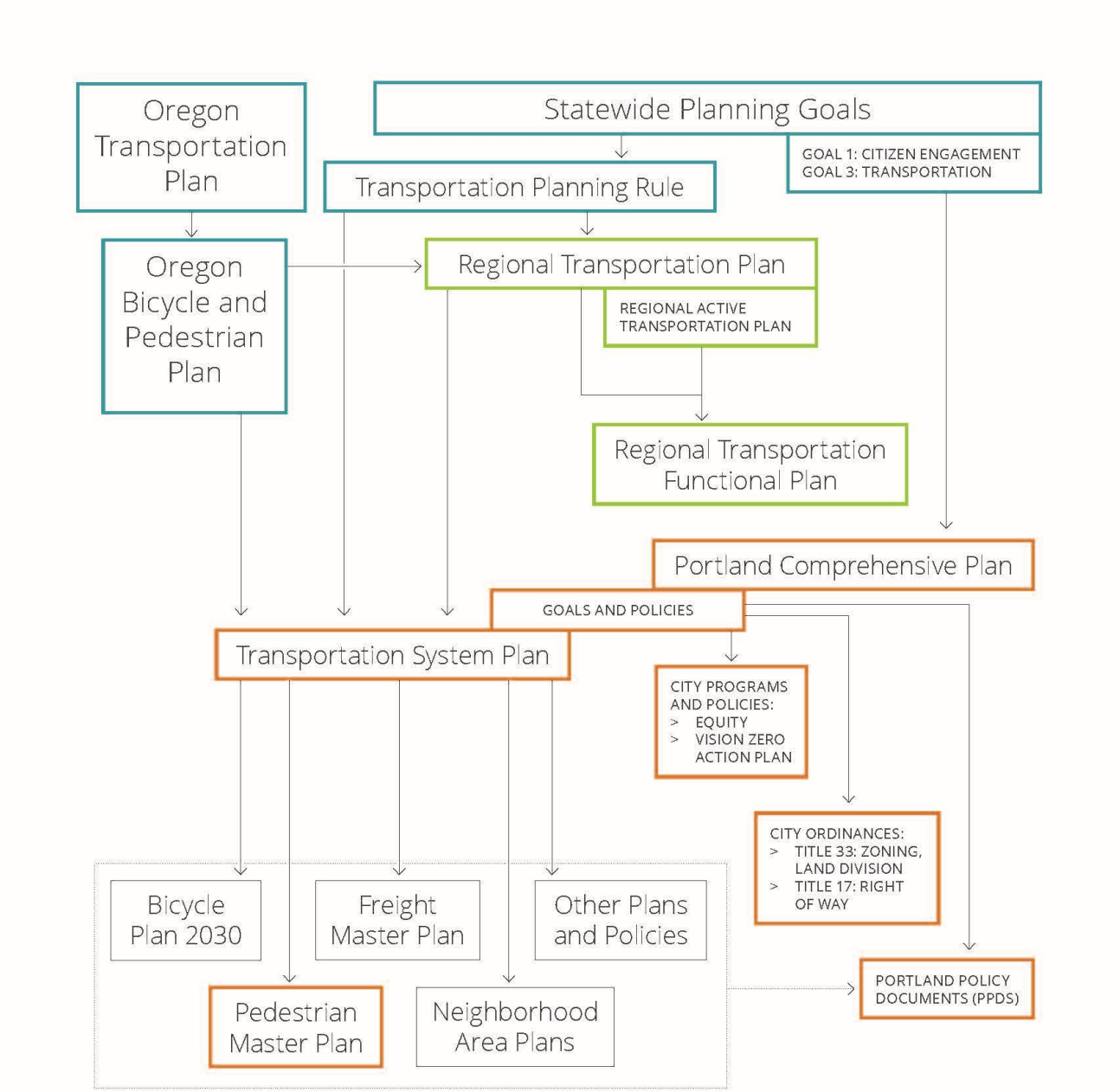



**Figure 1. This hierarchical chart shows the relationships of state, regional, and local plans in terms of the flow of policy directives. State policy directs Metro's Regional Transportation Plan, Active Transportation Plan, and Transportation Functional Plan. The City Comprehensive Plan, Transportation System Plan, and all local modal plans (including the PedPDX Portland Citywide Pedestrian Plan) conform to the requirements of the regional transportation plans. The process is not linear, however, as plan updates are staggered.**

## Why This Matters

Oregon state law establishes requirements for consistency of plans at the state, regional, and local levels. In the 20 years since the adoption of the ground-breaking 1998 Pedestrian Master Plan, new requirements and policy directives that impact pedestrian planning have been adopted at the state, regional, and local level. PedPDX is an opportunity to identify and meet these requirements, as well as incorporate recommended approaches to pedestrian planning. Specific changes to the policy context since 1998 include:

- State, Regional, and City plans established clearly defined directives around safety and equity in transportation
- Updates to the State Transportation Planning Rule and Metro Regional Transportation Framework Plan, which serve as the main drivers of compliance requirements for local pedestrian planning
- Updates to the City Comprehensive Plan and Transportation System Plan, which serve as the local planning framework for the local pedestrian plan

PedPDX will need to demonstrate compliance with applicable state and regional requirements and fill gaps required for the City to comply with such requirements. Generally, the City of Portland meets or exceeds the state and regional regulatory requirements. The content of the plan and policy recommendations will need to comply with requirements of the Regional Transportation Functional Plan, in particular. Amendments to the development code will most likely be required to continue to comply with the Transportation Planning Rule.
The plans, policies, and studies outlined in this memorandum establish requirements and guidance for PedPDX in several ways:

1. **Vision:** These plans provide the over-arching "umbrella" framework for planning for pedestrian transportation and access. Together, the family of plans and policies provide clear support, and direction, for local decisions to create walkable cities.
2. **Coordination:** As shown in **Figure 1**, the Oregon system of planning requires coordination between the state, regional, and local levels. It will be important for PedPDX to coordinate with some elements of the plans, such as goals and objectives addressing equity, and reflect the goals of these plans when undertaking the analysis and preparing recommendations.
3. **Process and Approach:** Where other plans include priorities, or considerations cities must use in project prioritization, PedPDX will need to reflect this. For example, state and regional plans include policies that direct cities to prioritize sidewalk and path access to schools, transit stops, centers, and along the regional pedestrian network.

**Table 1** below outlines the implications for PedPDX within each of these categories.

**Table 1: PedPDX Implications**

| Elements | Requirement/ Guidance | Plan Reference | Notes | PedPDX Implication |
|---|---|---|---|---|
| Vision | Pedestrians First | Comprehensive Plan, TSP | | Align with PedPDX Vision, Goals, Objectives |
| | Vision Zero | OTSAP, Vision Zero Action Plan | | Align with PedPDX Vision, Goals, Objectives and Performance Measures |
| | Twenty-Minute Neighborhoods | Comprehensive Plan, Portland Plan | | Align with PedPDX Vision, Goals, Objectives and Performance Measures |
| Coordination | Pedestrian Connectivity Standards | RTFP and TSP | Established in RTFP, met by TSP Policy 9.25d and 9.25e | Align standards with Network Completeness and Adequacy Criteria and Implementation Memo |
| | Access to Destinations | RTFP, RATP | | Include designated Regional Destinations and Essential Destinations |
| | Network Maps | RTP, RATP | Process requirements outlined in RTFP | Maintain consistency with or identify deviations from identified RTP and RATP pedestrian network maps |
| Process and Approach | Components of Pedestrian Plan | RTFP | | PedPDX scope of work fulfills |
| | Equitable Public Engagement | TPR (Goal 1), OTP, RTFP | | PedPDX scope of work fulfills |
| | Prioritization Criteria | RTP, TriMet Network Analysis | RTP provides explicit prioritization guidance | Consider existing frameworks for network prioritization, as well as linking to other established priorities (see geographic priorities below) |
| | Geographic Priorities | Comprehensive Plan, Vision Zero Action Plan | Centers and Corridors, Communities of Concern, Pattern Areas (see below) | Consider the City's established geographic and spatial priorities in the PedPDX network prioritization |
| | Performance Measures | RTFP, RATP, TSP | Non-SOV modal target required per the RTFP (3.08.210); TSPs are required to establish performance targets (3.08.230) per RTFP | Fulfill RTFP requirements; Align Performance Measures with existing local and regional targets |
| | Design Guidance and Standards | RATP, TSP | TSP meets the Classifications requirement of RTFP | Review and Update TSP Classifications in relation to RATP to support vision and goals of PedPDX |

## Mapping City Priorities

The Comprehensive Plan and other local plans define a series of geographies that are relevant to PedPDX as noted in the table of PedPDX implications. The following helps to clarify how these geographies relate to PedPDX and to each other. When considering the relationship of these plans to one another and to PedPDX, it is important to note that policies adopted by both the City and the state, such as the Comprehensive Plan, carry more weight than those adopted only at the local level, such as Vision Zero.

### Twenty-Minute Neighborhoods Index and Centers and Corridors (Comprehensive Plan)

A key element of the Comprehensive Plan is the Urban Design Framework: a system of centers and corridors that are the backbone of Portland's urban form. Future growth will be concentrated within centers and along these corridors and they will be the anchor to complete neighborhoods by providing walkable access to daily needs. Centers and corridors were identified, in part, through a GIS-based analysis of walkability termed the 20-Minute Neighborhoods Index (a concept analysis conducted in 2010). The index combined measures of proximity to destinations with measures of pedestrian infrastructure, with a goal of identifying and establishing neighborhoods "where you can walk to essential amenities and services in 20 minutes." To support this goal, the Comprehensive Plan calls for public facility investments to be focused in centers and corridors, which generally include concentrations of key destinations today and are expected to continue to function as the anchors to complete neighborhoods in the future. Thus, PedPDX must consider how to integrate centers and corridors into assessments of needs and prioritization of projects. This process should be informed by the methodology used for the 20-Minute Neighborhood Index; however, rather than simply producing a composite index, PedPDX should focus on diagnosing specific gaps in pedestrian infrastructure and investments that would improve access to key destinations.

### Communities of Concern (Vision Zero Action Plan)

Communities of Concern as defined by TriMet are census blocks in Portland that scored in the top quartile of ten equity indicators. While alternate equity matrices have been applied to other PBOT planning efforts, the TriMet Communities of Concern model has been embedded into the current Vision Zero Action Plan (2016), and will remain the matrix used by Vision Zero. Communities of Concern may need extra investment in street safety because people living these areas have fewer choices about how, when and where they travel, putting them at higher risk. Pedestrian improvements in Communities of Concern may receive additional priority and focus as they will contribute to achieving the City's transportation safety goals. Pedestrian improvements in centers and corridors, by contrast, should receive additional focus and priority because they can improve access to destinations and amenities and increase walk trips.

### Pattern Areas (Comprehensive Plan)

The Comprehensive Plan classifies Portland into five Pattern Areas that represent unique physical, social, cultural, and environmental qualities, including transportation-related features such as block size, street connectivity, and topography. The Pattern Area classification may not influence the identification of needs or prioritization of projects—the local pedestrian networks within each Pattern Area will vary greatly and they are not meant to be a tool for focusing investment. However, Pattern Areas may illustrate some shared challenges or opportunities within broad areas of the City. Further,

the Pattern Areas will influence the design of pedestrian infrastructure. For example, off-street trails or paths may be more effective and appropriate than full urban sidewalks in some locations in western and eastern neighborhoods.

## Next Steps

The policy direction summarized in this review will dovetail with the City's program review, the development of goals and objectives for PedPDX, and the forthcoming street classifications review. The synthesis of each of these reports will inform all aspects of PedPDX planning and provide the basis for recommended policy changes of the Implementation Memo.

# Summary of State Plans, Goals, and Requirements

## Oregon Crosswalk Statute

Under Oregon State Law, every intersection is a legal crosswalk (per ORS 801.220), permitting pedestrians to cross at any intersection whether a crosswalk is marked or not and requiring motorists to yield.

### PedPDX Implication

A policy change or prioritization approach related to marked pedestrian crossings should take into account the prevalence, use, and legality of unmarked crossings as part of the overall pedestrian network, including their influence on pedestrian and driver behaviors.

## 2011 (Last Amended) Statewide Planning Goals

Nineteen statewide planning goals provide the foundation for Oregon's land use planning program. The goals serve as mandatory state policies to be carried out through local comprehensive planning processes. Guidelines described within the goals are not mandatory, but serve as suggestions for achieving goals. In relation to the PedPDX Citywide Pedestrian Plan, which extends from the goals and policies set forth by the Comprehensive Plan and Transportation System Plan, the following serve as the critical policy drivers:

- Goal 1: To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.
- Goal 12: To provide and encourage a safe, convenient, and economic transportation system.

### PedPDX Implication

PedPDX is subject to the requirements associated with all plans that are adopted as part of a local government's Comprehensive Plan. The specific requirements associated with pedestrian planning are addressed below in relation to the Oregon Transportation Planning Rule.

## 2012 Oregon Transportation Planning Rule (TPR)

### General Description

The TPR (OAR 660-012) defines the necessary elements of a local Transportation System Plan (TSP) and how to implement Goal 12. The TPR requires counties and cities to prepare local TSPs that are consistent with the OTP and, for jurisdictions within a metropolitan planning organization, with the regional transportation plan. The TPR directs TSPs to integrate comprehensive land use planning with transportation needs and to promote multi-modal systems that make it more convenient for people to walk, bicycle, use transit, and drive less and to include a bicycle and pedestrian plan and list of facility improvements. Many of the requirements in the TPR are implemented though a city's Development Code.

### Specific Policy Direction

The following sections of the TPR include relevant policy direction or implementation guidance for PedPDX:

- OAR 660-012-0000 Purpose

- OAR 660-012-0020 Elements of Transportation System Plans
- OAR 660-012-0030 Determination of Transportation Needs
- OAR 660-012-0040 Transportation Financing Program
- OAR 660-012-0045 Implementation of the Transportation System Plan
- OAR 660-012-0060 Plan and Land Use Regulation Amendments

The following is a summary of the key requirements within each of these TPR sections that PedPDX must address. Note that some requirements apply to the process and methods for transportation planning, including pedestrian planning, and some apply to the implementation of the plan through development regulations.

- **General Pedestrian Planning Requirement:** In sections -0000(1)(c) and (3)(a), the TPR establishes that local transportation plans must provide for safe and convenient pedestrian circulation by planning a well-connected network of streets and supportive improvements for all modes.
- **Street Design Standards:** TPR section -0020(2)(b) requires that the standards for the layout of local streets provide for safe and convenient pedestrian circulation.
- **Funding Policies:** TPR section -0040(2)(d) requires that the policies that guide selection of transportation improvements for funding include policies that support or prioritize pedestrian-friendly development.
- **Needs of Transportation Disadvantaged Populations:** TPR section -0030(1)(b) requires that local transportation plans shall identify transportation needs of the transportation disadvantaged. Thus, the needs assessment completed as part of PedPDX should directly address how the needs to transportation disadvantaged populations have been identified and incorporated into the plan.
- **Sidewalk Requirements:** TPR section -0045(3)(b) requires that sidewalks be included on all arterial and collector streets, and most local streets. TPR section -00045(3)(c) requires that where off-street road improvements are required for development approval, they shall include pedestrian facilities.
- **General Pedestrian Connectivity Requirements:** TPR section 0045(3)(b) requires that on-site facilities shall be provided which accommodate safe and convenient pedestrian access from within new subdivisions, multi-family developments, planned developments, shopping centers, and commercial districts to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. Additionally, TPR section -0045(3)(e) stipulates that internal pedestrian circulation is required in new office parks and commercial developments.
- **Transit-Supportive Pedestrian Facilities:** TPR section -0045(4) applies to cities (like Portland) with a population greater than 25,000 and served by public transit. It requires that new retail, office, or institutional buildings at or near transit stops provide for convenient pedestrian access to those stops, including through:
    - Walkways connecting building entrances and streets
    - Connections through adjoining properties

    - At "major transit stops," either locate buildings within 20 feet of a transit stop (or transit street) or provide a plaza, and also provide a reasonably direct pedestrian connection between the transit stop and building entrances
- **Pedestrian Planning Requirements:** TPR section -0045(6) directs cities, when developing a pedestrian circulation plan, to identify improvements to facilitate pedestrian trips to meet local travel needs in developed areas and specifies that appropriate improvements should provide for more direct, convenient, and safer bicycle or pedestrian travel within and between residential areas and neighborhood activity centers (i.e., schools, shopping, transit stops).
- **Significant Effect Provisions:** TPR section -0060(2) requires that any amendments to adopted plans or land use regulations result in a "significant effect" on an existing or planning transportation facility, the local government must mitigate against this effect. TPR section -0060(2) provides multiple options for how to address the significant effect. One of the options is to provide improvements to other modes other than the significantly affected mode. For example, if the significant effect is motor vehicle traffic congestion, the mitigation could be adding sidewalks and bicycle lanes. This provision will not apply to PedPDX directly as it is unlikely that adoption of the plan will result in a significant effect on any one transportation facility. However, should future plans or projects have a significant effect, then the pedestrian improvements identified in PedPDX could be used as a mitigating measure.

#### PedPDX Implication

The majority of these requirements are implemented through the City's Transportation System Plan, the proposed planning methods that will be part of the PedPDX process (public engagement, project prioritization, and the update to classifications), and Titles 17 and 33 of the City's Development Code, as described below. The City currently meets or exceeds the state requirements.

## 2016 Oregon Bicycle and Pedestrian Plan

### General Description

The Oregon Bicycle and Pedestrian Plan (OBPP) is one of the eight modal elements that make up the Oregon Transportation Plan. The OBPP guides decision-making and investment for walking and biking in Oregon.

### Specific Policy Direction

Policies in the OBPP are meant to encompass all transportation agencies unless otherwise stated. The entire plan is applicable to PBOT's pedestrian planning efforts; some elements of the plan apply specifically to ODOT facilities. The policies listed here most directly affect PedPDX.

- Policy 1.1: Provide safe and well-designed streets and highways for pedestrian and bicycle users.
- Policy 1.2: Educate travelers on the rules of the road to promote understanding of legal rights and responsibilities and how all modes and users can safely and courteously interact with each other.
- Policy 1.3: Provide education and outreach to school children about walking and biking options and how to safely use those modes and develop safe walking and biking connections to schools.
- Policy 1.4: Improve pedestrians' and bicycle users' perceived safety by supporting personal security.

- Policy 2.2: Inventory and define walking and biking networks to aid in project prioritization.
- Policy 2.3: Add pedestrian, bicycle infrastructure, and street crossings to connect system gaps, understanding the unique needs of urban, suburban, and rural communities.
- Policy 2.4: Improve access to multimodal connections for bicyclists and pedestrians through planning, design, prioritization, and coordination.
- Policy 2.5: Support off roadway walkways and bikeways that help to connect communities, provide alternatives to motorized travel, or promote and support walking and biking tourism.
- Policy 3.1: Bring about a pedestrian and bicycle network that achieves ease of movement, especially considering the people using these modes are vulnerable users of the system.
- Policy 3.3: Balance pedestrian and bicycle needs and freight mobility needs through planning and design guidance and coordination.
- Policy 4.1: Encourage local land use policies and practices that support increased bicycling and walking and add to the overall livability and vitality of communities.
- Policy 4.2: Partner, collaborate, and disseminate information encouraging pedestrian and bicycle tourism to benefit Oregon's economy and that of individual communities and areas within the State.
- Policy 5.1: Identify and define geographic areas lacking transportation options, especially for transportation disadvantaged communities and people.
- Policy 5.2: Understand the disparities, barriers, and needs affecting the availability and use of walking and biking options for all Oregonians.
- Policy 5.4: Engage transportation disadvantaged populations in decision making.
- Policy 6.1: Promote walking and biking to help achieve public health goals to improve air quality, and provide opportunities for physical activity to help reduce risk of chronic diseases and other health issues.
- Policy 7.1: Promote walking and biking to help achieve local, regional, state, and federal environmental goals to reduce vehicle miles traveled, reduce greenhouse gas emissions, and improve air and water quality.
- Policy 7.2: Consider climate change adaptation, walking and biking needs, and system redundancy in the face of natural disasters.
- Policy 8.1: Seek funding to address pedestrian and bicycle transportation needs.
- Policy 8.2: Invest strategically in the overall pedestrian and bicycle system (state and local) by preserving existing infrastructure, addressing high need locations, and supporting programmatic investments.
    - Priorities for planning, identifying, and investing in pedestrian and bicycle projects are, in order: 1) protect the existing system and address significant safety issues, 2) add critical connections and address other safety issues, 3) complete the system, and 4) elaborate the system.
- Policy 8.4: Be opportunistic in leveraging funding for pedestrian and bicycle investments improvements through various funding mechanisms or project coordination.

**Goals and Objectives**

All of the broad goals of the Oregon Bike and Pedestrian Plan relate to the broad vision of PedPDX. Objectives of the Plan that reflect more specific guidance for PedPDX include:

- Preserving bicycle and pedestrian capacity
- Increasing data collection to support decision-making
- Creating opportunities to address speed concerns
- Filling system gaps to address critical connections

### PedPDX Implication

The scope of the PedPDX project reflects the goals and policies outlined in the plan. PedPDX will need to reflect the policy guidance with regard to prioritization and performance measures.

## 2016 Oregon Transportation Safety Action Plan

### General Description

The Oregon Transportation Safety Action Plan (TSAP) provides long-term goals, policies, strategies, and near-term actions to eliminate deaths and life-changing injuries on Oregon's transportation system by 2035. It serves as the Oregon Strategic Highway Safety Plan (SHSP), which is a federally-required document and the primary planning tool to address transportation safety planning issues and needs in every state. The SHSP identifies safety priorities, also called emphasis areas, and guides safety program and project investments using strategies and actions as a framework.

The TSAP is a Topic Plan of the Oregon Transportation Plan (OTP), with the purpose of implementing OTP safety goals and providing a resource for transportation safety direction as state, regional, tribal, county, and city plans are updated or new plans are developed. Safety elements of local plans, including the PedPDX Portland Citywide Pedestrian Plan, should be consistent with TSAP in order to access safety funding administered through the Transportation Safety Division and other resources for safety planning and improvements.

### Specific Policy Direction

The TSAP establishes the statewide vision of "no deaths or life-changing injuries on Oregon's transportation system by 2035." A range of broad-reaching goals, policies, and strategies are provided to support this vision. The policy drivers most relevant to the PedPDX Portland Citywide Pedestrian Plan are found within the four Emphasis Areas. Emphasis Areas are the Plan's near-term implementation focus areas and include: Risky Behaviors, Infrastructure, Vulnerable Users, and Improved Systems.

Relevant Emphasis Area Actions:

- Action 6.5.3: Support multimodal safety considerations during local Transportation System Plan development, and other planning efforts (e.g., local Transportation Safety Action Plans) to guide project planning, operations and maintenance for safer transportation facilities.
- Action 6.8.1: Evaluate the safety performance of innovative pedestrian facilities. Continue implementing the most effective.
- Action 6.8.2: Provide safe facilities and crossings in areas where pedestrians are present or access is needed. Prioritize transit corridors, school areas, multilane streets and highways and other high-risk areas and facilities.
- Action 6.8.3: Improve maintenance of existing pedestrian facilities.

- Action 6.12.2: Identify risk factors for older walkers and implement treatments, within current law.
- Action 6.16.1: Evaluate pedestrian and bicycle high crash locations and risk factors through analysis of existing data and development of new data sources.
- Action 6.17.1: Implement education and training related to new types of infrastructure (e.g., signal heads, safety edge, crosswalks, bike lanes, or roundabouts) and related traffic laws.

TSAP Performance Measures are established based on requirements of National Highway Traffic Safety Administration and Federal Highway Administration. Relevant to PedPDX, a target of zero by 2035 is set for the performance measure of Non-Motorized Fatalities and Series Injuries.

### PedPDX Implication

Aligning with the vision and relevant Emphasis Area Actions is necessary to position the City of Portland for state-administered transportation safety funds. Action 6.5.3 is accomplished through the development of PedPDX as a component of the TSP. Actions 6.8.2, 6.12.2, and 6.16.1 should be addressed through the Infrastructure Inventory and Network Needs Analysis and the Classification and Prioritization Framework of PedPDX. Actions 6.8.1, 6.8.3, 6.17.1 should be recommended within the strategies and actions of the PedPDX implementation toolkit.

# Summary of Regional Plans, Goals, and Requirements

## 2014 Regional Transportation Plan

Metro's Regional Transportation Plan (RTP), adopted in 2014, provides a framework for considering how communities relate to the region at large. The RTP recognizes the importance of walking and biking in the regional transportation system and the regional economy. State law establishes requirements for consistency of plans at the state, regional and local levels. The RTP serves as the region's regional transportation system plan (TSP), consistent with Oregon Transportation Planning Rule (TPR) requirements. The RTP must be consistent with the Oregon Transportation Plan, state modal and facility plans that implement the Oregon Transportation Plan, and the Oregon Transportation Planning Rule. Local plans must be consistent with the RTP.

Projects and programs must be in the RTP's Financially Constrained System in order to be eligible for federal and state funding.

The RTP is the parent plan of the Regional Active Transportation Plan (RATP) and both are implemented through the Regional Transportation Functional Plan (RTFP). These plans give policy direction to the City's TSP, of which PedPDX is a component. Thus, PedPDX must align with (and not contradict) relevant policy guidance and recommendations.

Metro is currently developing the 2018 RTP to establish regional priorities for investing in the transportation system through the year 2040. The process includes rigorous evaluation of a draft set of project priorities, as submitted for consideration by local jurisdiction. The final 2018 RTP will include a financially constrained project list based on committed and anticipated funding, as well as a strategic priorities list for unfunded projects. The plan is expected to be complete in the summer of 2018.

### Goals

The 2014 update of the RTP strengthened and more clearly defined biking and walking goals and policies to reflect direction from the Regional Safety Plan and the Regional Active Transportation Plan. Table 2 presents the RTP goals.

**Table 2: Goals of the 2014 Regional Transportation Plan**

| Title | Goal |
|---|---|
| Goal 1: Foster Vibrant Communities and Efficient Urban Form | Land use and transportation decisions are linked to optimize public investments and support active transportation options and jobs, schools, shopping, services, recreational opportunities and housing proximity. |
| Goal 2: Sustain Economic Competitiveness and Prosperity | Multi-modal transportation infrastructure and services support the region's well-being and a diverse, innovative, sustainable and growing regional and state economy. |
| Goal 3: Expand Transportation Choices | Multi-modal transportation infrastructure and services provide all residents of the region with affordable and equitable options for accessing housing, jobs, services, shopping, educational, cultural and recreational opportunities, and facilitate competitive choices for goods movement for all businesses in the region. |
| Goal 4: Emphasize Effective and Efficient Management of the Transportation System | Existing and future multi-modal transportation infrastructure and services are well-managed to optimize capacity, improve travel conditions and address air quality goals. |
| Goal 5: Enhance Safety and Security | Multi-modal transportation infrastructure and services are safe and secure for the public and goods movement. |

| Title | Goal |
|---|---|
| Goal 6: Promote Environmental Stewardship | Promote responsible stewardship of the region's natural, community, and cultural resources. |
| Goal 7: Enhance Human Health | Multi-modal transportation infrastructure and services provide safe, comfortable and convenient options that support active living and physical activity, and minimize transportation-related pollution that negatively impacts human health. |
| Goal 8: Ensure Equity | The benefits and adverse impacts of regional transportation planning, programs and investment decisions are equitably distributed among population demographics and geography, considering different parts of the region and census block groups with different incomes, races and ethnicities. |

## Specific Policy Direction

- Arterial and Throughway Policy 1: Build a well-connected network of complete streets that prioritize pedestrian and bicycle access.
- Arterial and Throughway Policy 2: Improve local and collector street connectivity.
- Transit Policy 6: Improve pedestrian and bicycle access to transit.
- Bicycle Policy 1/Pedestrian Policy 1: Make walking and bicycling the most convenient, safe and enjoyable transportation choices for short trips less than three miles.
- Pedestrian Policy 2: Build a well-connected network of pedestrian routes, including safe street crossings, integrated with transit and nature that prioritize seamless, safe, convenient and comfortable access to urban centers and essential daily needs, including schools and jobs, for all ages and abilities.
- Pedestrian Policy 3: Create walkable downtowns, centers, main streets and station communities that prioritize safe, convenient and comfortable pedestrian access.
- Pedestrian Policy 4: Improve pedestrian access to transit.
- Pedestrian Policy 5: Ensure that the regional pedestrian network equitably serves all people.

## Objectives

Many of the objectives identified in the RTP relate to pedestrian planning and prioritization of projects. Table 3 presents these objectives.

**Table 3: Relevant Objectives from the 2014 Regional Transportation Plan**

| Title | Objective |
|---|---|
| Objective 1.1: Compact Urban Form and Design | Use transportation investments to reinforce growth in and multi-modal access to 2040 Target Areas and ensure that development in 2040 Target Areas is consistent with and supports the transportation investments. |
| Objective 3.1 Travel Choices | Achieve modal targets for increased walking, bicycling, use of transit and shared ride and reduced reliance on the automobile and drive alone trips. |
| Objective 3.2 Vehicle Miles of Travel | Reduce vehicle miles traveled per capita. |
| Objective 3.3 Equitable Access and Barrier Free Transportation | Provide affordable and equitable access to travel choices and serve the needs of all people and businesses, including people with low income, children, elders and people with disabilities, to connect with jobs, education, services, recreation, social and cultural activities. |
| Objective 5.1 Operational and Public Safety | Reduce fatal and severe injuries and crashes for all modes of travel. |
| Objective 6.5 Climate Change | Reduce transportation-related greenhouse gas emissions. |
| Objective 7.1: Active Living | Provide safe, comfortable and convenient transportation options that support active living and physical activity to meet daily needs and access services. |

| Title | Objective |
|---|---|
| Objective 8.1 Environmental Justice | Ensure benefits and impacts of investments are equitably distributed by population demographics and geography. |
| Objective 8.4 Transportation and Housing Costs | Reduce the share of households in the region spending more than 50 percent of household income on housing and transportation combined. |

### Planning and Implementation Guidance

The RTP provides guidance on regional prioritization of walking and biking infrastructure, stating that "emphasis should be given to filling gaps and providing safe crossings of the busiest streets. Access to schools, parks, and community centers that are active parts of the community is important for influencing a healthy lifestyle that includes walking" (page 153). Priority should also be given to sidewalk improvements that access major transit routes and those that improve the lives of underserved communities (page 155).

