Seattle Department of Transportation

CITY OF SEATTLE PEDESTRIAN MASTER PLAN

Public Review Draft
July 2016

SDOT
Seattle Department of Transportation

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Appendices available on
http://www.seattle.gov/transportation/pedMasterPlan.htm

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Seattle Pedestrian Advisory Board

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CHAPTER 1: INTRODUCTION

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WHY WALKABILITY AND ACCESSIBILITY MATTER

Walkability and accessibility are at the core of a strong, healthy community. Seattle strives to be a place where people walk because it is an accessible, convenient, fun, and a healthy choice. As pedestrians, we meet new neighbors, explore treasured places, improve our bodies and minds, and support our local businesses. For employers, Seattle's sustained commitment to creating a pedestrian-friendly city is a key factor in our community's competitive advantage. For residents, the quality of a neighborhood's pedestrian environment is often a deciding factor for where they want to live.

Walkable, accessible cities share common elements:

- A reliable pedestrian network that allows people to access many different types of destinations, including schools, parks, and neighborhood businesses

SEATTLE PEDESTRIAN MASTER PLAN VISION:

"Seattle is the most walkable and accessible city in the nation."

- Direct connections to transit and the destinations it serves
- Clear, inviting spaces to move along every street, such as a walkway, a trail, or a shared space
- Well-maintained pedestrian facilities that are easy for everyone to navigate, including those who rely on wheelchairs and other mobility devices
- Compelling nearby destinations that allow people to live close to transit, shops, and public places
- Places of respite that invite casual conversation, encourage connection with nature, and provide places to play

In a pedestrian-friendly city, the public realm is attractive—whether it be because of a street tree turning colors, an engaging retail façade, a convivial sidewalk café, or an inviting public open space. Walkable and accessible cities allow residents to meet people, experience places first-hand, and connect with their culture.

Walking is our most basic, most sustainable form of transportation. Overall, walking has fewer impacts than any other travel mode, including fewer environmental impacts. It reduces vehicle trips and greenhouse gas emissions, creates less wear on existing infrastructure, and is available

at little or no cost. In addition to these social benefits, walking can positively impact personal health, as a well-connected, comfortable pedestrian network can provide opportunities for physical activity. This Plan is intended to encourage people to walk for their own benefit, for the life of the city, and for the good of our natural environment.

PLAN PURPOSE

Seattle is consistently recognized as one of the nation's safest and most accessible cities for pedestrians. We are tied for the second-lowest pedestrian fatality rate in the country[1], and we are ranked 5th in the country for the percentage of people who commute to work by foot[2].

Additionally, the Pedestrian and Bicycle Information Center ranks Seattle as the only platinum-level Walk Friendly Community in the nation. We are recognized for our leadership in pedestrian planning and engineering practices, our commitment to public outreach and education, and our strong enforcement and evaluation practices.

[1] 2016 Benchmarking Report, Alliance for Biking & Walking
[2] Ibid.

However, there is more we can do. Both the natural and built environment can create barriers that are especially challenging for people with disabilities, children, and older residents. While several Seattle neighborhoods have a pedestrian-friendly commercial core, many areas of the city are lacking sidewalks or other pedestrian infrastructure and have few accessible destinations. Between 2005 and 2012, we have seen an increase in the percentage of adults who are overweight, and/or who have diabetes[3]. And, despite our pedestrian fatality rate being one of the lowest in the country, we have not made significant strides in dramatically reducing the number of pedestrian fatal and serious injury collisions over the years.

Concerns for the well-being of our residents and the vibrancy of our neighborhoods underscore the need for the Pedestrian Master Plan (PMP). The Seattle Department of Transportation (SDOT) relies on the PMP as our 20-year blueprint to prioritize pedestrian investments we make throughout the city.

If we can only afford to build or improve a certain number of sidewalks or crossings each year, which ones should be built first, and where? What actions can we take to improve safety and pedestrian access in the city?

The PMP helps answer these questions by establishing policies, programs, and project opportunity areas that push Seattle to make measurable strides in pedestrian accessibility and safety, while remaining a national leader. It lays out the key strategies and actions that are intended to achieve our vision, and it establishes the performance measures we use to gauge our success.

[3] 2016 Benchmarking Report, Alliance for Biking & Walking

WHO DOES THE PMP SERVE?

This Plan is intended to improve mobility conditions for all who use our city's sidewalks and crossings. The PMP is an inclusive plan, and is intended to address the needs of people who use mobility devices to get around and people with visual and/or hearing impairments. This includes prioritizing sidewalk and crossing improvements on streets that connect people to important destinations, and identifying a set of implementing strategies and actions that we will use to improve mobility conditions for all on these streets.

The PMP is intended to improve mobility conditions for all who use Seattle's sidewalks and crossings, including those who rely upon wheelchairs and mobility devices, and those with visual and/or hearing impairments.

WHAT IS INCLUDED IN THIS UPDATED PLAN?

When Seattle's first PMP was adopted in 2009, the City Council envisioned a 5-year update to ensure the PMP continues to reflect current best practices in policy, planning, and design. This update also affords an opportunity to ensure that the data and the methodology we use to prioritize pedestrian improvements in Seattle continues to reflect community priorities, City policy objectives, and national and international best practices.

A key outcome of the 2009 PMP was a robust, data-based framework for evaluating priorities and directing pedestrian investments and programs throughout the city. We remain committed to using this data-based approach. Similarly, the vision, goals, and objectives developed in 2009 serve as the foundation for the PMP and remain fundamentally unchanged with this update.

The principal updates to the Pedestrian Master Plan include:

- An **assessment of progress** made implementing the Plan since 2009, to evaluate whether the projects that have been implemented are meeting the Plan's goals and performance measures.
- Updates to the Plan's **prioritization methodology**, in order to better meet Plan goals, and to ensure that the PMP prioritization reflects current City policy and community priorities for race, social justice, and equity.
- **Updates to the data** used in the Plan's analysis. The outdated demographic data used in the 2009 prioritization analysis has been refreshed.
- A list of **implementing strategies and actions** to advance the Plan's vision, goals, and objectives. These updated strategies and actions focus on planning, design, engineering, education, enforcement, and encouragement activities.
- A review of and updates to the Plan **performance measures** to ensure they are still meaningful. The updated Plan also establishes performance targets or trends for each measure.

COMMUNITY ENGAGEMENT

To ensure the PMP continues to reflect the priorities of Seattle's residents, we engaged the community in a variety of ways. This included enlisting the Seattle Pedestrian Advisory Board (SPAB) as advisors for the Plan update, conducting an online public survey to receive community feedback, hosting public open houses, and attending community meetings. Each of these engagement opportunities allowed us to solicit input and learn from community members and organizations.

Seattle Pedestrian Advisory Board

The SPAB is made up of 11 members and advises the Mayor, City Council, and all departments and offices of the City on pedestrian-related matters in Seattle. They are the stewards of the PMP and track its implementation.

Throughout the update process, the SPAB acted in an advisory role, providing an invaluable sounding board to test ideas and glean insights. Project staff attended SPAB's monthly meetings to provide project updates and solicit input. Additionally, we conducted targeted workshops with Board members to discuss specific topics in more depth.

All SPAB meetings are open to the public and were advertised on the project website and email list. Project briefing materials provided to the SPAB were posted on the project website.

Online survey

To ensure the Plan reflects the priorities of Seattle residents, we released an online survey in Fall 2015 that received nearly 4,700 responses citywide. The survey was a key component of our outreach and engagement strategy. Participants provided input on how and where we should prioritize pedestrian improvements in the city. Additionally, the survey showed images of a variety of lower-cost improvements considered for residential streets without sidewalks, and asked for feedback about these alternative engineering treatments.

We worked with other City departments, outside agencies, advocacy organizations, and media outlets to electronically distribute the survey as broadly as possible across the city. We targeted our outreach to neighborhoods with low response rates, translated the survey, and held focus groups to reach non-English speaking residents.

Feedback we received from the survey informed the updated prioritization methodology, as well as the implementing strategies and actions. A summary of our outreach activities is shown in Figure 1-1. Survey results are described in Chapter 4, and the full public survey report is provided in Appendix 2.

Communities across Seattle are seeking new ways to make their streets safe and more inviting.

FIGURE 1-1: PMP PUBLIC ENGAGEMENT BY THE NUMBERS

Public open houses

We held two public open houses in October 2015 to inform attendees about the PMP, advertise the public survey, and solicit survey responses. The PMP open houses were held jointly with the Trails Upgrade Plan, a concurrent SDOT pedestrian planning project seeking to make trail improvements throughout the city. The first open house was held in North Seattle, at the Northgate Library, and the second was held in Southeast Seattle, in Hillman City.

Community briefings

In addition to the project open houses, we worked with the Department of Neighborhoods to brief district and community councils. These meetings provided an opportunity to speak with residents directly about the PMP and the online survey, and to receive initial feedback on the Plan. We also attended several community and SDOT events to provide information on the Plan, including the Central District Summer Parkway, Ballard Summer Parkway, and PARK(ing) Day. In addition, we briefed various City Boards and Commissions during this outreach period, including the Seattle Planning Commission, Seattle Design Commission, Bicycle Advisory Board, Freight Advisory Board, Commission for People with Disabilities, Immigrant and Refugee Commission, and Urban Forestry Commission. Table 1-1 provides a summary of the community events and briefings we attended to solicit public input on the PMP.

During our summer outreach, we asked people "What is the single most important thing we can do to improve walking conditions in Seattle?" Event attendees shared their answers, and the responses we received fell into the following categories:

- Improve sidewalks
- Improve crossings
- Improve lighting, especially at crossings
- Slow vehicle speeds through traffic calming
- Increase car-free spaces, either permanently or temporarily
- Improve pedestrian access around construction sites

These answers have helped shape the strategies and actions developed for the Plan.

TABLE 1-1: PMP COMMUNITY EVENTS AND BRIEFINGS

PMP and Urban Trails Upgrade Plan Open Houses
Freight Advisory Board
Seattle Design Commission
Commission for People with Disabilities
Park(ing) Day
Seattle Comprehensive Plan Open Houses
Central District and Ballard Summer Parkways
District Council and Community Council meetings
Freight Master Plan Open Houses
"Seattle at Work" event
Immigrant and Refugee Commission
Bicycle Advisory Board
Seattle Planning Commission
Urban Forestry Commission

SDOT attended community events, including the Central District Summer Parkways, to provide information on the PMP.

PLAN ORGANIZATION

As you explore this document, you will find the following content:

Chapter 2: Policy Framework, outlines the planning context informing the updated PMP, as well as the Plan's vision, goals, and objectives.

Chapter 3: Measuring Progress, describes the progress we've made since the Plan's adoption in 2009 and assesses our performance toward desired plan outcomes.

Chapter 4: Prioritization Framework, presents the analysis framework for prioritizing locations for pedestrian investment throughout the city.

Chapter 5: Implementing Strategies and Actions, identifies tasks to implement the Plan and achieve its goals.

Chapter 6: Plan Implementation, lays out the path for executing the PMP, including a funding strategy, performance measures, and targets that we will use to determine the success of the Plan.

Photo credit: Adam Coppola Photography

CHAPTER 2: POLICY FRAMEWORK

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- Move Seattle 15
- Vision Zero 17
- Climate Action Plan 18
- Complete Streets policy..... 18
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PEDESTRIAN MASTER PLAN VISION, GOALS, AND OBJECTIVES

The policy framework for the PMP outlines the Plan's:

- Vision – the desired future outcome of the Plan
- Goals – what we expect to accomplish to meet the vision
- Objectives – how we plan to achieve the goals
- Performance measures – how we track progress in achieving the goals and objectives

The vision, goals, and objectives provide the foundation upon which the Pedestrian Master Plan is built, as illustrated in Figure 2-1 and described in this section. Performance measures established for the plan are described in Chapter 6.

UPDATING THE POLICY FRAMEWORK

We worked with the Seattle Pedestrian Advisory Board (SPAB) to review and refresh the Plan's policy framework. The PMP vision, goals, and objectives are substantively unchanged with this update, and the SPAB recommended only very minor modifications to the previous vision, goals, and objectives. We updated the Plan's vision statement to highlight our ongoing commitment to accessibility. We also updated language within the "Health" goal to explicitly identify getting more people moving as a means of improving public health and mobility. Changes to the "Vibrancy" goal reflect the importance that connectivity plays within and between neighborhoods.

Plan Vision

"Seattle is the most walkable and accessible city in the nation."

The vision for the Pedestrian Master Plan gives a clear aspiration for the city — that Seattle is the most walkable and accessible city in the nation. We want Seattle to become a "pedestrian city" in which people will use our sidewalks in ever increasing numbers. In Seattle, walking will be a way of life, accessible to people of all ages and abilities, and possible throughout the city. Our vision drives the Plan's goals, objectives, and implementing strategies and actions.

FIGURE 2-1: PMP POLICY FRAMEWORK

Plan Goals

To help achieve the vision of making Seattle the most walkable and accessible city in the nation, the PMP establishes 4 goals, as follows:

Safety - Reduce the number and severity of crashes involving pedestrians

Seattle is tied for second in pedestrian safety among large U.S. cities[1]. However, there are still approximately 460 pedestrian-vehicle crashes per year on average. Because even one crash is one too many, the City is committed to improving pedestrian safety through the PMP and delivery of the City's Vision Zero program (described later in this chapter).

Investing in safe and connected pedestrian facilities helps to ensure a high quality of life for residents as well as visitors. People who live in accessible, pedestrian-friendly areas are likely to be more familiar with their neighborhoods and to have richer social connections to their community. This is true for all Seattle residents, from young children to older adults and everyone in between.

Vibrancy - Develop a connected pedestrian environment that sustains healthy communities and supports a vibrant economy

The PMP defines vibrancy as a lively, healthy environment: one that has energy and activity of all types, including healthy business districts. A vibrant pedestrian environment supports and values walking as a mode of transportation, and recognizes the impact of pedestrians on the economic health of a city and region.

A vibrant pedestrian environment includes being able to connect to a variety of destinations, especially schools and transit. It is generally the case that neighborhoods that are pleasant and popular places to walk tend to be some of the city's most economically vibrant areas, and that improving pedestrian conditions can positively impact the liveliness of a neighborhood. In order to most effectively encourage pedestrian travel in Seattle among all city residents, it is important to think about increasing the quantity and quality of accessible destinations.

[1] 2016 Benchmarking Report, Alliance for Biking & Walking.

Equity - Make Seattle a more walkable and accessible city for all through equity in public engagement, service delivery, accessibility, and capital investments

Walking is the most broadly accessible form of transportation and recreation, requiring no fare, fuel, or license. As such, a quality pedestrian network is at the core of an equitable, accessible transportation system. The City has a commitment to address issues of race and social justice, and the design and implementation of pedestrian projects is no exception.

The PMP will provide for the needs of all of Seattle's neighborhoods, with the goal of improving the pedestrian environment for the city's diverse populations. For those who cannot use or who do not have access to other modes of transportation, the ability to walk safely is essential. People with disabilities may be more likely to be pedestrians, as some physical limitations make driving difficult. Our definition of walking includes mobility for those who use wheelchairs or other mobility devices.

Equitable services and investments provide the same opportunities for all people and strive to correct the historical inequities that exist in our society. By providing all people safe and comfortable pedestrian facilities for transportation and recreation, Seattle will be well on the way to becoming the most walkable and accessible city in the U.S.

Health - Get more people moving to improve health and increase mobility

Walking, for both transportation and recreation, can have a positive impact on an individual's health. Increased walking and physical activity is linked to reduced obesity and decreased likelihood of a number of chronic diseases. More than half of American adults do not get sufficient physical activity, and over two-thirds of adults are overweight[2].

Because walking is a low-impact activity, it's something that most people can do at almost any age. Seniors who walk regularly have a longer life expectancy than those who don't walk. And in addition to benefiting physical health, walking is also great for mental health.

More people walking for more trips can also reduce the consumption of fossil fuels, leading to a healthier environment for all Seattleites. Since transportation is the number one contributor to greenhouse gas emissions in the Seattle region, walking helps the City meet its climate protection goals by reducing emissions from motor vehicles. Decreased pollution also has health benefits, as air pollution is an irritant that can trigger asthma attacks in children and adults. Ensuring that there are safe, comfortable pedestrian facilities can help Seattle residents make walking part of their active, healthful daily routine.

[2] http://www.cdc.gov/nchs/fastats/obesity-overweight.htm

Plan Objectives

Six objectives guide our efforts to achieve the Plan goals. The strategies and actions in Chapter 5 articulate how we will accomplish these objectives.

Objective 1 - Complete and maintain the pedestrian system identified in the PMP

Funding improvements for new pedestrian facilities and programs, as well as the maintenance of existing facilities, is an essential step in completing and maintaining Seattle's pedestrian system.

Objective 2 - Improve walkability and accessibility on all streets

All streets in Seattle should be walkable and accessible at a basic level to encourage Seattle's residents and visitors to explore their environment. A clear walkable zone is a horizontal and vertical space that is free of obstructions and other potential hazards.

Objective 3 - Increase pedestrian safety

A sense of safety is an important consideration as people make the choice to walk. There are a variety of design, engineering, and enforcement strategies that can help to make pedestrian travel feel safer both along and crossing the roadway.

Objective 4 - Plan, design, and build Complete Streets to move people and goods

Complete Streets accommodate multi-modal travel with walkways, bicycle lanes, transit facilities, and freight design treatments. They encourage pedestrian movement by providing improvements such as curb ramps, landscape buffers, natural drainage features, and streetscape elements such as street furniture and lighting that help create friendly pedestrian environments.

Objective 5 - Create vibrant public spaces that encourage pedestrian use

Seattle's neighborhoods should be connected by a network of pleasurable and interesting places that are inviting. While there is no magic formula, pedestrian-friendly neighborhoods provide a mixture of land uses, human-scaled buildings, interesting and engaging streetscapes, and places within the public realm for people to linger alone or in the company of others.

Objective 6 - Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

Walking is an inexpensive form of transportation and recreation that provides health benefits for people, communities, and the environment. Education, encouragement, and enforcement campaigns can promote pedestrian movement and provide information about ways to improve pedestrian safety.

PLANNING CONTEXT

The Pedestrian Master Plan along with the Transit Master Plan, the Bicycle Master Plan, and the Freight Master Plan, all guide our efforts to improve travel safety, choices, conditions, and efficiencies. Adopted by City Council, each of these plans reflect our core values, and they identify policies, projects, programs, performance measures, and priorities to advance their respective transportation modes.

The PMP builds upon an existing foundation of City goals and policies, including the policy framework established in the 2009 Plan. The content of this Plan is also informed by a series of transportation planning, policy, and design initiatives undertaken since the original PMP was adopted, including:

- Seattle Comprehensive Plan
- Move Seattle
- Vision Zero
- Climate Action Plan
- Complete Streets policy
- Right-of-Way Improvements Manual

SDOT CORE VALUES

A Safe City

We will not accept traffic deaths as an inevitable part of traveling together in a safe city. Our goal is to eliminate serious and fatal crashes in Seattle. Safety also means being prepared for a natural disaster by seismically reinforcing our bridges to withstand earthquakes.

An Interconnected City

More travel options don't always equate to an easy-to-use, interconnected system. Our goal is to provide an easy-to-use, reliable transportation system that gives you the options you want when you need them.

A Vibrant City

A vibrant city is one where the streets and sidewalks hum with economic and social activity, where people meet and shop and enjoy the beautiful city we live in side by side with goods delivery and freight shipping. Our goal is to use Seattle's streets and sidewalks to improve the city's health, prosperity and happiness.

An Affordable City

Our goal is to give all people high-quality and low-cost transportation options that allow them to spend their money on things other than transportation. The transportation system in an affordable city improves the lives of all travelers: those with the latest model smart phones in their pockets and those without.

An Innovative City

Demographic changes and technological innovation are radically reshaping transportation. Our goal is to understand and plan for the changes of tomorrow, while delivering great service today. This includes newer, more nimble approaches to delivering projects and programs to our customers.

Seattle Comprehensive Plan

Seattle's Comprehensive Plan, Toward a Sustainable Seattle, is a 20-year vision and road map for Seattle's future. The Plan guides City decisions on where to build new jobs and housing, how to improve our transportation system, and where to make capital investments such as utility improvements, new sidewalks, and libraries. Seattle's Comprehensive Plan is the framework for most of the City's big-picture decisions on how to grow while preserving and improving our neighborhoods.

The four core values of Seattle's Comprehensive Plan are:

- **Community:** Developing strong connections between a diverse range of people and places
- **Environmental Stewardship:** Protect and improve the quality of our global and local natural environment
- **Economic Opportunity and Security:** A strong economy and a pathway to employment is fundamental to maintaining our quality of life
- **Social Equity:** Limited resources and opportunities must be shared; and the inclusion of under-represented communities in decision-making processes is necessary

Seattle's urban village strategy supports the core values by:

- Directing growth to existing urban centers and villages
- Contributing to the vibrancy of our neighborhood centers
- Reinforcing the benefits of City investments in transit, parks, utilities, community centers, and other infrastructure

As part of the 2015-16 major update of the City's Comprehensive Plan, the City has established a series of new policies relating to right-of-way allocation and how decisions are made with regard to using street space. The policies establish 6 essential functions of the street in the public right-of-way:

- Mobility (moving people and goods)
- Access for people (for example, bus stops and short-term passenger vehicle parking)
- Access for commerce (for example, loading spaces for trucks)
- Activation (for example, parklets)
- Greening (street trees, green stormwater)
- Storage (longer-term storage of vehicles)

The policies state that, in making right-of-way decisions, we should accommodate as many of these functions as possible and look to the modal master plans to identify specific needs on individual streets and corridors. These policies direct SDOT to focus on the pedestrian realm in making right-of-way allocation decisions.

Move Seattle

Move Seattle is the City's 10-year strategic vision for how we will move people and goods throughout Seattle. In many ways, it overlays our modal master plans and identifies opportunities to create a safer, more integrated transportation system. Move Seattle outlines the 10-year outcomes that we will achieve and the projects we plan to implement, in accordance with the Mayor's vision and our core values.

In November 2015, Seattle voters passed a 9-year, $930 million transportation levy to help achieve the vision set forth in Move Seattle. The Levy to Move Seattle replaced the Bridging the Gap Levy that expired at the end of 2015. The pedestrian improvements accomplished with Bridging the Gap funds between 2009 and 2015 are outlined in Chapter 3 of this document.