#### PedPDX Implication

PedPDX must adhere to the specific policy directions of the RTP as defined through the RTFP. Changes to projects, classifications, or maps are allowed, but the City will be required to incorporate these into the next RTP update.

## 2012 Regional Transportation Functional Plan

The Regional Transportation Functional Plan (RTFP) is part of the Metro Code and provides policies and guidelines to help jurisdictions implement the Regional Transportation Plan. The plan contains specific language regarding what to include in a pedestrian plan. If a TSP is consistent with this RTFP, Metro deems it consistent with the RTP.

### Goals and Objectives

The RTFP implements the goals and objectives of the Regional Transportation Plan. The RTFP specifically dictates that cities and counties of the region should carry these out in "their comprehensive plans, transportation system plans (TSPs), other land use regulations and transportation project development" with the goal of a more comprehensive approach for implementing the regional 2040 Growth Concept (3.08.010 B). To that end, PedPDX must conform to the policy direction of the RTFP.

### Specific Policy Direction

The following are specific policy directives that present the greatest nexus with the development of the PedPDX Portland Citywide Pedestrian Plan.

The City of Portland must provide street design regulations that allow (3.08.110):

- Adherence to adopted guidelines for livable, green, and transit-supportive streets (A 1-3)
- Implementation of sidewalks with five feet of pedestrian through zone (B 2)
- Implementation of landscaped or paved pedestrian buffers of at least five feet, that include street trees (B 3)
- Short and direct right-of-way routes and shared-use paths to connect residences with commercial services, parks, schools, hospitals, institutions, transit corridors, regional trails and other neighborhood activity centers (B 5)

- If proposed residential or mixed-use development of five or more acres involves construction of a new street, the city and county regulations shall require the applicant to provide a site plan that provides full street connections with spacing of no more than 530 feet between connections (E 2)
    - Provides for bike and pedestrian accessways that cross water features protected pursuant to Title 3 of the UGMFP at an average of 530 feet between accessways unless habitat quality or the length of the crossing prevents a connection; (E 5)

The City of Portland must integrate pedestrian planning with transit system access through (3.08.120):

- Investments, policies, standards and criteria to provide pedestrian…. connections to all existing transit stops and major transit stops designated in the RTP (A)
- Specific site design standards for new retail, office, multi-family and institutional buildings located near or at major transit stops identified in the RTP (B 2)

The City of Portland must address pedestrian system design through a TSP pedestrian plan, with implementing land use regulations, for an interconnected network of pedestrian routes within and through the city. The plan shall include (3.08.130):

- An inventory of existing facilities that identifies gaps and deficiencies in the pedestrian system;
- An evaluation of needs for pedestrian access to transit and essential destinations for all mobility levels, including direct, comfortable and safe pedestrian routes.
- A list of improvements to the pedestrian system that will help the city… achieve the regional Non-SOV modal targets in Table 3.08-1 and other targets established pursuant to section 3.08.230;
- Provision for sidewalks along arterials, collectors and most local streets, except that sidewalks are not required along controlled roadways, such as freeways; and
- Provision for safe crossings of streets and controlled pedestrian crossings on major arterials.

The RTFP also permits the establishment of pedestrian districts through the City Comprehensive Plan or land use regulations (3.08.130 B). Specific elements to define for a pedestrian district are outlined in the RTFP.

The RTFP also requires that City land use regulations require new development to provide on-site streets and accessways that offer reasonably direct routes for pedestrian travel. (3.08.130 C)

The City of Portland must identify pedestrian transportation needs through the TSP in accordance with the following process requirements (3.08.210):

- Incorporate regional and state transportation needs identified in the 2035 RTP;
- Determine local transportation needs based upon:
    - System gaps and deficiencies identified in the inventories and analysis of transportation systems
    - RTP's system maps and functional classifications for street design… [and] pedestrians
    - Consideration for the mobility corridor strategies of the RTP (cross-referencing the Atlas of Mobility Corridors)

**Planning and Implementation Guidance**

The RTFP specifies the importance of access to "essential destinations" and defines these as hospitals, medical centers, grocery stores, schools, and social service centers with more than 200 monthly LIFT

pick-ups. Table 3.08.01 of the RTFP provides Non-SOV modal targets for 12 distinct 2040 Design Types, with percentage targets that range from 40 to 70 percent.

#### PedPDX Implication

RTFP Policy 03.08.130 requires that the City of Portland develop a pedestrian plan through the TSP process, which the completion of PedPDX will satisfy. Implementing land use regulations must accompany that plan and will need to be an action item identified within PedPDX strategies and actions. RTFP Policy 3.08.210 sections A and B define the process that PedPDX must follow to be included in the TSP. PedPDX will need to establish consistency with the regional maps, functional classifications, and modal targets. Regional maps include RTP Pedestrian Network Map (Figure 2.20), as well as RATP maps noted below.

## 2014 Regional Active Transportation Plan

### General Description

The Regional Active Transportation Plan, adopted in 2014, provides guidance on creating bike and pedestrian networks, concepts, and policies that inform active transportation planning in the Metro region. The plan's vision is to create a region where people have safe and convenient access to active transportation regardless of age, ability, income level, and background. The outcomes of this vision are increased economic prosperity, increased environmental benefits, and decreased transportation costs.

### Specific Policy Direction

The Regional Active Transportation Plan (RATP) is an element of the Regional Transportation Plan (RTP). Portions of it are incorporated into the RTP and adopted by Ordinance, while others are not. The RATP offers greater detail than the RTP regarding existing conditions, needs, classifications, and implementation. Therefore, PedPDX should reflect requirements and policy guidance of both the RTP and the RATP, where relevant. The following lists policies and objectives that apply to the process and outcomes of PedPDX:

#### Policies

- Policy 1: Make walking and bicycling the most convenient, safe and enjoyable transportation choices for short trips less than three miles.
- Policy 3: Ensure that the regional active transportation network equitably serves all people.
- Policy 4: Complete the regional pedestrian and bicycle networks.

#### Objectives

- Objective 1.2: Support adding pedestrian and bicycle projects to the Regional Transportation Plan that improve safety and connect people to destinations that serve daily needs, especially in areas where there is high demand for walking, bicycling and transit service and/or in underserved communities.
- Objective 1.3: Encourage inclusion of wayfinding, street markings and other elements in projects and plans that enhance connections and make the regional pedestrian and bicycle networks consistent, integrated and easy to navigate on foot, by bicycle and transit.
- Objective 1.6: Support projects and programs in opportunity areas where short trips made by auto might be easily replaced by walking, bicycling and transit.

- Objective 1.7: Encourage bicycle, pedestrian and transit integration by supporting development of bicycle parking plans, transit access analysis, and processes to prioritize bus stop shelter improvements and safe crossings at transit stations and stops.
- Objective 3.3: Encourage the implementation of pedestrian and bicycle projects that increase safety and access to transit and other destinations that meet daily needs in areas where people of color, people with low-incomes, youth and seniors, people with disabilities, and people with low-English proficiency live.
- Objective 4.5: Work with cities, counties, agencies and other stakeholders to develop a policy in the Regional Transportation Plan and Regional Transportation Functional Plan to complete pedestrian and bicycle networks through roadway maintenance projects.

**Planning and Implementation Guidance**

The RATP identifies the need to map Regional Destinations and plan for access to such sites. Regional Destinations are identified as: Regional Park, Businesses (sites with 300 or more employees), Schools (High schools, colleges, and universities), Services (LIFT Paratransit), Shopping Center, High Ridership Bus Stop (as identified by TriMet), Hospital, Airport, City Hall, and Library. The RATP specifically cites the need for local plans to support local connections for first/last mile access to these regional destinations that are not fully serviced by the regional active transportation network (page 5-70).

The plan provides prioritization and implementation guidance for pedestrian infrastructure and states:

- Fill sidewalk and trail gaps within a mile of transit stops and stations, this is a top priority.
- Fill sidewalk gaps and improve deficient facilities, with priority on areas with high levels of walking.
- Prioritize improvements along arterials, at intersections, and where connectivity can be improved.
- Provide separation between people walking and motor vehicle traffic.
- Create facilities that are safe and comfortable for people of all ages and abilities.

Performance Measures of the RATP are based on the targets set by the RTP, RTFP, and the Regional Transportation Safety Plan (RTSP). Relevant RATP targets include:

- By 2040, triple the walking, biking and transit mode shares for all trips compared to 2010 modeled mode shares within the urban growth boundary compared to 2010 modeled mode shares.
- By 2040, reduce the number of pedestrian, bicyclist, and motor vehicle occupant fatalities plus serious injuries each by 50 percent compared to five year levels based on data in the in the Metro State of Safety Report.
- By 2040, increase by 50 percent the miles of sidewalks, bikeways and trails compared to the regional pedestrian and bicycle networks in 2010.
- Pedestrian miles traveled (total and per capita)
- Percent of regional pedestrian network with low Pedestrian Comfort Index improved.
- Increase in connectivity of regional pedestrian networks.

### PedPDX Implication

PedPDX network needs and classifications must align with the RATP, as directed by the RTFP. This includes consistency with the Regional Pedestrian Network Functional Classifications Map and the Regional Pedestrian Network On-Street/Off-Street Network. PedPDX is further informed by RATP's vision and goals, identified regional destinations, recommended prioritization criteria, and relevant performance targets.

## 2012 Regional Transportation Safety Plan

### General Description

The Regional Transportation Safety Plan (RTSP) serves as a data-driven framework and specifically urban-focused safety plan to build upon ODOT's statewide success and reduce fatalities and serious injuries in the Portland Metropolitan region. The RTSP recommends a suite of strategies and actions to support the region's target for reducing fatalities and serious injuries for all crashes by 50 percent, as identified in the RTP. Metro identified local governments and ODOT as partners in implementing the strategies and actions.

### Specific Policy Direction

Actions that can be addressed through PedPDX network needs assessment and implementation toolkit are:

- Research pedestrian/bicycle facility lighting best practices
- Ensure bike routes and crosswalks – marked and unmarked – are adequately lit
- Develop safe crosswalks on arterials and multilane roads, generally adhering to the region's maximum spacing standard of 530 feet and at all transit stops
- Enforce existing laws through crosswalk enforcement actions
- Use strategies including Highway Safety Manual strategies to address safety on multilane roadways, such as medians, speed management, access management, improved pedestrian crossings, roundabouts, and road diets

### PedPDX Implication

The City's TSP and Comprehensive Plan prioritize safety over motor vehicle capacity as recommended in the RTSP. While the RTSP has no binding requirements to PedPDX, its recommended actions in support of the RTP safety performance measures can inform PedPDX implementation strategies.

## 2012 TriMet Pedestrian Network Analysis

### General Description

The Pedestrian Network Analysis Project provides TriMet and its partners a way to objectively assess areas of its service district for needs and opportunities, communicate priorities, and eventually work with partners to program investments that provide better pedestrian access to transit stops. Moving beyond this study, TriMet will work with cities, counties, and the state to incorporate existing conditions information and findings into community plans, project designs, and funding decisions. Ultimately TriMet wants to find ways to build high quality sidewalks, make street crossings safer and easier, and to generally make the walk to a transit stop a positive and desirable experience for

everyone with the help of its city, county, and state partners. The plan includes a three-tiered prioritization methodology, identification of ten priority focus areas with recommended pedestrian projects, and a set of three performance targets.

## Specific Policy Direction

The TriMet Pedestrian Network Analysis provides the recommendations for completing TSP, of which PedPDX is a component. The following are relevant to PedPDX:

- Avoid calling walking, biking, and taking transit "alternative modes"
- Complete facilities that feel safe and allow many people to choose walking, bicycling, and taking transit
- Collect data that help identify meaningful and complete pedestrian, bicycle and transit needs
- Make improvements where they are most needed and most effective at achieving policy goals
- Match funding sources with types of projects
- Unbundle pedestrian and cycling needs from larger road projects
- Strongly encourage broad participation
- Support data-driven modeling with field investigation

## Planning and Implementation Guidance

The TriMet Pedestrian Network Analysis included a prioritization methodology based on:

- Walkability of the environment (such as street connectivity) and the transit stop location (including proximity to trip attractors)
- Network opportunities (such as funding) and deficiencies (such as high traffic volumes or speeds)

Scores from each of these layers of analysis were weighted and combined to form a composite score.

### PedPDX Implication

While the TriMet Pedestrian Network Analysis has no binding requirements to PedPDX, its recommendations for TSP and approach to prioritization can inform the planning process.

# Summary of City Plans, Goals, and Requirements

## 2012 Portland Plan

### General Description

The Portland Plan is a strategic plan intended to guide the actions of the City of Portland and a wide range of partner institutions. The plan is distinct from the Comprehensive Plan due to its focus on a broader vision and goals and its role in coordinating the actions of many institutions and agencies that work in the city, not only the government of the City of Portland. The plan was adopted in 2012 and served as the foundation for the state-mandated 2035 Comprehensive Plan update. Equity is a central focus of the Portland Plan. The policies and strategies associated with each goal were specifically formulated to achieve more equitable outcomes. The Portland Plan is a high-level, strategic plan that is implemented through the Comprehensive Plan; thus, the plan does not provide specific implementation guidance for the PedPDX plan.

### Goals and Objectives

The Portland Plan establishes three broad goals for the city:

1. **Thriving, Educated Youth:** Ensure that youth (ages 0–25) of all cultures, ethnicities, abilities and economic backgrounds have the necessary support and opportunities to thrive — both as individuals and as contributors to a healthy community and prosperous, sustainable economy.
2. **Economic Prosperity and Affordability:** Expand economic opportunities to support a socially and economically diverse population by prioritizing business growth, a robust and resilient regional economy, and broadly accessible household prosperity.
3. **Healthy, Connected City:** Improve human and environmental health by creating safe and complete neighborhood centers linked by a network of city greenways that connect Portlanders with each other. Encourage active transportation, integrate nature into neighborhoods, enhance watershed health and provide access to services and destinations, locally and across the city.

The plan calls for each of these three goals to be achieved within a Framework for Equity. The Framework defines equity, discusses why it matters, and outlines specific actions for prioritizing equity.

### Specific Policy Direction

The specific actions associated with Portland Plan's Framework for Equity and Healthy, Connected City goal are relevant to the PedPDX plan.

**Framework for Equity.** The following elements of the Framework for Equity are relevant to PedPDX:

- **Close the Gaps (Element 1)** - This policy calls for the City and partners to collect and track information needed to understand disparities in access, evaluate equity impacts of infrastructure investments, and mitigate disparities in access.
- **Increase Focus on Disability Equity (Element 5)** - The primary focus of this policy is for the City to implement its ADA Title II Disability Transition Plan. PedPDX should be coordinated with and informed by this plan. Additionally, the project may consider other ways to address disability equity through the needs assessment or project prioritization.

**Healthy, Connected City.** The following actions under the Healthy, Connected City goal are relevant to PedPDX and were identified as having an impact of equity goals.

- **Collaboration with health partners (Action 93)** - This action calls for the City to collaborate with health partners to elevate integration of public health impacts in planning decisions.
- **Neighborhood greenways (Action 122)** - This action calls for implementation of the City's neighborhood greenways network, and identifies several specific routes.
- **Alternative right-of-way projects (Action 124)** - This action calls for a pilot program to test alternative street designs for unimproved streets, where traditional approaches are not feasible.
- **Pedestrian facilities (Action 126)** - This action calls for the City to consider alternative treatments (that do not meet City standards) for pedestrian facilities where infrastructure is lacking, to accelerate implementation of improvements.
- **Sidewalk infill and pedestrian facilities (Action 129)** - This action calls for the City to build sidewalks on all arterials that are classified "streets of citywide significance" and to focus first on those high-need arterials in east and southwest Portland.

### PedPDX Implication

The Portland Plan is implemented by the Comprehensive Plan. As such, the Comprehensive Plan offers more detailed and articulated policy directives and implementation guidance. However, the Portland Plan is a useful reference for understanding how the Comprehensive Plan conceptualizes equity. A critical directive of the plan is that equity not be treated as a goal that competes with other goals for prioritization. Rather, advancing equity is a necessary outcome of any decision or action; equity is a lens or perspective to apply to every project, policy, or program. The Portland Plan is a useful resource should the PedPDX plan need further guidance on how to interpret or apply equity, in addition to the goals and policies of the Comprehensive Plan.

## 2018 City of Portland 2035 Comprehensive Plan

### General Description

The Comprehensive Plan is a long-range land use and public facility investment plan intended to guide future growth and the physical development of Portland. The Comprehensive Plan is Portland's primary tool to implement the Portland Plan. It is built on the 2012 Portland Plan, the Climate Action Plan and Portland's 1980 Comprehensive Plan. Elements of the TSP — the goals and policies, the projects included in the List of Significant Projects, street classification maps, and master street plans, and financial plan — are adopted as part of the Comprehensive Plan. The TSP itself is adopted concurrently with the Comprehensive Plan but is published under a separate cover. The Comprehensive Plan was adopted in 2016, and is pending approval by the state for implementation in 2018. The Comprehensive Plan establishes broad goals and policy that can be implemented by the pedestrian plan, and includes a transportation chapter with specific policies for pedestrian planning.

## Goals and Policies

The Comprehensive Plan establishes six guiding principles for overall growth and development in the City:

- Economic prosperity
- Human health
- Environmental health
- Equity
- Resilience

These guiding principles are applied to each citywide system and policy area to articulate more specific goals and policies. Two chapters of the Comprehensive Plan are most directly related to pedestrian planning: Chapter 3 – Urban Form and Chapter 9 – Transportation. The Urban Form chapter defines how the city will physically develop in order to realize the vision and guiding principles of the Comprehensive Plan. The foundation for the chapter is an Urban Design Framework (UDF), which defines system of land use, transportation, and environmental concepts that will guide development throughout the city. The Transportation chapter defines how the transportation system will function to serve the city as envisioned by the UDF. The overall goals and policies of each chapter are summarized below.

**Chapter 3 – Urban Form:** Chapter 3 defines policies for citywide design and development and for a series of specific geographies, as summarized below. For a discussion of how the UDF affects pedestrian planning, in conjunction with other important geographies identified in other plans, see the Key Findings section of this memo.

- Citywide Design and Development - The Urban Design Framework is the key citywide development goal that is relevant to PedPDX. Elements of the UDF are summarized below. Additionally, the plan establishes a citywide goal for equitable development. Policy 3.3, Equitable Development, includes seven sub-policies that help define the meaning and responsibilities of the City to promote equity. Two of the sub-policies define equitable development in relation to public facility investments, including pedestrian infrastructure:
    - *Mitigate negative impacts:* Address the potential negative impacts of public facility investments (such as displacement or loss of housing affordability) on communities of color, under-served and under-represented communities, and other vulnerable populations.
    - *Reduce disparities:* Make needed investments in areas that are deficient in public facilities to reduce disparities and increase equity.
- Centers - Centers are compact and pedestrian-oriented urban places. They are connected to public transit and active transportation networks and they anchor complete neighborhoods. Centers will be the primary areas for growth and change. Focusing new growth in centers helps achieve goals of having more Portlanders live in complete neighborhoods, use public transit and active transportation. The UDF identifies four types of centers that vary in size, scale, service area, local versus regional role, and density of residents and businesses: Central City, Regional Center (Gateway), Town Center, and Neighborhood Center. Two other subareas are defined by the UDF that work in conjunction with Centers:

    - *Inner Ring Districts:* Inner Ring Districts include some of Portland's oldest neighborhoods, with several historic districts and a broad diversity of housing types. These areas include distinct districts, such as Albina and Northwest Portland, which have multiple mixed-use corridors in proximity. Inner Ring Districts play a similar role to Town Centers in accommodating growth.
    - *Transit Station Areas:* Transit stations provide access to high-capacity transit. Housing and employment growth in transit station areas is encouraged to maximize people's ability to benefit from the regional connections. Priority is given to growth in station areas located in centers since they provide more opportunities to be close to both transit and to commercial and public services.
- Corridors - Corridors, like centers, are areas where Portland will grow and change much over the next 20 years. They are busy, active streets with redevelopment potential. They are close to neighborhoods and are places with transit, stores, housing, and employers. They need to be planned, designed, and improved to be places that benefit and become successful additions to surrounding neighborhoods. There are two types of Corridors: Civic Corridors and Neighborhood Corridors. Additionally, Regional Truck Corridors maintain the primary truck routes into and through the city to support Portland's role as an important West Coast trade hub.
- Greenways - Greenways are a system of distinctive pedestrian- and bicycle-friendly streets and trails, enhanced by lush tree canopy and landscaped storm water facilities that support active living by expanding transportation and recreational opportunities and making it easier and more attractive to reach destinations across the city. There are four types of Greenways: Enhanced Greenway Corridors, Trails, Heritage Parkways, and Neighborhood Greenways.
- Pattern Areas - Portland has five distinct Pattern Areas: Rivers, Central City, Inner Neighborhoods, Western Neighborhoods, and Eastern Neighborhoods. Each Pattern Area has unique physical, social, cultural, and environmental qualities that differentiate them and create their sense of place. To maintain and enhance the positive qualities and sense of place in each pattern area, it is desirable to have policies and regulations that respond to each area's unique natural and built assets.

**Chapter 9 – Transportation:** The Transportation Chapter establishes the following overall goals for transportation, as summarized below:

- Safety - Comprehensive efforts to improve transportation safety will be used to eliminate traffic-related fatalities and serious injuries.
- Multiple goals - Portland's transportation system is funded and maintained to achieve multiple goals and measurable outcomes for people and the environment.
- Great places - Portland's transportation system enhances quality of life for all Portlanders, reinforces existing neighborhoods and great places, and helps make new great places in centers and corridors.
- Environmentally sustainable - The transportation system uses active transportation and renewable energy, achieves adopted carbon reduction targets, and reduces pollution and reliance on private vehicles.
- Equitable transportation - There are two components to the equitable transportation goal:

    - *Equitable outcomes*: all Portlanders have access to safe, efficient, convenient, and affordable transportation.
    - *Equitable investments*: Transportation investments respond to distinct needs of each community.
- Positive health outcomes - The transportation system promotes positive health outcomes and minimizes negative impacts by supporting active transportation, physical activity, and community and individual health.
- Opportunities for prosperity - The transportation system supports a strong and diverse economy,
- Cost effectiveness - The City analyzes and prioritizes investments to cost effectively achieve the above goals.

**Specific Policy Direction**

The following specific policies were identified as important directives for the PedPDX plan. The policies are provided below in full.

Chapter 3 – Urban Form

- Policy 3.3 Equitable Development: Guide development, growth, and public facility investment to reduce disparities; encourage equitable access to opportunities, mitigate the impacts of development on income disparity, displacement and housing affordability; and produce positive outcomes for all Portlanders.
    - *Policy 3.3.a:* Anticipate, avoid, reduce, and mitigate negative public facility and development impacts, especially where those impacts inequitably burden communities of color, under-served and under-represented communities, and other vulnerable populations.
    - *Policy 3.3.b:* Make needed investments in areas that are deficient in public facilities to reduce disparities and increase equity. Accompany these investments with proactive measures to avoid displacement and increase affordable housing.
- Policy 3.4 All Ages and Abilities: Strive for a built environment that provides a safe, healthful, and attractive environment for people of all ages and abilities.
- Policy 3.15 Investments in Centers: Encourage public and private investment in infrastructure, economic development, and community services in centers to ensure that all centers will support the populations they serve.
- Policy 3.19 Center Connections: Connect centers to each other and to other key local and regional destinations, such as schools, parks, and employment areas, by pedestrian trails and sidewalks, bicycle sharing, bicycle routes, frequent and convenient transit, and electric vehicle charging stations. Prepare and adopt future street plans for centers that currently have poor street connectivity, especially where large commercial parcels are planned to receive significant additional housing density.
- Policy 3.45 Connections (Corridors): Improve corridors as multimodal connections providing transit, pedestrian, bicycle, and vehicle access and that serve the freight needs of centers and business districts.

- Policy 3.54 Community connections (Transit Station Areas): Integrate transit stations into surrounding communities and enhance pedestrian and bicycle facilities (including bike sharing) to provide safe and accessible connections to key destinations beyond the station area.
- Policy 3.60 Connections (Greenways): Create a network of distinctive and attractive City Greenways that link centers, parks, schools, rivers, natural areas, and other key community destinations.
- Policy 3.63 Design (Greenways): Use design options such as distinctive street design, motor vehicle diversion, landscaping, tree plantings, scenic views, and other appropriate design options, to create City Greenways that extend the experience of open spaces and nature into neighborhoods, while improving storm water management and calming traffic.

Chapter 9 – Transportation

- Policy 9.2: Street Policy Classifications: Maintain and implement street policy classifications for pedestrian, bicycle, transit, freight, emergency vehicle, and automotive movement, while considering access for all modes, connectivity, adjacent planned land uses, and state and regional requirements.
    - *Policy 9.2.b:* Designate district classifications that 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, neighborhood centers, and transit station areas.
- Policy 9.9: Accessible and Age-Friendly Transportation System: Ensure that transportation facilities are accessible to people of all ages and abilities, and that all improvements to the transportation system (traffic, transit, bicycle, and pedestrian) in the public right-of-way comply with the Americans with Disabilities Act of 1990. Improve and adapt the transportation system to better meet the needs of the most vulnerable users, including the young, older adults, and people with different abilities.
- Policy 9.17: Pedestrian Transportation: Encourage walking as the most attractive mode of transportation for most short trips, within neighborhoods and to centers, corridors, and major destinations, and as a means for accessing transit.
- Policy 9.18: Pedestrian Networks: Create more complete networks of pedestrian facilities, and improve the quality of the pedestrian environment.
- Policy 9.64: Education and Encouragement: Create, maintain, and coordinate educational and encouragement programs that support multimodal transportation and that emphasize safety for all modes of transportation. Ensure that these programs are accessible to historically under-served and under-represented populations.
- Policy 9.6: Transportation Strategy for People Movement: Implement a prioritization of modes for people movement by making transportation system decisions according to the following ordered list: walking, bicycling, transit, taxi / commercial transit / shared vehicles, zero emission vehicles, other single-occupant vehicles.

## Implementation Guidance

The Comprehensive Plan provides guidance for implementation that is relevant to PedPDX. This guidance includes methods for measuring pedestrian accessibility, prioritizing pedestrian investments,

producing context-sensitive design, and assessing equity impacts. The implementation guidance is summarized below:

- **20-Minute Neighborhood Analysis** - The 20-minute neighborhoods analysis was a GIS-based analysis of walkability completed by the City in 2010 to inform the Comprehensive Plan. The analysis combined measures of accessibility to key destinations (parks, schools, commercial services, etc.) with measures of pedestrian infrastructure (sidewalk area, street connectivity) to calculate a sum score that approximates the walkability of every location in the city. This data informed the identification and classification of centers and corridors in the Comprehensive Plan. The 20-minute neighborhoods analysis represents existing conditions (as of 2010); the centers and corridors represent the anticipated future conditions and City policies. As 20-minute neighborhoods methodology was informed by community input and influenced the Comprehensive Plan, any similar analyses performed for PedPDX should build on this methodology, particularly the selection and weighting of destinations. More recent data will need to be obtained as conditions have changed since 2010. The PedPDX analysis may take a more diagnostic and detailed approach that would identify the specific gaps that constrain accessibility in different locations.
- **Centers Investment Typology** - The Executive Summary of the Comprehensive Plan includes a discussion of infrastructure investment strategies for complete centers (see p. I-37). The typology presents four investment strategies that depend on the level of need and the projected future population size. PedPDX may consider building on this approach when prioritizing pedestrian investments. In general, the Comprehensive Plan calls for prioritizing investments that support centers. Additionally, this typology calls for PedPDX to consider whether any particular investment—or the entire package of investments in any particular center—is aligned with the identified investment strategy for that center.
- **Pattern Areas** - The Pattern Areas identified in Chapter 3 (Urban Form) of the Comprehensive Plan should influence the implementation and design of pedestrian infrastructure. The Pattern Areas classify areas by characteristics such as block sizes, street connectivity, and topography. For example, pedestrian infrastructure in Eastern and Western Neighborhoods may be more likely to take the form of off-street connections or mid-block crossings, given irregular and larger block sizes and a disconnected street grid. Residents of Western Neighborhoods may prefer design treatments that look more like trails or pathways than urban sidewalks. The Pattern Areas will be considered as a factor in the identification of needs and prioritization of projects for PedPDX, as well as for the development of context-sensitive alternative design standards.
- **Equity Assessment** - Multiple goals and policies in the Comprehensive Plan underscore the critical importance of assessing the equity impacts of investments. Generally, the plan calls for the City to assess and integrate equity impacts into public programs and investments in three ways:
    - *Reduce disparities*: Will the investment close gaps and reduce disparities in pedestrian infrastructure for underserved populations? This assessment primarily influences identification of needs and prioritization of investments.
    - *Mitigate negative impacts*: To what degree will the investment affect neighborhood affordability, and how can undesired impacts such as gentrification and displacement

be mitigated? This assessment may not influence whether a project is prioritized or included in PedPDX, but can help to anticipate unintended consequences and flag opportunities to coordinate the investment with anti-displacement efforts, such as affordable housing construction.

- *Extend community benefits:* How can the investment extend benefits to communities of color, low-income populations, and other under-served or under-represented groups? In the fall of 2017, the City Council passed a resolution to require that all public improvement contracts be procured through the process defined by the Subcontractor Equity Program, Community Equity and Inclusion Plan, or Community Benefits Agreements, depending on the size of the contract. The goal of this policy is to increase the utilization of women and minority workers on City construction contracts. Public investments identified in the PedPDX plan can advance equity by applying these procurement processes.

**PedPDX Implication**

In summary, the Comprehensive Plan primarily defines the role of pedestrian infrastructure in achieving the City's goals for urban form and equitable development. The PedPDX plan will need to consider how pedestrian projects and programs are contributing to the system of centers, corridors, and greenways that make up the Urban Design Framework. Further, the design of pedestrian infrastructure may be influenced by the Pattern Area classifications identified in the Comprehensive Plan. Lastly, the PedPDX process and outcomes will need to be consistent with the Comprehensive Plan's goals for equitable development by reducing disparities and mitigating negative impacts on underserved populations.

## 2017 (Pending) City of Portland Transportation System Plan (TSP)

### General Description

The City updated its TSP following adoption of the updated Comprehensive Plan. Council adopted updated TSP goals and policies in 2016, as part of the Stage 1 package of amendments. Street design classifications were adopted in 2016 as part of the Stage 2 package. Stage 1 and 2 Updates were completed as part of the Comprehensive Plan update work program. The Stage 3 Update package, which includes policies (as a replacement of the previously termed "objectives") and TSP updates not related to the Comprehensive Plan, are pending adoption in 2018. This process explicitly defers to PedPDX to address pedestrian network needs, priorities, classifications, and policies, underscoring the purpose and weight of this process. PedPDX is a planning process that can provide recommendations of pedestrian-related projects, but the outcomes of PedPDX will not influence the TSP's project prioritization. The City's Pedestrian Network Completion Program is a funding program that is a complement to the TSP program.

### Goals

The City's goals for transportation support the vision for a city in which people of all ages and abilities can safely walk within any neighborhood and to key destinations (such as employment and schools). Goals from the TSP Stage 1 Amendments that most directly establish policy direction for the Pedestrian Master Plan are shown in **Table 4**.

**Table 4: Goals of the City of Portland Transportation System Plan (adopted as part of Comprehensive Plan)**

| Goal | |
|---|---|
| Goal 9.a Safety | The City achieves the standard of zero traffic-related fatalities and serious injuries. Transportation safety impacts the livability of a city and the comfort and security of those using City streets. Comprehensive efforts to improve transportation safety through equity, engineering, education, enforcement and evaluation will be used to eliminate traffic-related fatalities and serious injuries from Portland's transportation system. |
| Goal 9.c Great Places | Portland's transportation system enhances quality of life for all Portlanders, reinforces existing neighborhoods and great places, and helps make new great places in town centers, neighborhood centers and corridors, and civic corridors. |
| Goal 9.e Equitable Transportation | The transportation system provides all Portlanders options to move about the city and meet their daily needs by using a variety of safe, efficient, convenient, and affordable modes of transportation. Transportation investments are responsive to the distinct needs of each community. |
| Goal 9.F Positive Health Outcomes | The transportation system promotes positive health outcomes and minimizes negative impacts for all Portlanders by supporting active transportation, physical activity, and community and individual health. |

## Specific Policy Direction

The current TSP Update includes the following relevant policies. These provide a basis for establishing PedPDX goals and objectives and for recommending modifications and additions to TSP policies related to the pedestrian network.

- Performance Measures. Establish multimodal performance measures and measures of system completeness to evaluate and monitor the adequacy of transportation services based on performance measures in goals 9.A. through 9.I. Use these measures to evaluate overall system performance, inform corridor and area-specific plans and investments, identify project and program needs, evaluate and prioritize investments, and regulate development, institutional campus growth, zone changes, Comprehensive Plan Map amendments, and conditional uses. (Policy 9.49)
- Street Design Classification. Maintain and implement street design classifications consistent with land use plans, environmental context, urban design pattern areas, and the Neighborhood Corridor and Civic Corridor Urban Design Framework designations. (Policy 9.1)
- Transportation Strategy for People Movement. Implement a prioritization of modes for people movement by making transportation system decisions according the following ordered list:
    1. Walking
    2. Bicycling
    3. Transit
    4. Fleets of electric, fully automated, multiple passenger vehicles
    5. Other shared vehicles
    6. Low or no occupancy vehicles, fossil-fueled non-transit vehicles (Policy 9.6)
- Streets for Transportation and Public Spaces. Integrate both placemaking and transportation functions when designing and managing streets by encouraging design, development, and operation of streets to enhance opportunities for them to serve as places for community interaction, environmental function, open space, tree canopy, recreation, and other community purposes. (Policy 9.14)

- Pedestrian networks. Create more complete networks of pedestrian facilities, and improve the quality of the pedestrian environment. (Policy 9.18)
- Pedestrian safety and accessibility. Improve pedestrian safety, accessibility, and convenience for people of all ages and abilities. (Policy 9.19)
- Connectivity. Establish an interconnected, multimodal transportation system to serve centers and other significant locations. Promote a logical, direct, and connected street system through street spacing guidelines and district-specific street plans found in the Transportation System Plan, and prioritize access to specific places by certain modes in accordance with policies 9.6 and 9.7. (Policy 9.47)

**Policies**

Street Design Classifications provide general design guidance based on the land use context. Classification maps are included in the TSP and online[1] and will provide the basis for an update to classifications as part of PedPDX *Task 4 Classifications and Recommendations Framework* (Deliverable 4E).

**Performance Measures**

The following two performance measures included in the adopted Stage 2 Update of the TSP are relevant to PedPDX:

- 9.26.g: By 2035, reduce the number of miles Portlanders travel by car to 11 miles per day on average and 70 percent of commuters walk, bike, take transit, carpool, or work from home at approximately the following rates:
  - Walk 7.5 percent
  - Bicycle 25 percent
  - Transit 25 percent
  - Carpool 10 percent
- 9.26.h: By 2035, increase the mode share of daily non-drive alone trips to 70 percent citywide and to the following in the five pattern areas:
  - Central City 87 percent
  - Inner Neighborhoods 71 percent
  - Western Neighborhoods 65 percent
  - Eastern Neighborhoods 65 percent
  - Industrial and River 55 percent

PedPDX Implication

The TSP Update identifies safety as the City's highest priority and confirms a "pedestrians first" approach to the "strategy of the movement of people" (an update to the "modal hierarchy" of the Portland Plan). This affirmation gives additional weight to the PedPDX planning process and outcomes. The TSP Updates are intended to meet requirements of the RTFP. PedPDX will serve as the pedestrian element to this TSP Update, as required by RTFP policy 3.08.130. As such, PedPDX must align with

[1] City of Portland Map App: https://www.portlandmaps.com/bps/mapapp/maps.html#mapTheme=cc2035TSPClass.

approved updated goals and policies of the TSP, must recommend new or revised pedestrian goals and policies for the TSP, and must adhere to RTFP's requirements of a TSP pedestrian plan.

## 1998 Pedestrian Master Plan

### General Description

This 1998 Pedestrian Master Plan was the first pedestrian plan of the City of Portland, and one of the first of its kind in the country. The Plan established a 20-year framework for creating a more walk-friendly City and served as the Pedestrian Element of the City's Transportation System Plan (TSP). The Plan is structured to reflect the goals, policies, and objectives formally adopted by City Council ordinance and to identify action items that facilitate achieving those goals. The Plan has guided network development through its Pedestrian Street Classifications, tied to the TSP, list of 146 prioritized pedestrian projects, pedestrian design guidelines.

### Goals

- City goals furthered by the Pedestrian Master Plan included:
    - Reducing reliance on the automobile
    - Developing a balanced, affordable, and efficient transportation system
    - Preserving the quality of the City's capital investment in the transportation system
    - Enhancing and extending Portland's attractive identity
- City policy related to achieving those goals is to:
    - Complete a pedestrian network that serves short trips and transit
    - Improve the quality of the pedestrian environment
    - Increase pedestrian safety and convenience
    - Encourage walking
    - Explore a range of funding options for pedestrian improvements

### Specific Policy Direction

- Determining pedestrian project prioritization based on policy factors, proximity factors (trip attractors within a walkshed), and environmental variables (physical context) (pages 21-23).
- Every project that is designed and built in the City of Portland should conform to the Pedestrian Design Guide, as issued by the City Engineer (page 14).
- Work with the state legislature to successfully increase state funding for transportation; and as funding becomes available, increase funding for pedestrian improvements (page 48).
- Encourage regional decision makers to use the full flexibility of federal transportation funding (page 48).
- Provide greater support for partnerships with business districts, urban renewal districts, and property owners (page 48).
- Dedicate resources to actively pursuing grants and other funding sources for pedestrian projects (page 49).
- Investigate the possibility of seeking a General Obligation Bond Initiative for pedestrian improvements (page 50).
- Give priority to projects on the System Development Charge list that are also in the Pedestrian Master Plan (page 50).

### PedPDX Implication

PedPDX will replace the 1998 Pedestrian Master Plan as a City of Portland policy document. This includes updating the design principles and pedestrian street classifications and updating the network needs and priorities. The factors included in the deficiency index and the prioritization methodology of the 1998 plan provide a basis for informing PedPDX adequacy criteria and prioritization criteria. PedPDX can carry forward the policy of conforming projects to the Pedestrian Design Guide.

## 2017 City of Portland Code of Ordinances

The City of Portland Code of Ordinances regulates certain elements of pedestrian network. The following highlights relevant portions of the Code.

- **Title 16: Vehicles and Traffic:** Title 16 generally includes regulations addressing the use and operation of vehicles and other travel modes in public right-of-way. Title 16 regulations are generally not relevant to the goals and outcomes of the PedPDX plan. However, this Title includes the City's definition of a pedestrian. The definition, quoted below, includes both people walking and people traveling using a variety of non-motorized vehicles or aids. It is important to note that the definition does not explicitly include people using a power-assisted or motorized mobility device or wheelchair, though these people are frequent users of pedestrian infrastructure and have needs that are distinct from other types of pedestrians. The PedPDX plan will consider the needs of these users; therefore, the plan may consider recommending an amendment to this Title 16 definition to include users of mobility devices. Alternatively, if the definition is not amended, the plan will need to clarify that the use of the term "pedestrian" in the plan will differ from the City's definition of pedestrian in Title 16.

  > *16.90.250 Pedestrian. (Amended by Ordinance No. 177028, effective December 14, 2002.) A person afoot; a person operating a pushcart; a person riding on or pulling a coaster wagon, sled, scooter, tricycle, bicycle with wheels less than 14 inches in diameter, or a similar non-motorized vehicle; or on roller skates, skateboard, wheelchair, or a baby in a carriage.*

- **Title 17: Public Improvements:** Title 17 addresses a wide range of public works projects. The Portland Bureau of Transportation (PBOT) is the agency responsible for management of the public right-of-way and no person may occupy or encroach on a public right-of-way without the permission of the City (Jurisdiction and Management of Public Right-of-Way, 17.24.005). The key regulations in Title 17 related to the construction, maintenance and operation of pedestrian facilities are noted below:
  - Funding tools include pedestrian facilities:
    - Transportation System Development Charges (TSDC) apply to new development and can be used to fund a portion of the needed capacity increases for transportation facilities including sidewalks, bicycle and pedestrian facilities (Transportation System Development Charge Scope and Purposes, 17.15.010)
  - Permit requirements help ensure that pedestrian facilities remain usable:
    - No person may occupy or encroach on a public right-of-way without the permission of the City (Transportation System Development Charge Scope and Purposes, 17.15.010)

        - Permits for sidewalk vendors require a minimum width of the Clear Pedestrian Zone (Sidewalk Cafes, Chapter 17.25) and the use of the permit operating area for sidewalk vending must be compatible with the public interest in use of the sidewalk areas as public right-of-way (Sidewalk Vendors, Chapter 17.26)
        - In no case may bicycle parking, installed through the Bicycle Parking Fund be placed in a sidewalk corridor of less than 10 feet in width (Bicycle Parking, 17.28.065)
    - Requirements work in conjunction with Title 33 (see below) to help ensure that sidewalks are constructed (typically at time of development) and maintained thereafter:
        - The owner(s) of land abutting any street in the City are responsible for constructing, reconstructing, maintaining and repairing the abutting sidewalks, curbs, driveways and parking strips, except in certain circumstances (Sidewalks, Curbs and Driveways, Chapter 17.28). In cases where a sidewalk is required to be constructed, but the property owner disagrees, the current requirements outline the process to remonstrate to the City Council (Construction Alternatives, 17.28.040)
        - The width of the improved sidewalks, the grade thereof, materials for construction or reconstruction, and the location and size of curbs are designated by the City Engineer and specifications for the temporary improvement, where required (Location, Size and Materials of Sidewalks and Curbs, 17.28.060)
    - The requirements for a transportation impact study are also specified to ensure an adequate level of street connections to serve land uses (Street Access, Chapter 17.88).
    - Supplementing Title 17 are the Portland Policy Documents and Administrative Rules (PPD) related to parking, right-of-way, street lighting, streets and sidewalks, traffic, transportation engineering, transportation options, transportation planning.
        - These policies and rules vary significantly in terms of age. Some will need to be updated as a part of this project (e.g., TRN-1.09: Design Standards for Public Streets references the Pedestrian Design Guidelines of the Pedestrian Master Plan (adopted 1998))
        - A number of transportation planning documents and streetscape plans are included in the PPD. The 1998 Pedestrian Master Plan itself is a Non-Binding City Policy (NCP-TRN-6.02)
        - Rules related to the maintenance and operation of sidewalks are included in the PPD (TRN-1.11: Sidewalk Maintenance Program Policy and Operating Guidelines)
        - The Infill Development Rule establishes a clear and objective set of criteria Administrative Exceptions to the City's sidewalk design requirements, including an exception for the replacement of single-family dwellings (TRN-1.22: Infill Development on Streets with an Existing Sidewalk Corridor). Similarly, the PBOT has implemented a temporary suspension of frontage improvement requirements (including sidewalks) for qualifying infill development on dirt and gravel and substandard streets (TRN-1.22: Infill Development on Streets with an Existing Sidewalk Corridor)

- **Title 33: Portland Zoning Code:** Title 33 regulates private property and land within private rights-of-way. Land within public rights-of-way is regulated by Title 17, Public Improvements. Title 33 is typically applied at time of development. While standards vary by zone, Title 33 includes:
    - Standards related to the orientation and design of development which are intended to create a pedestrian-friendly environment (Single-Dwelling Zones, 33.110; Multi-Dwelling Zones, 33.120; and Commercial Zones, 33.130)
        - Main Entrance standards can help ensure that the pedestrian entrance is visible or clearly identifiable from the street by its orientation or articulation
        - Street-Facing Facade standards can help prevent large expanses of blank facades along streets
        - Maximum building setbacks on a Transit Street or in a Pedestrian District or in CM or CS zones (10 feet). Alternative maximum setback option for large retailers requires internal accessways
        - Required ground Floor Windows in some locations
        - Direct pedestrian connection between abutting streets and buildings on the site, and between buildings and other activities within the site
        - Transit Street Main Entrance for convenient pedestrian access between the use and public sidewalks and transit facilities
    - Parking requirements which are balanced with an active pedestrian network to minimize pedestrian, bicycle and vehicle conflicts as much as possible (Parking And Loading, 33.266)
    - Pedestrian connectivity requirements including:
        - Designated Public Recreational Trails (Public Recreational Trails, 33.272)
        - Walkways within "superblocks" which linking buildings to public sidewalks, adjacent superblocks, and nearby transit facilities (Superblocks, 33.293)
        - Within some plan districts, special development guidelines and bicycle-pedestrian connections (Cascade Station/Portland International Center Plan District, 33.508)
        - Within new subdivisions (in all but industrial zones) pedestrian connections generally provided no more than 330 feet apart and along the most direct route practicable. In industrial zones, pedestrian connections to all Regional Transitways, Major Transit Priority Streets, Transit Access Streets, Community Transit Streets, Off-Street Paths, and recreational trails within 1,300 feet of the site are required where appropriate and practicable (Rights-of-Way, 33.654)
        - Required pedestrian connections are required to be dedicated to the public or to have a public access easement (Rights-of-Way, 33.654)
        - Pedestrian connections that are self-contained streets created solely for the use of pedestrians and bicyclists are not considered streets for the purposes of calculating the density of a residential subdivision so the density is not impacted by providing such a facility (NOTE: a similar allowance is not provided in the multifamily zones) (Lots in RF Through R5 Zones, 33.610)

PedPDX Implication

The City Code establishes regulations that apply at the time of development and will provide a mechanism for implementing the completed PedPDX Citywide Pedestrian Plan. Title 33 of the City Code establishes pedestrian-friendly design standards that apply in much of the City. These standards appear to meet the current TPR implementation requirements in OAR 660-012-0045. Upon completion, the PedPDX Citywide Pedestrian Plan will be considered for adoption as a PPD, and will contribute specific amendments to the TSP (such as updated street classifications) which is implemented by Title 17.

## 2016 Vision Zero Action Plan

The Vision Zero Action Plan, adopted in 2016 by the City's Bureau of Transportation, sets a goal of eliminating all traffic deaths and serious injuries by 2025.

### Goals and Objectives

The main goals of the plan are safety and equity. The objectives of the plan are to:

- Reduce "serious injury" and fatal crashes for all roadway users
- Focus on "communities of concern", defined as Census blocks in the top quartile of ten equity indicators and High Crash Corridors

### Specific Policy Direction

While majority of the Vision Zero plan relates to pedestrian-related policy and programs, there is specific policy direction that is most relevant to the update of the Pedestrian Master Plan.

- Secure a stable state-level transportation funding source dedicated to safety (Street Design Action: SD. 2).
- Develop guidelines for installation criteria for marked pedestrian crossings (Street Design Action: SD.4).
- Improve safe pedestrian and bicycle access to transit stops along key bus routes, prioritizing the High Crash Network in Communities of Concern, and where appropriate, in conjunction with increases in bus service frequency (Street Design Action: SD 7).
- Improve street design to support safe speeds in conjunction with posted speed reduction on four to six streets (not including SD.1 improvements) annually in the High Crash Network, prioritizing improvements in and engaging with Communities of Concern (Speed Action: S.3).

#### PedPDX Implication

Vision Zero Action Plan informs PedPDX vision and goals, network needs, prioritization, and performance measures as they relate to safety and equity. While the Vision Zero Action Plan does not place any specific requirements on PedPDX, it is an adopted policy document of the City, and provides useful data and analysis to incorporate into the PedPDX planning process.

## 2017 PBOT 5-Year Racial Equity Plan and Citywide Racial Equity Goals and Strategies

PBOT's five-year racial equity plan, launched in January of 2017, reflects PBOT's aspirational goals to advance racial equity. The plan is part of a citywide initiative to promote racial equity, coordinated by

the City of Portland Office of Equity and Human Rights. The citywide initiative is guided by the Citywide Racial Equity Goals and Strategies. The three goals are:

- Equity Goal #1. We will end racial disparities within city government, so there is fairness in hiring and promotions, greater opportunities in contracting, and equitable services to all residents.
- Equity Goal #2. We will strengthen outreach, public engagement, and access to City services for communities of color and immigrant and refugee communities, and support or change existing services using racial equity best practices.
- Equity Goal #3. We will collaborate with communities and institutions to eliminate racial inequity in all areas of government, including education, criminal justice, environmental justice, health, housing, transportation, and economic success.

There are six overall Citywide Equity Strategies to be used to achieve the goals:

1. Use a racial equity framework
2. Build organizational capacity
3. Implement a racial equity lens
4. Be data driven
5. Partner with other institutions and communities
6. Operate with urgency and accountability

Given this strategic framework, PBOT used an inclusive process to develop the 5-year racial equity plan. The plan identifies 45 action items that fall under the following six themes. Each of these six themes have a five-year objective that outlines the desired racial equity outcome to be achieved by the end of the five-year plan.

1. Planning and Evaluation
2. Training
3. Human Resources
4. Tools and Resources
5. Community Access and Partnership
6. Contracting

Specific action items that may be relevant to PedPDX include:

- *Action 1.5: Design and use a capital improvement project racial equity impact assessment tool for large infrastructure projects.*
- *Action 1.6: Prioritization of implementation of projects on lists uses an equity matrix, and individual funding requests for projects uses a standard template which includes a racial equity evaluation metric, to help address infrastructure deficiencies in communities of color.*
- *Action 4.3: Standardize an equity matrix for PBOT to address transportation infrastructure deficiencies in communities of color.*
- *Action 5.1: Create consistent best practices for recruitment and retention of people of color on advisory committees and groups, and embrace and enforce citywide policies and best practices for all advisory committees. Do a baseline analysis of advisory committee membership including demographic information about the racial composition of every group. This could include surveying all advisory committee staff and also all advisory committee member*

- *Action 5.4: Design a process for regularly informing communities of color about the eligibility process for how projects get on our lists (such as SDC lists) and how they can help inform prioritization (such as advisory committees, public comment periods), and how the equity matrix is used.*
- *Action 5.5: Build leadership capacity among communities of color to participate in and be passionate about transportation issues that impact them.*
- *Action 5.11: Shape and advance standard practices to increase outreach and engagement with Limited English Proficient (LEP) communities.*

### PedPDX Implication

The relevant action items identified above generally fall into two categories: (1) integrating racial equity into project evaluation and prioritization and (2) integrating racial equity into public involvement processes. Most of the action items call for PBOT to develop best practices and standards for the integration of racial equity into plans and projects. Thus, PedPDX should apply the most up-to-date best practices, tools, and standards for racial equity planning that have been developed by PBOT staff and approved by PBOT leadership. The racial equity plan identifies staff to lead each action item; these staff people can be consulted to ensure PedPDX is using appropriate racial equity tools and practices.

# APPENDIX F:

## Pedestrian Safety Existing Conditions Memo

NELSON
NYGAARD

# MEMORANDUM

To: Michelle Marx, City of Portland

From: Bryan Blanc, Jeri Stroupe, Paul Leitman, and Dru van Hengel, Nelson\Nygaard

Date: June 8, 2018

Subject: PedPDX Pedestrian Safety Existing Conditions Memo

## INTRODUCTION

This memo summarizes the analyses of crashes involving people walking conducted for the Portland Citywide Pedestrian Plan (PedPDX) existing conditions chapter. General trends and patterns of pedestrian-involved crashes citywide between 2006 and 2015 are complemented with a detailed analysis of the Vision Zero High Crash Network (HCN)[1]. PedPDX is guided in part by the City of Portland's Vision Zero goal of eliminating fatal and serious injury crashes by the year 2025. Towards that end, the findings of this memo will help shape the infrastructure-related safety criteria for identifying needs and establishing investment priorities.

[1] The City of Portland provided the crash data for this analysis, which it received from the Oregon Department of Transportation (ODOT) Crash Analysis and Reporting Unit.

## Key Findings

**Figure 1 Key Findings, Implications and Recommendations**

| Finding | Potential Implications | Recommendations | | |
|---|---|---|---|---|
| | | Network | Prioritization | Countermeasures |
| **Overall Trends** | | | | |
| Crashes are most concentrated on larger and higher-class roads and/or larger intersections.<br>▪ 25% of segment crashes occur on roads with 3 or more lanes, which account for less than 4% of centerline miles.<br>▪ 61% of segment crashes occur on arterials and highways, which account for 16% of centerline miles.<br>▪ Larger intersections have a significantly increased risk of both crash occurrence as well the likelihood of a severe injury or fatality resulting from a crash. | Focusing safety investments on larger streets and their intersections, including the High Crash Network identified in the Vision Zero Action Plan, is the most efficient way to reduce crashes. | ▪ Focus on arterial corridors and intersections citywide, particularly within the High Crash Network<br>▪ Support investments on parallel streets if out of direction travel would be limited | ▪ Streets with three or more travel lanes<br>▪ Arterial intersections<br>▪ Corridors and intersections identified in the Pedestrian High Crash Network (HCN) | ▪ Road diets<br>▪ Median refuge islands<br>▪ Signal improvements (e.g., protected left turns, Leading Pedestrian Intervals, bicycle signals, additional signals at unsignalized high pedestrian/bicycle traffic crossings)<br>▪ Ensure that all crossing treatments meet current City design guidelines<br>▪ Arterial speed reduction |
| Crashes involving people walking are more frequent in the fall and winter months when hours of daylight are reduced (most of the additional crashes occur in dark conditions with streetlights present). | Visibility is an important issue for pedestrian safety in Portland, where there is a big swing in the number of daylight hours depending on the time of year. | ▪ Focus on streets without pedestrian scale lighting | ▪ Street segments and intersections with a high density of night-time KSI crashes | ▪ Increase pedestrian lighting levels<br>▪ Close crossing gaps with appropriate crossing treatments<br>▪ High visibility crosswalks |
| **What are the major crash types?** | | | | |
| Signalized intersections are not preventing crashes.<br>▪ Over 40% of crashes and 30% of severe/fatal crashes citywide occur at signalized intersections.<br>▪ Over a quarter of all crashes involve a turning driver failing to yield when the person walking has the right of way at the signal (20% left-turning drivers and 8% right turning drivers) | PedPDX can put an emphasis on additional pedestrian enhancements at signalized intersections. | ▪ Focus on signalized intersection types with high risk of crash occurrence and severity. | ▪ Signalized intersections with KSI high crash rates, which are typically larger intersections of multi-lane arterials. | ▪ Leading pedestrian intervals<br>▪ No right turn on red<br>▪ Barnes crossing where high vehicle and pedestrian traffic co-exist<br>▪ Curb extensions<br>▪ Median islands at long crossings<br>▪ Protected left turn phasing<br>▪ Prohibit left turns<br>▪ High visibility crosswalks at signalized intersections<br>▪ Daylighting signalized intersections |
| Midblock crashes are common and more severe.<br>25% of crashes and 39% of serious/fatal crashes occur midblock.<br>Midblock crashes are more likely to result in a serious or fatal injury.<br>Nearly 20% of all crashes involve people walking across the road between intersections.<br>Many of the remaining midblock crashes involve people being in the road for a variety of reasons, but not attempting to cross it. | Increase the frequency of marked pedestrian crossings to reduce the number of street segments that do not meet the city's crossing spacing guidelines. | ▪ Focus on streets with long gaps between marked crossing treatments | ▪ Street segments with a high density of KSI collisions | ▪ Close crossing gaps with appropriate crossing treatments<br>▪ Increase awareness of the risks of hitting pedestrians where there are long distances between appropriate crossing treatments<br>▪ Utilize target speed for signal synchronization |

| Finding | Potential Implications | Recommendations | | |
|---|---|---|---|---|
| | | **Network** | **Prioritization** | **Countermeasures** |
| **What is happening on the high crash network (HCN)?** | | | | |
| Nearly half of crashes (50%) on the HCN occur at signalized intersections. The most common action involves drivers turning left into a person walking across the high crash network street<br>Nearly two thirds of crashes (64%) on the HCN involved pedestrians crossing the HCN. 30% of crashes involved pedestrians crossing at signalized intersections, while 15% of crashes involved pedestrians crossing at unsignalized intersections. | Provide additional pedestrian enhancements at signalized intersections (including those that reduce conflicts with left turning vehicles) and reduce the number of street segments that do not meet the city's crossing spacing guidelines. | ▪ Include HCN streets and intersections that serve commercial, school, and residential land uses | ▪ HCN network streets and intersections<br>▪ HCN network streets that serve land uses that support walking and transit trips | ▪ Leading pedestrian intervals<br>▪ No right turn on red<br>▪ Barnes crossing where high vehicle and pedestrian traffic exist<br>▪ Curb extensions<br>▪ Median islands at long signalized crossings<br>▪ Median refuge islands<br>▪ Protected left turn phasing<br>▪ Prohibit left turns<br>▪ Close crossing gaps with appropriate crossing treatments<br>▪ Utilize target speed for signal synchronization<br>▪ High visibility crosswalks at signalized intersections<br>▪ Daylighting signalized intersections |
| **What makes crashes more severe?** | | | | |
| People walking are ten times more likely than people driving to sustain a serious or fatal injury. | Speed at the time of impact is the critical factor in injury severity. | ▪ Focus on streets where pedestrian experience is described as 'feeling unsafe' in survey<br>▪ Include streets with high prevailing speeds if they serve commercial, school, and residential land uses | ▪ Locations on priority network with prevailing operating speeds in excess of 30 mph | ▪ Utilize target speed for signal synchronization<br>▪ Close crossing gaps with appropriate crossing treatments<br>▪ Reduce operating speeds through road diets, lane narrowing, traffic calming |
| Approximately 17% of all pedestrian crashes result in a killed or seriously injured (KSI) pedestrian. The following crash types are even more likely to result in a KSI:<br>▪ People walking across the street between intersections (19% of all crashes; 25% are KSI)<br>▪ People walking across the street against the signal (8% of crashes; 25% are KSI)<br>▪ Driver going straight at unsignalized intersection fails to yield (4% of crashes; 22% are KSI)<br>▪ People walking across the street at unsignalized intersection and did not provide sufficient time for person driving to stop (6% of crashes; 25% KSI) | Crashes that involve crossing the road not at a signalized intersection are the most likely to result in a serious or fatal injury. | ▪ None | ▪ Unsignalized priority network crossings | ▪ High visibility crosswalks<br>▪ Curb extensions<br>▪ Adjust transit stops to encourage crossing at intersections<br>▪ High visibility pedestrian heads<br>▪ Countdown pedestrian heads<br>▪ Protected crossings at unsignalized intersections of priority network<br>▪ Close crossing gaps with appropriate crossing treatments |
| Intersections of local streets with large (5+ lane) arterials are more likely to have severe crashes than other intersection types. | Over 80% of these intersections across the city are unsignalized. Intersections with high frequencies of crashes and severe crashes and/or high pedestrian volumes should be considered for signalization. | ▪ Add traffic signals and other crossing improvements to local streets along high crash network | ▪ Focus on unsignalized intersections of local streets (2 lanes) with arterials of five or more lanes | ▪ Curb extensions<br>▪ Median refuge islands<br>▪ Traffic signals<br>▪ Protected left turn phasing |

| Finding | Potential Implications | Recommendations | | |
|---|---|---|---|---|
| | | Network | Prioritization | Countermeasures |
| Crashes are less common in the late evening/early morning hours, but are more likely to result in a serious or fatal injury. | Measures that increase lighting and prevent speeding can reduce the risk associated with crashes that occur during these hours. | ▪ Include pedestrian scale and safety lighting on network | ▪ Locations on HCN where high proportion of crashes occur in darkness | ▪ High visibility crosswalks<br>▪ Increase pedestrian lighting levels<br>▪ Midblock safety lighting<br>▪ Reduce operating speeds through road diets, lane narrowing, traffic calming<br>▪ Implement time of day signal synchronization |

# CRASH TRENDS

## Overall Trends

Pedestrian crashes are on the rise in Portland, with injury crashes increasing by 25% between 2006 and 2015 (see Figure 1). Even considering the 17% population growth over this time-period, the number of pedestrian crashes per 100,000 residents (a common way of comparing safety across cities) has been trending up (see Figure 2). On average in this time-period, there were 223 reported crashes per year, 38 (17%) of which were fatal or serious injury crashes. Pedestrian crashes are ten times more likely to result in a serious injury or fatality than vehicle-only crashes – where only 1.7% of crashes in Portland result in a serious injury or fatality.