The Levy to Move Seattle will fund numerous transit and transportation projects across all parts of the city to help reduce congestion, increase safety for all travelers, and continue to address our City's transportation maintenance needs. This funding will be a critical tool for delivering Move Seattle, and for implementing the PMP.

The prioritization process outlined in this Plan will guide the use of levy funds dedicated to pedestrian improvements. Move Seattle's pedestrian-related outcomes include:

- Repair sidewalks and support healthy tree growth in areas of high pedestrian demand to enhance safety and support walkable neighborhoods
- Repair damaged residential sidewalks through innovative cost-sharing solutions to support walkable neighborhoods
- Evaluate and address safety concerns and crash locations quickly and effectively
- Implement safety programs along corridors with high levels of crashes
- Improve safety in school zones
- Provide education programs to help pedestrians, bicyclists, and motorists travel safely and efficiently
- Repair damaged or closed public stairways to connect neighborhoods and improve accessibility

See the following page for Move Seattle's pedestrian-related actions.

MOVE SEATTLE PEDESTRIAN-RELATED ACTIONS (2015-2017)

Roll out a coordinated Vision Zero program:

- Implement 20 mph speed zones in residential areas on a neighborhood-by-neighborhood basis, starting with areas with the highest crash rates
- Carry out 5 corridor safety projects, including on Rainier Ave S, 35th Ave SW, Lake City Way, and SW Roxbury St
- Reduce arterial speed limits to 30 mph or lower to improve safety
- Create a traffic safety education kit for community groups and schools to promote road safety and Vision Zero
- Partner with Seattle Police Department to conduct routine enforcement in areas with high crash rates
- Partner with SPD to install at least 12 new school zone cameras
- Improve school walking routes at up to 12 locations and upgrade school zone signage at up to 15 locations each year

Build out an all ages and abilities bike network:

- Build up to 50 miles of the highest-priority protected bike lane segments connecting to and through downtown and new neighborhood greenways to improve pedestrian and bicycle travel to and through our neighborhoods

Repair critical infrastructure to increase safety:

- Repair up to 25 blocks of damaged sidewalk each year
- Rehabilitate up to 5 stairways each year

Prioritize pedestrians:

- Make the 27% of the city without sidewalks more walkable — through constructing up to 30 new blocks of sidewalks connecting to transit stops and community centers and identifying new funding tools and partnerships to increase sidewalk construction
- Use high-reflectivity crosswalk markings on all projects
- Modify signal timing to favor pedestrians in neighborhood business districts
- Install up to 25 pedestrian countdown signals each year
- Help employers develop walking programs for employees in Seattle's most walkable neighborhoods

Vision Zero

Vision Zero is our goal of eliminating traffic deaths and serious injuries on Seattle streets by 2030. It uses a data-driven approach to prioritize engineering improvements that increase safety and predictability on our roadways. The program also provides funding for targeted education and enforcement.

VISION ZERØ

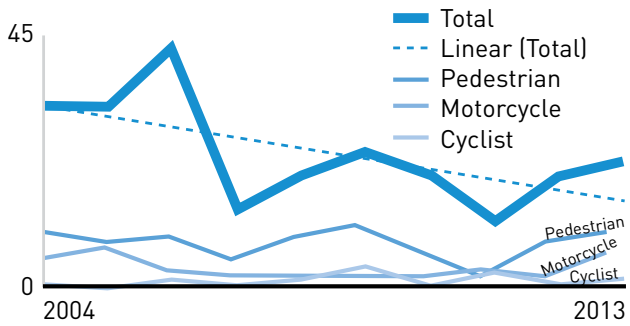
SAFER STREETS FOR SEATTLE

Vision Zero improvements are intended to provide roadway safety for all users, including people driving, people riding transit, people biking, and people using sidewalks or crossing streets. While all users are susceptible to the impacts of unsafe roadway practices, people who walk and bike are particularly vulnerable to serious injury when involved in a crash. Although crashes with pedestrians, bicyclists, and motorcycles make up less than 5% of total crashes, they comprise nearly 50% of all traffic fatalities on Seattle streets as demonstrated by the graph in Figure 2-2.

We consider safety for people walking and biking a top priority since the likelihood of injury is nearly 100% if they are hit. Figure 2-3 shows that speed is especially lethal for these vulnerable users, as the risk of injury and death increases as speed increases.

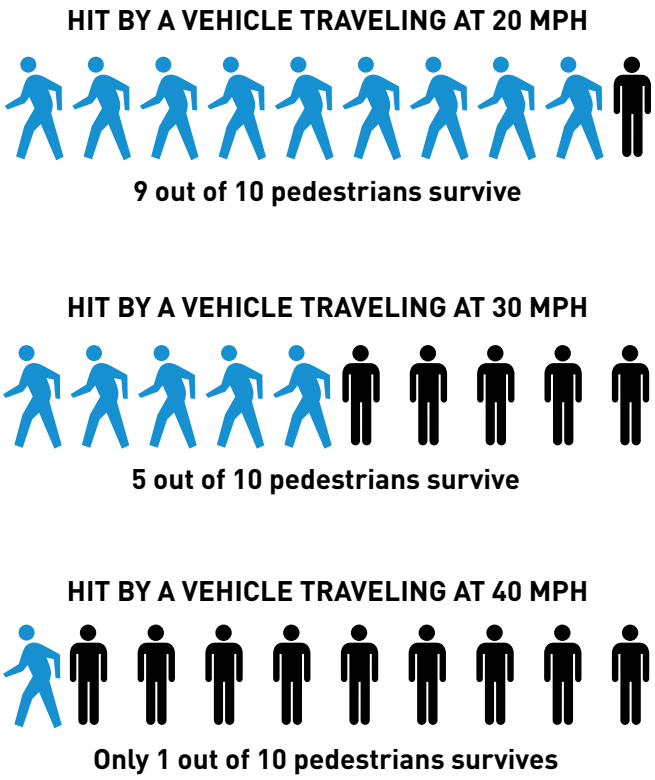
Vision Zero safety objectives are infused in all of our transportation work, including this Plan. We will use our ever-increasing wealth of safety data to prioritize investments in locations where conditions are most difficult for pedestrians.

FIGURE 2-2: DECLINING TRAFFIC FATALITIES ON SEATTLE STREETS



Traffic fatalities on Seattle streets have been declining; however, pedestrians and bicyclists make up a disproportionate percentage of all traffic fatalities.

FIGURE 2-3: HIGH VEHICLE SPEEDS INCREASE LIKELIHOOD OF PEDESTRIAN INJURY



High vehicle speeds increase the likelihood that pedestrians will suffer serious or fatal injuries when hit.

Climate Action Plan

The 2013 Climate Action Plan provides a framework for meeting Seattle's climate protection goals, including the overarching goal of becoming carbon neutral by 2050. Road transportation is a critical focus of the Climate Action Plan as Seattle's largest source of greenhouse gas (GHG) emissions, comprising approximately 40% of 2008 community emissions. These emissions come from fossil fuels burned by vehicles as they travel through the city moving people and goods. Passenger transportation represents over a third of all road emissions and is the transportation source where City action can have the greatest impact.

The City's 2030 goal is to reduce GHG emissions from passenger vehicles by 82% and vehicle miles traveled by 20%. A key strategy to achieve this goal is to expand transit, pedestrian, and bicycling infrastructure and services to provide safe and effective choices for getting around. High quality transit, bike, and pedestrian networks provide the underlying backbone of a low carbon transportation system. The Pedestrian Master Plan helps implement the Climate Action Plan by guiding planning and investments to expand and improve the pedestrian network.

Complete Streets policy

Seattle's Complete Streets policy (adopted by City Council in 2007) requires us to consider appropriate and safe accommodation for people of all abilities – whether they walk, bicycle, drive a car or a truck, or take a train or bus – when designing and constructing new transportation projects. We implement the Complete Streets policy through a checklist, which evaluates projects against the policy. This assessment process helps us identify project improvements to balance the needs of all users.

The Complete Streets policy and program are key tools in implementing the PMP. As part of the Complete Streets review process, SDOT projects are evaluated against the PMP recommendations, and PMP implementation is folded into larger project scopes where possible. In fact, many of the corridor projects funded by the Levy to Move Seattle reflect recommendations from the 2009 PMP in their scope assumptions and baseline cost estimates.

Right-of-Way Improvements Manual

The Right-of-Way Improvements Manual (ROWIM) provides design guidance to property owners, developers, architects, landscape architects, and engineers involved with the design, permitting, and construction of improvements to Seattle's rights-of-way. The ROWIM attempts to balance the access and mobility needs of everyone who uses the right-of-way.

The manual outlines procedures and design criteria to address the critical balance among safety, the preservation and maintenance of roadway infrastructure and utility services, context-sensitive design, and preserving our environment.

The 2016 update of the ROWIM will provide specific design guidance for a wide array of pedestrian-related infrastructure. Much of this design guidance stems directly from the recommendations provided in the "Pedestrian Toolbox," developed as part of the 2009 PMP. Pedestrian design elements that will be included in the updated ROWIM include (but are not limited to):

- Specify minimum sidewalk widths (including frontage zone, pedestrian clear zone and furnishing/landscape zone) for various street types
- Details on desired turning radii at corners to improve pedestrian safety at intersections by slowing turning vehicles
- Guidance on the provision and design of pedestrian facilities at intersections including crossing islands, curb bulbs, raised crosswalks, and raised intersections

- Guidelines for providing new low-cost walkways on non-arterial streets
- Improved guidance on complying with the American's with Disabilities Act (ADA), by offering more clarity on how Seattle applies federal design guidance

Because the ROWIM will provide detailed design guidance for new pedestrian infrastructure, the PMP intentionally does not include engineering-level design guidelines or standards. Rather, the implementing strategies and actions outlined in this Plan focus on the actions, policies, and programs needed to improve pedestrian conditions in high priority locations, and throughout the city.

NORIEGA PRODUCE
Noriega Produce Market
Organic Produce
DAIRY PRODUCE
FROZEN FOODS & GROCERIES
HEALTH FOODS
3821

CHAPTER 3: MEASURING PROGRESS

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Plan Performance 38

Evaluating our accomplishments helps to tell us whether the Plan has effectively guided pedestrian improvements since 2009 and whether it has been successful in making Seattle the most walkable and accessible city in the nation. This chapter documents our progress implementing the PMP and in achieving the vision and goals, as indicated by the Plan's performance measures.

The assessment in this chapter shows that, between 2008 and 2015, we have made notable progress toward achieving many of the performance measures established in the PMP. Furthermore, we have implemented several new projects and programs beyond what was originally recommended in the Plan in our effort to make Seattle a more walkable and accessible city.

CONSTRUCTING PEDESTRIAN IMPROVEMENTS IN SEATTLE

Pedestrian improvements in Seattle occur through a variety of means. The PMP guides the delivery of many new sidewalks and crossing improvements. However, many pedestrian improvements are provided independently of the PMP. A significant number of improvements are provided by the private sector in association with private development projects. Additionally, other City programs provide pedestrian improvements consistent with Complete Streets policies and/or neighborhood priorities. In evaluating our progress, it is helpful to understand how pedestrian improvements are typically provided in Seattle, and the role the PMP plays in guiding those improvements.

Figure 3-1 outlines how various programs and activities, both within and outside of SDOT, provide pedestrian improvements in Seattle (these programs are described in greater detail later in this chapter). Figures 3-2 and 3-3 show the various programs and activities (both within and outside of SDOT) that have provided sidewalk and crossing improvements citywide since the Plan's adoption in 2009, according to the SDOT Asset Management database. This inventory notes the construction of nearly 200 blocks of new sidewalks and crossing improvements at over 800 intersections.

FIGURE 3-1: PROGRAMS AND ACTIVITIES THAT PROVIDE PEDESTRIAN IMPROVEMENTS

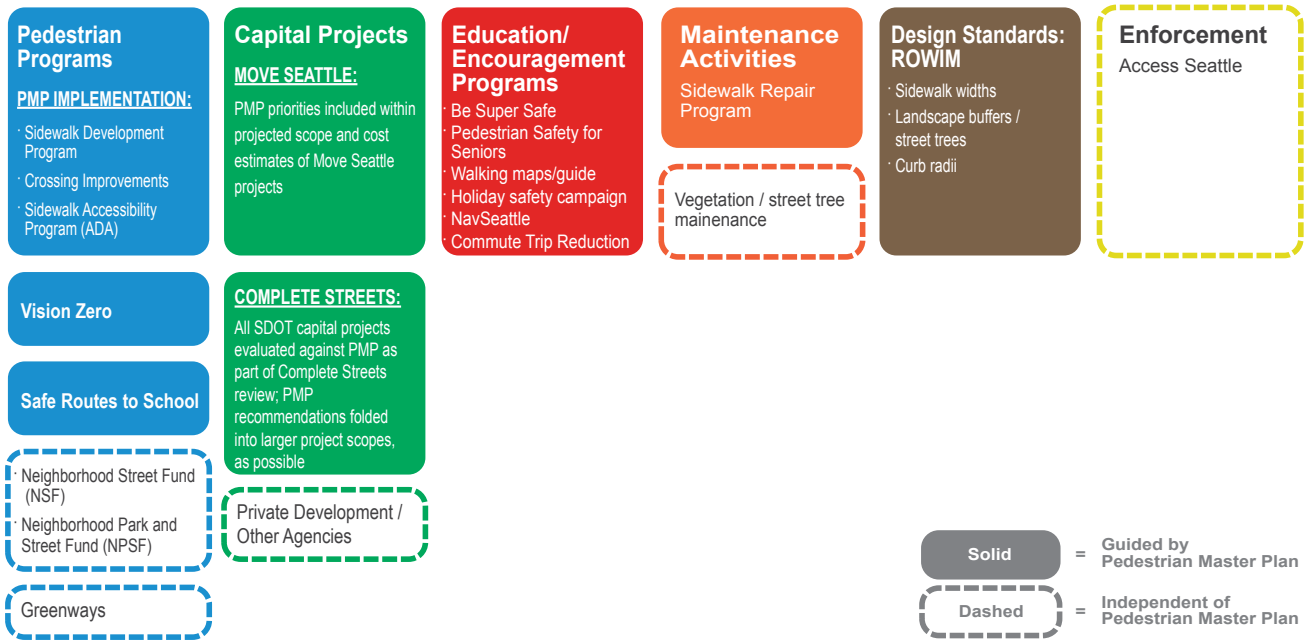


FIGURE 3-2: NEW SIDEWALK CONSTRUCTION, 2009-2015[1]

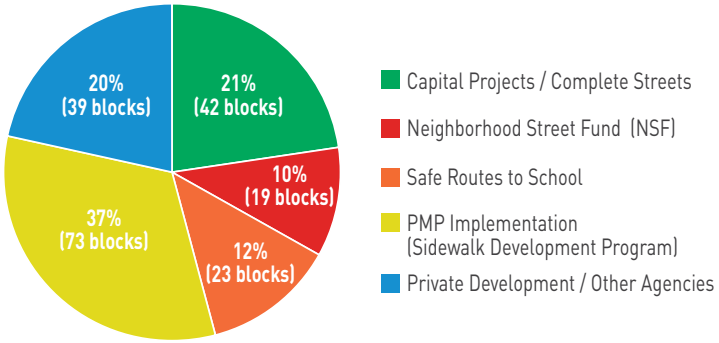
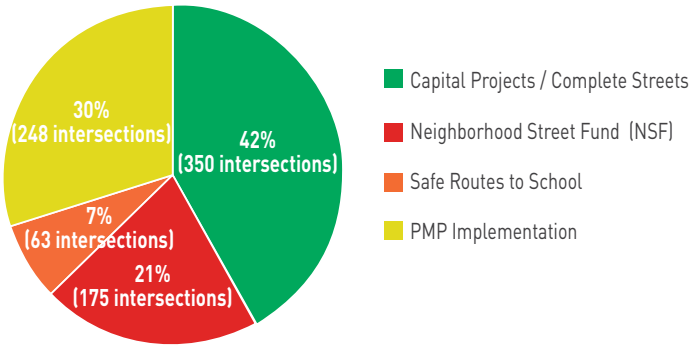


FIGURE 3-3: CROSSING IMPROVEMENTS, 2009-2015[1]



[1] Based on SDOT Asset Management database

SDOT ACTIVITIES GUIDED BY THE PMP

There are several programs and projects within SDOT that use the PMP prioritization framework to steer pedestrian improvements to high priority areas. The 2009 Plan defined high priority areas for pedestrian improvements as locations where there is high pedestrian demand, high socioeconomic and health priorities, and where there are important pedestrian linkages, as illustrated in Figure 3-4. For a full technical account of the 2009 PMP prioritization methodology, see Appendix 5.

Pedestrian programs

The following pedestrian programs are those explicitly charged with providing pedestrian safety and infrastructure improvements. While each of these programs are funded independently, each relies upon the PMP to help identify and prioritize projects.

The **Pedestrian Master Plan Implementation** program is charged with implementing the recommendations of the PMP. It constructs sidewalks and provides crossing improvements in PMP high priority areas. Crossing improvements may include installing new crosswalks, providing new pedestrian signals, building ADA-compliant curb ramps, or building curb bulbs or pedestrian refuge islands to shorten crossing distances.

The City of Seattle strives to make city programs, services, and activities equally accessible to all. Features such as curb ramps, sidewalks, detectable warnings, and street crossings are components of an accessible pedestrian network. We prioritize accessibility improvements to the pedestrian network using the Pedestrian Master Plan and as required by Title II of the Americans with Disabilities Act (ADA) regulation 28 C.F.R. § 35.150(d)(2) to provide access to city services and facilities. We are currently in the process of updating the ADA transition plan which will guide accessibility improvements moving forward in conjunction with this Plan.

SDOT plans, prioritizes, designs, and constructs infrastructure to enable residents with disabilities to access Seattle pedestrian facilities. These improvements include curb ramps, accessible pedestrian signals (APS) and new technology evaluations.

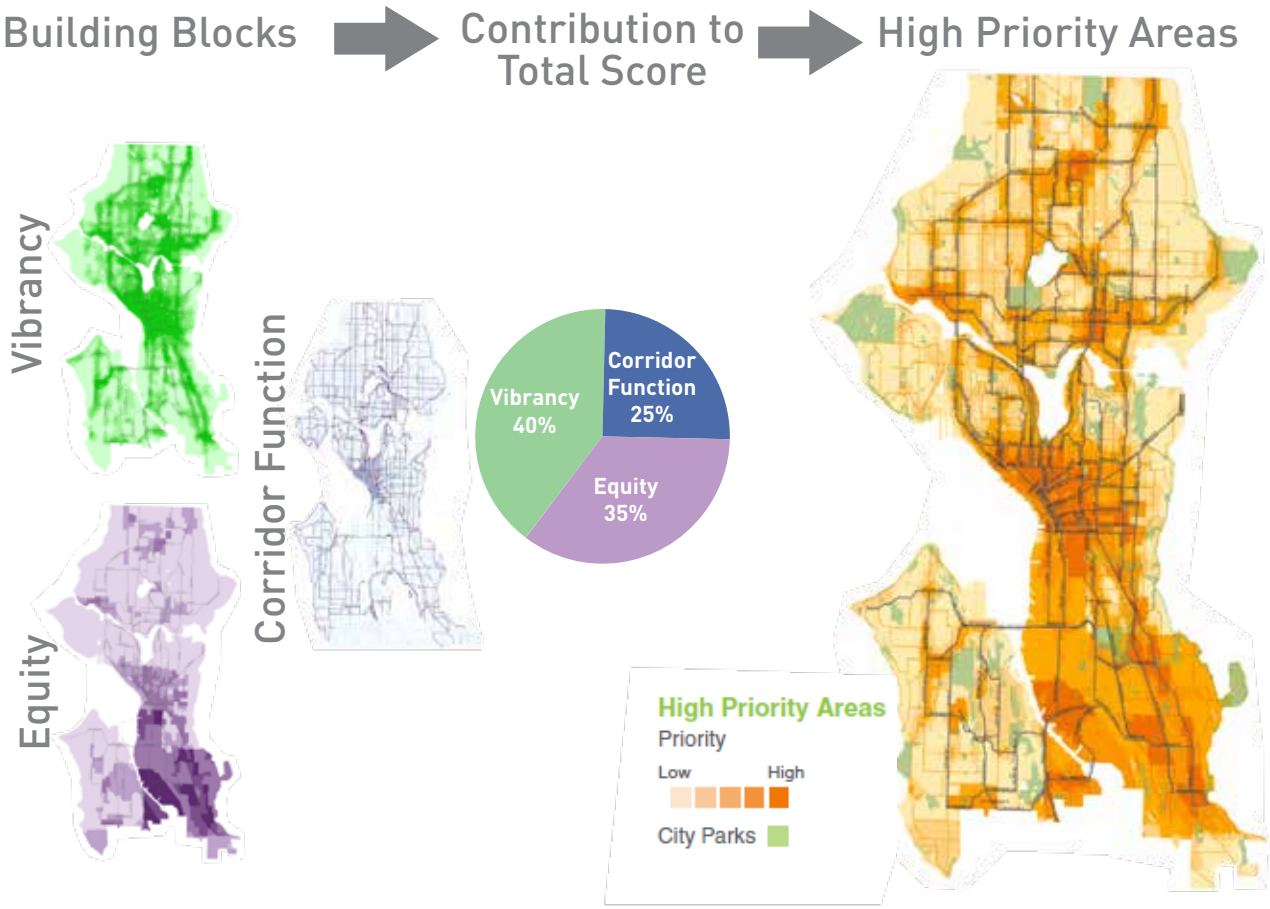
2009 PMP HIGH PRIORITY AREAS

The 2009 PMP used a data-driven methodology to identify priority locations for new sidewalks, crossings, and other pedestrian improvements. The Plan's prioritization process is a two-part analysis of citywide data related to:

- **"Vibrancy"** (demand) factors to identify existing and future land uses and destinations likely to generate the most pedestrian traffic
- **"Corridor function,"** or street types and associated roadway characteristics
- **"Equity"** factors that look at underlying socioeconomic and health factors, like automobile ownership, diabetes rates, and disability rates so we can provide pedestrian improvements where they are needed the most

Overlaying these three factors results in a "high priority areas" heat map, identifying areas where there is an overlap of high pedestrian demand, equity concerns, and key pedestrian linkages.

FIGURE 3-4: "HIGH PRIORITY AREAS," PER THE 2009 PMP



- **Curb Ramps.** SDOT strives to improve access to Seattle's network of sidewalks and walkways, particularly for those for whom mobility may be limited. Curb ramp design and construction includes a ramp with a tactile warning surface, landings, and necessary sidewalk transitions and (minor) utility modifications. Curb ramps are installed or improved when streets, roadways, or highways are altered at locations where a sidewalk or pedestrian way intersects a vertical curb at the pedestrian crossing.