**Figure 1 Annual Pedestrian Crashes and Crash Severity**

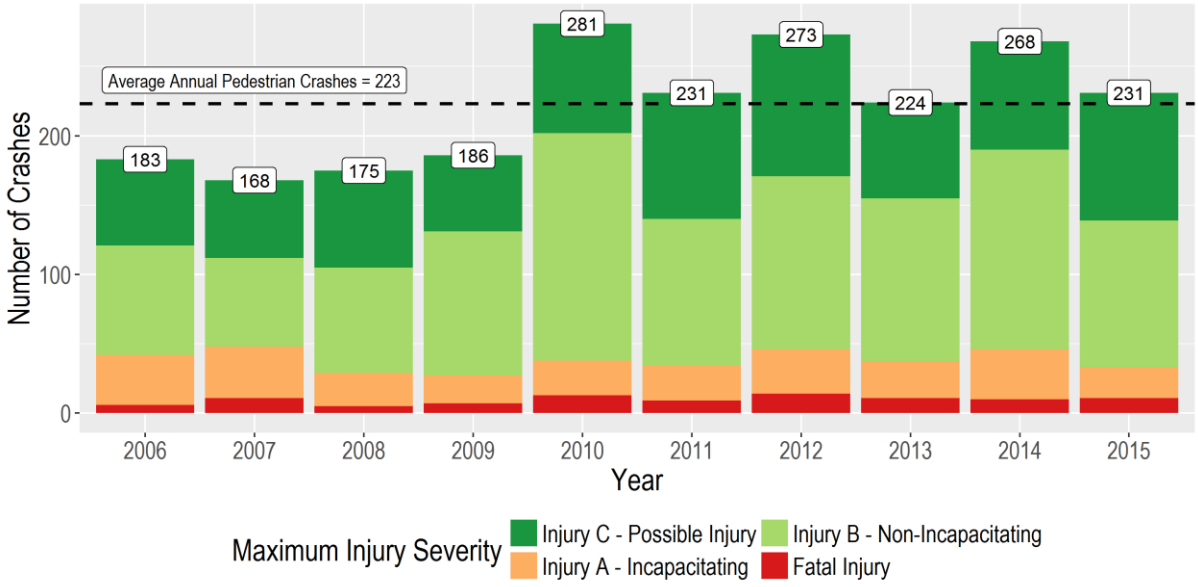


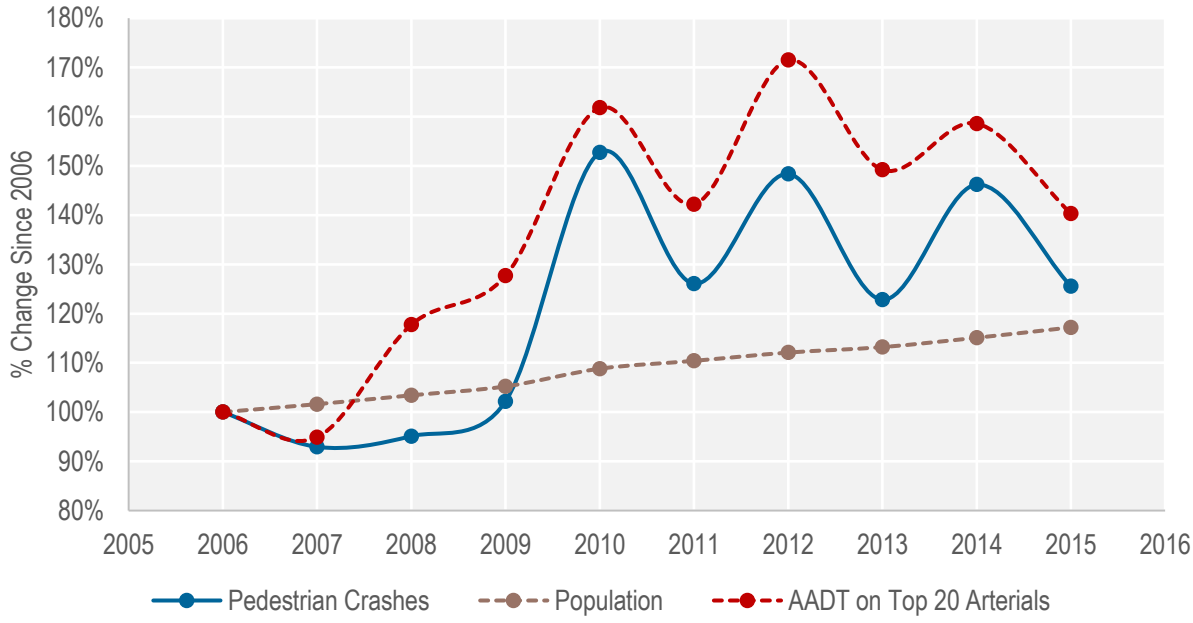
**Figure 2 Annual Pedestrian Crashes vs. Population**

| Year | Pedestrian Crashes | Population[1] | Pedestrian Crashes per 100,000 Residents | Total AADT for Top 20 Portland Arterials | Pedestrian Crashes per 100,000 AADT |
|---|---|---|---|---|---|
| 2006 | 184 | 538,091 | 34.2 | 554,500 | 33.2 |
| 2007 | 171 | 546,747 | 31.3 | 551,500 | 31.0 |
| 2008 | 175 | 556,442 | 31.4 | 516,300 | 33.9 |
| 2009 | 188 | 566,143 | 33.2 | 534,500 | 35.2 |
| 2010 | 281 | 585,478 | 48.0 | 519,000 | 54.1 |
| 2011 | 232 | 594,081 | 39.1 | 519,200 | 44.7 |
| 2012 | 273 | 603,124 | 45.3 | 517,700 | 52.7 |
| 2013 | 226 | 609,132 | 37.1 | 524,100 | 43.1 |
| 2014 | 269 | 619,334 | 43.4 | 534,900 | 50.3 |
| 2015 | 231 | 630,621 | 36.6 | 543,800 | 42.5 |
| **Average** | **223** | **584,919** | **38.0** | **531,550** | **42.1** |

Source: US Census American Community Survey

The growth in pedestrian crashes (ranging between 20% and 50% over 2006 in recent years) has exceeded the growth in both population (which has grown by 17% since 2006) and the change in AADT (which has decreased by 2% since 2006) on Portland's top 20 arterials – see Figure 3. This disproportionate growth in pedestrian crashes could be due to an increase in the volume of pedestrians walking and/or less safe roadway conditions for pedestrians.

**Figure 3 Annual Pedestrian Crash Growth Relative to Population and AADT Growth**

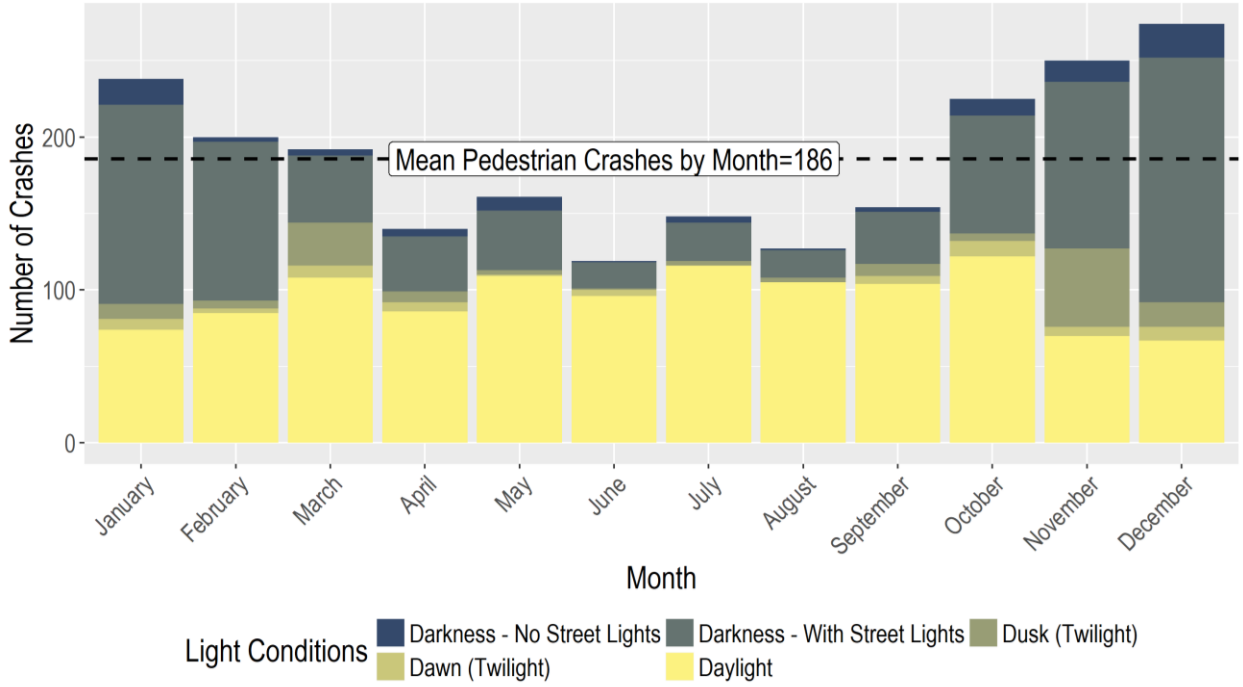


# Temporal Trends (When)

## Lighting Conditions

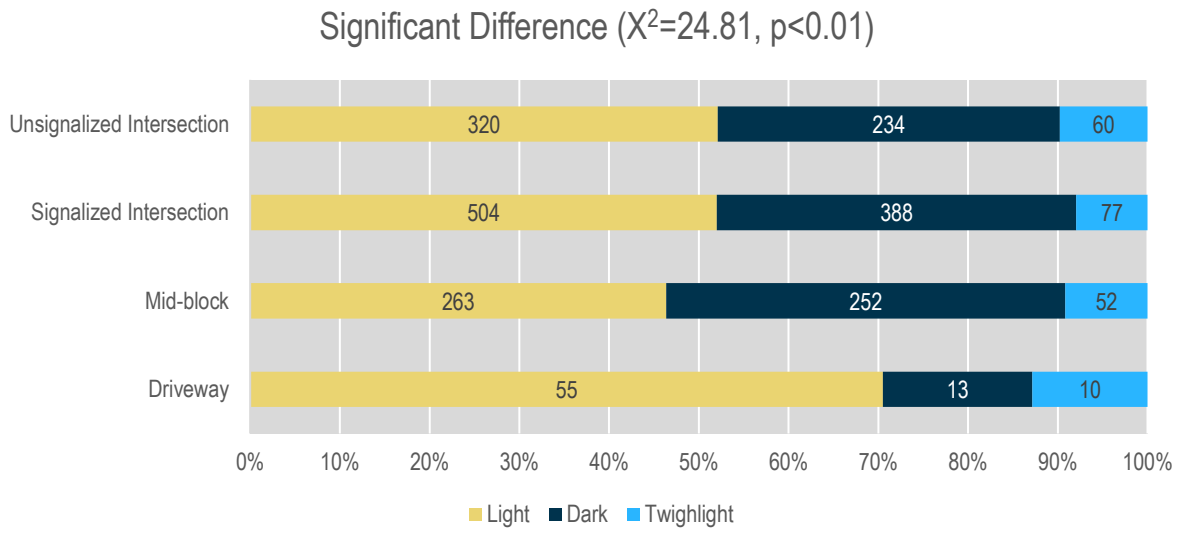
The fall and winter months see an increase in pedestrian crashes as compared to the spring and summer. This is despite the likelihood that there are more people walking in the warmer months. The number of crashes occurring in daylight is relatively constant throughout the year (Figure 4), while crashes in dark conditions increase dramatically in fall and winter, when there are fewer daylight hours. Pedestrian crashes after dark commonly have streetlights present, suggesting that streetlights alone are not sufficient to ensure motorists and pedestrians see each other. There is a noteworthy spike in crashes occurring at dusk in March and November, the months when daylight savings time begins and ends.

**Figure 4 Pedestrian Crashes by Month of Year and Lighting Conditions**




Collisions in different light conditions were also compared to roadway size and location type. There was not a statistically significant difference in the number of collisions as a function of lighting conditions across roadway size categories. Conversely, there was a statistically significant difference in the number of collisions occurring in dark or twilight conditions across location types – see Figure 5. Collisions in mid-block were most likely to be in dark or twilight conditions at mid-block locations, and were least likely to be in dark or twilight conditions at driveway locations.

**Figure 5 Differences in Occurrence of Pedestrian Collisions by Lighting Conditions and Location Type**




## Time of Day

Pedestrian crash patterns are similar to overall travel patterns, with a large and long afternoon/evening peak period as compared to the morning. More pedestrian crashes occur in the late afternoon and early evening than any other time of day, particularly between 5 pm and 7 pm (Figure 6).

While there are fewer pedestrian crashes during the nighttime and early morning hours, crashes during these periods are more likely to result in a serious or fatal injury and are more likely to involve impairment (Figure 7).

Possible factors for the increased severity could include the following:

- Higher vehicle speeds when roads are less congested. This cannot be confirmed since actual prevailing vehicle speeds are not known. Paradoxically, a statistically higher proportion of severe and fatal collisions occur on lower speed limit streets, reinforcing the need for prevailing speed information.
- Reduced visibility during dark hours leaves less time for a driver to react after perceiving the presence of a person walking on the street.
- Intoxication affecting decision-making regarding appropriate driving speeds and the ability to judge when it is safe to cross the street. Intoxication has a statistically significant relationship with severity of collisions among collisions occurring between 9 p.m. and 6 a.m.

**Figure 6** **Pedestrian Crashes by Hour and Severity**

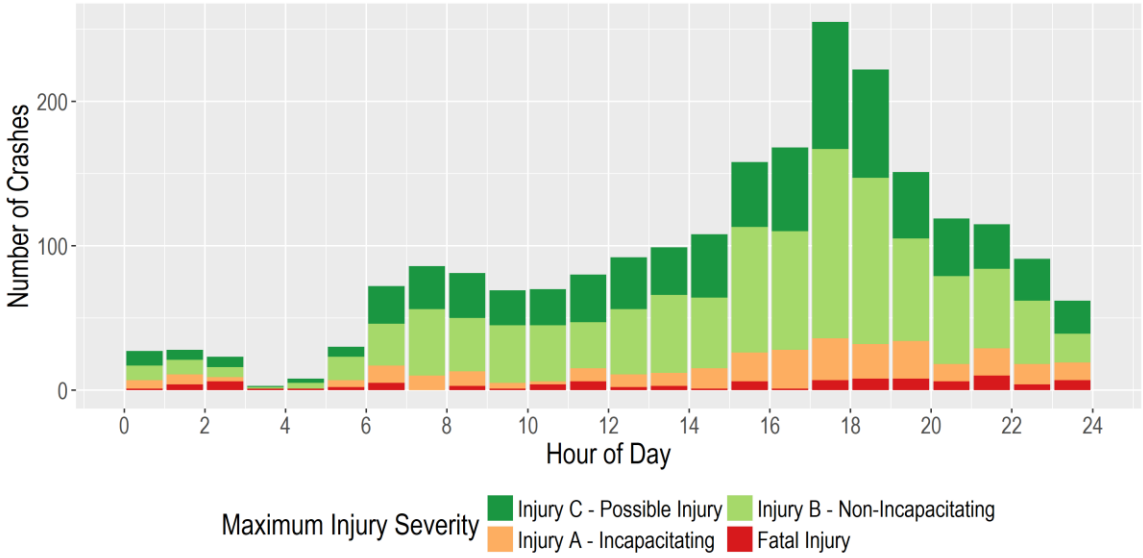
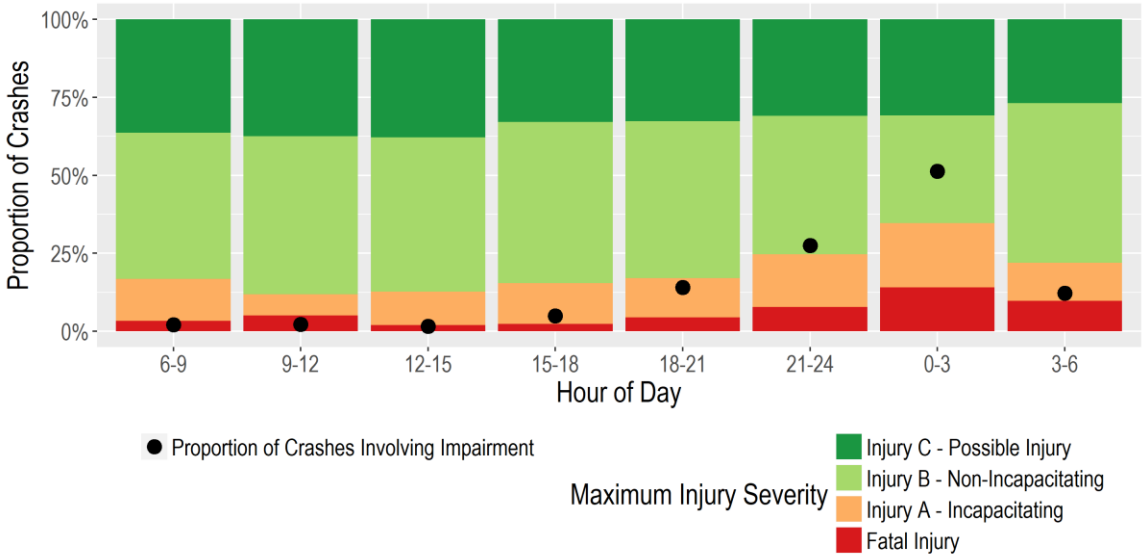



**Figure 7** **Proportion of Pedestrian Crashes Resulting in Serious or Fatal Injury by Time of Day**




# Demographic Trends (Who)

## Age of Pedestrians and Drivers

Younger adult pedestrians (ages 20 to 24) were more frequently involved in crashes than other age groups, at over 10% of the total. Teenagers and younger adults ages 15 to 24 are disproportionately represented when compared to the population of Portland as a whole (Figure 8). Younger drivers (15-19) and drivers aged 25-39 are under-represented in pedestrian collisions compared to the Portland population (Figure 9). Middle aged and older drivers (except for those older than 85) are slightly over-represented.

**Figure 8 Age Distribution of Pedestrians Involved in Crashes Compared to Portland Population**

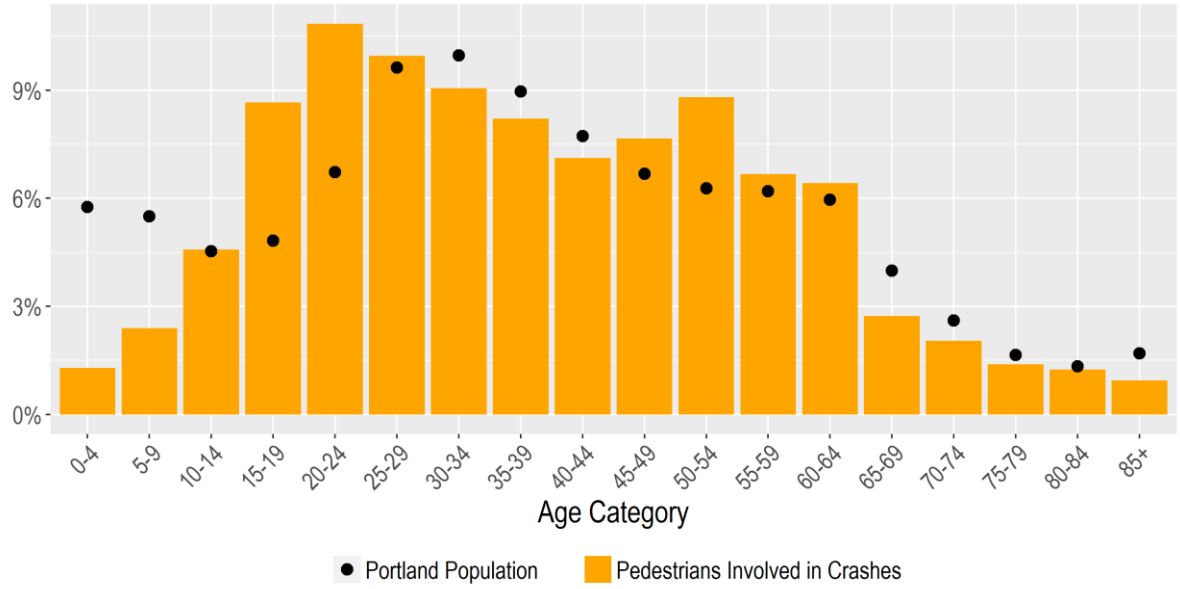
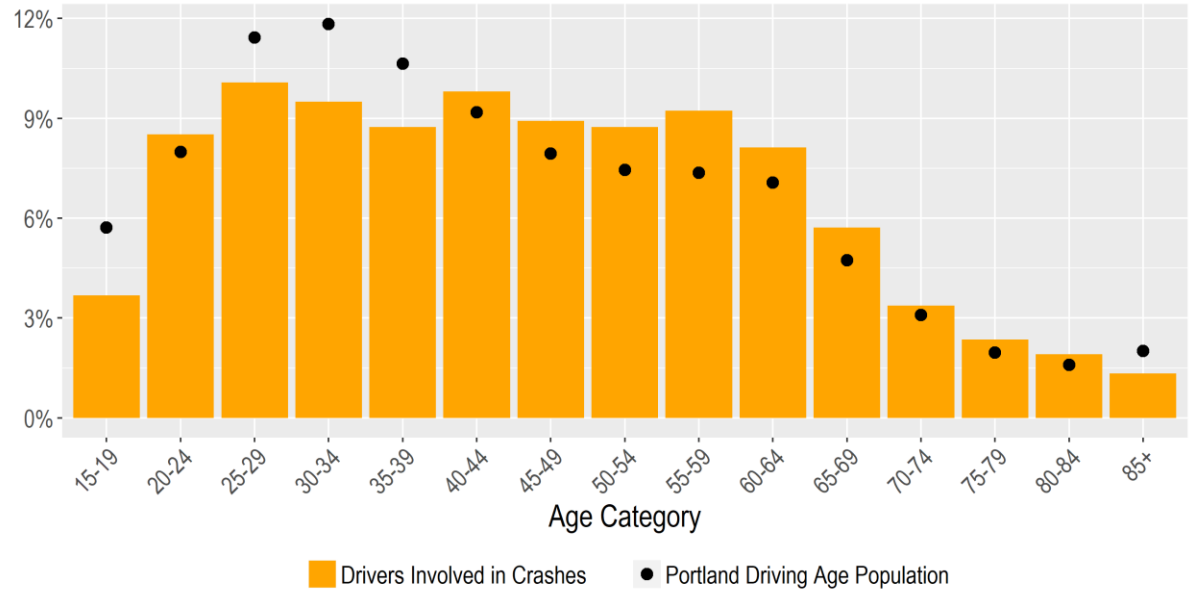



**Figure 9 Age Distribution of Drivers Involved in Pedestrian Crashes Compared to Driving Age Population**

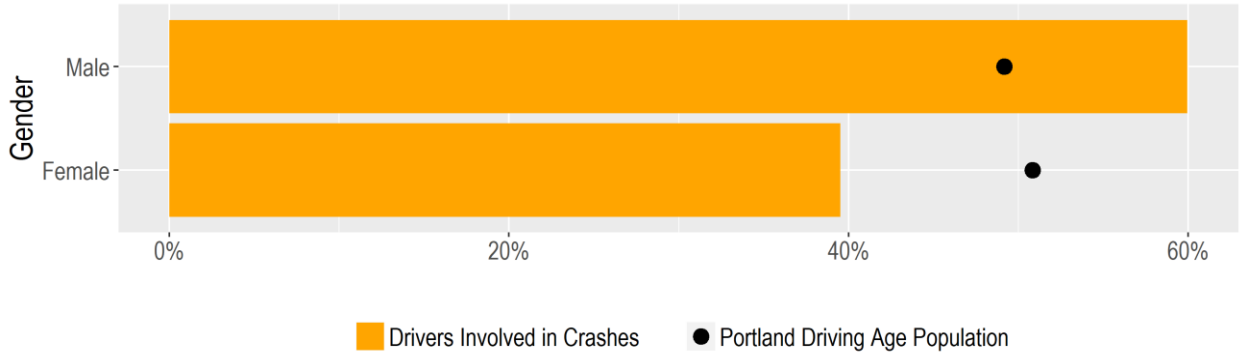



Source: US Census 2012-2016 American Community Survey 5-year estimates

## Gender Distribution of Drivers

The gender distribution of drivers involved in pedestrian crashes relative to the Portland driving age population (15 and older) is shown in Figure 10. Male drivers are over represented by over 10 percentage points.

**Figure 10 Gender Distribution of Drivers Involved in Pedestrian Crashes Compared to Driving Age Population**




## Location Trends (Where)

All collisions were classified into four location types, as identified in Figure 11. Over 2/3 of collisions (71%) occurred at intersections, while the remainder (29%) occurred on roadway segments at either driveway or mid-block locations. The majority of intersection collisions occurred at signalized intersections, while the majority of segment collisions occurred at midblock locations not adjacent to driveways. Mid-block collisions were the most likely to result in a severe injury or fatality at 26.1% -- this is 9 percentage points more likely than for all collisions.

**Figure 11 Location Type Summary**

| Location Type | Number Crashes | Percent of Crashes | Number KSI Crashes | Percent of KSI Crashes | Probability of a KSI crash |
|---|---|---|---|---|---|
| Signalized Intersections | 971 | 43.5% | 97 | 33.4% | 13.1% |
| Unsignalized Intersections | 614 | 27.5% | 127 | 25.5% | 15.8% |
| Mid-block | 567 | 25.4% | 148 | 38.9% | 26.1% |
| Driveway | 78 | 3.5% | 8 | 2.1% | 10.3% |
| **Total** | **2,230** | **100%** | **380** | **100%** | **17.0%** |

### Roadway Segment Class

The citywide street network has a hierarchical functional classification that was simplified into five categories for the purposes of this collision analysis. The number of centerline miles as well as the associated pedestrian crashes are tallied in Figure 12. A crash occurrence risk factor was calculated to measure the proportion of crashes relative to the number of centerline miles of a given roadway class. For example, crashes were over nine times as likely to occur on primary arterials as they were to occur on all roadways. A KSI risk factor was also calculated to measure the proportion of KSI crashes relative to all crashes on a given roadway type. For example, crashes on freeway/highway type roadways were over twice as likely to result in a severe injury or fatality when compared to the roadway network as a whole.

**Figure 12 Pedestrian Crash Summary by Roadway Class**

| Roadway Class | Centerline Miles | | Crashes | | Crash Occurrence Risk Factor[1] | KSI Crashes | | Probability of KSI Crash | KSI Crash Risk Factor[2] |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | | # | % | | |
| Local | 1,895 | 72.3% | 99 | 15.3% | 0.21 | 14 | 9.0% | 14.1% | 0.58 |
| Collector | 298 | 11.4% | 155 | 24.0% | 2.11 | 32 | 20.5% | 20.6% | 0.85 |
| Freeway/Highway | 160 | 6.1% | 25 | 3.9% | 0.64 | 13 | 8.3% | 52.0% | 2.15 |
| Primary Arterial | 152 | 5.8% | 267 | 41.4% | 7.15 | 73 | 46.8% | 27.3% | 1.13 |
| Secondary Arterial | 116 | 4.4% | 99 | 15.3% | 3.46 | 24 | 15.4% | 24.2% | 1.00 |
| **Total** | **2,621** | **100%** | **645** | **100%** | **1.00-** | **156** | **100%** | **24.2%** | **1.00** |

Notes: 1) Crash Occurrence Risk Factor = % Crashes / % Centerline Miles. 2) KSI Crash Risk Factor = % KSI Crashes / % All Crashes

## Roadway Size

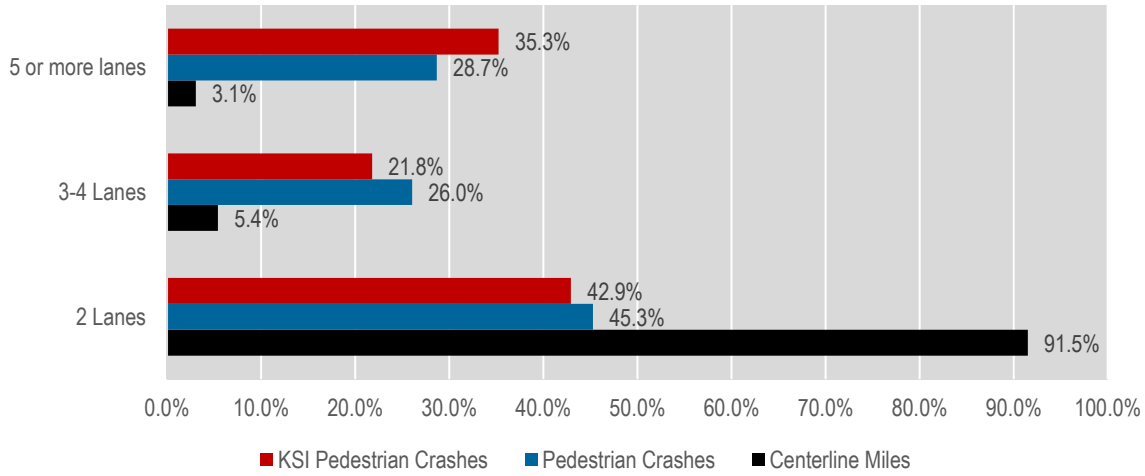
Figure 13 presents a summary of segment pedestrian crashes by roadway size (in terms of number of lanes). Pedestrian crashes are more likely to occur on larger roadways – they are over 4 times more likely on 3-4 lane roadways and nearly 10 times more likely on roads with 5 or more lanes. The differences in representation of pedestrian crashes on larger roads is illustrated in Figure 14.