  SDOT constructs or improves existing curb ramps within the public right-of-way as a part of several different programs, most notably larger capital projects and street resurfacing projects. Curb ramp work is also included as a part of SDOT's Safe Routes to School Program, Pedestrian Master Plan improvements, Neighborhood Park and Street Fund Improvements, as well as private development projects and utility work.

  We have a team of engineers that work hard to design and build curb ramps to best serve all pedestrians. This can be very challenging given the topography in Seattle as well as the existing built infrastructure, including utilities, areaways, or other conflicts.

  In addition to curb ramps, many SDOT projects include sidewalk installation or replacement of older sidewalks. These new sidewalks can make use much easier for people with disabilities and those using mobility devices.

- **Accessible Pedestrian Signal (APS).** An Accessible Pedestrian Signal is a pedestrian push button that produces an audible signal and vibration to indicate when it is safe to cross the street. Such devices can be helpful to people who are visually or hearing impaired. Starting in 2009, a portion of the Sidewalk Accessibility Program funding is set aside for APS improvements.

- **New Technology Evaluations.** Disability advocacy groups occasionally request that SDOT test new, alternative technologies focused on improving accessibility and mobility of people with disabilities within our transportation system. SDOT devotes a portion of our ADA funding to testing and evaluating these new technologies.

Curb ramps and APS may be requested to be installed for pedestrians with disabilities, and we install curb ramps as soon as funding allows when requested by qualified individuals with disabilities at locations not otherwise scheduled for improvement. It should be noted that any request is subject to prioritization of improvements as determined by SDOT as well as available funding. The program is not intended to address community concerns other than access for people with disabilities.

The **Safe Routes to School** (SRTS) program funds engineering improvements to improve pedestrian safety within school walksheds. While SRTS improvements must be located in proximity to a public or private school, the program uses PMP high priority areas to help prioritize safety improvements within those school walksheds, including sidewalks and curb ramps. The program also funds education and encouragement campaigns at public and private schools throughout Seattle.

Vision Zero is a citywide initiative aimed at ending traffic deaths and serious injuries on Seattle's streets by 2030. SDOT plays a lead role in Vision Zero engineering and education efforts, and coordinates enforcement efforts with the Seattle Police Department. To help guide pedestrian safety improvements, the Vision Zero program uses the PMP analysis and high priority areas to identify potential opportunities to improve safety for pedestrians traveling along and crossing the roadway.

Capital projects

All SDOT capital projects are evaluated against the PMP as part of the Complete Streets assessment to consider the travel needs of all users. PMP recommendations are folded into larger project scopes where possible. This evaluation includes looking for opportunities to make pedestrians more visible and to shorten street crossings by using curb bulbs or other measures. These efforts can help to make street crossings easier and safer for all pedestrians, particularly those with disabilities.

Many pedestrian improvements built throughout the city have been provided as part of these larger Complete Streets projects, as illustrated in Figures 3-2 and 3-3. Examples of Complete Streets projects that provided pedestrian improvements in accordance with PMP recommendations include Linden Ave N, the Mercer Corridor Project, NE 125th St, and 23rd Ave.

Maintenance activities

Our **Sidewalk Safety Repair Program** oversees the maintenance of the city's sidewalks and curbs. The program rehabilitates sidewalks damaged by street trees or where other safety concerns are reported. The program's goal is to ensure that all sidewalks are safe and accessible for all pedestrians. Among several other factors, the program prioritizes sidewalk repair projects across the city using the high priority areas identified in the PMP.

The majority of damage done to sidewalks is caused by tree roots. While street trees play a vital role in creating a sustainable, high quality public realm, it is not uncommon for conflicts to arise between trees and sidewalks. To provide guidance on installation, repair, and maintenance of sidewalks and street trees, we developed the Trees and Sidewalks Operations Plan in 2015 (discussed in greater detail later in this chapter).

While the City strives to keep sidewalks in reasonably safe condition, property owners are responsible for maintaining and repairing sidewalks adjacent to their property. However, when sidewalk damage is the result of a publicly-owned tree, SDOT is responsible for the sidewalk repair. Chapter 5 includes strategies and actions to improve sidewalk inspection and reporting procedures, educate residents about and increase enforcement of private sidewalk repair obligations, and make it easier and more predictable for private property owners to complete required sidewalk repairs.

Tree roots can sometimes uplift sidewalks, making pedestrian paths difficult to navigate, especially for users with mobility challenges.

Pedestrian refuge at 13th Ave NW, July 2014.

Pedestrian refuge at 13th Ave NW, October 2014.

HOLMAN ROAD COMPLETE STREETS PROJECT

Initially conceived as a repaving project, the Holman Road project went through the Complete Streets review process, as required by the City's Complete Street ordinance. As part of that review, it was noted that the project traversed several PMP high priority locations. As a result of the Complete Streets recommendations, the project was expanded. In addition to providing new pavement and extending the life of the roadway, the Holman Road Complete Streets project also provided pedestrian and transit improvements between Greenwood Ave N and NW 87th St, including:

- Constructing 3,700 feet of improved walkway
- Building curb ramps at 64 locations
- Installing 5 bus stop waiting pads with new lighting
- Constructing a pedestrian refuge at 7th Ave NW and 13th Ave NW
- Enlarging an existing median on 15th Ave NW

Design standards

Seattle's Right-of-Way Improvements Manual (ROWIM) provides guidance to property owners, developers, architects, landscape architects, and engineers involved with the design, permitting, and construction of improvements to Seattle's street right-of-way. The manual includes design standards for many of the pedestrian-friendly street design recommendations included in the 2009 PMP toolbox. The 2016 ROWIM update will include additional updates to pedestrian realm design standards to further implement PMP recommendations. These design standards aim to ensure that pedestrian realm improvements provided by private developments help implement the recommendations provided within the PMP.

Education and encouragement programs

Education and encouragement programs create awareness about pedestrians, help inform and reinforce the skills needed to be a safe pedestrian, and promote the benefits of walking. Several education and encouragement programs have been implemented in accordance with PMP recommendations to further the Plan's goals. These programs are in addition to the education and encouragement programs implemented by the SRTS and Vision Zero programs mentioned earlier. A fuller account of SDOT pedestrian programs, is provided later in this chapter.

OTHER PROGRAMS AND ACTIVITIES PROVIDING PEDESTRIAN IMPROVEMENTS

In addition to the PMP-guided programs and activities, other public and private efforts also provide pedestrian improvements. These improvements are not explicitly guided by the PMP and may lie outside of priority areas.

Neighborhood Park and Street Fund and Neighborhood Street Fund

Both the Neighborhood Park and Street Fund (NPSF) and Neighborhood Street Fund (NSF) grant programs award City funding to transportation projects prioritized by the community. These community-driven projects often result in pedestrian improvements that are not necessarily prioritized within the PMP.

NPSF grants are awarded by the Seattle Department of Neighborhoods to communities for small-scale improvements to streets and parks. Projects can receive grants up to $90,000. Examples of NPSF projects may include:

- Crossing improvements such as rapid flashing beacons, curb bulbs, and pedestrian countdown signals
- Traffic calming, such as traffic circles, median islands, and speed feedback signs
- Short segments of sidewalk construction (less than 100 feet, or one third of a block)

Like the NPSF program, the NSF program grants funds for neighborhood transportation projects that are identified and prioritized by the community itself. NSF projects are typically larger and more costly than smaller-scale NPSF projects and can also provide a range of pedestrian improvements, including new sidewalks and crossing improvements.

Neighborhood Greenways

Neighborhood Greenways are designed to give pedestrians and people riding bicycles travel priority. These non-arterial routes are typically located on roadways with low traffic volumes, slower vehicle speeds, and gentler grades; they provide safe arterial crossings and low-stress connections to key destinations such as schools, parks, and neighborhood centers. Neighborhood Greenways were originally identified as part of the 2014 Bicycle Master Plan (BMP) as a key component of the city's bicycle network, yet Neighborhood Greenways also serve the needs of pedestrians by providing traffic-calming, crossing beacons, pedestrian refuge islands, and crosswalks.

Because Neighborhood Greenways benefit both pedestrians and people biking, we can use the Neighborhood Greenways program to address the priorities within both the PMP and the BMP.

Private development/other agencies

A significant number of sidewalk improvements are constructed in association with street frontage improvements required as part of the private development approval process. Similarly, other public agencies engaging in construction work within the right-of-way are often required to build (or rebuild) pedestrian infrastructure, including sidewalks and curb ramps, when restoring the roadway. Figure 3-2 shows that approximately 20% of all new blockfaces of sidewalk provided between 2009-2015 were built as part of private development projects or improvements provided by other public agencies. Though these pedestrian improvements may lie outside of identified PMP priority areas, they must be built according to standards and guidelines provided within the ROWIM.

HOW HAS THE PMP GUIDED PEDESTRIAN IMPROVEMENTS?

The 2009 PMP was intended to direct pedestrian improvements to designated "high priority areas." These priority areas were determined by a data-driven assessment that looked at three factors: pedestrian demand (where the most people walk), equity indicators (where pedestrian improvements will serve residents with the greatest need), and corridor function (on streets that serve as important pedestrian links and that have traditionally been prioritized for motor vehicle travel). The PMP defines "high priority areas" for investment as locations where these factors overlap. See Appendix 5 for a more detailed explanation of the 2009 prioritization methodology.

Since the Plan's adoption in 2009, the majority (average of 79%) of pedestrian projects we've built have been directed to PMP high priority areas. Table 3-1 includes new improvements added to our asset database located within PMP high priority areas. Improvements constructed outside of high priority areas were typically the result of opportunities to leverage funding with other projects.

Despite constructing the majority of our pedestrian investments in high priority areas, we've only completed a very small percentage of the 2009 PMP's top-tier projects. This is because so much of the city was identified as a high priority location in the Plan, creating a long list of top-tier projects that did not correlate to anticipated funding and leveraging sources. Only 2% of the identified top-tier along-the-roadway projects and 4% of identified top-tier crossing-the-roadway projects were constructed between 2009 and 2015. These figures have not been adjusted to reflect top-tier locations that were evaluated by SDOT, but for which no project was identified or recommended.

Moving forward, the Plan will more narrowly focus priorities and improvement opportunities to better align with anticipated funding streams for the 20-year horizon of the PMP. More information on the prioritization framework can be found in Chapter 4 and on plan implementation in Chapter 6.

TABLE 3-1: SDOT PEDESTRIAN IMPROVEMENTS LOCATED IN PMP HIGH PRIORITY AREAS[2], 2009-2015

Type of improvement	Percent of improvements in high priority areas
New sidewalks	73%
Repaired sidewalks	78%
New crosswalks	86%
Crossing improvements (curb ramps, refuge islands, etc.)	67%
New pedestrian signals	92%

[2] "High priority areas" are defined as "Tier 1" or "Tier 2" locations. See Appendix 5 for details on the 2009 PMP prioritization methodology. Based on SDOT Asset Management database

Accomplishments: Pedestrian system funding

In 2006, Seattle voters passed a nine-year, $365 million Bridging the Gap (BTG) Levy for transportation maintenance and improvements. The levy funded programs to address several transportation needs, including for programs implementing the PMP. BTG provided funding for maintenance and new infrastructure as called for by the Plan, including sidewalk development and repair, tree pruning and planting, and transit enhancements. It also created and funded the Safe Routes to School program, and helped neighborhoods get larger projects built through the NSF program.

While BTG was not the only funding source to provide pedestrian improvements since the PMP was adopted, it contributed significantly toward providing the improvements called for in the Plan. Between 2009 and 2015, SDOT spent almost $52 million of BTG funding implementing the PMP, including the SRTS and Sidewalk Repair programs. The BTG Levy provided funding for a wide range of pedestrian improvements, including new sidewalks and curb ramps, school zone improvements, and roadway projects that reconfigured travel lanes to make crossings safer and easier. Pedestrian-related BTG accomplishments include:

- 220 blocks of repaired or restored sidewalk (initial commitment, 144 blocks)
- 118 blocks of new sidewalk (initial commitment, 117 blocks)
- 5,766 restriped crosswalks (initial commitment, 5,000 crosswalks)
- 64 new "safe routes to school" (initial commitment, 30 new routes)
- 50 rehabilitated stairways (initial commitment, 50 stairways)
- 29,902 street trees pruned to prevent safety and security hazards (initial commitment, 25,000 trees)

The Levy to Move Seattle was passed in 2015 and will continue to address Seattle's transportation needs, including helping to implement the PMP.

Accomplishments: Accessibility and ADA Compliance Efforts

SDOT is involved in a number of initiatives and efforts to provide improved accessibility and inclusion within the public right-of-way. Some of these efforts are described earlier in this chapter. While some efforts are ongoing and will continue from one year to the next, others may be custom designed, involve community outreach, or may be activities above and beyond the typical SDOT obligations. These efforts and initiatives include:

- In 2015, SDOT hired an ADA Coordinator to formalize policies and best practices for achieving ADA compliance within the public right-of-way. The SDOT ADA Coordinator assists with training SDOT staff on ADA compliance, provides technical assistance on design requirements, serves as liaison between the public and SDOT staff, and coordinates and participates in community outreach. The ADA Coordinator participates in national ADA-related conferences and has active communications with others in similar roles throughout the region.
- SDOT has an ADA Committee that is comprised of representatives from all SDOT divisions. The Committee meets regularly to discuss and agree upon a united approach on ADA compliance and best practices for providing accessibility as a Department.
- Training occurs both in-house at SDOT via the ADA Coordinator as well as from outside sources to ensure that the staff is aware of current requirements and best practices. Some of the training opportunities that SDOT has participated in include the U.S. Access Board, the National ADA Network, and the Federal Highway Administration (FHWA).
- We are in the process of evaluating pedestrian features in the public right-of-way with respect to accessibility. In May of 2016, we completed a citywide evaluation of all known curb ramps, totaling in excess of 28,000 curb ramps.
- Currently the City of Seattle is updating the ADA Transition Plan to ensure access to city programs for people with disabilities. With authority over streets and sidewalks, SDOT is updating the Transition Plan for features within the public right-of-way with priorities for improvements defined in Title II of the Americans with Disabilities Act (ADA) regulation 28 C.F.R. § 35.150(d)(2). Updating this plan will include public involvement and outreach. The updated plan will be available for the public to view upon completion.
- Engineers and designers at SDOT have participated, and will continue to participate in, blindness simulations, and mobility observations of deaf-blind pedestrians to better understand the needs of pedestrians with visual and/or hearing impairments. We have worked with professional mobility instructors to discuss possible new treatments in the public right-of-way that could assist pedestrians with visual and/or hearing impairments.
- SDOT staff has participated in wheelchair exercises to experience first-hand some of the challenges of rolling over the sidewalks and curb ramps in Seattle. SDOT has a wheelchair available that is used by engineers to test different curb ramp designs after construction to determine and evaluate improvements or adjustments that could be made.
- We are currently working on a citywide map that will help pedestrians with disabilities plan routes according to varying features and conditions of Seattle sidewalks, curb ramps, and street crossings. This map will be available online upon completion.

In addition to these efforts and initiatives, SDOT actively searches for opportunities to work with individuals and communities living with disabilities to better understand the needs and abilities of all pedestrians.

Accomplishments: Pedestrian programs

Pedestrian programs are designed to complement engineering improvements and are an additional way we can improve pedestrian conditions in Seattle. We have implemented several program elements that go beyond typical on-the-ground project improvements since the Plan's adoption, including:

- Education and encouragement programs (including the Pedestrian Safety Downtown Holiday campaign, the "Be Super Safe" campaign, and NavSeattle)
- Programs and legislation intended to enhance or vitalize the pedestrian realm by creating new public gathering space (including play streets, pavement to parks, summer parkways, and parklets/streateries)
- Updates to internal policies or design standards (including updates to SDOT Standard Plans, the Trees and Sidewalks Operations Plan, and the ROWIM)

A list of a programs and policy changes we've made since the PMP was adopted is shown in Figure 3-5. Selected programs/activities are described in further detail in the following pages.

FIGURE 3-5: PROGRAMS AND POLICY CHANGES MADE SINCE PMP ADOPTION

2009
- Holiday Pedestrian Safety Campaign begins
- PARK(ing) Day
- Summer Streets
- Street and Sidewalk Pavement Opening and Restoration Rule

2010
- SDOT Standard Plans update
- Walk Bike Ride initiative
- Seattle Walking Maps

2011
- Festival street/pedestrian plaza legislation
- Mobile food vending legislation
- Intercept surveys
- McGraw Square opens

2012
- Road Safety Action Plan
- Be Super Safe Campaign
- Pedestrian Lighting Citywide Plan
- Increased coordination with Parks department to leverage resources
- Automated school zone speed enforcement

2013
- Parklet pilot program
- Public Space Management taskforce
- Access Seattle construction coordination program

2014
- Vision Zero
- Play Streets pilot program
- Update Seattle Walking Maps
- NavSeattle
- Bell Street Park opens

2015
- Trees and Sidewalks Operations Plan
- School Road Safety Plan
- Streateries pilot program
- Adaptive Streets program
- Summer Parkways

Center City Holiday Pedestrian Safety Campaign

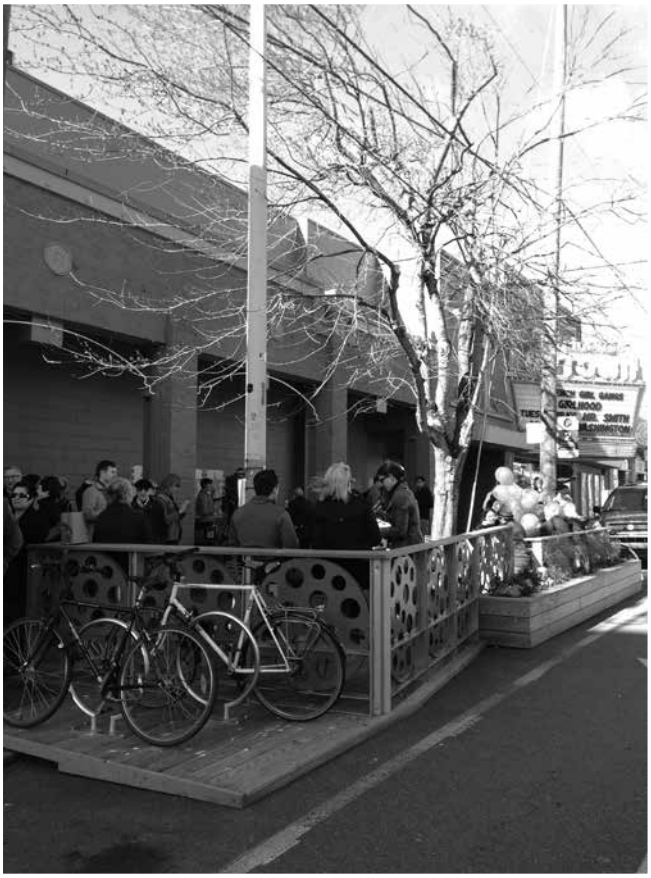
We ran a 5-year (2009 – 2013) Center City Holiday Pedestrian Safety Campaign. The effort focused on safety messages during the winter holiday season, when days are darker and wetter, and when many people are out and about shopping downtown. Public service announcements, flash mobs, bus advertisements, caroling, social media blasts, and posters were among the many marketing tools used to capture people's attention and encourage behavior change and reduce collisions. Over the course of the 5-year campaign, we saw a slight decrease in collisions in the Center City during the holiday season.

The Seahawks' mascot Blitz helps with the Holiday Pedestrian Safety Campaign in Westlake Park.

Parklet program

Parklets convert a few on-street parking spots into open spaces for all Seattleites to enjoy. They are privately funded and maintained, and work to activate streets, create more vibrant neighborhoods, and support economic vitality. They are cost-effective tools for increasing our city's public open space and have added to the vibrancy of the pedestrian realm.

We launched the pilot Parklet program in summer 2013 to evaluate how well parklets serve neighborhoods and businesses. The pilot program was extended through 2014, and the parklets were evaluated to determine how well they activated streets and whether they provided useful public spaces for neighborhood businesses, residents, and visitors. As of February 2015, the Parklet program is now a permanent program at SDOT, and new applications are accepted twice a year.



Parklets like this one in the Uptown neighborhood help enliven the streetscape.

Streateries

In 2015, we launched the Streateries pilot program to explore new activation opportunities for parklets. For a small fee, Streateries allow hosting restaurants, cafés, and bars to offer table service in their parklets during business hours (like a sidewalk café) and provide a public open space at all other times. The streateries built under the pilot program in 2015 are currently being evaluated to identify whether we should adopt a permanent Streateries program.

Streateries, which allow restaurants, cafes and bars to offer table service in parklets, help create an inviting public realm. Photo credit: San Francisco Planning Department

Adaptive Streets program

The Adaptive Streets program is a cost-effective way to experiment with new public spaces and street improvements to energize the public realm. Focused on creating inexpensive, temporary solutions, the Adaptive Streets program includes two types of projects:

- **Pavement to Parks** projects, which create opportunities for active public spaces in underutilized roadway space
- **Tactical Urbanism** projects, which enhance safety and mobility with low-cost, easy-to-install materials

The Adaptive Streets program demonstrates an institutional effort to implement quick and economical treatments that enhance the function of streets for both activation and safety. Our approach is characterized by short-term, low-cost, adaptive, and community-oriented interventions.

SDOT seeks opportunities to convert underutilized pavement in the right-of-way into more gracious public spaces through its Pavement to Parks program.

Summer Parkways

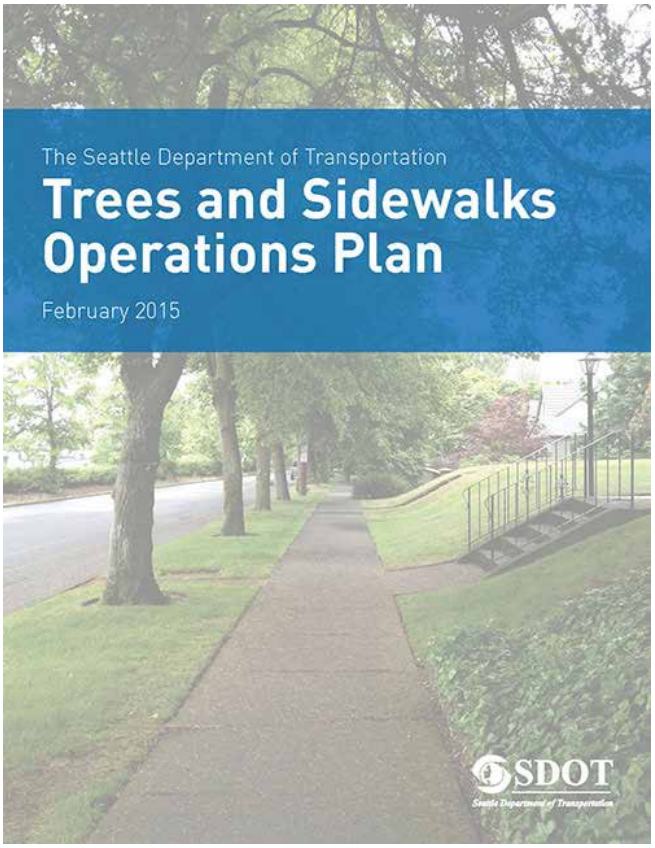
Seattle Summer Parkways are free, all-ages events that open up the city's largest public space—our streets—for families, friends, and neighbors to have fun, celebrate the spirit and personality of their communities, discover active healthy transportation, support local businesses, and explore the city - car-free and care-free. We created our first two Summer Parkways in 2015, giving people the opportunity to traverse by bicycle or on foot through the Central District or Ballard via a 3- to 7-mile route. Along the way they could visit neighborhood parks full of live music and activities. Summer Parkways is now an annual event in Seattle.

Summer Parkways allow for unique celebrations to occur in the street, celebrating the strength and richness of Seattle's various neighborhoods.

Trees and Sidewalks Operations Plan

Street trees and sidewalks both play vital roles in Seattle's public realm, helping to make our city more livable and sustain our quality of life. However, it is not uncommon for conflicts to arise between trees and sidewalks, particularly in locations where both were installed some time ago. The majority of damage done to sidewalks is caused by tree roots. Cracked and uplifted sidewalks can make pedestrian paths difficult to navigate, particularly for users with mobility impairments. Furthermore, conflicts between street trees and sidewalks can compromise tree health where roots do not have sufficient space.

To better address commonly occurring conflicts between trees and sidewalks, in 2015 we developed the Trees and Sidewalks Operations Plan to clarify responsibilities and work processes and to provide guidance on installation, repair, and maintenance of sidewalks and street trees in Seattle's rights-of-way. This operations plan informs the work of SDOT's Street Maintenance division, as well as the work of other City departments. The operations plan also clarifies for the broader public the processes and procedures that SDOT uses to manage street trees and sidewalks in partnership with Seattle residents, businesses, and property owners.



SDOT's Trees and Sidewalks Operations Plan clarifies responsibilities and work processes for maintaining both sidewalks and trees in the right-of-way.

Street trees and sidewalks are both critical components in creating a high-quality public realm, but it is not uncommon for conflicts to arise between trees and sidewalks.

Access Seattle

In recognition of the impacts that construction activities can have on mobility for the traveling public, we developed the Access Seattle Program to identify and pro-actively resolve potential right-of-way issues associated with work zones. This includes coordinating and consolidating temporary closures and detours, and working to maintain access to and through impacted areas.

As part of this effort, we published a revised Director's Rule for Pedestrian Mobility In and Around Work Zones (SDOT DR 10-2015) in January 2016. The main objective of the rule is to keep pedestrians safe and mobile around construction sites, and to outline specific requirements for developers and contractors whose work impacts the public right-of-way. The rule requires sidewalks adjacent to work sites to remain open for the duration of a construction project, and allows sidewalk closures only as a last resort approach. When circumstances do not allow for sidewalks to remain open, the rule provides guidance on how requests for sidewalk closures are evaluated and, where approved, alternative methods that can be used to provide pedestrian mobility. As a result, pedestrians can expect fewer construction-related detours and a consistent standard of protection around work zones.

The SDOT Director's Rule for Pedestrian Mobility In and Around Work Zones rule states that sidewalks adjacent to work sites must remain open for the duration of a construction project, and that sidewalk closures are allowed only as a last resort approach. The rule provides guidance on alternative methods that can be used to provide pedestrian mobility when circumstances do not allow for the existing sidewalk to remain open during construction.

PLAN PERFORMANCE

Performance measures allow us to determine whether we are successfully achieving the Plan's vision and goals. This performance assessment is intended to identify our successes and where there may be opportunities for improvement moving forward. While the Plan goals answer the question "What is the Plan designed to do?" performance measures help answer the question "How is the Plan's success measured?"

The PMP performance measures are primarily outcome based and are directly tied to the Plan goals of safety, equity, vibrancy, and health. By establishing whether the trends associated with each performance measure are moving in the direction of the desired outcome, it is possible to determine the progress toward meeting Plan goals.

Table 3-4 outlines each of the Plan's performance measures and desired trends, and indicates whether or not we are moving in the direction of the desired outcomes. Between 2008 and 2015 we have made notable progress toward achieving many of the PMP performance measures, meeting 8 of the 12. The 4 we didn't meet have either seen no significant change since 2008, or there is no data available to report.

This performance assessment helps to tell us where the Plan is successfully driving change and where there may be opportunities for improvement moving forward. While the performance evaluation indicates that, generally, more people (including children) are walking in Seattle and pedestrian collision rates have decreased, it also shows that vehicle speeds have generally not gone down across the city and self-reported physical activity rates have remained stagnant.

A more detailed discussion of each of the performance measures and the data used to evaluate them is provided in Appendix 3. Chapter 6 establishes updated performance measures and targets moving forward.

TABLE 3-2: PMP PERFORMANCE MEASURES EVALUATION, 2008-2015

PMP Goal	Performance measure	Desired trend	On track?
Safety: Reduce the number and severity of crashes involving pedestrians.	Rate of crashes involving pedestrians	Decreasing rate	**Collision rates by walking trips: Yes** **Collision rates per 100,000 residents: No significant change**
	Change in vehicle speeds on identified corridors	Reduction in 85th percentile vehicle speeds	**No significant change**
	School participation in pedestrian safety, education, and encouragement programs	Increasing school participation	**Yes**
	Driver and pedestrian behaviors and awareness of pedestrian laws	Increasing awareness and optimal behavior	**No significant change**
Equity: Make Seattle a more walkable city for all through equity in public engagement, service delivery, and capital investments.	City investments toward Top-tier projects in high priority areas	Increasing percentage of Top-tier projects completed in high priority areas	**Yes**
	Public communication about pedestrian issues	Increasing number of "hits" on website	**Not tracked**
	Transit ridership	Increasing rate of ridership per service hour	**Yes**
	Mode share (more people walking)	Increasing percentage of trips	**Yes**
Vibrancy: Develop a pedestrian environment that sustains healthy communities and supports a vibrant economy.	Increase streetscape vibrancy	Increasing number of permits that include streetscape elements	**Yes**
	Increase pedestrian volumes in selected count locations	Increasing number of pedestrians in selected count locations over time	**Yes**
Health: Raise awareness of the important role of walking in promoting health and preventing disease.	Self-reported physical activity	Decreasing percentage of respondents reporting little or no physical activity	**No change**
	Children walking or biking to or from school	Increasing number of trips by children	**Yes**

CHAPTER 4: PRIORITIZING PEDESTRIAN IMPROVEMENTS

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PRIORITIZATION FRAMEWORK

Full implementation of all pedestrian needs across the city will take many years. This makes it important to develop a framework for selecting an equitable and realistic set of prioritized projects to complete over the course of the 20-year Plan. If we can only afford to build or improve a certain number of sidewalks or crossings each year within the timeline of the Plan, which ones should we build first, and where?

The PMP prioritization is our 20-year blueprint for providing a suite of pedestrian improvements across the city. The intent is to focus resources in areas where conditions are difficult, and where people need to be able to walk the most. The process is based on an analysis of factors related to the Plan's goals of vibrancy, safety, equity, and health. This data-driven prioritization framework helps us provide targeted improvements that reflect community priorities, SDOT and City policy objectives, current data, and projected funding.

KEY ELEMENTS IN THE 2016 PMP PRIORITIZATION

We have "re-grounded" the prioritization in the Plan's goals and ensured that it continues to reflect City policy objectives, national and international best practices, and community priorities. The key elements include:

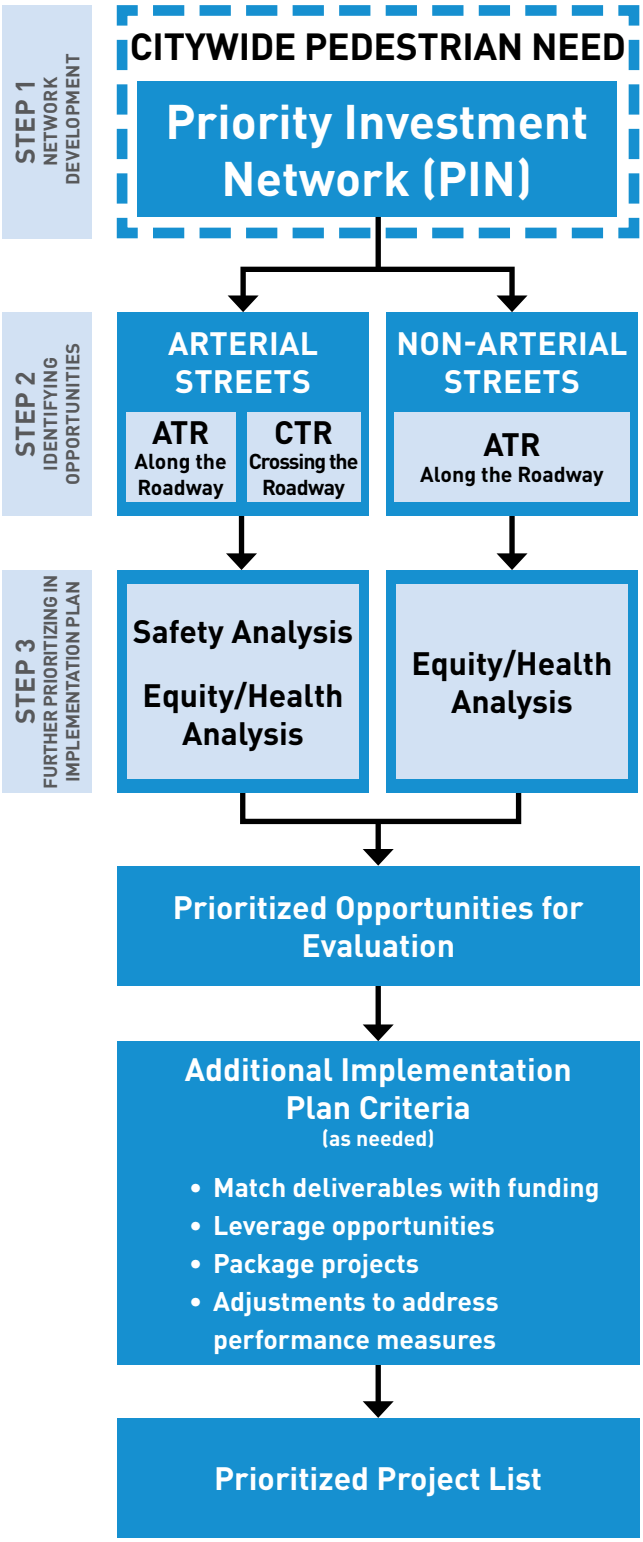
- A focus on schools and transit as key pedestrian destinations, directing resources to the most critical components of the pedestrian network
- A clear, connected network of streets connecting pedestrians to key destinations; investments will be directed to this Priority Investment Network (PIN)
- Updated data to measure vibrancy, safety, equity, and health to more accurately identify locations most in need of pedestrian improvements. This includes using new Vision Zero traffic safety data to ensure that the PMP contributes toward the City's vision of eliminating fatal and serious injuries on Seattle streets by 2030
- Clarity about the location, number, and type of "along-the-roadway" and "crossing-the-roadway" improvement opportunities within the PIN

To narrow citywide need into a 20-year plan, the prioritization framework includes three steps as diagrammed in Figure 4-1:

- **Step 1:** we developed a citywide "Priority Investment Network" (PIN) using vibrancy (or demand) factors; these streets will be prioritized for pedestrian improvements
- **Step 2:** we identified specific opportunities for improvement within the PIN to improve conditions both along and across these streets
- **Step 3:** we established the criteria by which these opportunities will be prioritized as the Plan is implemented, applying safety and equity/health analyses to identify which opportunity areas within the network to evaluate first for pedestrian improvements

Full technical details of the 2016 PMP prioritization methodology are available in Appendix 7.

FIGURE 4-1: PRIORITIZATION FRAMEWORK



To ensure that PMP investment priorities accurately reflect those of Seattle residents, we engaged community members to help us better understand where to focus finite resources to improve pedestrian conditions in Seattle. This was done through a series of public outreach activities designed to gather feedback, and included a citywide public survey where we asked three key questions about pedestrian conditions in Seattle:

- What makes it difficult or unpleasant for you to walk?
- Where should the City prioritize walking improvements first?
- What types of pedestrian improvements should we build first?

Community responses (over 4,700) were clear, directing us to prioritize investments for:

- Streets connecting families and children to schools
- Streets connecting people to transit stops
- Sidewalks and crossings on busy arterial streets
- Residential streets where sidewalks are missing
- Locations where pedestrians are injured

This public input is reflected in the PMP prioritization process and will guide how we allocate resources and where we provide improvements moving forward.

See Appendix 2 for the full PMP Public Survey Report.

NETWORK DEVELOPMENT: THE PRIORITY INVESTMENT NETWORK

To focus improvements and investments to locations most in need, the PMP defines a "Priority Investment Network" (PIN). The PIN is composed of streets that serve as key pedestrian routes to k-12 public schools and frequent transit stops, two types of destinations dispersed throughout all areas of the city. This network reflects the Plan's "vibrancy" (or demand) goal by ensuring that pedestrian improvements are directed to locations to which people most need to walk across the city.

Schools and transit stops are arguably the most important pedestrian destinations in the city. Public feedback confirms that residents want to prioritize improvements on streets connecting people to transit stops and on streets connecting families and children to schools. As such, the foremost priority of the PMP is ensuring that streets connecting people to these key destinations provide a safe and comfortable pedestrian environment. These same streets also often provide key connections to and within urban centers and urban villages.

Connecting families and children to public schools and people to frequent transit stops has multiple positive outcomes, as it:

- Focuses on some of our most vulnerable residents and improves the health of our children by providing safe options to walk to school
- Creates transportation options by providing safe and comfortable connections to transit, providing pedestrians access to destinations across the city
- Distributes investment priorities across the city, as schools and transit stops are important destinations in all neighborhoods

The PIN's foundation is "walksheds" – streets that serve as important walking routes to each school and frequent transit stop in the city. We established walksheds within a prescribed distance of each of these destinations, and then overlaid these routes to create a clearly identified, interconnected Priority Investment Network. Table 4.1 shows the walkshed distances we used for public schools and frequent transit stops. Every city street located within a walkshed to a school or frequent transit stop is included as part of the PIN.

TABLE 4-1: WALKSHED DISTANCES

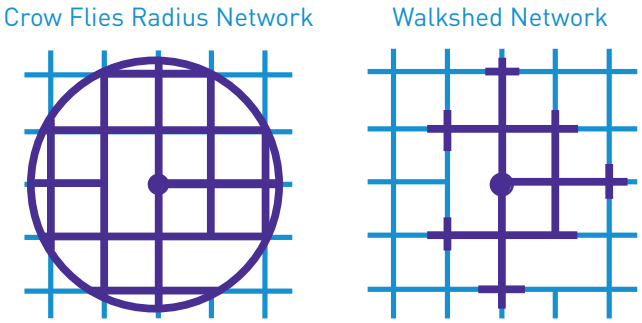
Pedestrian generator	Distance (miles)
K-12 Public Schools	1/4
Frequent Transit Network Stops	
Existing or planned transit hubs*	1/2
Link Light Rail (LRT)	1/2
RapidRide, future Bus Rapid Transit (BRT) and Streetcar	1/4
Frequent/priority bus	1/8

*Transit hubs are where an existing or planned LRT, RapidRide, BRT, or streetcar route, as identified in the Transit Master Plan, intersects with at least one other of these routes.

The frequent transit stop locations we used to develop the PIN were derived from the City's Transit Master Plan (TMP). The TMP provides detailed information on both routes and stops for existing and future Link Light Rail, Seattle Streetcar, and RapidRide / Bus Rapid Transit (BRT) service. The TMP also identifies "priority bus corridors" where existing transit ridership is high and planned growth will continue to drive transit ridership demand. The TMP calls for transit speed and reliability improvements along these priority bus routes in order to upgrade these high ridership routes to frequent service levels. The PMP Priority Investment Network assumes that as these existing bus routes are upgraded, existing bus stops will be consolidated to approximately 1/4 mile spacing.

WHAT IS A WALKSHED?

A "walkshed" is the network of streets within a defined walking distance of a specified location, such as a transit stop. They are a more accurate way to identify actual walking routes and distances to destinations. Unlike approaches that measure straight-line distance to a destination "as the crow flies," walksheds attempt to consider gaps in the network where streets don't connect and physical barriers like water bodies. Mapping walksheds on the street network helps identify individual street segments that pedestrians are likely to take to a specified destination within a given walking time or distance.



This stop spacing assumption is consistent with the planning assumptions underlying Metro's long range transit plan. While it is not entirely possible to know which existing stops will be consolidated in the future and which will remain, the PIN assumes that high ridership stops located at arterial intersections would likely remain. As priority bus routes are upgraded to frequent service in the future, updated stop locations will be integrated into future updates of the PMP, along with any other changes to frequent transit stop locations.

WHAT IS THE FREQUENT TRANSIT NETWORK?

While quality pedestrian connections to all transit stops within the city are important, the PMP prioritizes connections to stops on the Frequent Transit Network (FTN), as identified in the City's Transit Master Plan (TMP). This approach aligns investments between the PMP and the TMP, maximizing impacts to both modes.

The TMP defines the FTN as "a network of top-quality services provided by bus and rail modes, connecting residents and workers to the regional transit system via transportation centers that are well integrated with urban village life."

Frequent Transit is service occurring every 15 minutes or less at least 18 hours a day, 7 days a week. It includes light rail, streetcar, RapidRide and bus rapid transit, and frequent bus service.

Because the PMP seeks to direct pedestrian improvements to streets connecting people to both existing and future frequent transit stops, the PIN also includes streets within walksheds to all sited Link Light Rail stations (both existing and planned). As new light rail stations are sited, we will identify streets to be added to the pedestrian Priority Investment Network, consistent with the methodology outlined in this Plan. Sound Transit will be responsible for assessing and providing pedestrian improvements within that walkshed consistent with the Sound Transit Board Station Access Policy.

In addition to walksheds to schools and frequent transit stops, the PIN also includes all frequent transit corridors themselves. This helps to ensure that there are good pedestrian conditions both along and across all frequent transit routes, including between transit stops. Because frequent transit corridors traverse some of the city's key arterial corridors, focusing resources to improve conditions both along and across these corridors also reflects the public's desire to prioritize sidewalk and crossing conditions along busy arterial streets.

The PIN includes both arterial and non-arterial streets. Arterial streets tend to be roadways with more cars and higher speeds, while non-arterial streets are neighborhood roadways with lower speeds and volumes.

Together, these streets create a clearly identified, interconnected pedestrian network that connects people to important destinations. Funding to improve conditions both along-the-roadway and crossing-the-roadway will be directed to the streets within this network.

The PIN is shown by city sector in Figures 4-2 through 4-7.