**Figure 13 Pedestrian Crash Summary by Roadway Size (segment crashes only)**

| Roadway Size | Centerline Miles | | Crashes | | Crash Occurrence Risk Factor[1] | KSI Crashes | | Probability of KSI Crash | KSI Crash Risk Factor[2] |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | | # | % | | |
| 2 Lanes | 2,399 | 91.5% | 292 | 45.3% | 0.49 | 67 | 42.9% | 22.9% | 0.95 |
| 3-4 Lanes | 142 | 5.4% | 168 | 26.0% | 4.80 | 34 | 21.8% | 20.2% | 0.84 |
| 5 or More Lanes | 81 | 3.1% | 185 | 28.7% | 9.33 | 55 | 35.3% | 29.7% | 1.23 |
| **Total** | **2,621** | **100%** | **645** | **100%** | **1.00** | **156** | **100%** | **24.2%** | **1.00** |

Notes: 1) Crash Occurrence Risk Factor = % Crashes / % Centerline Miles. 2) KSI Crash Risk Factor = % KSI Crashes / % All Crashes

**Figure 14 Pedestrian and Centerline Mile Summary by Roadway Size (segment crashes only)**



## Roadway Speed

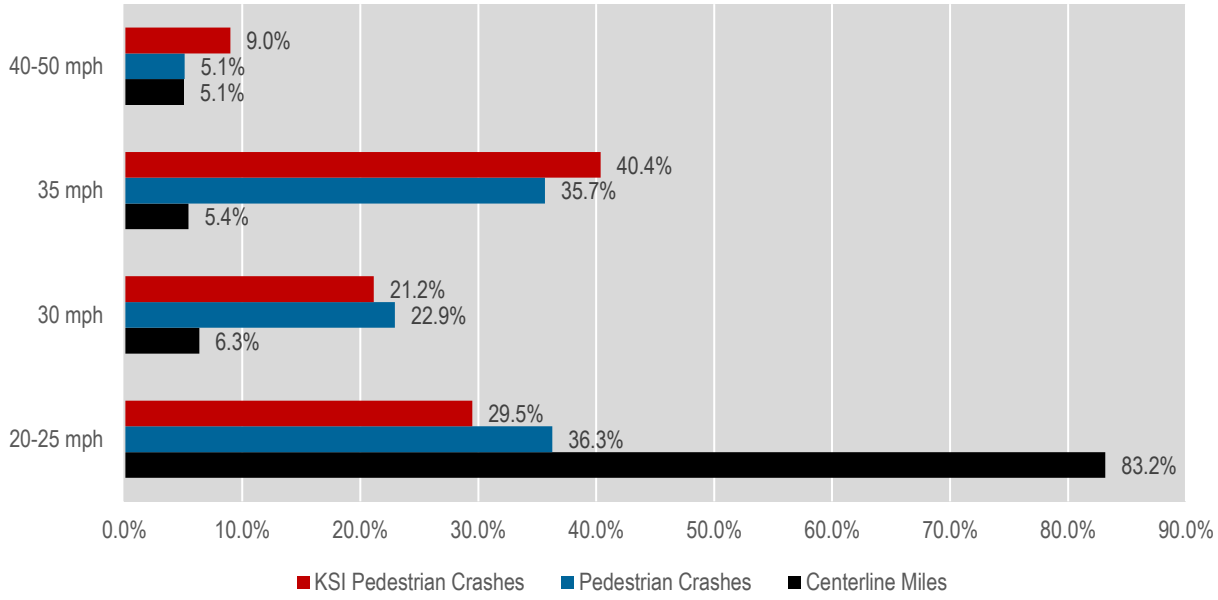
Figure 15 presents a summary of segment pedestrian crashes by posted speed. Pedestrian crashes are more likely to occur on roads with speeds between 25 and 35 mph than other roadways. The risk factor for pedestrian crashes on roads with speeds higher than 35 mph is lower than those for 25 – 35 mph – this is likely a function of where pedestrians typically walk (i.e., lower speed streets). Nevertheless, the KSI risk factor *does* increase steadily as a function of posted speed, which agrees with widely cited literature on KSI risk as a function of speed. Figure 16 visualizes these trends, emphasizing differences in representation of pedestrian crashes on higher speed roadways.

**Figure 15 Pedestrian Crash Summary by Posted Speed Limit (Segment crashes only)**

| Posted Speed | Centerline Miles | | Crashes | | Crash Occurrence Risk Factor[1] | KSI Crashes | | Probability of KSI Crash | KSI Crash Risk Factor[2] |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | | # | % | | |
| 20-25 mph | 2,180 | 83.2% | 234 | 36.3% | 0.44 | 46 | 29.5% | 19.7% | 0.81 |
| 30 mph | 166 | 6.3% | 148 | 22.9% | 3.61 | 33 | 21.2% | 22.3% | 0.92 |
| 35 mph | 143 | 5.4% | 230 | 35.7% | 6.56 | 63 | 40.4% | 27.4% | 1.13 |
| 40 – 50 mph | 133 | 5.1% | 33 | 5.1% | 1.01 | 14 | 9.0% | 42.4% | 1.75 |
| **Total** | **2,621** | **100%** | **645** | **100%** | **1.00** | **156** | **100%** | **24.2%** | **1.00** |

Notes: 1) Crash Occurrence Risk Factor = % Crashes / % Centerline Miles. 2) KSI Crash Risk Factor = % KSI Crashes / % All Crashes

**Figure 16 Pedestrian Crashes and Centerline Miles by Posted Speed Limit (segment crashes only)**




## Intersection Size

Figure 17 presents a summary of pedestrian crashes by intersection size. Pedestrian crashes were significantly more likely at larger intersections, and were most likely to result in a KSI crash at intersections of 2 lanes and 5 lanes or more.

**Figure 17 Pedestrian Crash Summary by Intersection Size (intersection crashes only)**

| Intersection Size | Intersections | | Crashes | | Crash Occurrence Risk Factor[1] | KSI Crashes | | Probability of KSI Crash | KSI Crash Risk Factor[2] |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | | # | % | | |
| 2 Lanes & 2 Lanes | 17,467 | 85.4% | 467 | 29.5% | 0.34 | 63 | 28.1% | 13.5% | 0.95 |
| 2 Lanes & 3-4 Lanes | 1,609 | 7.9% | 596 | 37.6% | 4.78 | 72 | 32.1% | 12.1% | 0.85 |
| 2 Lanes & 5 or more lanes | 625 | 3.1% | 203 | 12.8% | 4.19 | 42 | 18.8% | 20.7% | 1.46 |
| >=3 Lanes & >=3 Lanes | 756 | 3.7% | 318 | 20.1% | 5.43 | 47 | 21.0% | 14.8% | 1.05 |
| **Total** | **20,457** | **100%** | **1,584** | **100%** | **1.00** | **224** | **100%** | **14.1%** | **1.00** |

Notes: 1) Crash Occurrence Risk Factor = % Crashes / % Intersections. 2) KSI Crash Risk Factor = % KSI Crashes / % All Crashes

## Intersection Class

Figure 19 presents a summary of pedestrian crashes by intersection class. Intersection classes were assembled based on the simplified roadway functional classification presented in Figure 12. In general, larger intersections carried a substantially higher risk of collision occurrence. For example, Primary Arterial – Collector intersections are nearly 14 times as likely to have a pedestrian crash as all other intersections, and Primary Arterial – Secondary Arterial intersections are over 17 times as likely to have a pedestrian crash as all other intersections. Some intersections are more likely to result in a severe injury or fatality – Primary Arterial –Local, Freeway/Highway, and Primary Arterial – Primary Arterial are all at least 30% more likely to have a KSI pedestrian collision.

Figure 18 illustrates how crashes occurred at intersection types relative to their signalization. The majority of crashes occurring at intersections involving a local roadway occurred at unsignalized locations. Primary – Arterial – Local intersections – which are nearly four times as likely to have a pedestrian crash, and 30% more likely have a KSI pedestrian crash, are often unsignalized. Intersections like this, especially those with high collision rates, should be considered for signalization.

**Figure 18 Pedestrian Crashes by Intersection Type and Signalization**

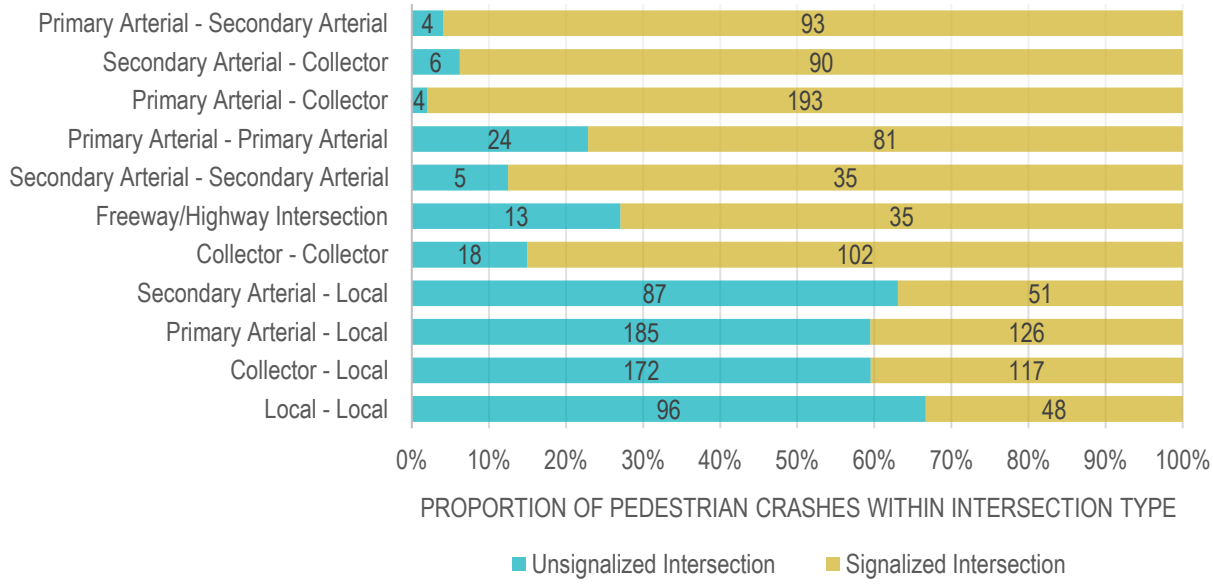


**Figure 19 Pedestrian Crash Summary by Intersection Class**

| Intersection Class | Intersections | | Crashes | | Crash Occurrence Risk Factor[1] | KSI Crashes | | Probability of KSI Crash | KSI Crash Risk Factor[2] |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | | # | % | | |
| Local - Local | 12,870 | 62.9% | 144 | 9.1% | 0.14 | 9 | 4.0% | 9.3% | 0.44 |
| Collector - Local | 2,986 | 14.6% | 289 | 18.2% | 1.25 | 33 | 14.7% | 34.0% | 0.81 |
| Primary Arterial - Local | 1,070 | 5.2% | 311 | 19.6% | 3.75 | 58 | 25.9% | 59.8% | 1.32 |
| Secondary Arterial - Local | 904 | 4.4% | 138 | 8.7% | 1.97 | 18 | 8.0% | 18.6% | 0.92 |
| Collector - Collector | 829 | 4.1% | 120 | 7.6% | 1.87 | 15 | 6.7% | 15.5% | 0.88 |
| Freeway/Highway Intersection | 651 | 3.2% | 48 | 3.0% | 0.95 | 9 | 4.0% | 9.3% | 1.33 |
| Secondary Arterial - Secondary Arterial | 393 | 1.9% | 40 | 2.5% | 1.31 | 3 | 1.3% | 3.1% | 0.53 |
| Primary Arterial - Primary Arterial | 356 | 1.7% | 105 | 6.6% | 3.80 | 22 | 9.8% | 22.7% | 1.48 |
| Primary Arterial - Collector | 182 | 0.9% | 197 | 12.4% | 13.96 | 30 | 13.4% | 30.9% | 1.08 |
| Secondary Arterial - Collector | 134 | 0.7% | 96 | 6.1% | 9.24 | 10 | 4.5% | 10.3% | 0.74 |
| Primary Arterial - Secondary Arterial | 71 | 0.3% | 97 | 6.1% | 17.62 | 17 | 7.6% | 17.5% | 1.24 |
| **Total** | **20,446** | **100%** | **1,585** | **100%** | **1.00** | **224** | **100%** | **14.1%** | **1.00** |

Notes: 1) Crash Occurrence Risk Factor = % Crashes / % Intersections. 2) KSI Crash Risk Factor = % KSI Crashes / % All Crashes

## Crash Types (Why/How)

Land use and pre-crash behaviors were explored to develop locally specific crash types. The crash type analysis is provided in Figure 20.

Key findings include:

- **Crashes at signalized intersections are prevalent.** They account for over 40% of pedestrian crashes and 30% of serious or fatal crashes.
- **Turning vehicles are failing to yield to pedestrians at signalized intersections.** Over a quarter of pedestrian crashes involve a turning driver failing to yield when the pedestrian has the right of way when crossing at the signal (nearly 20% left-turning and 8% right-turning drivers).
- **Midblock crashes are also prevalent.** Over 20% of crashes involve pedestrians crossing between intersections. These crashes tend to be more severe (see below).
- **Certain crash types tend be to more severe.** Approximately 17% of pedestrian crashes result in a serious or fatal injury. The following crash types are more likely to result in a killed or seriously injured (KSI) pedestrian:
  - Pedestrian crossing between intersections (20% of all crashes; 25% are KSI)
  - Pedestrian crossing against signal (8% of crashes; 23% are KSI)
  - Driver going straight at unsignalized intersection fails to yield (7% of crashes; 22% are KSI)
  - Pedestrian crossing at unsignalized intersection did not provide sufficient time for vehicle to stop (6% of crashes; 22% are KSI)

**Figure 20 Pedestrian Crash Type Definitions, Counts, and Percentages**

| Pedestrian Crash Type | Criteria Description | Count | % of Crashes | % of Type Resulting in a KSI | % of KSI Crashes | % of Crashes within Type with Marked Crosswalk Available |
|---|---|---|---|---|---|---|
| **Signalized Intersections** | **Crash at signalized intersection location (per reported Intersection field and geographic proximity to traffic signal)** | **971** | **43.5%** | **13.1%** | **33.4%** | **99.0%** |
| Left turning driver fails to yield to pedestrian | ▪ Vehicle turning left preceding collision<br>▪ Driver assigned error code | 453 | 20.3% | 8.6% | 10.3% | 100.0% |
| Right turning driver fails to yield to pedestrian | ▪ Vehicle turning right preceding collision<br>▪ Driver assigned error code | 184 | 8.3% | 9.2% | 4.5% | 98.9% |
| Pedestrian crossing against signal or outside of crosswalk | ▪ Pedestrian assigned error code<br>▪ Error code = Disregarded traffic signal or crossing at intersection – traffic signal present | 160 | 7.2% | 25.0% | 10.5% | 98.8% |
| Driver going straight fails to yield | ▪ Vehicle traveling straight preceding collision<br>▪ Driver assigned error code | 88 | 3.9% | 21.6% | 5.0% | 97.7% |
| Other | ▪ All other crashes at signalized intersections | 86 | 3.9% | 14.0% | 3.2% | 95.3% |
| **Unsignalized Intersections** | **Crash at non-signalized intersection location (per reported Intersection field and no geographic proximity to traffic signal)** | **614** | **27.5%** | **15.8%** | **25.5%** | **38.3%** |
| Driver going straight fails to yield | ▪ Vehicle traveling straight preceding collision<br>▪ Driver assigned error code | 189 | 8.5% | 20.1% | 10.0% | 30.2% |
| Left turning driver fails to yield | ▪ Vehicle turning left preceding collision<br>▪ Driver assigned error code | 159 | 7.1% | 6.3% | 2.6% | 58.2% |
| Pedestrian crossing did not have the right-of-way | ▪ Pedestrian assigned error code<br>▪ Non-motorist action indicated pedestrian crossing | 135 | 6.1% | 25.2% | 8.9% | 29.6% |
| Right turning driver fails to yield to pedestrian | ▪ Vehicle turning right preceding collision<br>▪ Driver assigned error code | 70 | 3.1% | 7.1% | 1.3% | 31.4% |
| Other | ▪ All other crashes at unsignalized intersection | 61 | 2.7% | 16.4% | 2.6% | 24.6% |
| **Mid-block** | **Crash at mid-block location (per reported Intersection field)** | **567** | **25.4%** | **26.1%** | **38.9%** | **6.0%** |
| Pedestrian crossing between intersections | ▪ Non-motorist action – crossing between intersection | 420 | 18.8% | 24.5% | 27.1% | 6.2% |
| Other | ▪ All other crashes at midblock locations | 147 | 6.6% | 30.6% | 11.8% | 5.4% |
| **Driveway** | **Crash located at driveway (per Road Character field)** | **78** | **3.5%** | **10.3%** | **2.1%** | **47.4%** |
| Driveway | ▪ All crashes located at driveway | 78 | 3.5% | 10.3% | 2.1% | 47.4% |
| **Total** | **All collisions** | **2,230** | **100.0%** | **17.0%** | **100.0%** | **56.8%** |

# HIGH CRASH NETWORK

The City of Portland identified a High Crash Network (HCN) comprised of the 30 streets with the highest crashes for people driving (fatal and severe injury only), bicycling, or walking. Vision Zero was the guiding framework for developing the HCN, so only KSI crashes were considered for drivers, while all collisions were considered for pedestrians and bicyclists since the vulnerability of non-motorists means that nearly any collision could be severe or fatal.

This network was derived by combining the top 20 crash streets of each mode. The city's Vision Zero work is focused on these streets, many of which were in the top 20 for multiple modes. Portland's High Crash Network is illustrated in Figure 21. The total number of all and KSI crashes on each of these corridors are displayed in Figure 22. Additionally, crashes per mile are calculated to measure the risk of occurrence and this metric is compared to the network average. Corridors with higher than average crashes per mile have a higher risk of crash occurrence. The probability of a crash being KSI is also computed and compared to the network average – this difference indicates which corridors are more likely to have a KSI crash than the network average. The two of these difference metrics can aid in prioritizing high crash corridors for pedestrian related improvements, the values in red indicate, a location where one or the other is above the network average.

**Figure 21 Portland's High Crash Network**

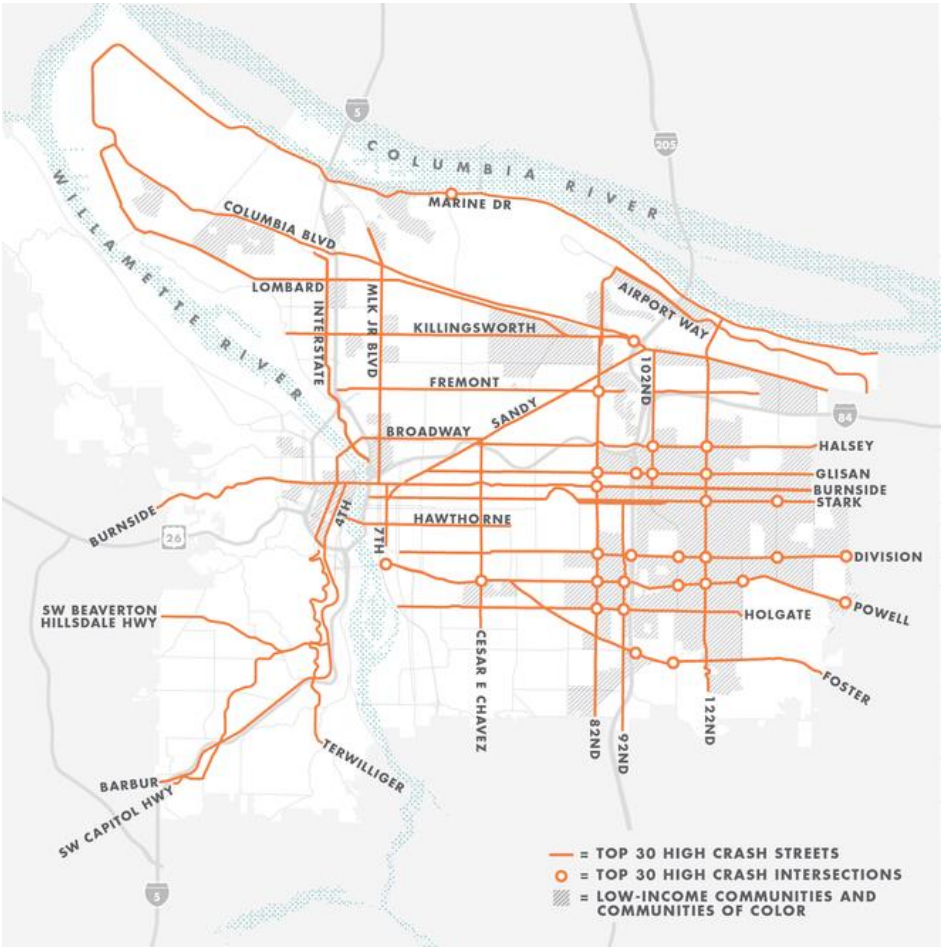


**Figure 22 High Crash Corridor Summary**

| PBOT Corridor ID | Corridor Name | Length (mi) | Pedestrian Crashes[2] | | | KSI Pedestrian Crashes | | |
|---|---|---|---|---|---|---|---|---|
| | | | # | Per Mile | Difference from Average per Mile | # | % | Difference from Average % |
| HCN1 | E/W Burnside St | 12.4 | 159 | 12.8 | 4.3 | 32 | 20.1% | 1.5% |
| HCN2 | N Interstate Ave | 4.3 | 23 | 5.3 | -3.2 | 7 | 30.4% | 11.8% |
| HCN3 | N/NE Fremont St | 7.3 | 22 | 3.0 | -5.5 | 2 | 9.1% | -9.5% |
| HCN4 | N/NE Killingsworth St | 6.7 | 39 | 5.8 | -2.7 | 9 | 23.1% | 4.5% |
| HCN5 | N/NE Lombard St | 12.6 | 78 | 6.2 | -2.3 | 15 | 19.2% | 0.6% |
| HCN6 | NE 102nd Ave | 2.5 | 28 | 11.1 | 2.6 | 2 | 7.1% | -11.5% |
| HCN7 | NE Airport Way | 5.5 | 2 | 0.4 | -8.1 | 0 | 0.0% | -18.6% |
| HCN8 | NE Columbia Blvd | 10.3 | 6 | 0.6 | -7.9 | 4 | 66.7% | 48.1% |
| HCN9 | NE Glisan St | 7.1 | 79 | 11.1 | 2.6 | 12 | 15.2% | -3.4% |
| HCN10 | NE Halsey St | 6.3 | 36 | 5.7 | -2.8 | 3 | 8.3% | -10.3% |
| HCN11 | NE Marine Dr | 15.7 | 3 | 0.2 | -8.3 | 0 | 0.0% | -18.6% |
| HCN12 | NE Martin Luther King Jr Blvd | 4.7 | 60 | 12.6 | 4.1 | 7 | 11.7% | -6.9% |
| HCN22 | NE/SE 122nd Ave | 7.1 | 88 | 12.4 | 4.0 | 12 | 13.6% | -5.0% |
| HCN23 | NE/SE 82nd Ave | 8.4 | 155 | 18.5 | 10.0 | 46 | 29.7% | 11.1% |
| HCN24 | NE/SE Sandy Blvd | 8.9 | 88 | 9.8 | 1.4 | 16 | 18.2% | -0.4% |
| HCN13 | SE 7th Ave | 1.1 | 9 | 7.9 | -0.6 | 1 | 11.1% | -7.5% |
| HCN14 | SE 92nd Ave | 4.3 | 18 | 4.2 | -4.3 | 2 | 11.1% | -7.5% |
| HCN15 | SE Cesar E Chavez Blvd | 3.5 | 51 | 14.6 | 6.1 | 7 | 13.7% | -4.9% |
| HCN16 | SE Division St | 8.3 | 135 | 16.2 | 7.7 | 36 | 26.7% | 8.1% |
| HCN17 | SE Foster Rd | 6.2 | 46 | 7.4 | -1.1 | 12 | 26.1% | 7.5% |
| HCN18 | SE Hawthorne Blvd | 2.6 | 41 | 15.5 | 7.1 | 6 | 14.6% | -4.0% |
| HCN19 | SE Holgate Blvd | 6.4 | 41 | 6.4 | -2.1 | 7 | 17.1% | -1.5% |
| HCN20 | SE Powell Blvd | 8.7 | 140 | 16.2 | 7.7 | 28 | 20.0% | 1.4% |
| HCN21 | SE Stark St | 8.4 | 95 | 11.3 | 2.8 | 14 | 14.7% | -3.9% |
| HCN25 | SW 4th Ave | 1.3 | 38 | 29.1 | 20.6 | 5 | 13.2% | -5.5% |
| HCN26 | SW Barbur Blvd | 6.3 | 22 | 3.5 | -5.0 | 3 | 13.6% | -5.0% |
| HCN27 | SW Beaverton-Hillsdale Hwy | 2.4 | 15 | 6.2 | -2.3 | 3 | 20.0% | 1.4% |
| HCN28 | SW Capitol Hwy | 4.7 | 20 | 4.3 | -4.2 | 2 | 10.0% | -8.6% |
| HCN29 | SW Terwilliger Blvd | 4.9 | 7 | 1.4 | -7.1 | 1 | 14.3% | -4.3% |
| HCN30 | SW/N/NE Broadway | 4.6 | 100 | 21.6 | 13.1 | 12 | 12.0% | -6.6% |
| **Total** | | **193.6** | **1,644** | **8.5** | **0.0** | **306** | **19.0%** | **0.0%** |

[2] Includes crashes within 100 feet of each high crash network street

Approximately two-thirds of pedestrian crashes on the HCN involve people attempting to cross (rather than walk along) the HCN. Nearly half of crashes involve people crossing at signalized intersections (49%), while the other half is split between crossing at midblock locations (25% of crashes) or at unsignalized intersections (23%). Left turning crashes are twice as likely as right turning crashes, and this difference is especially pronounced at signalized intersections. A summary of the key trends is provided in Figure 23 below.

**Figure 23 Pedestrian Crash Trends on the High Crash Network**

| Trend | Potential Implication for Countermeasures |
|---|---|
| **Signalized Intersections (49% of crashes)** | |
| Driver turning onto the HCN corridor hits person walking across it<br>▪ 19% of crashes (> 1/3 of crashes at signals)<br>▪ 78% involve left turning motorists | Provide crossing enhancements or protected left turns on the minor legs of signalized intersections |
| Driver turning off the corridor hits person crossing the road while walking along it<br>▪ 9% of crashes<br>▪ 60% are left turns | |
| **Unsignalized Intersections (23% of crashes)** | |
| Driver traveling along the corridor hits person crossing it<br>▪ 12% of crashes; over ½ of crashes at unsignalized intersections | Upgrade pedestrian crossings so more streets meet the city's crossing spacing standards. |
| Driver turning on or off the corridor hits person crossing the road while walking along it<br>▪ 6% of crashes<br>▪ Over half are left turns | Consider access management or turning movement prohibitions, where appropriate or raise visibility of pedestrians using curb extensions. |
| **Mid-block (25% of crashes)** | |
| Driver traveling along the corridor hits person walking across it<br>▪ 18% of crashes; nearly ¾ of midblock crashes | Install midblock pedestrian crossings so more streets meet the city's crossing spacing standards. |
| **Driveways (3% of crashes)** | |
| Driver turning on to the corridor hits person walking along it<br>▪ 1% of crashes | This largest driveway category is only 1% of crashes citywide. |

Figure 24 illustrates the actions preceding collisions in accordance to their relative frequency, within the context of roadway location.

**Figure 24 Pedestrian Crashes in Relation to the High Crash Network Streets, Location Type, and Vehicle Movement**

| Relation to High Crash Network (HCN) | Signalized Intersection | | | | Unsignalized Intersection | | | | Mid-Block | | | | Driveway | | | | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Straight | Turning Left | Turning Right | Other | Straight | Turning Left | Turning Right | Other | Straight | Turning Left | Turning Right | Other | Straight | Turning Left | Turning Right | Other | |
| **Driver** Along HCN Segment \| **Pedestrian** Across HCN Segment | 102 | 0 | 0 | 0 | 154 | 0 | 0 | 0 | 231 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | **487** |
| **Driver** Turning On To HCN Segment \| **Pedestrian** Across HCN Segment | 0 | 204 | 37 | 0 | 0 | 23 | 5 | 0 | 0 | 3 | 0 | 1 | 0 | 8 | 0 | 0 | **281** |
| **Driver** Turning Off Of HCN Segment \| **Pedestrian** Along HCN Segment | 0 | 81 | 40 | 0 | 0 | 36 | 11 | 0 | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 0 | **173** |
| **Driver** Across HCN Segment \| **Pedestrian** Along HCN Segment | 59 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 2 | 0 | 0 | 59 | **99** |
| **Driver** Turning On To HCN Segment \| **Pedestrian** Along HCN Segment | 0 | 11 | 33 | 0 | 0 | 4 | 22 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 10 | 0 | **88** |
| **Driver** Along HCN Segment \| **Pedestrian** Along HCN Segment | 17 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | **51** |
| **Driver** Turning Off Of HCN Segment \| **Pedestrian** Across HCN Segment | 0 | 8 | 24 | 1 | 0 | 4 | 6 | 0 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | **50** |
| Other | 16 | 1 | 3 | 3 | 4 | 0 | 1 | 1 | 22 | 0 | 0 | 2 | 0 | 2 | 1 | 16 | **56** |
| **Totals** | **194** | **305** | **137** | **4** | **185** | **67** | **45** | **1** | **298** | **3** | **2** | **9** | **2** | **21** | **11** | **1** | **1,285** |

# PEDESTRIAN PRIORITY NETWORK NEEDS

The PedPDX Pedestrian Network Needs Evaluation identified pedestrian infrastructure needs and deficiencies on the designated Pedestrian Priority Network (PPN). Nearly 96% of the 2,230 pedestrian crashes that occurred in Portland from 2006 to 2015 were on PPN streets, which is unsurprising since the network includes all of the collectors and arterials in the city, and those streets are disproportionately prone to pedestrian crashes (see Figure 12). This section examines the crashes that took place along and across PPN streets through the lens of identified needs and deficiencies on the network. For a description of PPN roadway designations and a summary of gaps and deficiencies, see the PedPDX Network Needs Evaluation memo.