FIGURE 4-2: PRIORITY INVESTMENT NETWORK, NORTHWEST SECTOR

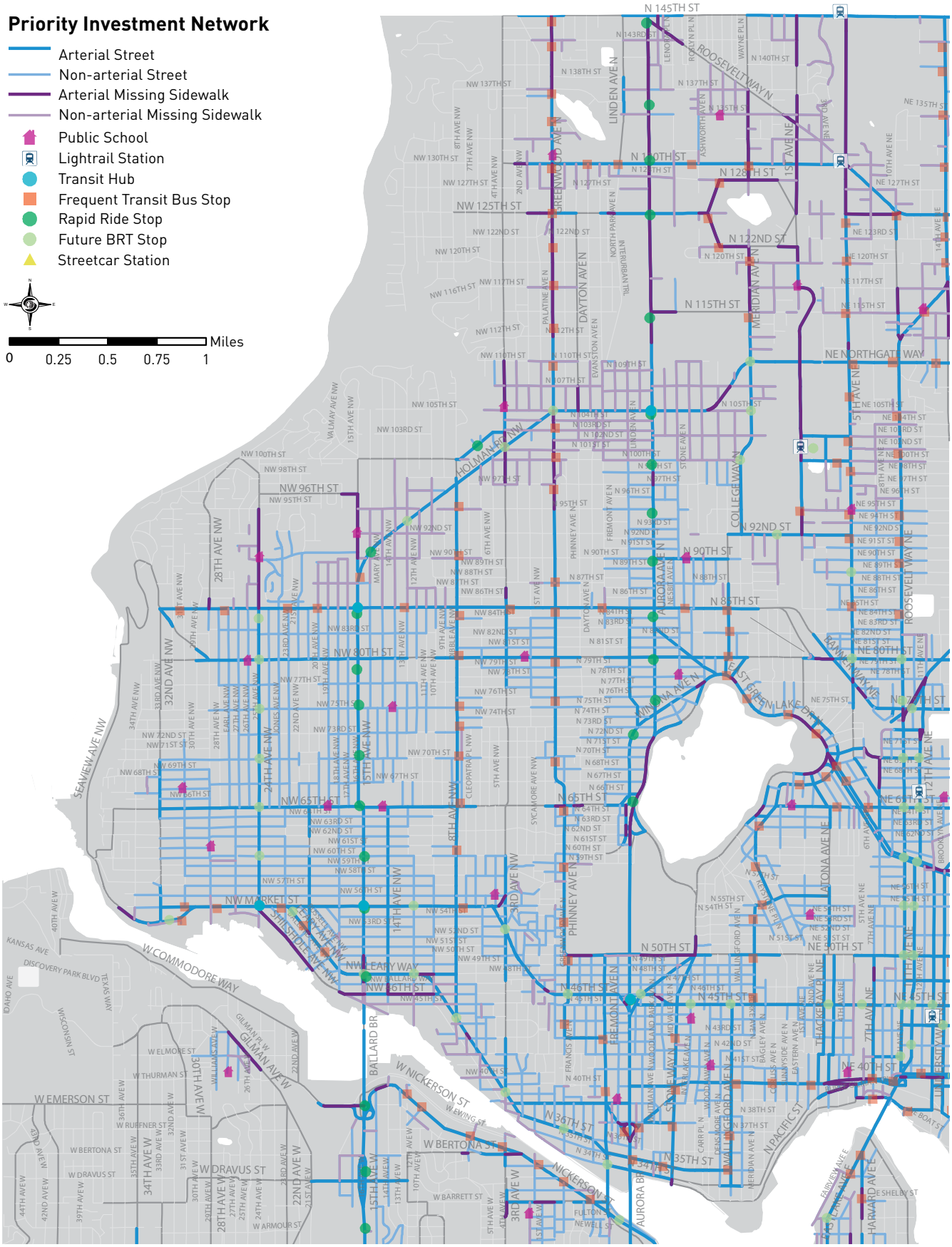


FIGURE 4-3: PRIORITY INVESTMENT NETWORK, NORTHEAST SECTOR

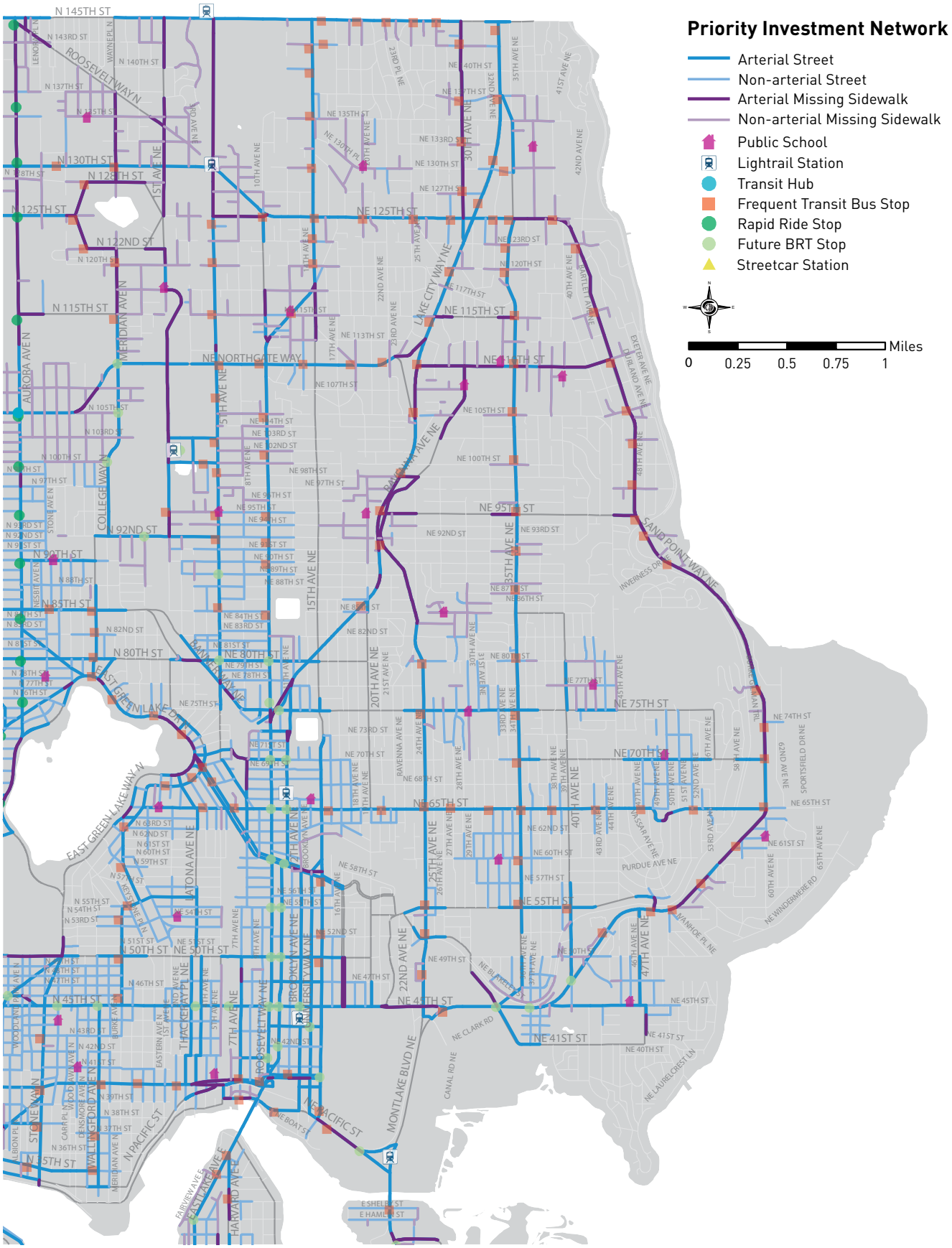


FIGURE 4-4: PRIORITY INVESTMENT NETWORK, WEST SECTOR

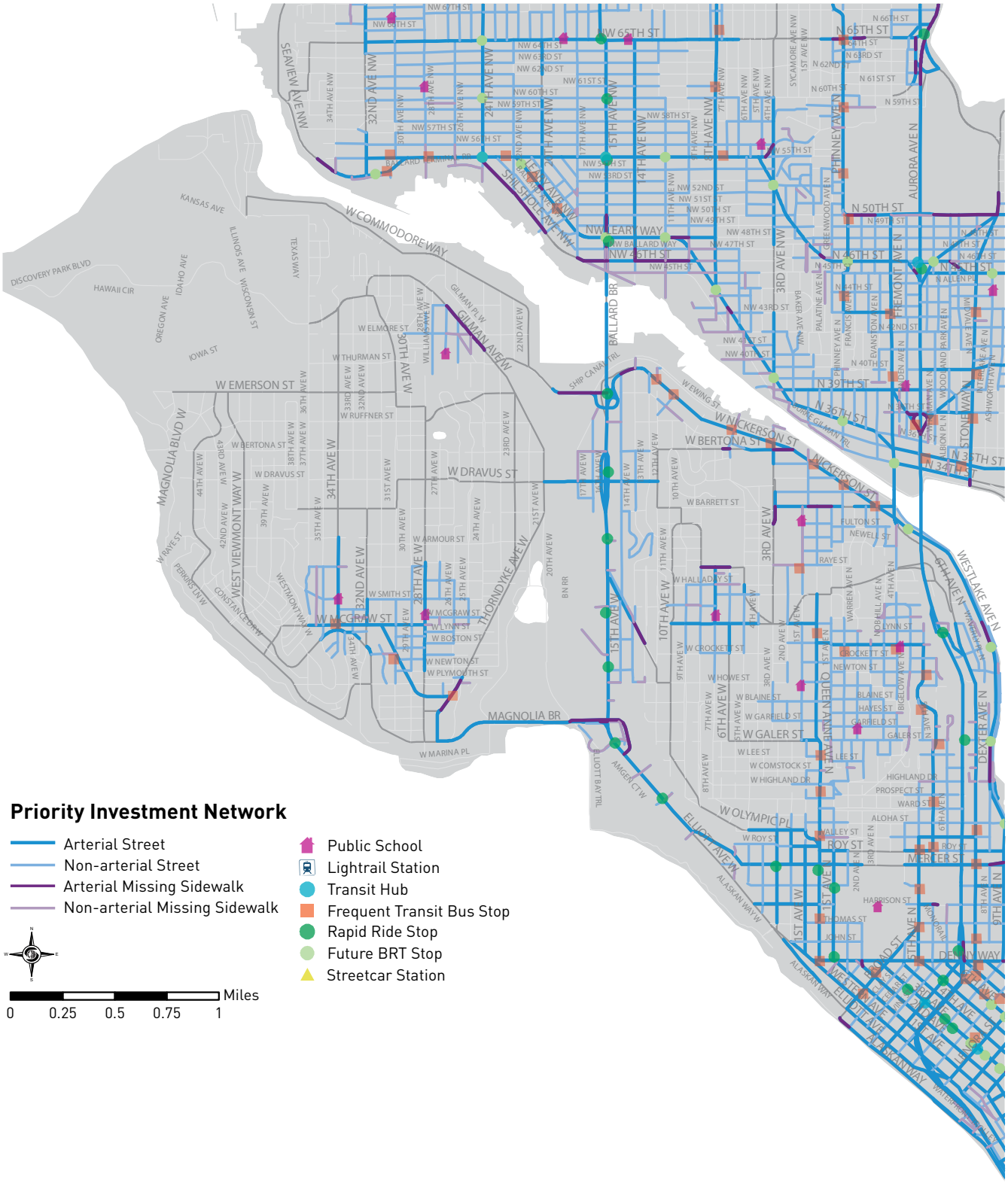


FIGURE 4-5: PRIORITY INVESTMENT NETWORK, EAST SECTOR

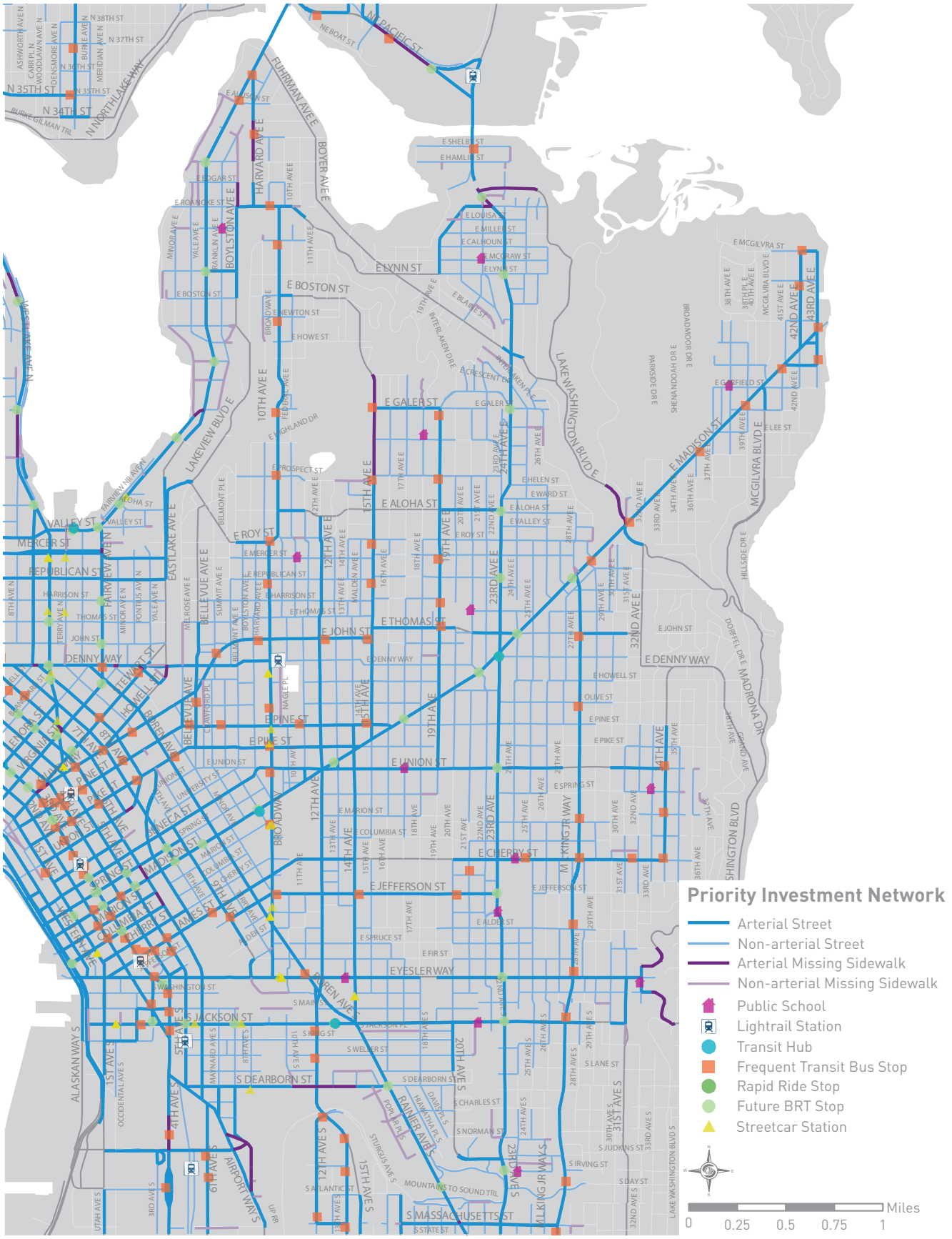


FIGURE 4-6: PRIORITY INVESTMENT NETWORK, SOUTHWEST SECTOR

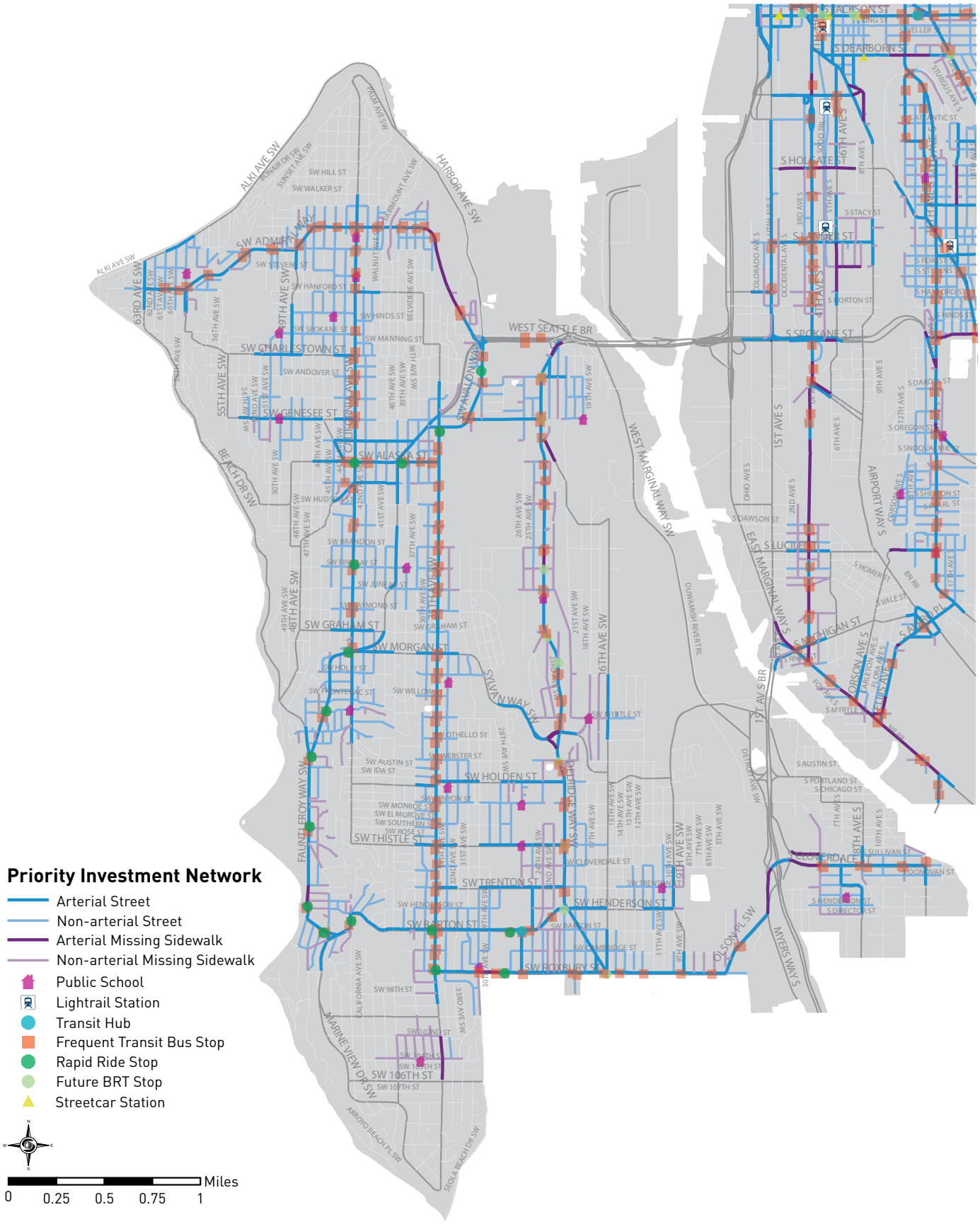
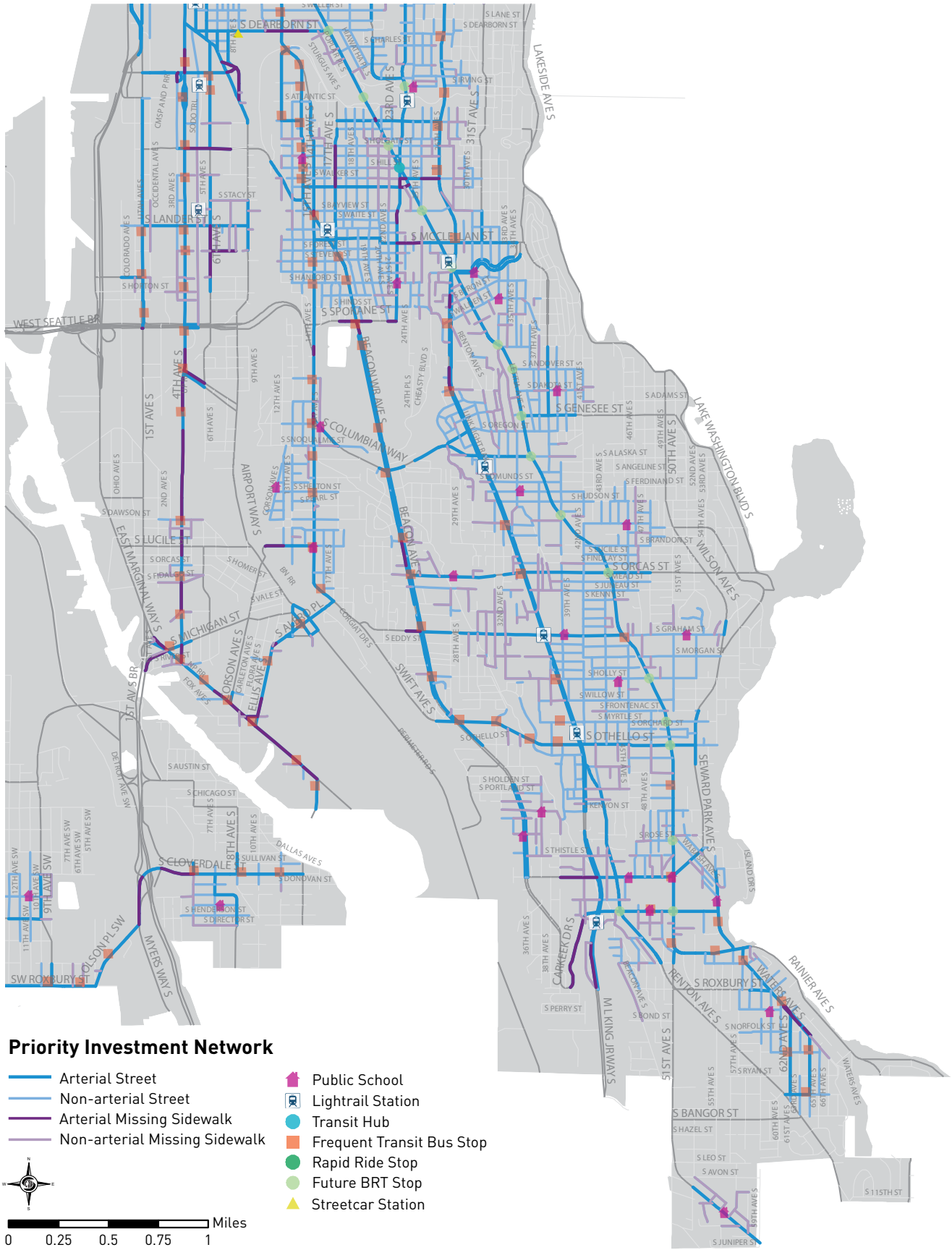


FIGURE 4-7: PRIORITY INVESTMENT NETWORK, SOUTHEAST SECTOR



OPPORTUNITIES FOR PEDESTRIAN IMPROVEMENTS

With a Priority Investment Network (PIN) defined in Step 1, our next step was to evaluate the needs and opportunities to improve conditions both along- and crossing-the-roadway within that network. Such improvements may take the form of providing new sidewalks or paths where they are missing and improving existing or providing new infrastructure at crossings to make it make it safer and more comfortable to cross busy arterials.

The opportunity analysis helps identify the infrastructure needs within the PIN that the PMP will address over the next 20 years.

Along-the-roadway opportunities

This evaluation identifies locations within the PIN where there may be opportunities to improve conditions for pedestrians moving along the roadway. Specifically, it identifies locations where pedestrian walkways are missing along arterial and non-arterial streets. Opportunities to improve conditions for people moving along-the-roadway include constructing sidewalks on arterial streets and pedestrian walkways on non-arterial streets where they are missing. The sector maps in Figures 4-2 – 4-7 identify streets within the PIN where sidewalks or walkways are missing.

It is important to note that not all locations where our data indicates a sidewalk is missing are necessarily feasible or desirable locations for new sidewalks. For example, data may show a sidewalk is missing in a location that closely parallels an off-street path or trail, or on a block located along a steep embankment. As we implement the PMP, we will evaluate the along-the-roadway opportunity locations to determine if new sidewalks are technically and financially feasible.

Table 4-2 lists the number of blockfaces of missing sidewalks both citywide and within the PIN. We use the term "blockface" as the measurement for missing sidewalks or walkways. This is the average length of one side of a city block. In Seattle, that typically measures 300 feet, or the length of a football field without end zones.

As shown in Table 4-2, there are more than 45,000 blockfaces in the city, and nearly 24,000 are part of the Priority Investment Network. More than 70% of all arterial blockfaces and 45% of all non-arterial blockfaces citywide are designated as part of the PIN.

Along all arterial blockfaces within the PIN, 6% (570 blockfaces) are estimated to be missing sidewalks, and almost 21% (3,109 blockfaces) of the non-arterial blockfaces lack a sidewalk or pedestrian walkway.

TABLE 4-2: BLOCKFACES WITH MISSING SIDEWALKS [1]

	Arterials		Non-arterials [2]	
	Citywide	Priority Investment Network	Citywide	Priority Investment Network
Total blockfaces	12,835	9,220	32,609	14,884
Blockfaces missing sidewalks [3]	1,804	570	9,990	3,109
Percent missing sidewalks	14.1%	6.2%	30.6%	20.9%

[1] Based on SDOT Asset Management database. Not all locations may be feasible or desirable locations for new sidewalks.
[2] The total number of missing non-arterial sidewalks includes all blockfaces, and therefore may include both sides of a single street segment. As we develop the PMP Implementation Plan, it may be determined that the most feasible approach to improving conditions along a non-arterial street is to provide a walking path on one side of the street only.
[3] Full or partial blockfaces

Because the prioritization criteria, funding sources, and design solutions for arterial and non-arterial streets differ, the sidewalk opportunities for each are outlined separately. Arterial streets tend to have higher traffic volumes and speeds, so most new sidewalks provided along arterials will be traditional, curb-separated concrete sidewalks. The along-the-roadway assessment for arterial streets identifies all blockfaces or partial blockfaces where there is not a curb-separated sidewalk.

Non-arterial streets tend to have lower speeds and volumes. Therefore, low-cost improvements, like an asphalt path, may be an appropriate type of facility for many of these streets. Low-cost improvements can be as little as one-half the cost of traditional concrete sidewalks, and providing them on non-arterial streets will allow us to provide more pedestrian improvements to more neighborhoods at a faster rate.

Examples of low-cost improvements are shown and described in more detail in Chapter 5. Chapter 6 provides more detail on funding available to address these along-the-roadway needs.

Crossing-the-roadway opportunities

We conducted an evaluation to identify intersections within the PIN where there may be opportunities to provide improvements to make crossing the roadway safer and more comfortable for pedestrians. The analysis evaluates crossing conditions at arterial intersections, including locations where arterial streets intersect with other arterial streets and locations where non-arterial streets intersect with arterial streets. This is because arterial streets tend to be higher-volume, higher-speed streets with wider crossing distances, making them a higher priority than low-speed, low-volume residential streets where there are typically fewer pedestrians crossing. This focus on providing safe crossings across busy arterials echoes the feedback received in the PMP Public Survey.

Crossing-the-roadway improvements can take the form of enhancements to existing infrastructure or the provision of missing infrastructure. We looked at the following arterial intersection issues:

- **Crossing distance:** Locations where crossing distances at intersections are wide, and where pedestrians may experience a longer time exposed within the roadway when crossing.
- **Controlled-crossing spacing:** Locations where traffic control devices that stop vehicular traffic to allow pedestrians to cross may be too widely spaced for comfortable pedestrian access.
- **Curb ramp status:** Locations where there are opportunities to provide curb ramps where they are missing.

While the PMP focuses on infrastructure conditions, there are other types of pedestrian safety improvements that can be provided at crossings, including modifications to signal phasing and improving lighting conditions. While these types of improvements are outside of the PMP crossing-the-roadway analysis, other SDOT programs (including the Vision Zero program) will continue to evaluate opportunities to provide these types of safety improvements.

The maps in Figures 4-8 and 4-9 identify opportunity areas within the PIN where pedestrian improvements should be further evaluated. As with the along-the-roadway evaluation, these locations may not necessarily be feasible locations for new curb bulbs, traffic signals, or other improvements, but will be evaluated as the Plan is implemented.

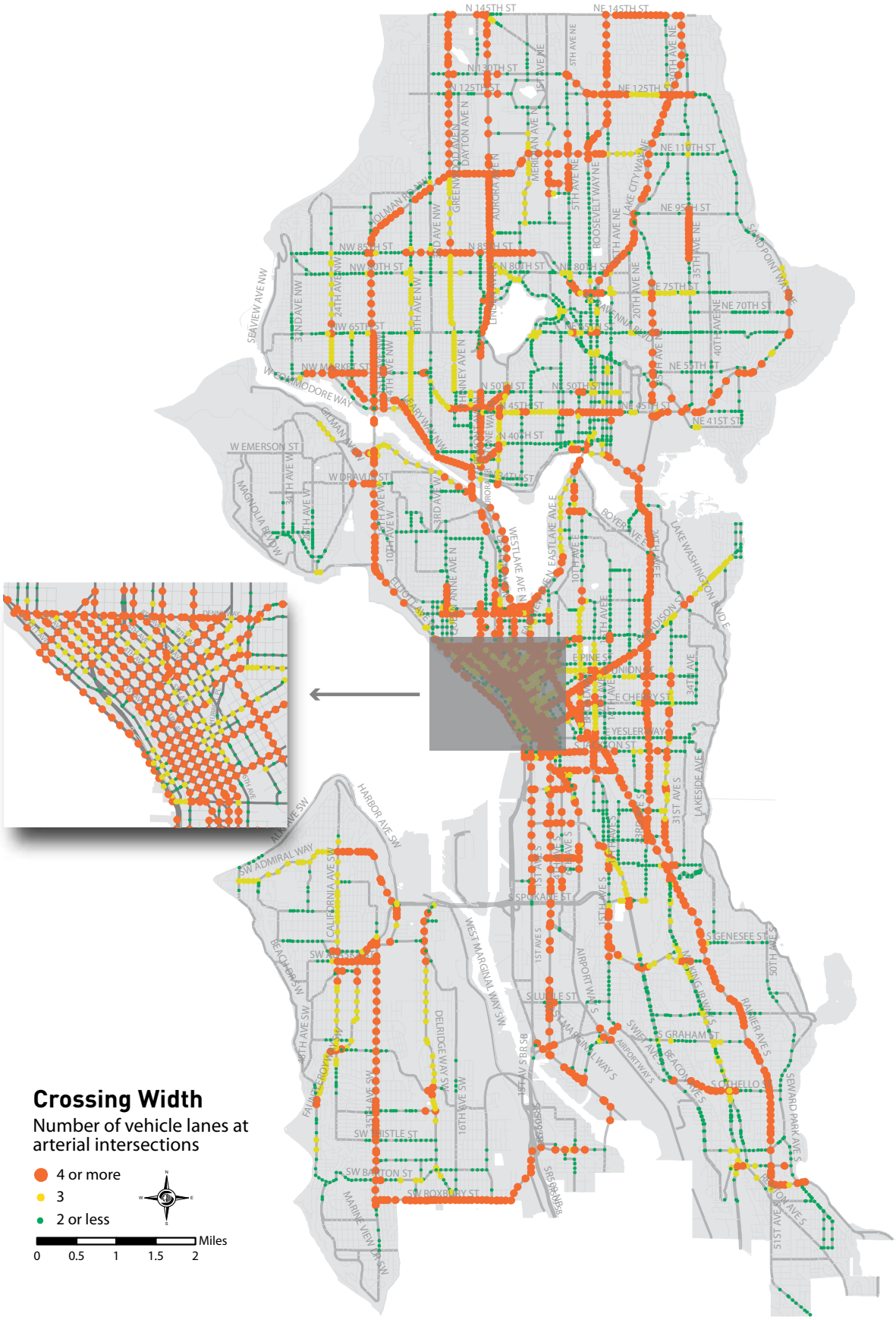
Chapter 5 discusses the types of crossing-the-roadway improvements that may be provided at prioritized intersections within the PIN in greater detail.

Crossing Distance

Crossing distance refers to how long a pedestrian must be in the roadway in order to cross; the longer the crossing, the more the pedestrian is exposed to vehicles in the roadway. Shorter crossing distances increase pedestrian safety by minimizing exposure.

Figure 4-8 shows arterial intersections within the PIN where pedestrians must cross a number of vehicle travel lanes to reach the other side of the street. A variety of treatments can be provided to minimize crossing distances and the amount of time a pedestrian is exposed to vehicles in the roadway, including medians, pedestrian refuge islands, curb bulbs, and roadway lane reductions. As we implement the PMP, we will prioritize arterial crossings within the PIN where pedestrians must cross four or more vehicle lanes for potential improvements to narrow crossing distances.

FIGURE 4-8: NUMBER OF VEHICLE LANES AT PIN ARTERIAL INTERSECTIONS



Controlled Crossing Spacing

Traffic control devices stop vehicles to provide an opportunity for pedestrians to cross the roadway. Widely spaced distances between controlled crossings can force pedestrians to go out of their way to safety cross a street, and can result in non-compliant behavior such as people crossing busy arterial streets at unpredictable locations.

Appropriate traffic control devices can include traditional traffic signals, pedestrian-actuated "half signals," crossing beacons, and stop signs. Half signals are activated by a pedestrian waiting to cross the street and are used to stop traffic in only two directions at an intersection. Crossing beacons are devices placed on both sides of a crosswalk with pedestrian-actuated flashing LED lights that alert drivers to the presence of someone crossing the street.

Figure 4-9 shows locations where controlled arterial crossings are widely spaced within the PIN and identifies opportunities to evaluate intersections for new traffic control devices. Locations where controlled crossing opportunities are 1/4 mile or more apart will be prioritized for further study as the Plan is implemented.

Curb Ramp Status

Curb ramps make it easier to access the street from the sidewalk for all people, particularly for wheelchair and stroller users, seniors, and people with visual impairments. SDOT is proactively transitioning intersections to provide curb ramps that are compliant with the Americans with Disabilities Act (ADA).

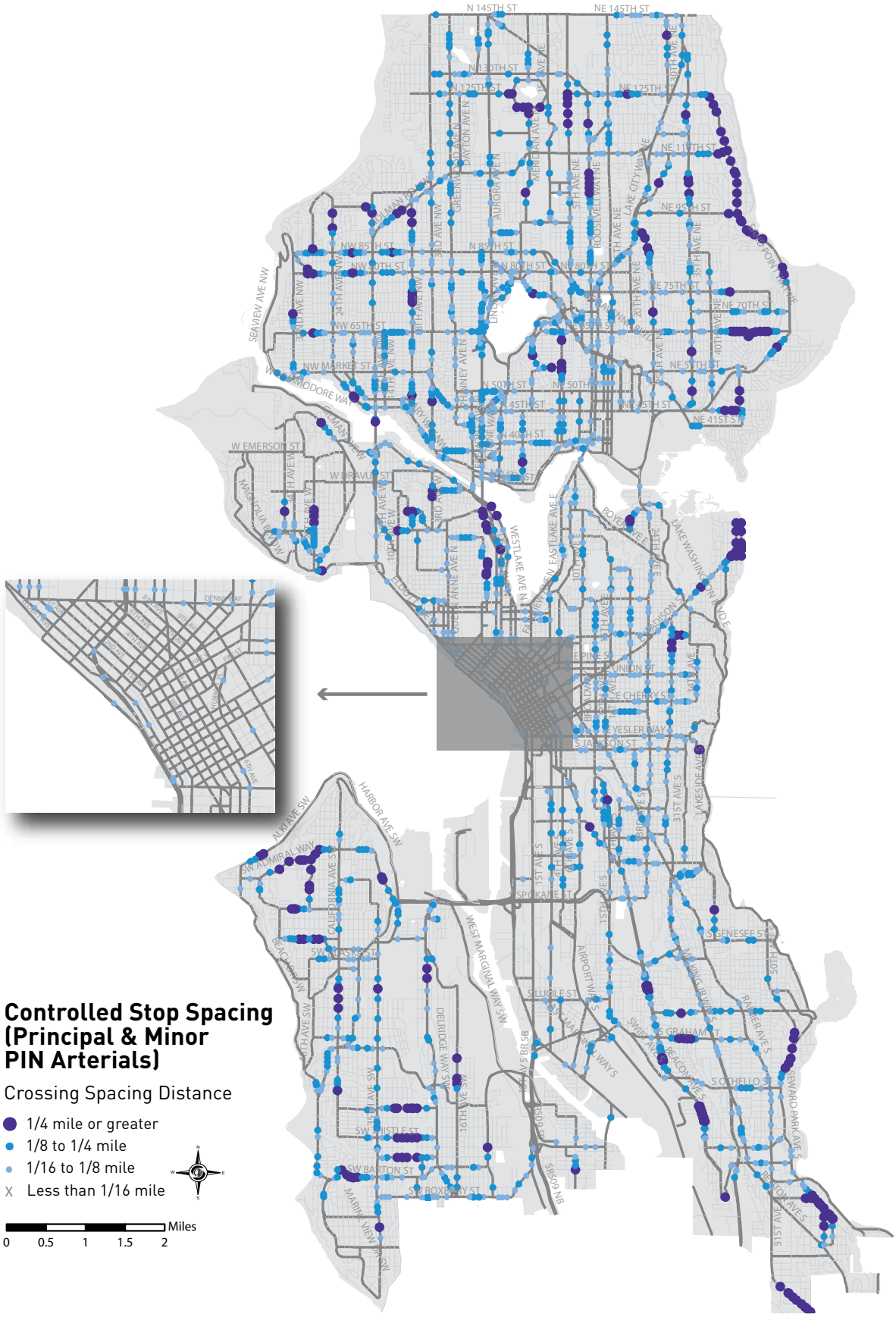
We are currently conducting a citywide curb ramp audit and conditions assessment. Upon completion, this up-to-date data will be incorporated into the crossing-the-roadway analysis to identify locations where there are opportunities to provide or upgrade curb ramps at arterial intersections within the PIN.

An updated ADA transition plan will identify locations where curb ramp and other accessibility improvements will be provided throughout the city. While the PMP prioritization seeks to improve access to schools and transit, an ADA transition plan considers a broader array of destinations and access needs when prioritizing accessibility improvements. The PMP Priority Investment Network and curb ramp opportunity analysis will be used as an input in developing an updated ADA transition plan.

WHEN IS A NEW TRAFFIC SIGNAL APPROPRIATE?

For an intersection to be eligible for a new traffic signal, it must meet minimum thresholds, or "warrants," based on pedestrian demand and traffic volumes, as set forth in the Manual on Uniform Traffic Control Devices (MUTCD). In lieu of traffic signals, high-visibility crossing beacons can be an effective tool at intersections that do not meet signal warrants, though, to be eligible, intersections must meet thresholds based on the number and speed of people driving on the street, and the number of traffic lanes a person has to cross. Chapter 5 discusses these types of improvements in greater detail.

FIGURE 4-9: DISTANCE TO NEAREST CONTROLLED CROSSING OPPORTUNITY ON PIN ARTERIAL STREETS



FURTHER PRIORITIZING PEDESTRIAN OPPORTUNITIES

The PMP prioritization framework identifies the Priority Investment Network (Step 1) and the locations within that network where opportunities exist to improve conditions along- and crossing-the-roadway (Step 2). The final step is to further prioritize these opportunities to identify locations where we will develop improvement projects first (Step 3).

To further prioritize where we should focus our efforts to provide sidewalk and crossing improvements within the PIN, we will use factors based on the PMP's safety, equity, and health goals. This ensures that new pedestrian improvements help to mitigate potential safety concerns and health and equity disparities in the city, reflecting the Plan's goals as well as public input.

To meet this need, we will develop a PMP Implementation Plan to accompany the 20-year needs identified in this Plan. The implementation plan will consider how to prioritize improvements within the PIN based on:

- **Safety** factors, to ensure pedestrian improvements are prioritized in locations where the most pedestrians are injured and in locations where roadway design characteristics appear correlated with pedestrian crashes
- **Equity and Health** factors that look at underlying socioeconomic conditions, including self-reported health outcomes, race, and income, so we can provide pedestrian improvements in areas with the greatest need

Because most of our safety data is limited to arterial streets, and because most fatal and serious-injury collisions occur on arterials, the PMP safety analysis will be used to prioritize improvements on arterials within the PIN in conjunction with the Equity and Health analysis. Improvements on non-arterial streets within the PIN will be prioritized using the Equity and Health analysis.

The sections below describe the safety and equity/health analyses that will be used to prioritize improvements within the implementation plan and how they will be applied to the along-the-roadway and crossing-the-roadway opportunities identified within the PIN.

PMP IMPLEMENTATION PLAN

The implementation plan will be developed after PMP adoption and will be similar to those developed for our other modal master plans. Implementation plans typically identify near-term improvements (3 to 5 years) and are regularly updated to ensure we can best:

- Match projects with annual funding availability
- Leverage opportunities with other projects and programs to strategically stretch our resources
- Secure and meet delivery commitments for grants and funding partnerships
- Package projects for efficient delivery
- Make implementation plan adjustments based on performance measurement and evaluation

The implementation plan will identify particular locations within the Priority Investment Network for near-term improvements. Because it will be updated regularly, the safety and equity/health inputs we use to prioritize improvements within the PIN can also be updated as new data is available.

Projected funding for PMP implementation and potential program leveraging opportunities that the implementation plan will consider are discussed in greater detail in Chapter 6.

Safety analysis

The PMP prioritizes improvements on arterial street segments where infrastructure modifications appear likely to make streets even safer for pedestrians. To help identify these opportunities, the PMP safety analysis evaluates pedestrian crash locations over the last five years as well as roadway design characteristics that may be related to pedestrian crashes.

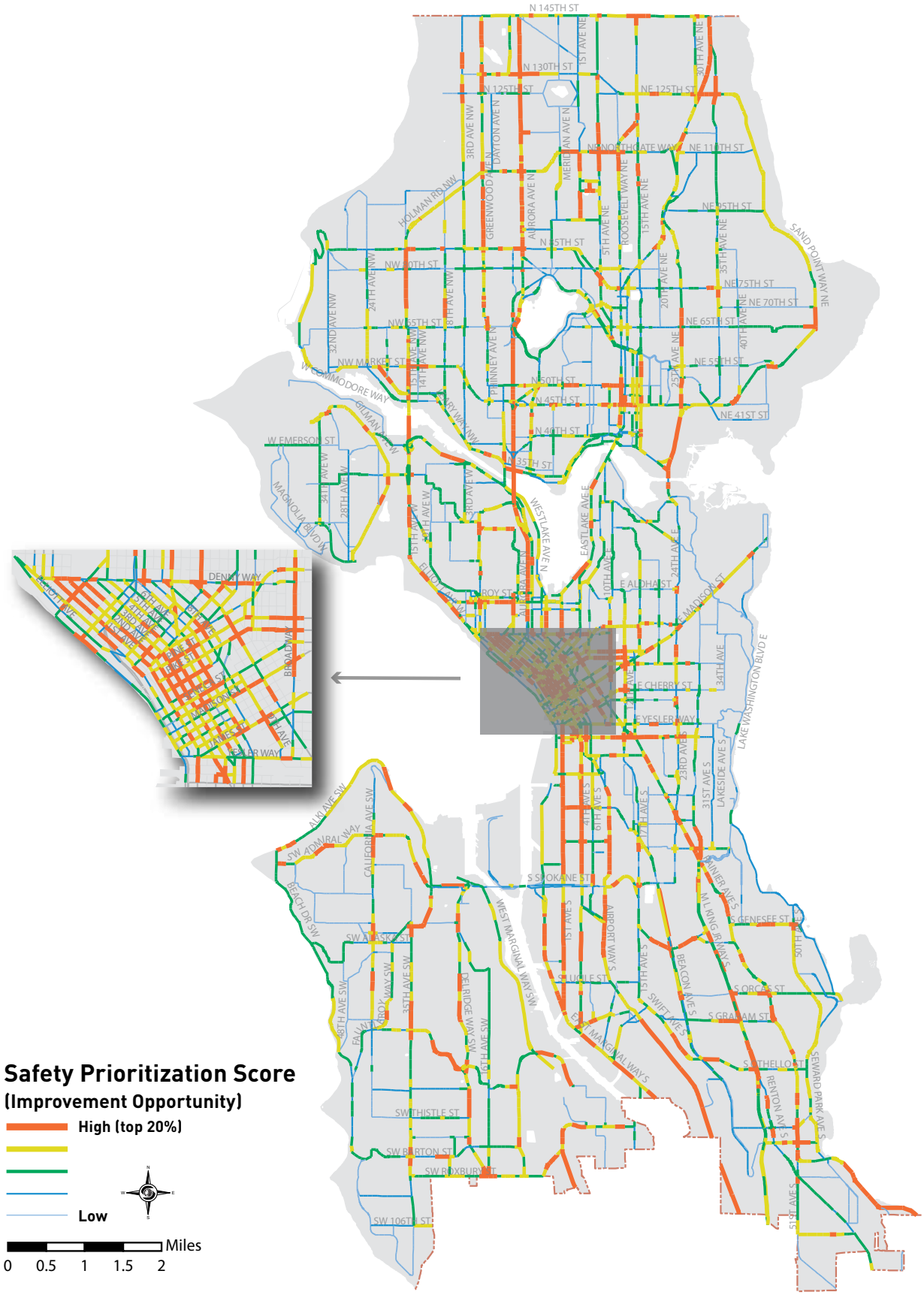
The analysis data is derived from a model that identifies design and behavioral factors that may be correlated with pedestrian crashes. These factors include arterial classification, roadway width, vehicle speeds, and controlled crossing spacing. This effort helps us spend City money where it will have the most impact, and furthers the Vision Zero goal of eliminating fatal and serious injuries on Seattle Streets by 2030.

Figure 4-10 shows the results of this arterial safety prioritization analysis. The street segments with the greatest opportunities to provide pedestrian safety improvements based on the factors above are shown in orange. This subset of streets represent the top 20% of PIN arterials where infrastructure spending is most likely to have a significant impact. Along- and crossing-the-roadway opportunities within the PIN will be prioritized in these locations.

SDOT BICYCLE AND PEDESTRIAN SAFETY ANALYSIS (BPSA)

Since the Plan's adoption in 2009, we have collected a wealth of new data on where and how pedestrians are injured on Seattle streets each year. In order to proactively improve locations where we can make Seattle's streets even safer, SDOT's Bicycle and Pedestrian Safety Analysis (BPSA) is developing a safety prioritization model to identify opportunities for spot and corridor improvement projects. The BPSA is studying all bicycle and pedestrian crashes in the city over the last eight years to identify the roadway design and behavioral characteristics most highly correlated with non-motorized crashes in Seattle. Understanding potential causes of bicycle and pedestrian crashes will better allow us to work towards the goals of Vision Zero. The report will be released in late 2016.

FIGURE 4-10: ARTERIAL SAFETY ANALYSIS



Equity and Health analysis

Consistent with the PMP goals related to equity and health, we will prioritize pedestrian improvements where people rely on our sidewalks and crossings the most. This includes people who are more dependent upon pedestrian and transit networks to get around, and people in need of quality pedestrian infrastructure to help improve health outcomes.

The PMP Equity and Health analysis assesses socio-economic data to identify populations most reliant on the pedestrian network, including income, race, and disabled communities. To ensure that improvements are prioritized to facilitate better health outcomes across the city, the analysis also includes self-reported health data provided by King County Health, including self-reported physical activity rates and rates of obesity and diabetes.