## Key Findings

- Crashes involving a person crossing at an unmarked location are more likely to occur where marked crosswalks are too far apart to meet the City of Portland's spacing guidelines than where the spacing guidelines are met
- Crashes at marked crossings are more likely to occur where the existing crossing design is deficient
- Crashes at deficient crossings are more likely to result in a KSI
- Crashes involving people walking along the roadway are more likely to result in a KSI when they occur in a block with missing sidewalks

## Crossing the Roadway

### Gaps

The majority (82%) of pedestrian crashes that occurred on the Pedestrian Priority Network streets involved people walking across a Major City Walkway or City Walkway. On most City Walkways and Major City Walkways, marked crossings are not sufficiently close together to meet crossing spacing guidelines. The guidelines set the standard of 530 feet between marked crossings within pedestrian districts, and 800 feet between marked crossings elsewhere. Nearly 80% of street centerline miles are within a crossing gap. One would expect that more pedestrian crossing crashes would occur in gap locations, and in fact about 60% of crossing crashes on the pedestrian priority network occur where crossings do not meet the spacing guidelines.

More than half of crossing crashes took place at a location with a marked crosswalk. The likelihood that a crash occurred at a marked crossing was higher in places where crossings are sufficiently spaced than in places where they are not. In non-gap locations, marked crossing crashes outnumber unmarked crossing crashes nearly 2 to 1. Within gaps, there were only 1.3 times more crashes at marked crossings than at unmarked locations (see Figure 25). This suggests that in locations where marked crossings are not sufficiently close together, people may be more likely to cross at an unmarked location rather than walk the extra distance to a marked location.

**Figure 25 Pedestrian Crashes and Crossing Gaps on the Pedestrian Priority Network**

| Crossing Gap Status | Crossing Type | Percent of All Crossing Crashes |
|---|---|---|
| Not a gap[1] | Marked crossing | 19.0% |
| | Not at marked crossing | 10.9% |
| In a gap[2] | Marked crossing | 34.0% |
| | Not at marked crossing | 26.2% |

1. The distance between marked crossings is 530 feet or less within a pedestrian district, or 800 feet or less elsewhere
2. The distance between marked crossings is more than 530 feet within a pedestrian district, or more than 800 feet elsewhere

The average length of the gap between marked crossings where a crash occurred was just over 1/3 of a mile, which is not significantly different than the overall average gap length. The risk of a fatality or serious injury is higher when people cross in between marked crosswalks, but is not any higher where the crossing spacing does not meet the guidelines than it is where the spacing guidelines are met.

### Deficiencies

The PedPDX Needs Evaluation analyzed existing marked crossings on Major City Walkways and City Walkways on the Pedestrian Priority Network and identified those that do not meet the City of Portland's crossing design guidelines. Five percent of the marked crossings evaluated were found to be potentially deficient. A disproportionate number of the pedestrian crashes that occurred at marked crossings on the Pedestrian Priority Network took place at one of these potentially deficient marked crossings, at 7% of the total. Crashes that resulted in a severe injury or fatality were even more likely to occur at deficient crossings, with over 8% taking place at a potentially deficient crossing location.

## Along the Roadway

### Gaps

Crashes involving people walking along the road (which includes crashes that occur at driveways) are much less common than crashes involving people crossing the road, representing just over 10% of the total. Of the along-the-roadway pedestrian crashes on the Pedestrian Priority Network, 34% occurred in a block with a sidewalk gap on one or both sides of the street. It should be noted that many blocks with sidewalk gaps also have a partial sidewalk present, and collision reports do not always indicate whether the pedestrian was on the sidewalk or not. In 47 of the 79 crashes that took place in a block with missing sidewalks, the crash report specifically indicates that the person was in the roadway, on the shoulder, or in the bike lane.

On the Pedestrian Priority Network, 45% of street centerline miles have a sidewalk gap present on one or both sides of the street, so the number of crashes occurring in those locations is not disproportionately high. This may reflect the fact that locations without sidewalks are less appealing to people walking, and thus people avoid these streets. The rate of fatality or severe injury, however, is disproportionately high in locations with sidewalk gaps. While 34% of the total along-the-roadway crashes took place in a sidewalk gap location, over 45% of the along-the-roadway crashes that resulted in a fatality or severe injury took place in a location with a sidewalk gap.

# APPENDIX G:

## Existing Needs Analysis Memo

MEMORANDUM

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To: PedPDX Technical Advisory Committee
Michelle Marx, City of Portland Bureau of Transportation
Lidwien Rahman, Oregon Department of Transportation
From: Jean Crowther, Alta Planning and Design
Date: May 15, 2018
Re: PedPDX Existing Needs Analyses Memo (DRAFT Deliverable 3B)

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## Existing Needs Analyses Framework

This memo summarizes a selection of completed plans, and planning processes underway, and how each relates to the PedPDX planning process. This review builds from the memoranda Alta already completed for the Policy Framework, and the Program Review. It serves as a complement to the spatial data (GIS shapefiles) of previously identified pedestrian needs and previously proposed projects. The project team reviewed the following existing planning documents because they include pedestrian network needs analyses and prioritizations, and may inform the Ped PDX network needs analysis:

### City Plans

- 2016 TSP Project and Program Lists
- PBOT Neighborhood planning efforts:
    - Tryon Stephens Headwaters Neighborhood Street Plan
    - Division-Midway Neighborhood Plan
- Safe Routes to School Project Plan (in development)
- Enhanced Transit Corridors Plan
- Growing Transit Communities Plan
- Southwest in Motion (in development)
- Southwest Trails Plan
- CC2035 Plan and the related MMA pedestrian needs assessment
- Central City in Motion multimodal safety project (in development)

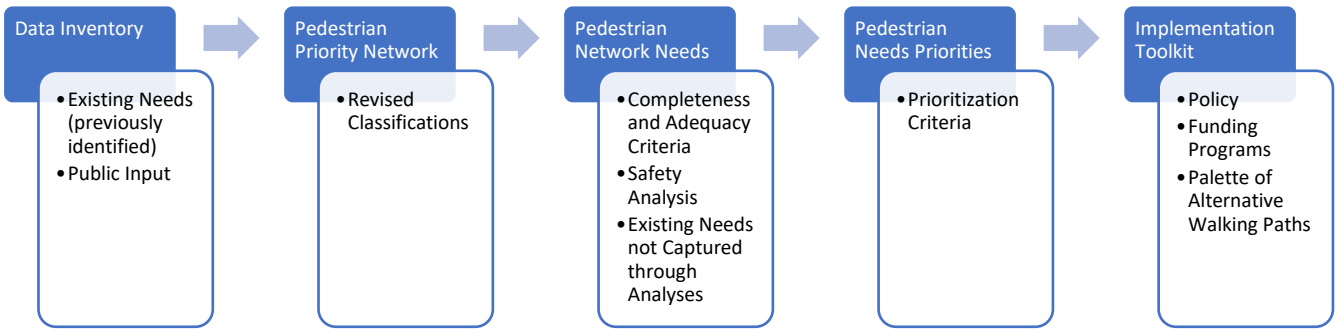
### Regional and State Plans

- ODOT Region 1 Active Transportation Needs Assessment
- Regional Transportation Plan (RTP) Project Lists (update in development)
- Regional Active Transportation Plan
- TriMet Pedestrian Network Analysis

## Summary

PedPDX will establish the vision, goals, and workplan for improving the pedestrian environment in Portland. As part of establishing that workplan, PBOT is using a linear, systematic approach to identifying pedestrian infrastructure needs and prioritizing them across the city. A large number of pedestrian needs are already identified within the City of Portland through prior (or currently underway) planning efforts. In some cases, plans identify needs by documenting a gap or deficiency in the pedestrian infrastructure, such as a lack of a signalized crossing, or by documenting larger trends in the pedestrian experience, such as a high crash corridor. In other cases, plans identify projects, which are fundable solutions to a pedestrian need at a specific location, such as streetscape improvements. However, the level of specificity provided in each plan with regard to project design, extents, and location vary substantially. Additionally, the terms "need" and "project" are often applied interchangeably, or without consistency across planning documents.

The pedestrian needs identified through existing plans represent an important basis for the PedPDX planning process. As shown in the graphic below, PBOT incorporates all previously identified needs as inputs to PedPDX's initial data inventory. For the purposes of the PedPDX planning process, this first step included data of both needs as well as projects, because projects that include a pedestrian component respond to an identified need on the pedestrian network.




What follows from that is an opportunity to determine how these prior (and currently underway) efforts compare against a newly formed PedPDX standard of what constitutes pedestrian needs from a citywide perspective. This is expected to be an iterative process to best match the highest priority needs already identified with an approach that can identify the highest priority needs not yet documented.

Through this multi-step process, PBOT filters the needs inventory first through a Pedestrian Priority Network comprised of the critical streets and corridors for pedestrians. The Pedestrian Priority

Network is based on pedestrian street classifications (which includes considerations for school routes, neighborhood greenways, and similar designations). PBOT then applies the PedPDX Completeness and Adequacy Criteria to the Pedestrian Priority Network. This step translates needs consistently across the City. Previously identified needs that were included in the data inventory and are located on the Pedestrian Priority Network but were not identified as needs through the Needs Analysis will be added to the final set of citywide Network Needs.

Based on this process, PBOT will not include a previously identified (or currently being developed) pedestrian need and project if it does not fall within the Pedestrian Priority Network. PBOT will ensure that all existing and newly identified needs along that network are included in the PedPDX final set of needs. This memo identifies the potential impacts of this and considers strategies for addressing it.

The following sections summarize the type of needs and projects identified in plans previously developed or currently underway and the relationship of each dataset to the PedPDX process. Broadly, the review of plans revealed the following:

- City, regional, and state plans have taken a variety of approaches to defining pedestrians needs and pedestrian projects.
- Plans offer varying levels of specificity of pedestrian needs and recommended implementation strategies.
- The reviewed plans have similar goals of increasing connectivity, safety, and access to important destinations, including transit stops.
- Many of the plans also recognize that a “one size fits all” approach of constructing sidewalks (with curb and gutter) on both sides of every street may not be appropriate or feasible for pedestrian infrastructure implementation.
- Providing a range of facility types that meet the needs and context of a particular location, from less expensive curbless pathways to more expensive fully landscaped sidewalks, will allow for more facilities to be built throughout the city.
- PBOT will need to consider needs and projects identified in City plans as distinct from regional or state plans.

## Review of City Plans

Pedestrian needs and projects that are included in plans developed, and in some cases, adopted by Portland City Council and that can be spatially mapped (i.e. provide sufficient specificity of location) will be filtered through the PedPDX process of needs assessment and prioritization. The PedPDX project team will track the outcomes of the prioritization process against the datasets of previously-identified needs and projects. Next steps will include one of the following courses of action:

1) recalibrate the prioritization methodology to align with broader City priorities;

2) identify projects that are outside of PedPDX priorities and may be considered for implementation through alternate funding programs or an alternate timeline; or

3) amend a previously-adopted plan to reflect the outcomes of PedPDX.

Among City-adopted plans, it is important to note that all previously identified needs and projects have merit, as justified within the plan. The role of PedPDX is to serve as a citywide lens and to prioritize needs to align with TSP policies and applicable City funding and implementation programs.

## 2016 Transportation System Plan (TSP) Projects

The City of Portland's TSP is a 20-year plan that guides transportation investments in Portland. It houses key goals and policies for the City's transportation system, and provides a list of major transportation projects.

Capital infrastructure projects with costs estimated at over $500,000 are listed individually as Major Projects in the TSP. These Major Projects are identified from individual planning processes such as modal plans (such as PedPDX) or local area plans (such as the East Portland Action Plan). Pedestrian-related projects in the TSP may include broad multimodal "complete streets" corridor improvements that include pedestrian elements in their descriptions and cost estimates, or they may be specific large-scale projects with a pedestrian emphasis such as pedestrian district improvements, large sidewalk or trail projects, or bicycle/ pedestrian bridges. All TSP projects are prioritized into two timelines for implementation (either a one to ten-year or 11-20 year implementation).

### Relationship to PedPDX:

The TSP includes an adopted Major Projects list that is part of the PedPDX data inventory. Of the 427 Major Projects listed in the TSP, 241 include pedestrian elements. These 241 projects will be included in the PedPDX needs inventory in all cases where the improvement can be assigned to a location. In the case of projects that are non-specific (e.g. Goose Hollow bicycle and pedestrian improvements), the project team will compare the PedPDX draft Network Needs to these locations. PedPDX findings may add specificity to those more generalized project scopes. Ultimately, the process of identifying and prioritizing pedestrian needs in PedPDX is an opportunity to determine how well those TSP *projects* that include a pedestrian component align with identified *needs* of pedestrians. Where those do not align, PBOT will need to address inconsistencies through amendment to the TSP. The TSP explicitly defers to PedPDX to address pedestrian network needs, priorities, classifications, and policies. The prioritized needs of PedPDX provide the basis for an updated list of pedestrian projects to include in the TSP Update. Although PedPDX does not influence the TSP's project prioritization, PedPDX's prioritization criteria may influence the City's approach to implementing pedestrian-related projects within the TSP-determined timelines.

## PBOT Neighborhood Plans

PBOT's Neighborhood Plans are neighborhood-scale plans that address the unique needs and desires of a particular place. These plans provide relevant guidance in relation to communities that are currently underserved by pedestrian infrastructure investments:

*Tryon-Stephens Headwaters Neighborhood Street Plan* (2015)

The *Tryon-Stephens Headwaters Neighborhood Street Plan* is a strategy for enhancing neighborhood access to local destinations by looking comprehensively at street and drainage issues. The plan acknowledges that a "one size fits all" approach is not always feasible or context-sensitive for neighborhoods, where full sidewalk build outs are expensive and

inflexible. The plan recommendations are not included in the City's TSP Major Projects list. Rather than provide discrete projects, the plan provides a series of potential cross sections to be implemented, depending on a variety of criteria such as street typology and natural features, coupled with a range of network considerations, including priority pedestrian routes.

*Division-Midway Neighborhood Street Plan* (2014)

The *Division-Midway Neighborhood Street Plan* identifies and prioritizes local street and pathway connections to improve transportation connectivity in the project area. These connections are intended to address existing deficiencies, including pedestrian infrastructure. The plan prioritizes local street and pathway connections that increase safety, connectivity, and access to transit. The plan identifies projects both in the existing right of way, as well as future connections across private property. Of the plan's proposed improvements, large projects are included in the TSP (such as the 4M Greenway, a proposed neighborhood greenway), but most are too small in scale to be included in the TSP.

### Relationship to PedPDX:

For both of these plans, the project team will analyze identified needs that fall within the PedPDX Pedestrian Priority Network. Needs outside of that network will not be included in the PedPDX dataset of needs, however they will remain as programmable pedestrian needs through funding sources outside of the Pedestrian Network Completion program. PBOT also responded to the needs identified in these plans by developing a palette of alternative walking paths to serve as context-appropriate design solutions included in the PedPDX document.

## Safe Routes to School (SRTS) Project Plan

PBOT is currently developing its Safe Routes to School (SRTS) program through a multi-faceted process of community engagement and planning analysis. The process is determining preferred walking and biking routes to school and identifying discrete infrastructure projects to improve each route. PBOT will construct the prioritized list of safety improvements using Fixing Our Streets, a voter-approved local funding source offering an anticipated $8 million for improving school routes.

### Relationship to PedPDX:

The draft SRTS Project Plan identifies 1,229 projects in 19 different categories along designated routes to school, and prioritizes them into three tiers. SRTS projects offer more detail regarding proposed improvements than do other City-adopted plans. The project team will incorporate these projects into the PedPDX inventory of needs and projects. The project team will prioritize all SRTS projects that fall within the Priority Pedestrian Network of PedPDX. PBOT will need to cross-check the outcomes of the SRTS Project Plan prioritization, and the resulting three tiers, with the outcomes of the PedPDX prioritization process. One outcome is not meant to supplant the other, but cross-referencing the two can inform implementation and funding strategies. This will require close coordination with the SRTS program to determine how to distinguish between projects prioritized for the Fixing Our Streets project versus those considered for funding through the Network Completion Program or TSP Major Projects.

## Enhanced Transit Corridors Plan

PBOT and TriMet's *Enhanced Transit Corridors Plan* (to be adopted Spring 2018) will identify where transit priority, streamlining, and access treatments could be most beneficial on the planned TriMet frequent service network within the City of Portland. The primary product of the plan is a capital and operational toolbox of strategies and infrastructure treatments that can support increases in transit ridership and improve the experience for current riders.

Three lines that are part of TriMet's High Frequency Network were chosen for further study within the Enhanced Transit Corridors Plan: Lines 72, 12, and 6. The plan's toolbox of solutions is applied to each corridor as a test case of its application. Lines 73 and 20, as well as a study area within the Central City, are identified as warranting further study through other planning efforts. These focus corridors were chosen through a selection process that scored bus lines based on:

- **Transit Reliability/Delay** – Where buses are delayed by traffic congestion and it takes longer to travel during the most congested periods of the day compared to free flow conditions. Calculation: 90$^{th}$ to 10$^{th}$ Percentile Bus Operating Speed Variance.
- **Transit Speeds** – Where buses are slower throughout the day, compared to the posted speed. Calculation: Average Bus Operating Speed to Posted Speed Limit.
- **Transit Dwell Time** – Where buses are stopped at bus stops longer. Calculation: Transit Dwell Time (with the door open) to overall Transit Run Time.
- **Current Transit Trips** – Where transit ridership is greater than average based on the Average Existing Weekday Transit Trips.
- **Equity** – Where there are concentrations above the citywide average of the following populations:
    - People of Color
    - Low Income Households
    - Limited English Proficiency Households
- **Forecasted Future Population and Job Growth between 2010 and 2035** – Where forecasted increase in population and jobs suggests more transit demand in the future, based on the preferred Growth Scenario for the Portland 2035 Comprehensive Plan.

### Relationship to PedPDX:

Pedestrian access to transit will likely be a criterion within the PedPDX prioritization framework. When complete, the *Enhanced Transit Corridors Plan* will provide a rationale for prioritizing certain transit corridors as part of either the Pedestrian Priority Network, or as higher weighted elements within the PedPDX prioritization framework.

## Growing Transit Communities (GTC) Plan

The *Growing Transit Communities Plan* (2017) is an effort to identify and prioritize the most beneficial improvements that would make getting to transit stops and using transit a safer and more convenient option along sections of bus lines 87 (Airport Way/181$^{st}$), 77 (Broadway/Halsey), and 20

(Burnside/Stark). These three bus corridors were selected after an analysis of all bus lines in Portland using the following criteria:

- Residential Density
- Opportunity: Jobs and Education
- Equity
- Access
- Mixed-use Land Patterns

The plan identifies corridor safety, crossings, pedestrian connections, sidewalks, signals, paving, and trail projects at locations where transit, along with walking and bicycling for short trips, could be the best mode for travel. Along the three planning corridors, the plan also identifies needs, including a lack of safe and conveniently spaced crossings (one corridor has crossings spaced more than a quarter mile apart), sidewalk gaps on connecting side streets, and poor bus stop quality. Projects were prioritized using a pedestrian network analysis tool developed for the project, and also the NCHRP ActiveTrans Priority Tool.

**Relationship to PedPDX:**

PBOT will incorporate all of the recommended projects in the GTC Plan that include a pedestrian component into the PedPDX needs inventory. Those that fall within the PedPDX Pedestrian Priority Network will be prioritized. Given the process undertaken to select the three bus corridors highlighted in the GTC Plan, PedPDX may choose to incorporate lines 87, 77, and 20 as part of either the Pedestrian Priority Network. Additionally, given that pedestrian access to transit will likely emerge as a criterion within the PedPDX prioritization framework, PedPDX may choose to include those bus lines as higher weighted elements within the PedPDX prioritization framework.

## Southwest in Motion

*Southwest In Motion* (to be adopted Summer/Fall 2018) is a strategy for active transportation investments in Southwest Portland. The final plan will identify a realistic 5-year active transportation action plan that provides basic walking and bicycling connectivity as well as access to transit improvements.

The plan will identify a short-term project list, with a focus on project readiness, to more effectively implement pedestrian and bicycle improvements in SW Portland.

**Relationship to PedPDX:**

Once a short-term project list has been created, PedPDX will identify which of the proposed projects lie within the Priority Pedestrian Network, evaluate how the projects perform against the Completeness and Adequacy Criteria, and perform a citywide prioritization that includes the projects identified in Southwest in Motion.

## Southwest Urban Trails Plan

The intent of the Southwest Urban Trails Plan, adopted in 2000, is to increase pedestrian access throughout Southwest Portland for recreation and transportation. The plan identifies an urban trail network linking pedestrians to schools, parks, transit, shopping, and recreation, as well as to regional trail systems and adjacent cities. The plans goals are to:

- Identify a primary trail network
- Identify design, construction, and right of way issues
- Develop recommendations for funding and construction
- Involve the community

Proposed improvements in the plan aim to increase pedestrian connections, promote pedestrian safety, and enhance the walking experience. Improvements include volunteer-built pathways and trails, sidewalks, crossing improvements, and stairs and bridges.

The plan priorities sidewalks along roadways with limited sight visibility due to topography and roadway geometry. Crosswalk improvements were proposed where crossing the road is difficult due to high traffic volumes, poor sight visibility, or high traffic speeds.

**Relationship to PedPDX:**

This plan provides guidance on sidewalks and trail connections, including a detailed project list. PedPDX will identify which of the planned trail segments identified in the Southwest Urban Trails Plan are on the Pedestrian Priority Network, evaluate how the projects perform against the Completeness and Adequacy Criteria, and perform a citywide prioritization that includes the projects identified by the plan.

## CC2035 Plan and MMA Pedestrian Needs Assessment

The Central City 2035 Plan (CC2035) replaces the 1988 Central City Plan as the primary guiding policy document for the Central City, with goals, policies and tools designed to make Portland's urban core more vibrant, innovative, sustainable, and resilient. The CC2035 Plan includes policies and objectives to be amended into the TSP. One of the plan's performance targets is for at least 80% of commute trips to and from the district to be made by non-single occupancy vehicles (SOV) by 2035. The CC2035 plan also includes documentation for designating Portland's Central City as a Multimodal Mixed-Use Area (MMA), which provides the City of Portland with flexibility by lifting the Transportation Planning Rule (TPR) requirement for considering automobile congestion standards during the City's review of certain land use actions. Portland City Council did not adopt the MMA Pedestrian Needs Assessment portion of the CC2035 Plan.

**Relationship to PedPDX:**

The pedestrian needs identified in the CC2035 Plan assessment are included in the TSP as projects. PBOT will incorporate these projects into the PedPDX needs inventory. For those projects that fall within the Pedestrian Priority Network, PBOT will apply the Completeness and Adequacy Criteria. using the PedPDX prioritization framework.

## Central City in Motion (CCIM) Multimodal Safety Project

Central City in Motion is Portland's plan for making strategic transportation investments in the Central City. The project will produce a final prioritized list and implementation plan by November 2018. The

plan aims to increase multimodal investments ahead of the population increase expected in the area by 2035.

The project is focusing pedestrian-related infrastructure investments on pedestrian safety at crossings and intersections. The project's draft planning principles and criteria for identifying projects to improve the pedestrian network in the Central City include:

- Coordinate with other plans: Coordinate with and build upon the City's TSP project list, MMA Inventory, Vision Zero analysis, and PedPDX Crossing Gap Analysis
- Address missing crossings: Focus project funds on improving locations that do not meet the City's draft minimum crossing standards:
    - At least every 530 feet on Central City Transit / Pedestrian Streets, Civic Main Streets, and Neighborhood Main Streets
    - At least every greater than 800 feet on City Walkways
- Address deficient crossings: Improve pedestrian crossings with features that improve pedestrian safety, e.g., decreasing crossing distance.
- Fill critical gaps: Identify other critical access improvement needs (transit access, etc.)
- Multi-modal: Along the priority bikeway corridors, identify where the bikeway project would also make substantial improvements to the pedestrian network

**Relationship to PedPDX:**

CCIM will identify and prioritize crossing and ADA improvements within the Central City. The project list and prioritization criteria are currently in development. These projects will be prioritized for near-term implementation (within five years) and funding. Projects not included in the near-term implementation package will be placed on a list of long-term investments. A Once the proposed improvements are available, the PedPDX project team will identify which of these crossing projects lie within the Priority Pedestrian Network, evaluate how the projects perform against the Completeness and Adequacy Criteria, and perform a citywide prioritization. Because the PedPDX plan and CCIM are happening concurrently, closer coordination may be required, especially as it relates to: 1) the CCIM determination of near-term and long-term implementation as compared to PedPDX prioritization outcomes; and 2) the CCIM funding recommendations as compared to PedPDX funding recommendations.

## Regional and State Plan Review

Pedestrian needs and projects that are included in plans developed by TriMet, Metro, or the state, rather than the City, are relevant to PedPDX but may not be incorporated in the same manner. The relationship of each assessment of needs in relation to PedPDX is summarized below.

### ODOT Region 1 Active Transportation Needs Assessment

The Oregon Department of Transportation (ODOT) has developed the Active Transportation Needs Inventory (ATNI) to better understand pedestrian and bicycle travel needs on the existing system of ODOT facilities. ODOT facilities within the City of Portland include 82$^{nd}$ Avenue and Powell Blvd, which are two of the most dangerous roads for pedestrians in Portland.

The inventory report recommends prioritizing improvements on highway segments with characteristics associated with increased pedestrian or bicycle crash risk, regardless of previous crash history, to proactively and systemically improve safety. Characteristics include traffic volumes, number of motor vehicle travel lanes, posted speed limit, driveway density, locations of traffic signals, and location of pedestrian activated flashers/beacons.

The report also prioritizes improvements on highway segments that serve areas with high numbers of transportation disadvantaged residents and environmental justice communities, and aims to improve pedestrian and bicycle facilities in areas that have been traditionally underserved.

Additionally, the report prioritizes sidewalk infill that fills a gap or connects to the surrounding active transportation network, in order provide increased access to destinations, address barriers, and support increased levels of walking.

**Relationship to PedPDX:**

The ODOT Region 1 Active Transportation Needs Assessment provides an inventory of all pedestrian facilities on ODOT facilities in Portland using standards specific to ODOT; it does not reflect current City policy. Segments along ODOT facilities are classified as a gap (no facility), substandard (does not meet ODOT minimum standards), or meets standard (meets ODOT minimum standard). The project team will incorporate this dataset into the needs inventory. The project team will evaluate all ODOT facilities within the Pedestrian Priority Network based on the PedPDX Completeness and Adequacy Criteria. The PedPDX analysis will likely identify pedestrian needs beyond the “gap” and “substandard” classifications of the ODOT assessment. PBOT will prioritize needs through the citywide PedPDX prioritization framework. The PedPDX process will provide ODOT Region 1 with more robust documentation of infrastructure needs along its facilities, as well as inform future project scoping for gap and substandard segments.

## RTP Project Lists

The 2014 *Regional Transportation Plan* (RTP) is currently being updated as a 2018 Plan. This plan coordinates city, county, regional and state priority transportation projects and, once completed, will create a transportation priority list for the period for 2018-2040. The plan identifies current and future transportation needs, investments required to meet those needs and what funds the region expects to have available through 2040 to implement those investments.

RTP projects include sidewalk construction, reconstruction, and infill on arterial roads; Multnomah County pedestrian improvements (marked crossing, lighting, and sidewalks); pedestrian connections to transit (bike/pedestrian bridge, sidewalks); pedestrian connectivity projects (bridges over I-5 and Columbia Blvd); and improvements in pedestrian districts.

**Relationship to PedPDX:**

Metro invited local jurisdictions to submit projects for inclusion in the plan’s update, as a means of assessing needs across the region. The 2018 list of projects that the City of Portland submitted to the RTP process overlap significantly with TSP projects and include 228 projects with a pedestrian element. As with other plans, the project team will incorporate this dataset into the PedPDX needs inventory. PBOT will need to analyze the 2018 RTP project list against the identified Pedestrian Priority Network, as well as determine how the projects perform against PBOT’s Completeness and Adequacy Criteria and Prioritization, and provide suggested amendments to the next RTP process.

## Regional Active Transportation Plan

The 2014 *Regional Active Transportation Plan* (ATP) provides a vision, plan and policies for communities in the region to increase transportation options and support economic development, healthy active living and equity.

To create a new regional pedestrian network, Metro first conducted a regional pedestrian network evaluation. The analysis found that areas in the region with the greatest projected increase in total walking trips between 2010 and 2035 include Portland's Central City and SE Portland to Interstate 205. Areas with the greatest projected increase in percentage of walking trips between 2010 and 2035 include East Portland (east of I-205) and North Portland.

The analysis also identified urban arterials as being important corridors in the regional pedestrian network, as well as frequent and almost frequent transit route corridors.

The ATP identifies a set of functional classifications for the regional pedestrian network:

- Pedestrian parkways - the highest functional classification applied to regional pedestrian routes. They mirror the regional transit network and are also key regional destinations themselves;
- Regional pedestrian corridors - the second highest functional classification for regional pedestrian routes.
- Pedestrian parkways and regional pedestrian corridors connect to and through pedestrian districts.

### Relationship to PedPDX:

The project team will incorporate RATP projects into the PedPDX needs inventory. Projects within the Pedestrian Priority Network will be analyzed against the PedPDX Completeness and Adequacy Criteria and Prioritization. This will likely be an iterative process to determine where RATP projects align with PedPDX needs and where inconsistencies exist. As the Pedestrian Priority Network is developed, PBOT may consider the Regional Pedestrian Network (RTP Figure 1.22) as a component of that. Inconsistencies with the final prioritized needs of PedPDX will need to be submitted as amendments to the next ATP process.

## TriMet Pedestrian Network Analysis

TriMet's Pedestrian Network Analysis, completed in 2012, is a data-driven system for identifying pedestrian infrastructure needs near transit. The analysis includes specific recommendations that cities, counties, and the state can incorporate into planning projects, and potential projects for 10 focus areas in the region. These improvements may include adding or widening sidewalks, adding landscaping or planting street trees, calming traffic and/or adding street lighting.

TriMet scored every transit stop on transit supportiveness and the existing pedestrian environment. From this analysis, TriMet selected 10 focus areas and performed qualitative needs assessments. Three of the focus areas are in the City of Portland: SE Division St & SE 122nd Ave, SE Powell Blvd. & SE 82nd Ave, and Hillsdale. For each focus area, the assessment concludes with five actions to the make the area safer, easier, and comfortable to walk.

### Relationship to PedPDX:

The needs identified in the TriMet Pedestrian Network Analysis for the City of Portland are limited to three locations. While the needs are not easily integrated into a GIS needs inventory, enough specificity is provided to support cross-referencing PedPDX's draft Network Needs against the project concepts recommended at these three locations. Where needs align, the Pedestrian Network Analysis provides a basis for project development and potential partnership in implementing. Where needs are not aligned, TriMet may consider amending recommendations to support PedPDX priorities that also improve pedestrian access to transit at these locations or others within the City limits.

# APPENDIX H:

## Network Completeness and Adequacy Criteria Memo

NELSON
NYGAARD

# 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

## 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[1].

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

[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.

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:<br>▪ Provide safe, convenient, and attractive pedestrian access to activities along major streets and to recreation and institutions<br>▪ Provide connections between neighborhoods<br>▪ Provide access to transit<br>▪ Serve areas with dense zoning, commercial areas, and major destinations | 800 feet, (approximately three blocks) |

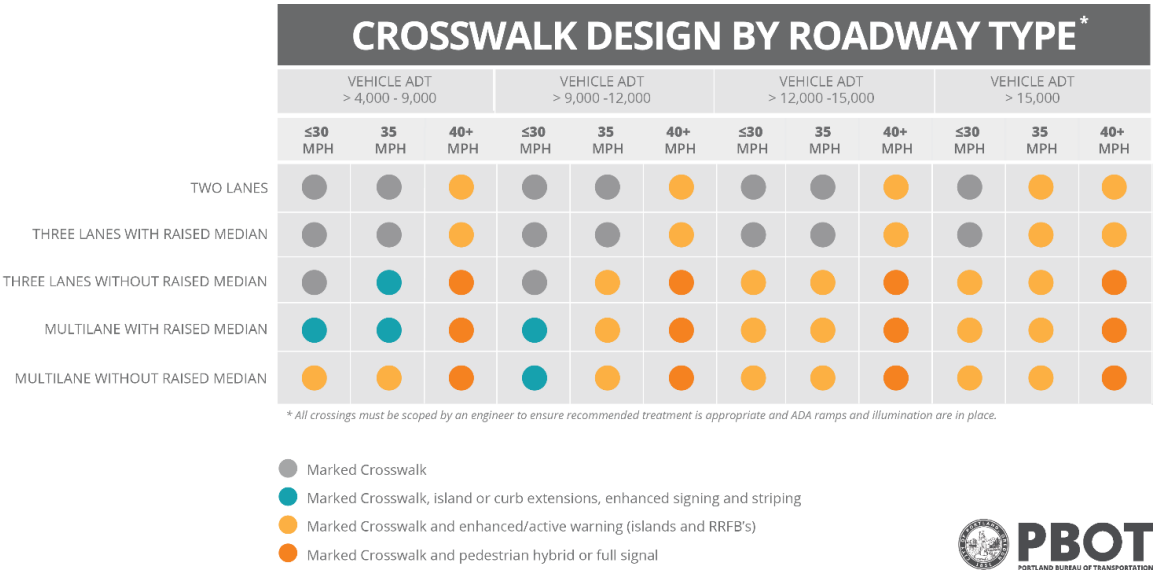
## What Constitutes a Crossing Deficiency?

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.

# APPENDIX I:

## Pedestrian Network Needs Memo

NELSON
NYGAARD

# MEMORANDUM

To: PedPDX Technical Advisory Committee; Michelle Marx, City of Portland Bureau of Transportation; Lidwien Rahman, Oregon Department of Transportation

From: Corinna Kimball-Brown and Drusilla van Hengel, Nelson\Nygaard Consulting Associates

Date: May 24, 2018

Subject: PedPDX Network Needs Evaluation - DRAFT

# INTRODUCTION

## Purpose

The PedPDX Pedestrian Network Needs Evaluation assesses existing infrastructure for people walking along and across the citywide Pedestrian Priority Network, and identifies locations of gaps and deficiencies in this infrastructure. This memo describes the results of the needs evaluation and includes a summary of the criteria and methods used. The infrastructure that was evaluated includes marked pedestrian crossings ("across") and sidewalks ("along"). The criteria used in the evaluation were developed by the City of Portland and are described in the PedPDX Network Completeness and Adequacy Criteria Memo.

## Pedestrian Priority Network

The Pedestrian Priority Network is a network of streets in Portland, developed through the PedPDX planning process, that are designated as a priority for people walking. Streets within the priority network are assigned pedestrian classifications based on the level of pedestrian demand. Pedestrian classifications (listed in descending order of demand) include the following:

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www.nelsonnygaard.com

- Major City Walkways: These walkways are comprised of the Civic and Neighborhood Corridors and Main Streets, as defined by Portland's 2035 Comprehensive Plan, all streets along the planned and existing Frequent Transit Network, core downtown streets, and off-street trails in high demand corridors.

- City Walkways: These walkways are comprised of all arterial streets, collector streets, streets with transit service that are not designated as Major City Walkways, and off-street trails in moderate demand corridors.

- Neighborhood Walkways: These walkways are comprised of all local streets within pedestrian districts, within a half-mile of a light rail station, on a designated Safe Routes to School travel route, and on an existing or funded neighborhood greenway. Neighborhood walkways also include designated paths with the street right-of-way and neighborhood trails.

- Local Streets: Local streets are included on the network if they are located in one of the district overlay classifications.

# CROSSING THE ROADWAY

PedPDX identifies pedestrian needs "across" the roadway based on gaps (where a crossing is not provided) and deficiencies (where a crossing is provided, but identified as insufficient).

## Gaps

The needs evaluation defines a crossing gap as a segment of a City Walkway or Major City Walkway on the Pedestrian Priority Network where the distance between marked pedestrian crossings exceeds the City of Portland's Interim Spacing Guidelines. Neighborhood Walkways are not included in the crossing gaps evaluation. Marked crossings include those with basic parallel striping, high-visibility striping, and those indicated with distinct paving materials (for example, on the downtown transit mall).

### Guidelines

The City of Portland's interim spacing guidelines for marked pedestrian crossings are as follows (for more information, see the Network Completeness and Adequacy Criteria Memo):

- On City Walkways and Major City Walkways *within* pedestrian districts, the desired marked crossing spacing is 530 feet apart.
- On City Walkways and Major City Walkways *outside of* pedestrian districts, the desired marked crossing spacing is 800 feet apart.

### Methods

1. City Walkway or Major City Walkway streets on the Pedestrian Priority Network were split into segments at the locations of marked crossings.
2. The length of each street segment was rounded to the closest interval of 10'.
3. The crossing spacing guidelines for streets within and outside pedestrian districts were applied to each street segment. Crossing spacing guidelines for pedestrian districts were applied to all segments partially within a pedestrian district.

4. For a street segment identified as a gap, the length of the segment was divided by the desired crossing spacing to arrive at a rough estimate of how many additional crossings are needed citywide.

## Findings

On the majority of Portland's City Walkways and Major City Walkways, marked crossings are spaced too far apart to meet the City's guidelines. The distribution of such crossing gaps varies geographically. Gaps are less common within pedestrian districts than outside of them.

The gaps analysis found:

- A total of 464 miles of City Walkway and Major City Walkway with crossing gaps, 79% of the 590 total centerline miles of streets with those designations.
- The longest gap is 49,011 feet, or 9.28 miles, on NW Skyline Boulevard.
- The mean length of gaps between crossings is 1,874 feet, or roughly 1/3 mile.
- Approximately 3,520 new marked crossings, with design appropriate to the street type, would need to be installed citywide in order for all City Walkways and Major City Walkways to meet the spacing guidelines.

*Pedestrian Districts*

Within pedestrian districts, the initial analysis identified the following:

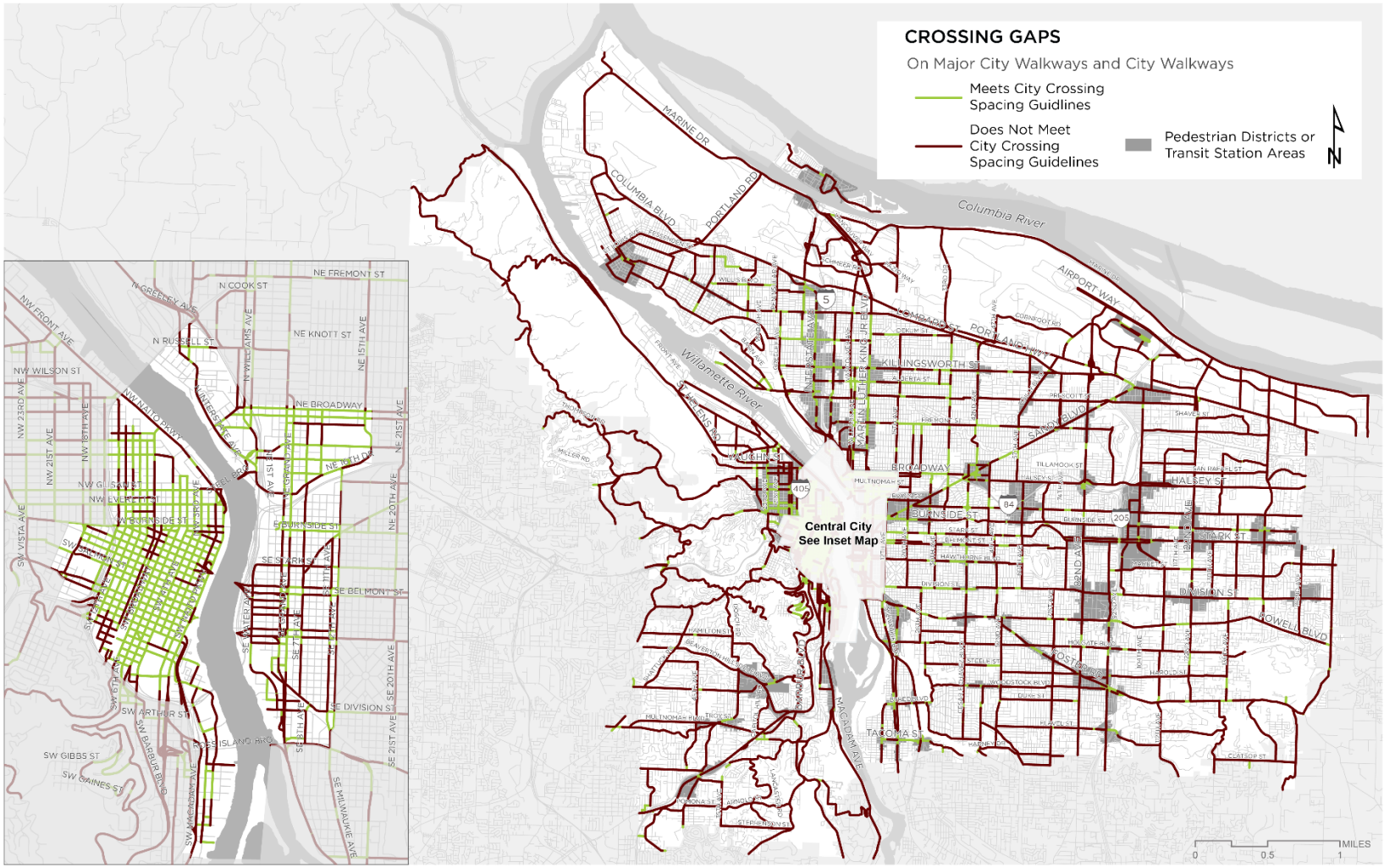
- 147 miles of City Walkway/Major City Walkway where gaps are present, representing 66% of the total miles within pedestrian districts
- Mean gap distance of 1,277 feet, or 2.4 times the spacing guidelines
- Need for approximately 1,440 new marked crossings

*City Walkways and Major City Walkways outside of Pedestrian Districts*

On City Walkways and Major City Walkways outside of Pedestrian Districts, the initial analysis identified the following:

- 317 miles of City Walkway/Major City Walkway where gaps are present, representing 86% of the total miles outside of pedestrian districts
- Mean gap distance of 2,394 feet, nearly 3 times the spacing guidelines
- Need for approximately 2,080 new marked crossings

**Figure 1 Crossing Gaps on the Pedestrian Priority Network**




This map illustrates that gaps between marked crossings are most prevalent on Portland's west side outside of downtown, and more prevalent in East Portland than in North, Inner Northeast, and Southeast Portland.

# Deficiencies

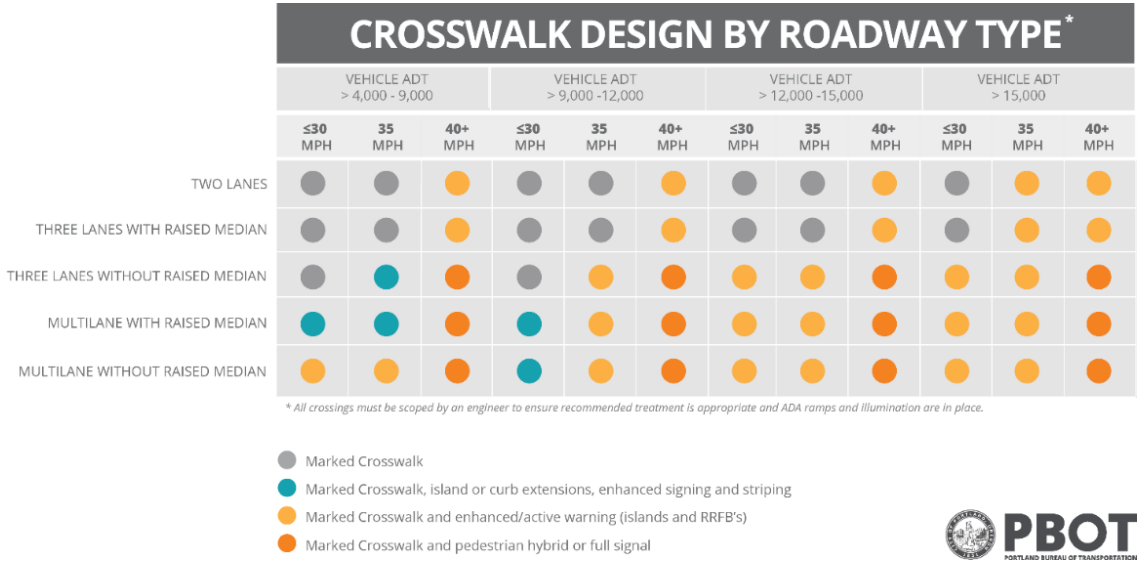
The needs evaluation assessed the sufficiency of all marked crossings on Pedestrian Priority Network streets with a designation of City Walkway or Major City Walkway. Crossings were identified as potentially deficient if the existing crossing design did not meet the City of Portland's design guidelines, as outlined below.

## Criteria

The City of Portland has established the desired design of a crosswalk based on the speed limit, number of lanes, and average daily traffic (ADT) of the roadway that it crosses, as illustrated in Figure 1. Generally, the streets with higher volumes and more lanes need a more robust crosswalk design. The needs analysis identified those crossings that are potentially deficient based on these guidelines and available data. Ultimately, City engineers will assess each potentially deficient crossing location to determine the appropriate design.

The guidelines indicate that marked crossings at signalized intersections are sufficient for all roadways. However, an analysis of crashes involving people walking finds that many crashes occur at signalized intersections (for more information see the Pedestrian Safety Existing Conditions memo). While signalized intersections are not identified as a potential deficiency in the needs evaluation, in the next phase of PedPDX, the Pedestrian Network Prioritization will include signalized intersections with a high historic crash rate paired with other systemic characteristics that are likely to make them more dangerous to people walking.

**Figure 2 Crosswalk Design by Roadway Type**




Based on the chart in Figure 2, the evaluation considers a crossing to be *sufficient* if one of the following is true:

- The location requires a marked crosswalk (as indicated by a grey circle) and a marked crosswalk is present.
- The location requires a curb extension or pedestrian refuge island to supplement a marked crosswalk (as indicated by a blue circle) and this treatment is present.
- The location requires enhanced/active warnings with islands and Rectangular Rapid Flash Beacon to supplement a marked crosswalk (as indicated in light orange circle), and this treatment is present.
- The location requires a hybrid or full signal to supplement a marked crosswalk (indicated by a dark orange circle), and this treatment is present.

Any marked crossing that does not fall into one of the categories described above is considered to be potentially deficient.

## Methods

1. Existing marked crossings were assigned values for the following characteristics of the *crossing*:

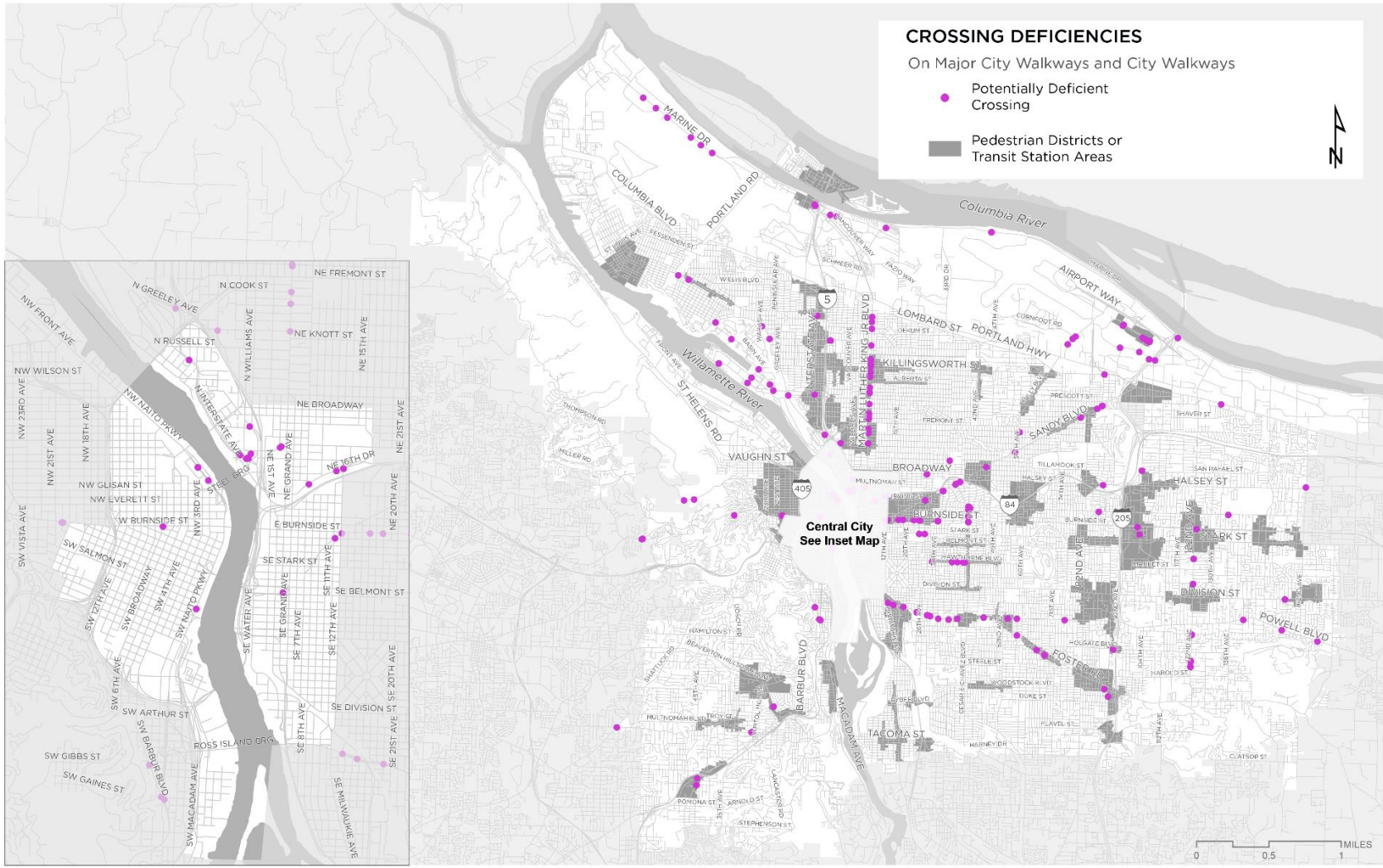
   a. Presence of curb extension
   b. Presence of pedestrian refuge island
   c. Presence of active warning device (RRFB)
   d. Presence of hybrid or full traffic signal

2. Existing marked crossings were assigned values for the following characteristics of the *roadway* on which they are located:
   a. Speed limit
   b. Average daily traffic (ADT)
   c. Number of lanes
   d. Presence of raised median
3. Existing marked crossings were assigned to a crossing design category. For example, a crossing with a pedestrian refuge island but no signal would be assigned to the "blue" crossing category based on the chart shown in Figure 2.
4. The existing crossing design category was compared with the level of design appropriate for the roadway type. In the example in step 3, if that crossing were on a roadway with two lanes, speed limit of 40 mph, and ADT of between 9,000 and 12,000, it would be assigned to the "orange" roadway design category.
5. Deficient crossing were identified as those where the roadway category calls for a level of design that exceeds the existing crossing design.

## Findings

There are 221 deficient marked crossings on City Walkways and Major City Walkways, about 5% of the total. The number is relatively low partly because nearly 70% of the marked crossings on City Walkways and Major City Walkways are at a signalized intersection, which is deemed sufficient for all roadway types for the purposes of this evaluation.

**Figure 3 Crossing Deficiencies on the Pedestrian Priority Network**




This map illustrates that potentially deficient crossings are concentrated on arterial streets with multiple mid-block crossings.

Deficient crossings are concentrated on larger, busier streets for which the desired crosswalk design is a shade of "orange," that is, at least a marked crossing with an RRFB or signal. Most of the deficient crossings that should be in the "orange" design category are actually "grey", meaning they have a marked crosswalk with no other design elements. The vast majority of deficient crossings – 86% – are located in places where crossings are spaced close enough together to meet the City's spacing guidelines. Examples of major streets with many closely-spaced deficient crossings include NE Martin Luther King, Jr Boulevard and SE Powell Boulevard.

Figure 2 shows the number of crossing deficiencies organized by the existing design versus the desired crossing design for the roadway. About 30% of the marked crossings analyzed fall on a road where the desired crossing design includes an RRFB or signal, but they make up 90% of the deficient crossings.

**Figure 4 Number of Crossing Deficiencies: Existing Crossing Design compared with Design Guidance**

| Existing Crossing Design | Desired Crossing Design for Roadway | | |
|---|---|---|---|
| | Blue: pedestrian refuge or curb extension | Light Orange: RRFB | Dark Orange: hybrid or full signal |
| Blue: marked crosswalk with pedestrian refuge island or curb extension | NA | 87 | 1 |
| Grey: marked crosswalk | 13 | 111 | 9 |

# ALONG THE ROADWAY

PedPDX identifies pedestrian needs "along" the roadway based on gaps (where a pedestrian walkway is not provided). It does not identify deficiencies. While deficiencies were considered within the process, the project team did not 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.

## Gaps

The Network Needs Evaluation defines a walkway gap along the roadway as a segment of any Pedestrian Priority Network street, including all Major City Walkways, City Walkways, and Neighborhood Walkways, that does not meet the City of Portland's guidelines. Sidewalk data was available for 95% of street centerline miles on the Pedestrian Priority Network. Planned regional trails are also considered to be gaps in the network.

### Guidelines

Requirements for pedestrian walkways are based on the 1998 Pedestrian Design Guide. City requirements state that all streets should have sidewalks on both sides. The needs analysis identifies two types of gaps: street segments with a sidewalk gap on both sides of the street, and street segments with a sidewalk gap on only one side of the street. Trails gaps are included within the category of "gap on both sides of the street."

In recognition of new City Comprehensive Plan policies indicating that context-sensitive walkways may be more appropriate than a traditional sidewalk on both sides of the roadway in certain locations, PedPDX is developing guidelines for Alternative Pedestrian Walkways. 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 may represent complete walkways provided that certain criteria are met. 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.

## Methods

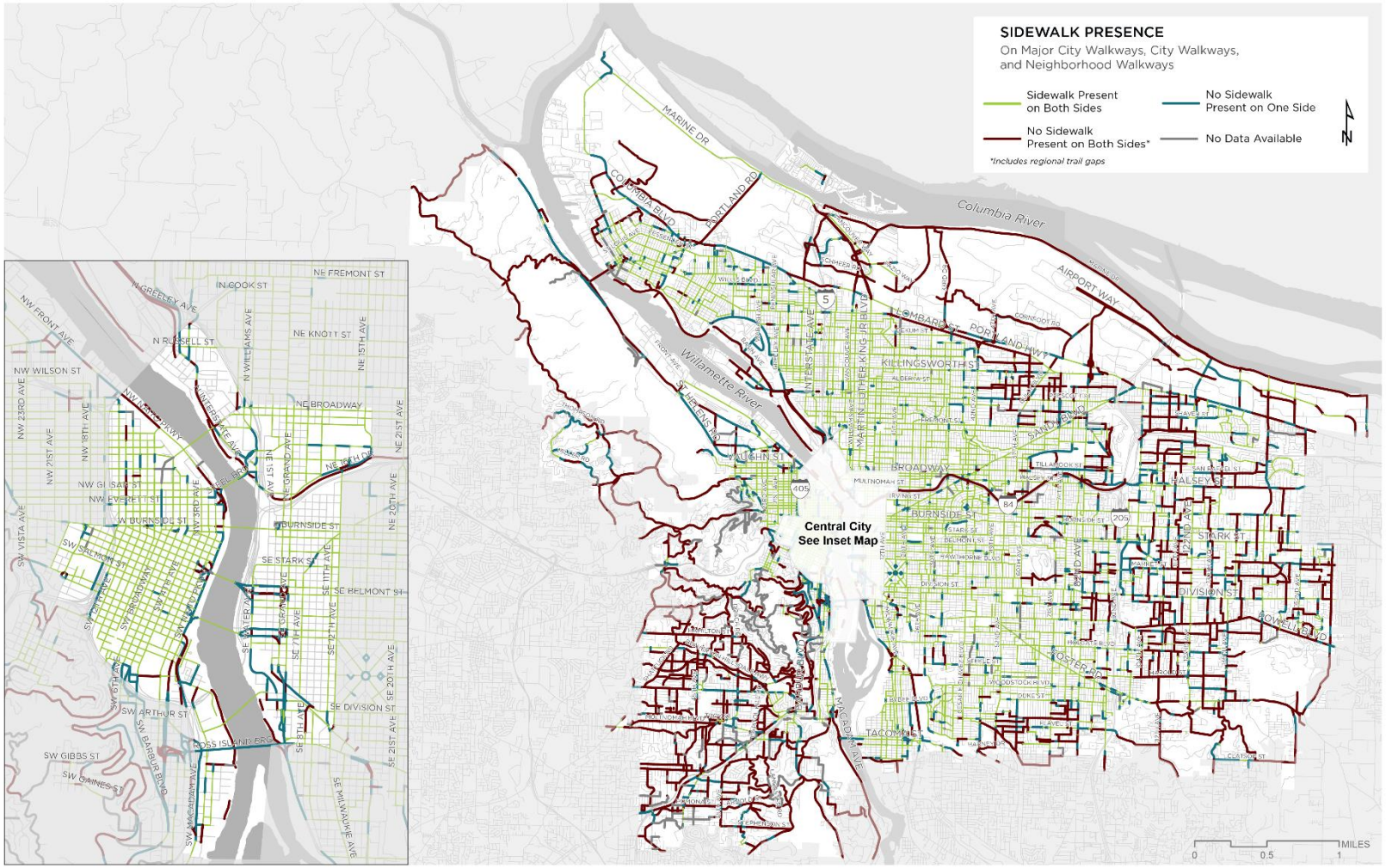
1. The presence of sidewalks along Pedestrian Priority Network streets was summarized for each side of each street segment. In general, each street segment is equal to one block, but there is considerable variation, particularly in areas where streets do not follow a grid pattern.
2. All street segments were assigned to one of the following categories:
    a. Not a gap: continuous sidewalk present on both sides of the street (or built trail)
    b. Gap: sidewalk gap on both sides of the street (this includes street segments with intermittent sidewalks on both sides and planned but not built trails)
    c. Gap: sidewalk gap on one side of the street
    d. No data: data was not available for every Pedestrian Priority Network street

## Findings

On Pedestrian Priority Network streets for which data was available, 45% of centerline miles have sidewalk gaps on one or both sides of the street. This represents 425 miles of street. Based on the available data, roughly 600 miles of new sidewalk would be needed to fill all of these gaps, about 380 miles on Major City Walkways or City Walkways. Of those streets with sidewalk gaps:

- 31%, about 132 centerline miles, have a sidewalk gap on one side
- 69%, about 293 centerline miles, have a sidewalk gap on both sides
- 36.8 miles of regional trail gaps exist

**Figure 5 Sidewalk Gaps on the Pedestrian Priority Network**




Sidewalk gaps on the Pedestrian Priority Network are distributed unevenly throughout Portland. They are very prevalent in Southwest Portland and east of 82nd Avenue. Two neighborhoods that are just west of 82nd Avenue also have gaps on most of their streets: Northeast Portland's Cully neighborhood, and the Brentwood-Darlington neighborhood of SE Portland.

# APPENDIX J:

Prioritization Memo

MEMORANDUM

711 SE Grand Ave.
Portland, OR 97214
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To: PedPDX Technical Advisory Committee
Michelle Marx, City of Portland Bureau of Transportation
Lidwien Rahman, Oregon Department of Transportation

From: Jean Crowther and Mike Sellinger, Alta Planning and Design

Date: October 31, 2018

Re: PedPDX Prioritization Framework Memo (Deliverable 4A)

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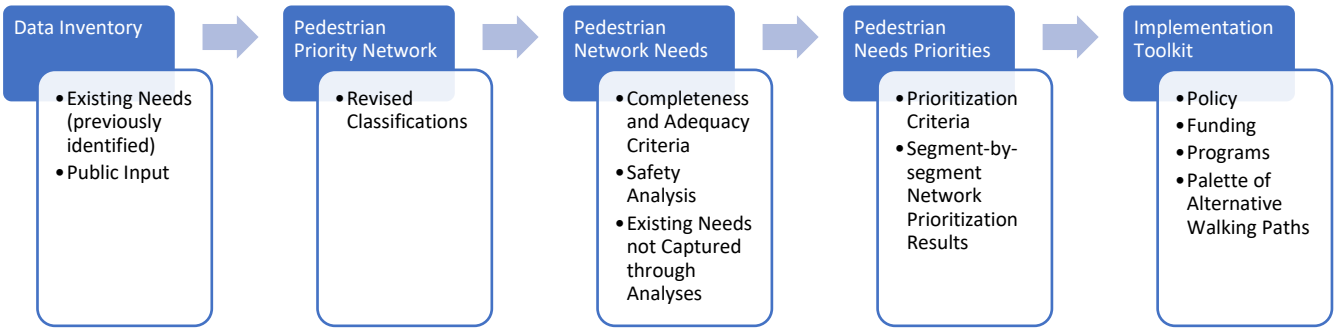
This memo summarizes the proposed approach to prioritize pedestrian needs in Portland.