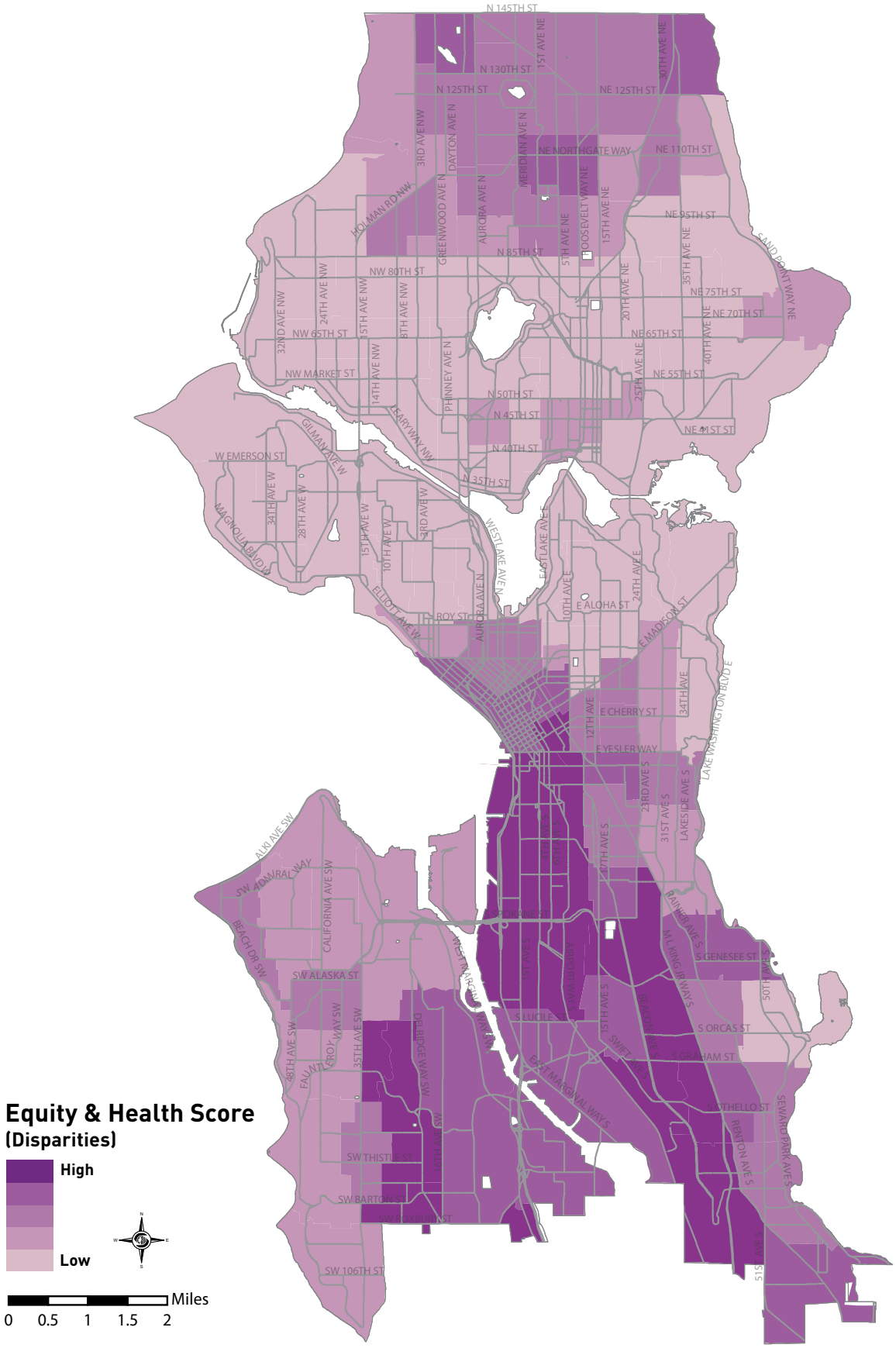
The equity and health analysis assesses the following socio-economic data (from the 2010-2014 American Community Survey) and health data (from Public Health - Seattle & King County) to identify populations most reliant on the pedestrian network. Factors evaluated include:

- Income level
- Disability
- Race
- Physical activity rates (self reported)
- Obesity rates
- Diabetes rates

Figure 4-11 depicts the results of this equity and health analysis. The areas of the city that would benefit the most from pedestrian infrastructure to improve equity and health disparities are shown in dark purple. Along- and crossing-the-roadway opportunities within the PIN will be prioritized in these locations.

Photo credit: Rainier Valley Greenways

FIGURE 4-11: EQUITY AND HEALTH ANALYSIS



GAP

CHAPTER 5: IMPLEMENTING STRATEGIES AND ACTIONS

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Education, Encouragement, and Enforcement Strategies and Actions 94

Pedestrian Quality and Comfort Strategies and Actions 97

This chapter outlines the strategies and actions that we will use to improve pedestrian conditions within the Priority Investment Network. Each strategy is intended to help achieve one or more of the Pedestrian Master Plan's 6 objectives described in Chapter 2.

These strategies and actions are based, in part, on a review of current national and international best practices in the areas of design and engineering, education, enforcement, evaluation, and encouragement. The strategies are organized into five groups:

1. **Along-the-Roadway** strategies address how we will improve pedestrian conditions and maintain a high-quality pedestrian realm for people traveling along the roadway.
2. **Crossing-the-Roadway** strategies outline measures we will take to create more comfortable conditions for people crossing the roadway.
3. **Network-wide** strategies are measures we will take to reduce the quantity and severity of pedestrian collisions across the city, and to increase safety for all people. These strategies and actions will be implemented in association with Seattle's Vision Zero program.
4. **Education, Encouragement and Enforcement** strategies focus on how we will promote more pedestrian movement in Seattle and enforce safe roadway practices by all users to help improve pedestrian safety.
5. **Pedestrian Realm Quality and Comfort** strategies outline how we will create, enhance and maintain a vibrant, comfortable pedestrian realm.

Table 5-1 outlines the full set of implementing strategies and actions associated with each of these five elements.

TABLE 5-1: IMPLEMENTING STRATEGIES AND ACTIONS

1. ALONG-THE-ROADWAY STRATEGIES AND ACTIONS
Strategy 1.1: Build out the PMP Priority Investment Network (PIN)
Action 1.1.1: Provide sidewalks along arterials
Action 1.1.2: Prioritize new sidewalks on the Frequent Transit Network
Action 1.1.3: Implement Neighborhood Greenways as part of the PMP Priority Investment Network
Action 1.1.4: Provide low-cost improvements on non-arterial streets, including Neighborhood Greenways
Action 1.1.5: Explore options to establish a fund to build and maintain stairways
Strategy 1.2: Facilitate the provision of new sidewalks by the private sector
Action 1.2.1: Evaluate more stringent land use code standards for new sidewalks
Action 1.2.2: Explore opportunities to incentivize pedestrian realm improvements above and beyond existing land use code requirements
Action 1.2.3: Increase the number of street concept plans to make it easier for developers to go above and beyond code requirements to enhance the pedestrian realm
Action 1.2.4: Explore options for developers to provide alternative mitigation, in lieu of requiring sidewalk construction
Action 1.2.5: Explore mechanisms to accept voluntary contributions for both new sidewalk projects and enhancements to existing projects
Action 1.2.6: Consider working with large sponsors to develop a private partnership program and leverage public dollars
Strategy 1.3: Consolidate driveways and curb cuts
Action 1.3.1: Work with the Seattle Department of Construction and Inspection to create stronger code requirements and/or incentives to minimize curb cuts and driveway widths on all street types (and particularly along the PMP Priority Investment Network)
Action 1.3.2: Utilize the development review process to review access strategies for new developments early in the design process to minimize access impacts
Strategy 1.4: Repair sidewalks
Action 1.4.1: Explore options to establish a proactive sidewalk inspection program to inventory sidewalk deficiencies that pose potential risks to pedestrians
Action 1.4.2: Make it easier for residents to report sidewalk repair needs, including evaluating the feasibility of updating the City's "Find it, Fix it" service request mobile app to include a service request category for sidewalk repair needs
Action 1.4.3: Educate residents about and increase enforcement of private sidewalk repair obligations
Action 1.4.4: Make it easier and more predictable for private property owners to complete required sidewalk repairs
Strategy 1.5: Create and maintain a walkable zone on all sidewalks
Action 1.5.1: Update the Right-of-Way Improvements Manual (ROWIM) to specify and enforce minimum pedestrian clear zone widths for all street types
Action 1.5.2: Create a program directed at neighborhood business districts to communicate the importance of keeping the walkable zone clear of objects/impediments, including propped doors, A-frame signs, outdoor seating and displays, etc.
Action 1.5.3: Consider locations for bike share stations; prioritize non-sidewalk locations when possible

TABLE 5-1: IMPLEMENTING STRATEGIES AND ACTIONS (CONTINUED)

Strategy 1.6: Improve accessibility in Seattle
Action 1.6.1: Implement short-term improvements to ensure that critical routes are clear of vegetation
Action 1.6.2: Identify opportunities to restripe painted crosswalks to better align with curb ramps
Action 1.6.3: Develop an updated ADA transition plan
2. CROSSING-THE-ROADWAY STRATEGIES AND ACTIONS
Strategy 2.1: Improve pedestrian visibility at crossings
Action 2.1.1: Provide curb bulbs (including low-cost installations) in the PMP Priority Investment Network
Action 2.1.2: Provide high-visibility treatments at crossings in the PMP Priority Investment Network including flashing crossing beacons, signage, etc.
Action 2.1.3: Use high-reflectivity crosswalk markings on all projects
Action 2.1.4: Provide lighting at marked pedestrian crossings
Action 2.1.5: Utilize Complete Streets project reviews to evaluate capital projects for opportunities to maximize pedestrian visibility using the tactics described
Strategy 2.2: Shorten pedestrian crossing distances
Action 2.2.1: Provide curb bulbs, pedestrian crossing islands, and/or pedestrian refuges, when possible
Action 2.2.2: Use lane reductions, as appropriate, as part of the engineering toolkit when making pedestrian or other safety improvements
Strategy 2.3: Optimize crossing times for pedestrians as signals
Action 2.3.1: Review current SDOT pedestrian crossing time standards and update as needed to reflect current best practices, factoring in pedestrian wait times
Action 2.3.2: Provide sufficient countdown time at pedestrian crossing signals
Action 2.3.3: Modify signal timing to favor pedestrians in neighborhood business districts
Strategy 2.4: Reduce turning movement conflicts at intersections
Action 2.4.1: Consider leading pedestrian intervals
Action 2.4.2: Implement pedestrian-only phasing where appropriate, including scramble signals, factoring in pedestrian wait times
Action 2.4.3: Review signal phasing for opportunities to eliminate shared phases that create conflicts between cars and pedestrians
Action 2.4.4: Eliminate permitted "turn on red," where appropriate
Action 2.4.5: Provide diverter islands at unsignalized arterial/non-arterial intersections
Action 2.4.6: Develop internal policies and guidelines for implementing the approaches in 2.4
Strategy 2.5: Increase opportunities for controlled crossings on arterials
Action 2.5.1: Review and establish maximum controlled crossing spacing standards / guidelines for multi-lane arterials
Action 2.5.2: Locate transit stops in proximity to controlled crossings, particularly on multi-lane arterials

TABLE 5-1: IMPLEMENTING STRATEGIES AND ACTIONS (CONTINUED)

3. NETWORK-WIDE STRATEGIES AND ACTIONS
Strategy 3.1: Manage vehicle speeds
Action 3.1.1: Establish 20 mph speed limits on non-arterial streets as part of Vision Zero implementation
Action 3.1.2: Establish default speeds on arterial streets to 25 mph as part of Vision Zero implementation
Action 3.1.3: Consider posted speed reductions on arterial streets, as appropriate
Strategy 3.2: Provide neighborhood and arterial traffic calming measures
Action 3.2.1: Continue to use lane reductions, as appropriate, as part of the engineering toolkit when making pedestrian or other safety improvements
Action 3.2.2: Review capital projects for opportunities to implement lane reductions as part of the Complete Streets review
Action 3.2.3: Increase funding for SDOT's Neighborhood Traffic Calming Program
Action 3.2.4: Streamline the process for installing neighborhood traffic calming improvements
4. EDUCATION, ENCOURAGEMENT, AND ENFORCEMENT STRATEGIES AND ACTIONS
Strategy 4.1: Enforce vehicular speed limits and safe driving behaviors
Action 4.1.1: Continue to work with the City's Office of Intergovernmental Relations (OIR) on outreach to State legislators to expand the City's ability to deploy automated speed enforcement and other photo enforcement technologies
Action 4.1.2: Continue to collaborate with the Seattle Police Department (SPD) on data-driven traffic enforcement
Action 4.1.3: Pair speed limit reductions with communication and public outreach
Action 4.1.4: Utilize the network of dynamic messaging signs to raise awareness of enhanced traffic enforcement
Strategy 4.2: Expand multimodal traveler safety education and encouragement programs
Action 4.2.1: Explore options to expand driver education courses for traffic citations within the City of Seattle
Action 4.2.2: Work with partners to incorporate more active transportation educational content into the *Washington Driver Guide*
Action 4.2.3: Expand safety education programs to educate people about safe pedestrian practices
Action 4.2.4: Leverage the Safe Routes to School program to provide bicycle and pedestrian safety training and encouragement to all public elementary schools
Action 4.2.5: Create public outreach tools to communicate the top contributing factors to collisions in Seattle
Action 4.2.6: Help employers develop walking programs for employees
Action 4.2.7: Expand other programs that encourage and promote the benefits of walking

TABLE 5-1: IMPLEMENTING STRATEGIES AND ACTIONS (CONTINUED)

5. PEDESTRIAN REALM QUALITY AND COMFORT STRATEGIES AND ACTIONS
Strategy 5.1: Provide pedestrian buffers
Action 5.1.1: Update the Right-of-Way Improvements Manual to specify furnishing zone requirements for various street types and associated design requirements
Action 5.1.2: Create a suite of options for buffer treatments that could be used when there is insufficient ROW/ sidewalk width to provide landscape buffers, particularly on streets where transit and/or vehicular uses are accommodated within the curb lane
Strategy 5.2: Develop a coordinated wayfinding system
Action 5.2.1: Collaborate with external partners to develop a coordinated wayfinding plan to facilitate pedestrian travel and modal integration
Strategy 5.3: Create inviting pedestrian spaces
Action 5.3.1: Provide pedestrian amenities, including benches and resting opportunities, in the right-of-way
Action 5.3.2: Consider opportunities to create pedestrian-only streets either temporarily, at key times, or on a permanent basis
Strategy 5.4: Promote and maintain green infrastructure in the right-of-way
Action 5.4.1: Update the Right-of-Way Improvements Manual to update minimum standards for landscape zones within the sidewalk and landscape maintenance requirements
Action 5.4.2: Explore options for establishing a capital budget for SDOT Urban Forestry to provide new street trees and landscaping within the right-of-way
Action 5.4.3: Increase funding for landscape and street tree management and maintenance
Action 5.4.4: Continue to collaborate with Seattle Public Utilities to maximize opportunities to provide green stormwater infrastructure within the right-of-way
Strategy 5.5: Provide pedestrian-scale lighting
Action 5.5.1: Update the Pedestrian Lighting Citywide Plan
Action 5.5.2: Identify funding source(s) to provide pedestrian lighting as part of SDOT capital projects
Action 5.5.3: Update the Right-of-Way Improvements Manual to specify where pedestrian-scale lighting is desired to help ensure that private frontage improvements include pedestrian-scale lighting

1. ALONG-THE-ROADWAY STRATEGIES AND ACTIONS

STRATEGY 1.1 BUILD OUT THE PMP PRIORITY INVESTMENT NETWORK (PIN)

The PIN is a connected network of arterial and non-arterial streets that connect people to key pedestrian destinations (frequent transit stops and schools). Given the role these streets play in linking people to important destinations, we will direct resources for improving pedestrian infrastructure to streets within this PIN.

Chapter 4 provides a preliminary assessment of pedestrian infrastructure conditions within this network. The along-the-roadway analysis assesses whether sidewalks exist within the PIN, while the crossing-the-roadway analysis identifies opportunities to evaluate arterial intersections for crossing improvements.

The key strategies for implementing the PMP will be to provide walking paths along all streets in the PIN and to evaluate identified arterial intersections for potential crossing improvements.

●	**OBJECTIVE 1:** Complete and maintain the pedestrian system identified in the PMP
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Increase pedestrian safety
●	**OBJECTIVE 4:** Plan, design, and build Complete Streets to move people and goods
	OBJECTIVE 5: Create vibrant public spaces that encourage pedestrian use
	OBJECTIVE 6: Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

Considerations

- This strategy is based in part on community feedback. As noted in the PMP Public Survey Report (Appendix 2), residents have asked us to prioritize providing sidewalks and crossing improvements along and across busy streets and providing pedestrian improvements on non-arterial streets connecting people to schools and transit.
- A PMP Implementation Plan will be developed and updated regularly to identify particular street segments within the PIN for near-term improvements. The implementation plan will use the Safety and Equity analyses provided in Chapter 4 to help identify near-term priorities, and it will seek to maximize efficiencies by identifying program and project leveraging opportunities.
- Not all street segments identified as missing sidewalks may be feasible or desirable locations for new sidewalks. Project feasibility will be determined as part of the implementation plan.

Actions associated with this strategy

1.1.1 Provide sidewalks along arterials

1.1.2 Prioritize new sidewalks on the Frequent Transit Network

1.1.3 Implement Neighborhood Greenways as part of the PMP Priority Investment Network

1.1.4 Provide low-cost improvements on non-arterial streets, including Neighborhood Greenways

1.1.5 Explore options to establish a fund to build and maintain stairways

Icon indicates further detail on the action is provided within sidebar.

ACTION 1.1.1
PROVIDE SIDEWALKS ALONG ARTERIALS

Public feedback received via the PMP Public Survey emphasized that busy arterial streets without sidewalks are one of the biggest barriers to pedestrian movement. Based on this feedback, we will prioritize the construction of new sidewalks where they are missing on busy arterial streets. Arterial corridors within the Frequent Transit Network and other arterials that connect pedestrians to schools and transit stops are included within the Priority Investment Network.

Principal and minor arterials in particular tend to have higher speed limits and traffic volumes, making the provision of grade-separated sidewalks along these streets desirable. As such, new sidewalks along arterials will typically be traditional concrete, curb and gutter sidewalks with a landscaped buffer to provide physical separation between pedestrians on the sidewalk and vehicles in the roadway, as called for by the Right-of-Way Improvements Manual.

Providing sidewalks where they are currently missing along arterials streets will be a priority within the PMP Implementation Plan.

ACTION 1.1.3
IMPLEMENT NEIGHBORHOOD GREENWAYS AS PART OF THE PMP PRIORITY INVESTMENT NETWORK

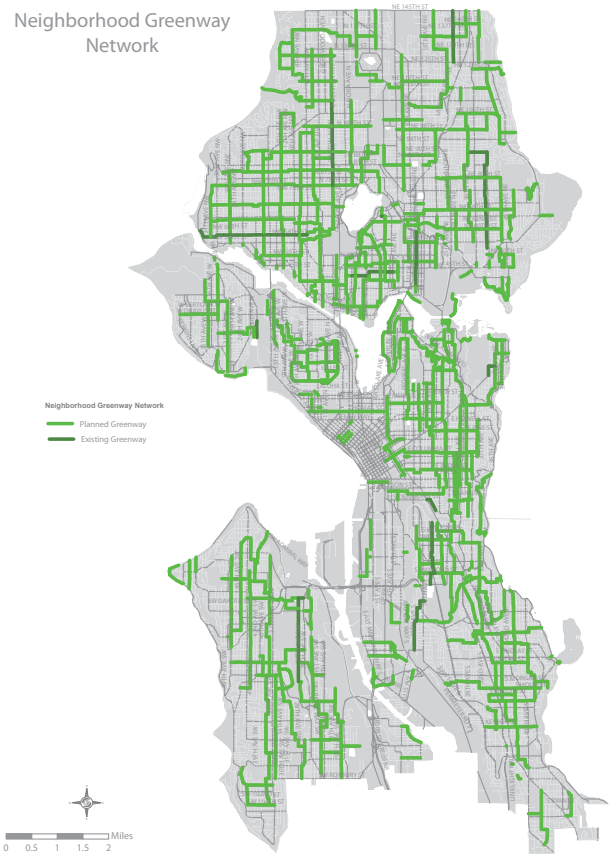
Neighborhood Greenways are a network of low-speed, low-volume streets with gentle grades designed to give priority to pedestrians and people biking. They are intended to provide safe arterial crossings and low-stress connections to key neighborhood destinations.

Seattle's Neighborhood Greenway network was originally established in the 2014 Bicycle Master Plan (BMP) as a key component of the city's bicycle network. However, because the types of improvements that Neighborhood Greenways typically provide can also effectively serve pedestrians, the Neighborhood Greenway program should be leveraged to address bicycle priorities identified in the BMP, as well as pedestrian priorities identified in the updated PMP.

In many instances, non-arterial streets within the pedestrian Priority Investment Network overlap with planned Neighborhood Greenway routes. (It should be noted that the exact route of a Neighborhood Greenway is determined as projects are developed, and does not always align with the routes illustrated in the Bicycle Master Plan).

As such, the Neighborhood Greenways program provides an opportunity to leverage funding for bicycle and pedestrian improvements. As Neighborhood Greenways are planned and built, their precise routing should be reviewed and updated to ensure they help address needs within the Priority Investment Network.

Because Neighborhood Greenways are located on non-arterial streets, low-cost improvements may be deployed as part of the Greenway project to help address pedestrian needs (see Action 1.1.4).



The planned Neighborhood Greenway system was developed as part of the 2014 Bicycle Master Plan (BMP). In many instances, non-arterial streets within the PIN overlap with planned Neighborhood Greenway routes. Moving forward, the Neighborhood Greenways program should be leveraged to meet the priorities identified in both the BMP and the PMP.