## Prioritization Framework

PedPDX's overarching framework considers priority locations for pedestrian investment as distinct from a specific pedestrian need or the potential improvement to address that need. As a first step, the City identified a Pedestrian Priority Network comprised of the critical streets and corridors for pedestrians citywide. The Pedestrian Priority Network is based on pedestrian street classifications (which includes considerations for school routes, transit routes, and neighborhood greenways, and similar designations). Based on that Network, the process includes two concurrent analyses: identifying where needs exist and identifying priority investment areas within the Pedestrian Priority Network.

- Needs Analysis: applying the PedPDX Completeness and Adequacy Criteria to the Pedestrian Priority Network to translate needs consistently across the City; this identifies crossing gaps, crossing deficiencies, and sidewalk gaps
- Prioritization: applying scores to the Pedestrian Priority Network to provide a segment by segment metric for priority investment locations

The flow chart below illustrates how these steps fit within the larger PedPDX process. Beyond these two concurrent analyses, the next step is to identify the needs that fall within the highest priority locations – these are considered the "Pedestrian Needs Priorities." In some cases, high priority locations may not have a pedestrian need. Some high priority areas may have needs that require resource-intensive, capital improvements while others may have needs that require less investment. The Implementation Toolkit, shown as the final step in the process, is developed with the identified needs and priority locations in mind. It offers resources for addressing priority needs, as well as comprehensive strategies for advancing walking equity citywide.




## Prioritization Approach

The prioritization approach is the methodology used to assign a numerical value to street segments based on characteristics that relate to the PedPDX mission and goals. A prioritization score is calculated for each segment on the Pedestrian Priority Network using the following three criteria:

- Equity
- Pedestrian Demand
- Safety

The segments are scored on each criterion, with a maximum score of 10 per criterion. The criteria are weighted equally, and the overall Network Scores range from 3 to 30. The following sections describe the methodology for calculating the scores for each criterion.

### Equity

PedPDX will use PBOT's Equity Matrix Scores as the basis for quantifying equity implications of pedestrian needs. Incorporating an equity score into the prioritization process is one or many strategies to develop PedPDX through an equity lens and to align with Citywide Racial Equity Goals and Strategies and PBOT's 2017 5-Year Racial Equity Plan. The Equity Matrix was developed jointly with over eight City Bureaus including the Office of Equity and Human Rights. The process also included input from the Government Alliance on Race and Equity, Metro, PolicyLink and others. Refer to the PBOT Equity Matrix White Paper for a detailed look at how and why the methodology was chosen.

The PBOT Equity Matrix provides a location-based equity score using the following demographic variables:

- Race (People of Color and Latino populations normalized by population density)
- Income (Median Household Income)

By using race and income data, the Equity Matrix accounts for the intersectionality of other important considerations, including persons with disabilities, affordable housing, and persons with limited English proficiency.

To calculate the Equity Matrix Scores, Census Tracts in Portland were given scores for race and income from 1 to 5. For the race indicator the population was apportioned by population density by Census Tracts, and then multiplied by the percentage of people identifying as people of color or Latino. The scores correspond to the citywide quintiles for each demographic variable, with '5' equaling the top quintile, '3' encompassing the citywide average, and '1' representing the bottom quintile. The data source for the Equity Matrix Score is the 2012-2016 American Community Survey.

**Proposed Prioritization Approach:**

Apply the PBOT Equity Matrix Score to each segment of the Pedestrian Priority Network. Network segments were split if they spanned multiple Census Tracts. There is no data available for the Census Tract located on Swan Island. Segments within this Census Tract were given the minimum score of 2.

| Factor | Equity Score |
|---|---|
| Race | 1 to 5 |
| Income | 1 to 5 |
| *Overall Equity Score* | *Sum (2 to 10)* |

## Pedestrian Demand

Pedestrian demand serves as the basis for the pedestrian classifications developed through the PedPDX planning process. These classifications factor in land use, transit, and the results of the *Walking Priorities* survey. There are four street classifications and three district overlay classifications.

### Street Classifications

The street classifications from highest demand to lowest demand are:

- **Major City Walkways:** These walkways are comprised of the Civic and Neighborhood Corridors and Main Streets, as defined by Portland's 2035 Comprehensive Plan, all streets along the planned and existing Frequent Transit Network, and off-street trails in high demand corridors.
- **City Walkways:** These walkways are comprised of all arterial streets, collector streets, streets with transit service that are not designated as Major City Walkways, and off-street trails in moderate demand corridors.
- **Neighborhood Walkways:** These walkways are comprised of streets on a designated Safe Routes to School travel route, or on an existing or funded neighborhood greenway. Neighborhood walkways also include designated paths with the street right-of-way and neighborhood trails.
- **Local Streets:** Local streets are included on the network if they are located in a Pedestrian District or within a quarter-mile of fixed rail stop.

### District Overlay Classifications

In addition to the street classifications, there is one type of overlay that indicates additional demand:

- **Pedestrian Districts:** These districts are comprised of the Centers, as defined by Portland's 2035 Comprehensive Plan.

**Proposed Prioritization Approach:**

Major City Walkways, City Walkways, Neighborhood Walkways, and Local Streets are assigned the scores shown in the table below. Segments located in a pedestrian district have additional points added to their respective demand scores. The prioritization scoring adds ***a second type of overlay*** that accounts for designated Safe Routes to School that fall on Major City Walkways and City Walkways. This overlay is intended to identify the unique circumstances of a route prioritized for

school travel that falls on an arterial or collector. The additional points added to those street reflects the increased activity from children, youth, and families accessing school on foot or other means of walking, and also recognizes the more-permanent nature of schools as a neighborhood destination.

| Network Classification | Demand Score in Pedestrian Districts | Demand Score on Designated Safe Routes to School (outside of Ped Districts) | Demand Score outside of Ped Districts |
|---|---|---|---|
| Major City Walkway | 10 | 8 | 6 |
| City Walkway | 8 | 6 | 4 |
| Neighborhood Walkway | 4 | 1 | 1 |
| Local Streets | 2 | N/A | N/A |
| *Note: Demand Score is a single score based on classification (not a sum)* | | | |

## Safety

The safety criteria for PedPDX are drawn from the results of the Pedestrian Safety Existing Conditions memo. They safety criteria are intended to account for both crash history and crash risk factors. Using both factors is a way to include not only locations that are currently dangerous and are used by people walking (crash history), but also locations that are dangerous but may not be used by people walking because of the danger (risk factors). The prioritization approach uses the following considerations to measure crash history and risk factors:

Crash History:

- Pedestrian High Crash Network (HCN) streets. The Pedestrian HCN includes the 20 most dangerous streets for pedestrians throughout Portland (Source: Portland's Vision Zero Action Plan).
- Street segments with KSI pedestrian collisions (Source: ODOT crash data). This criterion identifies the most dangerous street segments for pedestrians at a finer scale than the corridors along the Pedestrian HCN.

Risk Factors:

- Streets with three or more travel lanes. Crashes are concentrated on larger roads and 52% of pedestrian crashes occur on the 7% of roadway miles with three or more travel lanes (Source: ODOT crash data). More points are awarded for one-way streets and for streets with four or more travel lanes.
- Locations with posted or prevailing operating speeds (where available) of 30 mph or higher.[1] People walking are eight times more likely to die when struck by someone driving 40 mph than someone driving 20 mph (Source: Portland's Vision Zero Action Plan).

[1] Posted speeds are used as a proxy for prevailing operating speeds when data are not available.

These considerations are not reflected in trail segments because those segments are off-street and separated from motor vehicle traffic. To account for the reduction in risk trails offer as alternative pedestrian routes, a third factor that offers baseline points for off-street facilities is included.

**Proposed Prioritization Approach:**

The safety prioritization criteria are scored as follows:

| Condition | Safety Score |
|---|---|
| ***Collision-based Factors*** | |
| Pedestrian High Crash Network | 2 |
| Street segments with **one** KSI pedestrian collision | 1 |
| Street segments with **multiple** KSI pedestrian collision | 2 |
| ***Risk Factors*** | |
| Streets with two or fewer travel lanes | 1 |
| Streets with three travel lanes (two-way street) | 1 |
| Streets with three travel lanes (one-way street) | 2 |
| Streets with four or more travel lanes | 3 |
| Locations with posted speeds of 30 mph or higher | 2 |
| Locations with posted speeds of 40 mph or higher | 3 |
| ***Off-Street Factor*** | |
| Trail segments separated from motor vehicles | 1 |
| *Overall Safety Score* | *Sum (1 to 10)* |

## Overall Prioritization Score

The overall prioritization score is equal to the sum of the demand, equity, and safety scores. Prioritization scores are calculated for each segment on the Pedestrian Priority Network and can range from 3 to 30. The output table is formatted to be consistent with outputs from the Active Trans Priority Tool – a prioritization methodology used in other PBOT programs. Priority Tiers are identified using an equal interval scoring classification. Tier 1 represents a score of 26 to 30, requiring a high score across all three categories. The two lowest scoring classifications are combined as Tier 5 and represent scores from 3 to 10. These categories are combined as the lowest tier given that these segments did not score at the highest level in any of the three categories and received a low score in at least one category.

| Tiers | Scoring Range |
|---|---|
| Tier 1 | 26 - 30 |
| Tier 2 | 21 - 25 |
| Tier 3 | 16 - 20 |
| Tier 4 | 11 - 15 |
| Tier 5 | 3 - 10 |

# Appendix: Criteria from Selected Plans

The ODOT **Region 1 Active Transportation Needs Inventory** used the following evaluation criteria:

- Crash history
- Crash risk
- Access to transit
- Access to essential destinations
- Transportation disadvantaged populations
- System completeness
- Needs in local plan
- Existing pedestrian and bicycle facility conditions

Metro's **Regional Transportation Plan** investment priorities are to achieve the following outcomes:

- Vibrant Communities
- Economic Prosperity
- Safe and Reliable Transportation
- Leadership on climate change
- Clean air and water
- Equity

Metro's **Regional Active Transportation Plan** used the following criteria for evaluation of the regional pedestrian network:

- Access to destinations
- Equity
- Safety
- Increases Activity

The City of Portland **Transportation System Plan** is guided by these seven outcomes:

- Reduce/eliminate transportation fatalities and injuries
- Improve access to daily needs
- Improve health by increasing walking and bicycling
- Increase economic benefits
- Ensure disadvantaged communities benefit
- Reduce global warming pollution from transportation
- Prioritize the most cost-effective projects

The criteria for selecting corridors in the **Enhanced Transit Corridors Plan** were:

- Transit reliability
- Ridership passenger loads
- Transit speeds
- Forecasted future growth

The **Division-Midway Neighborhood Street Plan** used the following criteria to prioritize projects:

- Connection to transit stop
- Connection to school, grocery story, service, park, or open space
- Direct connection to key anchor/destination on SE Division
- Project is along a neighborhood greenway, or planned or existing Safe Route to School
- High connectivity benefit
- Project is along a low speed and/or low volume roadway
- Serves a targeted underserved population or serves an area with high active transportation demand score
- Has neighborhood and/or other stakeholder support
- Utilizes existing ROW that is partially or completely unimproved
- Has a high benefit relative to negative impact
- Has a high benefit relative to cost

**TriMet's Pedestrian Network Analysis** used a GIS Network Analysis to select 10 focus areas for pedestrian enhancements, based on a composite score developed for every TriMet stop of Transportation Analysis Zone (TAZ) with the following scoring:

| **Transit Environment** | |
|---|---|
| **Combined residential and employment density by TAZ** (TAZs with the greatest density = high score) | **2** |
| **Residential/employment ratio** (TAZs with the a ratio closest to 50/50 = high score) | **1** |
| **Average intersection density**<br>(TAZ with the greatest number of intersections = high score) | **1** |
| **Transit Stops** | |
| **boardings and alightings**<br>(stops with the greatest boardings and alightings = high score) | **2** |
| **Distance to nearest high school**<br>(stops closest to a high school = high score) | **1** |
| **Distance to nearest grocery stores**<br>(stops closest to a grocery store = high score) | **1** |
| **Distance to nearest pre-school, middle, or elementary school**<br>(stops closest to a school = high score) | **1** |
| **Distance to nearest major attraction e.g. university, hospital, stadium, major employer** (stops closest to a major attractor = high score) | **1** |
| **Distance to nearest multi-modal facility**<br>(stops closest to a multi-modal facility = high score) | **1** |
| **Distance to nearest park**<br>(stops closest to a park = high score) | **1** |
| **# of connecting transit lines**<br>(stops near the greatest number of connections = high score) | **2** |
| **Distance to nearest social service site**<br>(stops closest to a social service site = high score) | **1** |
| **Distance to nearest senior housing/services site** | **1** |

| | |
|---|---|
| (stops closest to a senior housing/service site = high score) | |
| **Deficiencies** | |
| **Distance to a street without a sidewalk**<br>(stops closest to a street without a sidewalk = high score) | **2** |
| **Located on a road with high traffic volumes**<br>(stops located on roads with the highest traffic volumes = high score) | **1** |
| **Located on a road with high posted speeds**<br>(stops located on roads with the highest speeds = high score) | **2** |
| **Located near a pedestrian crash site**<br>(stops located closest to pedestrian crash sites = high score) | **2** |
| **Opportunities** | |
| **Located near an address with high paratransit (LIFT) activity**<br>(stops nearest addresses with highest number of LIFT requests = high score) | **2** |
| **Stops with a high number of vehicle ramp deployment**<br>(stops with highest number of ramp deployments = high score) | **1** |

**Growing Transit Communities** used a GIS Network Analysis tool in combination with the NCHRP Active Trans Priority Tool. The following table identifies the factors considered within the Active Trans Priority Tool:

| | Criteria | Active Trans Category | Types of Measures | Data Source | What Counts | Analysis Buffers |
|---|---|---|---|---|---|---|
| 1 | **Transportation Safety** | **Safety** | Crash history | State crash data points | # of Ped and Bike fatalities (double weight), Serious Injuries (double weight), All Injuries | # within 250 ft radius buffer |
| | | | High Crash Network | Vision Zero analysis layer | On a High Crash Corridor | Y/N: 100 ft radius buffer |
| | | | High Crash Intersection | Vision Zero analysis layer | Near High Crash intersection | 250 ft radius buffer |
| | | | Crash risk factors | Vision Zero analysis layer | Crash Factor Average Score | 250 ft radius buffer |
| 2 | **Improves Access to Transit** | **Access to Transit** | Proximity of project to bus stop or MAX line and ability to improve access to the stop. | TriMet transit stop layer | # of bus and MAX stops | 250 ft radius buffer |
| | | | Average Daily MAX and Bus Ridership (Weekly average ons/offs at nearby bus stop) | TriMet 2015 Passenger Census | # of ons and offs | 250 ft radius buffer |
| | | | Monthly Average Bus Ramp Deployment | TriMet 2015 Passenger Census | # of ramp deployments | 250 ft radius buffer |
| 3 | **Proximity to Essential Destinations** | **Demand** | Number of nearby essential destinations. Community Centers (GIS Enterprise Layers), Grocery Stores (GIS Enterprise Layers), Clinics (see email from Neil), and Hospitals (GIS Enterprise Layers), Parks (GIS Enterprise Layers), and Schools (GIS Enterprise Layers) | GIS Enterprise Layers | # of destinations | 500 ft buffer |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | **Equity. Serves Transportation Disadvantaged People and Vulnerable Roadway Users** | **Equity** | 1. Minority population<br>2. Low-income population<br>3. Limited English Proficiency (LEP) population<br>4. Senior population<br>5. Youth population<br>6. People with disabilities<br>7. Limited vehicle access households<br>8. Low and medium wage jobs<br>9. Affordable housing units<br>10. Key retail/human/social services | TriMet's Transit Equity Index/ Communities of Concern | Average Score for Intersecting Census Tracts | |
| 5 | **Identified in a Plan or Prioritized Previously** | **Stakeholder Input** | In the Portland Transportation System Plan (TSP), Bicycle Plan 2030, Pedestrian Master Plan, East Portland In Motion (EPIM), Eastside Station Areas Plan, etc. | | Number of plans | |
| 6 | **Network Connectivity Benefit/ Convenience** | **Connectivity** | Increases convenience, connectivity and access. Reduces out of direction travel along streets and reduces delay waiting to cross streets. | Pedestrian Network Analysis | Increase in access from all addresses to all addresses through reduced impedance. | ½ mile buffer |
| | | | Scoring bikeway projects: Increase connectivity for cycling. | Methodology:<br><u>3 points</u> if it fills a major network gap, particularly if it crosses a major barrier (like a freeway) or completes a couplet (SE Washington is the main example)<br><u>2 points</u> if it fills a network gap but there are other available routes (no major barriers)<br><u>1 point</u> if it is addressing a deficiency in existing facilities | | |
| 7 | **Improves Transit Service and Operations** | **Transit Ops** | Reduces delay to buses. | | # of recognized delays | |
| 8 | **Public Support** | **Stakeholder Input** | Based on public comment during the planning process. | | # of public comments about need or support | |
| 9 | **Serve the most people nearby** | **Demand** | Forecasted Housing Density in 2035 | | # of Units | 1000 ft radius buffer |
| | | | Forecasted Job Density in 2035 | | # of Jobs | 1000 ft radius buffer |
| | ***Personal Security*** | ***Discontinued – Not scored in this analysis*** | *Crime report history from Portland Police Bureau* | *Crime data points* | *Number of crime reports near bus stop* | *100 ft radius buffer* |
| | | | *Reports of locations with unsafe activity, reported to TriMet, Police or PBOT (if data is available)* | *Ask TriMet for data* | | |

**Tyron-Stephens Headwaters Street Plan**: No prioritization, only project identification

**Connected Cully:** No prioritization criteria

**Southwest in Motion:** Project prioritization coming in Spring 2018

**Central City in Motion:** Criteria under development

# APPENDIX K:

## PBOT Lighting Level Guidelines

PBOT
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**Chloe Eudaly** Commissioner **Chris Warner** Interim Director

# City of Portland
# Recommended Light Levels and Guidelines for Roadway Lighting
# May 2019

| | |
|---|---|
| Mayor: | Ted Wheeler |
| Commissioner: | Amanda Fritz |
| Commissioner: | Chloe Eudaly |
| Commissioner: | Nick Fish |
| Commissioner: | Jo Ann Hardesty |

*The Portland Bureau of Transportation fully complies with Title VI of the Civil Rights Act of 1964, the ADA Title II, and related statutes and regulations in all programs and activities. For accommodations, complaints and information, call (503) 823-5185, City TTY (503) 823-6868, or use Oregon Relay Service: 711.*

# City of Portland Recommended Light Level Guidelines

## Background

The Portland Bureau of Transportation (PBOT) previously adopted roadway lighting standards on February 28, 1980 and revised them on November 1, 1984. Those roadway lighting standards provided illuminance and luminance lighting values for different roadway classifications.

On April 27, 1990, PBOT implemented an infill policy (STL-201) for residential streets which set maximum spacing standards for practical lighting infill of local streets that the 1980 and 1984 policies did not cover. As part of this policy, the City developed a standard detail identifying the different light pole layout configurations (Cases I to VI). The City also adopted a neighborhood traffic management program device lighting enhancement policy (Policy STL-202) which set forth options for enhancing lighting and visibility in the areas of traffic circles and other traffic control devices when considered to be in the public's best interest.

In 2017, PBOT commissioned an evaluation of its roadway lighting standards to compare them to current lighting industry practices, identify new recommended minimum light levels, and define a "recommended procedure" to develop aspirational goals for lighting Portland's roadways. The purpose of the "recommended procedure" is to adjust the minimum recommended average horizontal light levels on roadways based on user needs and specific roadway characteristics. The "recommended procedure" includes a series of weighted values that consider the various roadway parameters that may be present and expands upon the initial functional roadway classifications. The "recommended procedure" is not intended to be used on local service roadways or patterned lighting districts (e.g. River District) except as noted. The implementation of the "recommended procedure" is ultimately applied at the discretion and judgement of the City's District Engineer.

These guidelines are intended for use in conjunction with new lighting projects as they are scoped, designed, and constructed.

## Recommended Procedure to Adjust Minimum Roadway Lighting Values

The steps to develop the adjustments to the minimum values for roadway lighting within the City of Portland jurisdiction are as follows:

***Step 1:*** Based on the functional classification of the roadway, determine the minimum average horizontal recommended lighting values from Table 1.
***Step 2:*** Select the appropriate roadway parameters that apply to the roadway segment to be analyzed from Table 2. The roadway parameters should be based on the constructed/future condition of the roadway segment.
***Step 3:*** Sum the values selected in Step 2 to determine the overall weighting value.
***Step 4:*** Based on the overall weighting value calculated in Step 3, determine the adjusted average horizontal lighting values from Table 3.
***Step 5:*** Compare the "adjusted lighting value" determined in Step 4 to the "minimum recommended lighting value" determined in Step 1. The value with the highest average maintained light level and lower uniformity ratio is used for the roadway segment.
***Step 6:*** Determine average horizontal light level values for intersections if applicable. The average maintained lighting value for intersections between collectors and/or arterial level streets is 1.5 times the lighting value of the intersecting roadway with the highest roadway functional classification. Do not apply a weighting factor for intersections with a local service street.

*Table 1: Minimum Recommended City of Portland Light Level Guidelines.*

| Street Functional Classification | Illuminance Method | |
|---|---|---|
| | Average Maintained (fc) | Uniformity Ratio $E_{ave}/E_{min}$ [a] |
| **Major Traffic/Major Transit/Traffic Access** | 1.0 | 3 |
| **District Collector** | 0.7 | 4 |
| **Neighborhood Collector - Major Transit** | 0.7 | 4 |
| **Neighborhood Collector - Minor Transit** | 0.6 | 4 |
| **Local Service** | 0.2 | 6[b] |
| Notes: (a) Uniformity Ratio values should be rounded to the nearest integer.<br>(b) "Recommended Procedure" aspirational goal. If uniformity ratio cannot be achieved, approval from the City of Portland is required. | | |

*Table 2: Roadway Parameter and Weighted Values.*

| Roadway Parameter | Options | Weighted Value |
|---|---|---|
| Posted Speed | ≥ 35 mph | 2 |
| | 30 mph | 1 |
| | ≤ 25 mph | 0 |
| Traffic Volume (veh/day) | > 15,000 | 2 |
| | 5,000 - 15,000 | 1 |
| | < 5,000 | 0 |
| Bicycle Traffic | Major City Bikeways | 2 |
| | City Bikeways | 1 |
| | Local Service Bikeways | 0 |
| Pedestrian Traffic | Pedestrian-Transit Streets/ Major City Walkways | 2 |
| | City Walkways | 1 |
| | Neighborhood Walkways | 0 |

*Table 3: Overall Corridor Weighting and Adjusted Lighting Values.*

| Overall Weighting Value [(a)] | Adjusted Corridor Illuminance | |
|---|---|---|
| | Average Maintained (fc) | Uniformity $E_{ave}/E_{min}$ [a] |
| ≥ 6 | 1.2 | 3 |
| 5 | 1.0 | 3 |
| 4 | 0.8 | 4 |
| 3 | 0.6 | 4 |
| 2 | 0.4 | 4 |
| ≤ 1 | 0.2 | 6 |
| Notes: (a) Uniformity Ratio values should be rounded to the nearest integer. | | |

*Table 4: Overall Intersection Weighting and Adjusted Lighting Values. Intersections with local service streets should be illuminated to the corridor level at the intersecting street.*

| Overall Weighting Value [(a)] | Adjusted Intersection Illuminance | |
|---|---|---|
| | Average Maintained (fc) | Uniformity $E_{ave}/E_{min}$ [a] |
| ≥ 6 | 1.8 | 3 |
| 5 | 1.5 | 3 |
| 4 | 1.2 | 4 |
| 3 | 0.9 | 4 |
| 2 | 0.6 | 4 |
| ≤ 1 | 0.3 | 6 |
| Notes: (a) Uniformity Ratio values should be rounded to the nearest integer. | | |

# Pedestrian Zones

Pedestrian Zones include marked crosswalks, multi-use paths, and woonerf streets. The additional guidelines for these zones are summarized in Table 5.

## Sidewalks

Sidewalks are intended to provide a safe place for pedestrians to navigate the transportation network without conflicts from vehicles and, in the downtown area, conflicts with bicyclists. Illumination levels for sidewalks are intended to aid pedestrians in identifying obstacles and are not intended to provide sufficient illumination for facial recognition. Illuminating sidewalks may affect nearby properties in the form of light trespass. Average horizontal illumination for sidewalks should be between 0.2 and 0.9 fc average with no uniformity metric. Sidewalks should be illuminated to include no areas devoid of measurable light.

## Marked Crosswalks

Marked crosswalks are intended to provide a safe place for pedestrians to cross where pedestrians are visible by other road users. Marked crosswalks at locations other than those at fully-signalized intersections, which includes crosswalks controlled by beacons (RRFBs and PHBs), should maintain an average vertical illumination of 0.2 to 0.5 foot-candles over the crosswalk area. Vertical illumination should be calculated at a 5-foot height in the direction opposite the traffic direction.

## Multi-Use Paths

Multi-Use paths are areas shared by bicyclists and pedestrians and are often located in residential or natural areas. Multi-use paths should be illuminated such that hazards on the path surface can be identified. Acceptable average horizontal lighting levels should be between 0.4 and 2.0 foot-candles with a uniformity ratio of 4. Where multi-use paths intersect roadways, multi-use paths should be treated as marked crosswalks, where vertical illuminance will aid drivers in identifying bicyclists or pedestrians. See RP-8-14 Table 6 for additional lighting guidance for multi-use paths or low pedestrian conflict areas.

## Woonerf

A woonerf (plural Woonerven) is also known as a “living street.” A woonerf is a space shared primarily by bicyclists and pedestrians, but also includes low-speed motor vehicles. While a woonerf is not intended for through traffic by motor vehicles and is intended for local access only, the conflict area between motor vehicles and pedestrians spans the entirety of the woonerf accessible by motor vehicles. The vertical illumination calculation should be oriented opposite each motor vehicle direction of travel. The area outside of the conflict area may be treated as a multi-use path or a sidewalk depending on projected non-motorized usage.

*Table 5: Special Treatment Zone Illuminance Guidelines.*

| Special Treatment Zone | Illuminance Method | | |
|---|---|---|---|
| | Average Maintained (fc) $E_{ave}$ | Average Vertical Maintained (fc) $EV_{min}$ | Uniformity Ratio* $E_{ave}/E_{min}$ |
| **Marked Crosswalk (unsignalized or at RRFB/PHB)** | Use corridor calculation | 0.2 - 0.5 | – |
| **Multi-Use Path** | 0.4 – 2.0 | - | 4 |
| **Woonerf** | 0.4 – 2.0 | 0.2 - 1.0 | 4 |

* = Uniformity Ratio does not apply to vertical illumination.

# Definitions:

**Speed**: Current speed limit of the roadway segment.

**Traffic Volume:** Average Daily Traffic (ADT) of the roadway segment. ADT includes traffic volumes for both directions of travel.

**Bicycle Traffic:** Weighted values were developed based on the street classifications for bicycle travel described in the City of Portland Transportation System Plan. The following street classifications for bikeway travel are included in the parameters:

1. **Major City Bikeways:** They are intended to serve high volumes of bicycle traffic and provide direct, seamless, efficient travel across and between transportation districts. Where conditions are warranted and where practical, Major City Bikeways should have separate facilities for bicycles and pedestrians.
2. **City Bikeways:** They are intended to establish a direct and convenient bicycle access to significant destinations, to provide access to Major City Bikeways and provide coverage within three city blocks of any given point
3. **Local Service Bikeways:** They are intended to serve local circulation needs for bicycles and provide access to adjacent properties. Includes streets not classified as City Bikeways, Major City Bikeways or Regional Trafficways.

**Pedestrian Traffic:** Weighted values were developed based on the street classifications for pedestrians described in the City of Portland Transportation System Plan. The following street classifications for pedestrian travel are included in the parameters:

1. **Major City Walkways:** They are intended to create a strong connection between pedestrians and transit facilities within the City. They should include wide sidewalks to accommodate high levels of pedestrian traffic, and design features that attract pedestrian traffic.
2. **City Walkways:** They are intended to provide safe, convenient, and attractive pedestrian access to activities along major streets and to recreation and institutions; provide connections between neighborhoods; and provide access to transit.
3. **Neighborhood Walkways:** They are intended to serve the circulation needs for pedestrians and provide safe and convenient access to local destinations, including safe routes to school.

**Horizontal Illuminance Method:**

1. The horizontal illuminance method of roadway lighting design determines the amount of light incident on the horizontal roadway surface from the roadway lighting system.
2. Average maintained illuminance is measured in foot-candles (fc) and calculated as the average over the area of the traffic lanes including the center median, bike lanes, and parking lanes.
3. Uniformity ($E_{ave}/E_{min}$) is the ratio of the average maintained illuminance ($E_{ave}$) to the minimum illuminance value ($E_{min}$). Uniformity values should be rounded to the nearest integer.
4. For design calculations, the end-of-life lamp lumens should be used together with an appropriate luminaire maintenance factor.

**Vertical Illuminance Method:**

1. The vertical illuminance method of roadway lighting design determines the amount of light incident on imaginary vertical surfaces facing the oncoming traffic direction. The vertical surfaces are located 5 feet above the roadway surface.
2. Average maintained vertical illuminance is measured in foot-candles (fc) and calculated as the average over the area of the crosswalk including the center median, bike lanes, and parking lanes.
3. There is no uniformity metric for the vertical illuminance method.
4. For design calculations, the end-of-life lamp lumens should be used together with an appropriate luminaire maintenance factor.