ACTION 1.1.4
PROVIDE LOW-COST IMPROVEMENTS ON NON-ARTERIAL STREETS, INCLUDING NEIGHBORHOOD GREENWAYS

In order to maximize resources and provide pedestrian improvements to more people as quickly as possible, we will provide innovative, lower-cost improvements on non-arterial streets lacking sidewalks within the Priority Investment Network. Low-cost walking improvements are an alternative to traditional concrete, curb and gutter sidewalks. Because they can be installed for as little as one-half the cost of a traditional sidewalk, these lower-cost techniques will allow us to provide significantly more improvements to more people. These lower-cost improvements are intended for residential streets to help connect people to important neighborhood destinations such as schools, parks, and transit stops. Traditional concrete sidewalks will still be provided on arterial streets.

The type of low-cost improvement appropriate for a given street will depend upon the context of the street, including the right-of-way available, drainage needs, impacts to parking, and the location and number of driveways. Low-cost improvements may include any of the following treatments:

- Stamped and/or stained asphalt sidewalks
- Delineated, at-grade paths
- At-grade paths separated by landscaping
- Shared space with calmed traffic
- Coordinated infrastructure delivered in partnership with drainage improvements provided by Seattle Public Utilities

Stamped and stained asphalt sidewalk with curb (raised walkway) along NE 105th Street.

Curb-separated path at the same level as cars at N 97th Street and Fremont Avenue N.

At-grade path behind green stormwater infrastructure without curb in the City of Shoreline.

Traditional concrete sidewalk with curbs on one side of the street only, with rain gardens that could be implemented in coordination with Seattle Public Utilities. 2nd Avenue NE pictured above.

STRATEGY 1.2
FACILITATE THE PROVISION OF NEW SIDEWALKS BY THE PRIVATE SECTOR

As new private development occurs, these projects should construct new and repair older sidewalks, curb ramps and pedestrian amenities, bringing them in line with the current Right-of-Way Improvements Manual (ROWIM) standards. Installing and improving pedestrian facilities in tandem with new development incrementally upgrades Seattle's pedestrian realm as the city grows and pedestrian demand increases.

●	**OBJECTIVE 1:** Complete and maintain the pedestrian system identified in the PMP
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Increase pedestrian safety
●	**OBJECTIVE 4:** Plan, design, and build Complete Streets to move people and goods
●	**OBJECTIVE 5:** Create vibrant public spaces that encourage pedestrian use
	OBJECTIVE 6: Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

Considerations

- Because private developments typically only provide pedestrian realm improvements along the property's frontage, sidewalk improvements are incremental, and some developer-driven sidewalk segments may remain disconnected from the overall sidewalk network
- Codes and regulations governing sidewalk improvements for new development within the right-of-way are currently located in the ROWIM, Seattle Municipal Code (SMC) sections 15.32, 15.70, 21.16, 23.48, 23.53, and Pedestrian "P" Zones Ordinance 124770

As new development occurs, new sidewalks and curb ramps continuously upgrade the city's pedestrian experience.

Actions associated with this strategy

1.2.1 Evaluate more stringent land use code standards for new sidewalks

1.2.2 Explore opportunities to incentivize pedestrian realm improvements above and beyond existing land use code requirements

1.2.3 Increase the number of street concept plans to make it easier for developers to go above and beyond code requirements to enhance the pedestrian realm

1.2.4 Explore options for developers to provide alternative mitigation, in lieu of requiring sidewalk construction

1.2.5 Explore mechanisms to accept voluntary contributions for both new sidewalk projects and enhancements to existing projects

1.2.6 Consider working with large sponsors to develop a private partnership program and leverage public dollars

ACTION 1.2.3
INCREASE THE NUMBER OF STREET CONCEPT PLANS TO MAKE IT EASIER FOR DEVELOPERS TO GO BEYOND CODE REQUIREMENTS

Street concept plans provide an opportunity for community groups, property owners, and/or the public sector to proactively develop a design concept for a street or series of streets. Street concept plans help articulate the community's design vision for the street. They often relate to and help implement broader planning and design objectives that the neighborhood or City may have developed. Street concept plans are adopted jointly by SDOT and the Office of Planning and Community Development and are appended to the Right-of-Way Improvements Manual (ROWIM).

While the design guidance provided in adopted street concept plans is not mandatory, they do have broad community support. As such, these plans have successfully guided the enhancement of the public pedestrian realm by private developers and other public agencies beyond the baseline requirements of the ROWIM. We will continue to develop and implement street concept plans in the future to communicate desired pedestrian realm improvements that may be above and beyond basic requirements.

Terry Avenue was constructed following an adopted street concept plan.

STRATEGY 1.3
CONSOLIDATE DRIVEWAYS AND CURB CUTS

Driveways and curb cuts create areas of conflict between pedestrians on the sidewalk and moving vehicles accessing private parcels. They can also be difficult to navigate for people with disabilities and/or mobility challenges. Consolidating, minimizing, and/or eliminating driveways and curb cuts creates a safer and more comfortable pedestrian environment by reducing potential conflicts between pedestrians and turning vehicles. This strategy can also provide more on-street parking opportunities and space in the pedestrian realm for landscaping and amenities.

Considerations

- Minimizing driveways and curb cuts increases pedestrian comfort, maintains a continuous pedestrian realm, and can minimize traffic delay by reducing interference between turning and through traffic
- In areas without alleys, curb cuts for access to parcels are difficult to avoid
- SDOT can work with Seattle Department of Construction and Inspection (SDCI) to discuss access strategies for new developments early in the development review process to minimize access impacts
- The City could encourage—through incentives and regulations—consolidated access points

Actions associated with this strategy

1.3.1 Work with SDCI to explore stronger code requirements and/or incentives to minimize curb cuts and driveway widths on all street types (and particularly key pedestrian and transit streets)

1.3.2 Utilize the development review process to review access strategies for new developments early in the design process to minimize access impacts

	OBJECTIVE 1: Complete and maintain the pedestrian system identified in the PMP
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Increase pedestrian safety
	OBJECTIVE 4: Plan, design, and build Complete Streets to move people and goods
	OBJECTIVE 5: Create vibrant public spaces that encourage pedestrian use
	OBJECTIVE 6: Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

Minimizing the impact of driveways helps to maintain a continuous pedestrian realm and concentrate conflict points to one location along a block face.

ACTION 1.3.1
WORK WITH SEATTLE DEPARTMENT OF CONSTRUCTION AND INSPECTION TO CREATE STRONGER CODE REQUIREMENTS AND/OR INCENTIVES TO MINIMIZE CURB CUTS AND DRIVEWAY WIDTHS ON ALL STREET TYPES (AND PARTICULARLY KEY PEDESTRIAN AND TRANSIT STREETS)

Overly wide driveways and curb cuts have a deleterious effect on the pedestrian realm, creating conflict points where pedestrians and vehicles must negotiate the sidewalk space. SDOT, SDCI and other City departments should examine opportunities to strengthen both the land use and transportation sections of the Seattle Municipal Code to minimize curb cuts and driveways on key pedestrian and transit streets.

Consolidating driveways to one location reduces the number of conflict points at which vehicles cross the pedestrian realm.

STRATEGY 1.4
REPAIR SIDEWALKS

Cracked and uplifted sidewalks can make pedestrian paths difficult to navigate, particularly for users with mobility impairments. While the City strives to keep public sidewalks in a reasonably safe condition, responsibility for permanent repair and replacement can lie with the City or with private property owners, depending upon the cause of the damage.

In order to systematically inventory sidewalk conditions, we will evaluate opportunities to adopt city-wide sidewalk inspection procedures. A proactive sidewalk inspection program could help identify and prioritize sidewalk repair and replacement needs in advance of resident complaints.

Considerations

- The majority of damage done to sidewalks is caused by tree roots
- While street trees play a vital role in creating a sustainable, high-quality public realm, it is not uncommon for conflicts to arise between trees and sidewalks, particularly in locations where both were installed some time ago
- To provide guidance on installation, repair, and maintenance of sidewalks and street trees, SDOT developed the Trees and Sidewalks Operations Plan in 2015, which outlines design and repair solutions where street trees are negatively impacting sidewalk conditions
- Section 15.72 of the Seattle Municipal Code notes that property owners are responsible for maintaining and repairing sidewalks adjacent to their property
- When sidewalk damage is the result of a publicly owned street tree, SDOT is responsible for the sidewalk repair

●	**OBJECTIVE 1:** Complete and maintain the pedestrian system identified in the PMP
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●	**OBJECTIVE 5:** Create vibrant public spaces that encourage pedestrian use
	OBJECTIVE 6: Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

Tree roots can damage sidewalks and make travel difficult for pedestrians.

Actions associated with this strategy

1.4.1 Explore options to establish a proactive sidewalk inspection program to inventory sidewalk deficiencies that pose potential risks to pedestrians

1.4.2 Make it easier for residents to report sidewalk repair needs, including evaluating the feasibility of updating the City's "Find it, Fix it" service request mobile app to include a service request category for sidewalk repair needs

1.4.3 Educate residents about and increase enforcement of private sidewalk repair obligations

1.4.4 Make it easier and more predictable for private property owners to complete required sidewalk repairs

STRATEGY 1.5
CREATE AND MAINTAIN A WALKABLE ZONE ON ALL SIDEWALKS

Seattle's ROWIM states that the sidewalk shall be clear of all vertical obstructions for a width of at least 6 feet and a height of at least 8 feet. While amenities like landscaping, signage, café seating, benches and art add visual interest to the public realm, these elements should be located outside of the required pedestrian clear zone.

Maintaining the walkable zone includes utilities, snow/debris removal, crack and damage repair, and vegetation management/tree limbing. Maintaining a walkable zone is important to creating a connected, accessible pedestrian network.

●	**OBJECTIVE 1:** Complete and maintain the pedestrian system identified in the PMP
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Increase pedestrian safety
	OBJECTIVE 4: Plan, design, and build Complete Streets to move people and goods
●	**OBJECTIVE 5:** Create vibrant public spaces that encourage pedestrian use
	OBJECTIVE 6: Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

This sidewalk along 5th Avenue offers an example of a well-maintained pedestrian clear zone. Signs, bike racks and plantings are located within the furnishing zone, and the pedestrian clear zone is unobstructed.

Considerations

- The Right-of-Way Improvements Manual establishes minimum widths for all zones of the sidewalk
- The pedestrian clear zone/walkable zone is the area of the sidewalk corridor that is specifically reserved for pedestrian travel
- The ROWIM notes that street furniture, plantings, and other fixed items should not protrude into travel routes
- Utility poles or hydrants that impede the walkable zone can be costly to relocate
- Maintaining a walkable zone may require increased enforcement
- Currently, privately-funded signage, planters, cafés, and other encroachments must obtain an annual Public Space Management Street Use Permit from SDOT

Actions associated with this strategy

1.5.1 Update the ROWIM to specify and enforce minimum pedestrian clear zone widths for all street types

1.5.2 Create a program directed at neighborhood business districts to communicate the importance of keeping the walkable zone clear of objects/impediments, including propped doors, A-frame signs, outdoor seating and displays, etc.

1.5.3 Consider locations for bike share stations; prioritize non-sidewalk locations when possible

STRATEGY 1.6
IMPROVE ACCESSIBILITY IN SEATTLE

Seattle strives to be the most accessible city in the nation. The along-the-roadway and crossing-the-roadway improvement opportunities identified in Chapter 4 are intended to improve mobility for all pedestrians, including people who rely on wheelchairs or other mobility devices to get around, as well as people with visual and/or hearing impairments.

Many of the implementing strategies and actions outlined throughout this chapter are intended to help improve mobility conditions for all people who use our city's sidewalks and crossings. However, the following actions are specifically targeted at making pedestrian facilities more accessible to those with mobility, vision, and/or hearing impairments.

Considerations

- Accessible design guidelines for new sidewalks and crossing improvements are addressed in the City's Right-of-Way Improvements Manual, including horizontal and vertical clear zone requirements, curb ramp design guidelines, and accessible pedestrian signals.
- An updated ADA transition plan will identify locations where curb ramp and other accessibility improvements will be provided throughout the city.
- While a transition plan considers many of the same factors that the PMP includes in its prioritization, a transition plan also evaluates additional access needs for individuals with disabilities, and describes the methods and timeline for making facilities accessible.

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	OBJECTIVE 6: Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

The PMP is intended to improve mobility conditions for all who use Seattle's sidewalks and crossings, including those who rely upon wheelchairs and mobility devices, and those with visual and/or hearing impairments.

Actions associated with this strategy

1.6.1 Implement short-term improvements to ensure that critical routes are clear of vegetation

1.6.2 Identify opportunities to re-stripe painted crosswalks to better align with curb ramps

1.6.3 Update the ADA transition plan

2. CROSSING-THE-ROADWAY STRATEGIES AND ACTIONS

STRATEGY 2.1 IMPROVE PEDESTRIAN VISIBILITY AT CROSSINGS

A variety of engineering treatments can be used to improve visibility of pedestrians at intersections by eliminating visual obstructions and improving lines of sight. These include:

- **Curb bulbs:** Curb bulbs extend the curb line into the roadway at corner or mid-block crossings, bringing pedestrians into the line of sight of drivers and decreasing crossing distances. They also help prevent cars from parking too close to a crossing. Curb bulbs may be traditional concrete extensions of the sidewalk or temporary low-cost paint treatments.
- **"Daylighting" intersections:** Daylighting refers to removing visual obstructions at intersection approaches to maximize a driver's field of vision. This can include enforcing parking restrictions at intersection approaches.
- **Correcting skewed intersections:** Squaring up skewed intersections to right angles increases visibility, decreases pedestrian crossing distances, and can help prevent vehicles from turning at high rates of speed at obtuse angles. Intersections can be squared up through curb reconstruction, or paint and delineator posts can provide a temporary, low-cost treatment.
- **Crossing Beacons:** Rectangular Rapid Flashing Beacons (RRFBs) are traffic control devices placed on both sides of a crosswalk with pedestrian warning signs and pedestrian-actuated flashing LED lights that alert drivers to the presence of someone crossing the street. They are particularly effective at alerting drivers to a pedestrian entering the crosswalk at unsignalized intersections, curves, or mid-block crossings, and they dramatically increase driver yielding rates over crosswalks alone or overhead flashing beacons.
- **Lighting:** Well-lit pedestrian crossings increase the visibility of pedestrians crossing the roadway, which is particularly important during Seattle's long winter months
- **Crosswalk striping:** Installing and maintaining crosswalk striping helps clearly define where pedestrians are expected to cross the roadway. In addition, using high-reflectivity crosswalk markings can improve visibility of crossing locations to people driving.
- **Signage and Stop Bars:** Signage along the right-of-way and painted stop bars prior to intersections help reinforce safe roadway use

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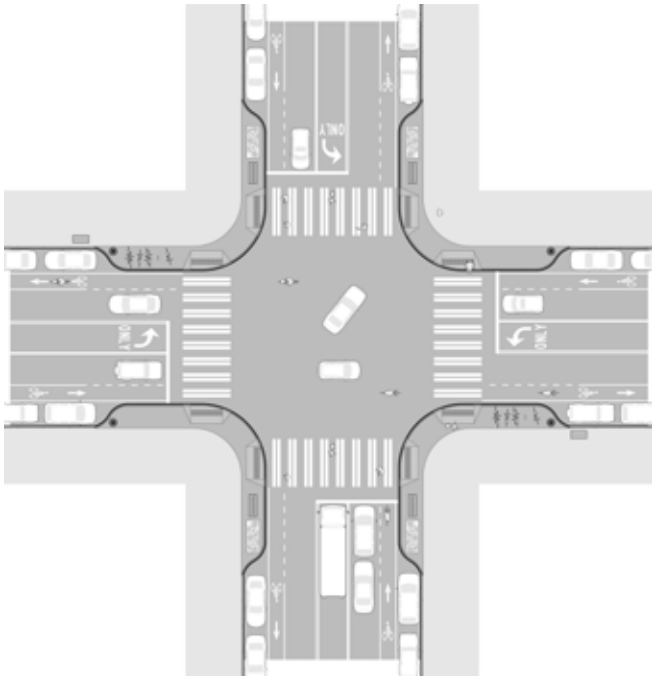
Considerations

- Locations for new crosswalks and Rectangular Rapid Flashing Beacons must meet thresholds based on traffic volumes, vehicle speeds, and crossing demand
- Conflicting right-of-way needs may not always allow for curb extensions
- Turning movement needs of large vehicles (such as trucks and buses) must be considered when retrofitting intersections
- Realigning curbs may reduce on-street parking capacity and can be costly



Curb bulbs can be particularly effective at maximizing visibility of people using wheelchairs, walkers, and strollers as they prepare to cross the street.

Actions associated with this strategy

2.1.1 Provide curb bulbs (including low-cost installations) in the PMP Priority Investment Network

2.1.2 Provide high-visibility treatments at crossings in the PMP Priority Investment Network, including flashing crossing beacons, signage, etc.

2.1.3 Use high-reflectivity crosswalk markings on all projects

2.1.4 Provide lighting at marked pedestrian crossings

2.1.5 Utilize Complete Streets project reviews to evaluate capital projects for opportunities to maximize pedestrian visibility using the tactics described

ACTION 2.1.2
PROVIDE HIGH-VISIBILITY TREATMENTS AT CROSSINGS IN THE PMP PRIORITY INVESTMENT NETWORK, INCLUDING RECTANGULAR RAPID FLASHING BEACONS

The crossing-the-roadway analysis in Chapter 4 identifies arterial intersections within the Priority Investment Network where widely spaced opportunities between controlled crossing locations may make it difficult to comfortably cross the street. These intersections will be evaluated for opportunities to provide new controlled crossings. New traffic controls that could potentially be deployed in these locations may include full traffic signals, pedestrian-activated traffic signals ("half signals"), or high-visibility crossing beacons.

Rectangular Rapid Flash Beacons (RRFBs) are traffic control devices placed on both sides of a crosswalk with pedestrian warning signs and pedestrian-actuated flashing LED lights that alert drivers to the presence of someone crossing the street. They are used in the absence of a full traffic signal. These high-visibility crossing treatments increase driver yielding rates for people trying to cross the street.

RRFB's are less expensive to install than traffic signals and can be an option when an intersection does not meet minimum thresholds for a new signal. To be eligible for a new RRFB, crossing locations must still meet guidelines based on traffic volumes, vehicle speeds, crossing distance, and pedestrian demand. RRFBs can be provided in conjunction with other intersection treatments such as curb bulbs and/or a median refuge island.

Crossing beacons, like this Rectangular Rapid Flashing Beacon (RRFB), have been shown to increase driver awareness of people crossing the street.

STRATEGY 2.2
SHORTEN PEDESTRIAN CROSSING DISTANCES

Shortening crossing distances at intersections reduces the amount of time pedestrians are exposed to vehicular traffic when crossing the street. Crossing distances can be shortened through treatments such as medians or pedestrian refuge islands, curb bulbs, and lane reductions. Shorter crossing distances are especially beneficial for those with mobility challenges and can provide a resting place for people unable to quickly cross the street.

As pedestrian treatments are implemented, care must be taken to balance the needs of different modes and the contextual issues at crossings in order to maintain pedestrian safety and roadway function.

Considerations

- Competing demands on the available right-of-way may preclude pedestrian islands or curb bulbs in some locations
- Curb bulbs can help prevent cars from parking too close to intersections or crossings
- Curb bulbs may be traditional concrete extensions of the sidewalk, or temporary low-cost paint treatments
- Pedestrian median islands can preclude left-turn lanes
- Curb bulbs can provide space for stormwater planters in locations where natural drainage is a priority
- Curb bulbs can preclude using the curb lane for mobility uses, including transit and bike lanes

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- When a protected bike lane is located along the curb and on-street parking is provided on the far side of the bike lane, there may be an opportunity to provide a pedestrian refuge at intersections on the far side of the protected bike lane
- The turning-movement needs of large vehicles (buses and trucks) must be considered when retrofitting intersections

Actions associated with this strategy

2.2.1 Provide curb bulbs, pedestrian crossing islands and/or pedestrian refuges, when possible

2.2.2 Use lane reductions, as appropriate, as part of the engineering toolkit when making pedestrian or other safety improvements

ACTION 2.2.1
PROVIDE CURB BULBS, PEDESTRIAN CROSSING ISLANDS AND/OR PEDESTRIAN REFUGES WHEN POSSIBLE

A variety of engineering treatments can be used to increase the visibility of pedestrians and shorten crossing distances at intersections. These tools can be used alone, or in conjunction with each other, and include:

- **Curb bulbs:** Curb bulbs extend the curb line into the roadway at a corner or a mid-block crossing, bringing pedestrians into the line of sight of drivers and decreasing crossing distance. Curb bulbs may be traditional concrete extensions of the sidewalk, or temporary low-cost paint treatments. Curb bulbs can be installed at most locations with a legal crosswalk, on streets with all day on-street parking, and at locations where they do not extend into travel lanes or bike lanes.

- **Crossing islands/refuges:** Pedestrian crossing islands (also called pedestrian refuges) are raised areas in the middle of the street at intersections or mid-block crossings that protect pedestrians from vehicles while they wait for an opportunity to cross the other half of the street. Crossing islands reduce the amount of time people are exposed to traffic and allow them to negotiate crossings in phases.

Curb bulbs in Belltown help narrow crossing distances for pedestrians crossing busy downtown arterials.

Painted curb bulbs in Maple Leaf, with safety pylons, help make pedestrians more visible and reduce crossing distances to Maple Leaf Park.

Curb bulbs and pedestrian crossing islands create a safer midblock crossing.

ACTION 2.2.2
USE LANE REDUCTIONS, AS APPROPRIATE, AS PART OF THE ENGINEERING TOOLKIT WHEN MAKING PEDESTRIAN AND OTHER SAFETY IMPROVEMENTS

Lane reductions (or "rechannelizations") make busy streets safer for pedestrians by reducing the number of traffic lanes a person must cross, eliminating the multiple threats associated with crossing streets with more than one lane in each direction.

Lane reductions have also been shown to slow people driving, which makes the street safer for everyone. Depending on the needs of the street, general purpose traffic, parking or turn lanes may be re-purposed for other uses such as wider sidewalks, street trees, bike lanes, or more efficient transit.

Careful analysis is required to begin evaluation of lane reduction options. This may include traffic counts, field surveys, traffic modeling, and neighborhood outreach. Streets that are good candidates to be configured with one lane in each direction and a center turn lane typically have fewer than 25,000 vehicles per day, a large number of driveways or driveways with frequent use, and a history of rear end collisions or collisions between people driving and pedestrians moving across or along the street.

NE 130th Street before lane reduction

NE 130th Street after lane reduction

STRATEGY 2.3
OPTIMIZE CROSSING TIMES FOR PEDESTRIANS AT SIGNALS

Signals should be programmed to allow sufficient time for pedestrians to cross the street, including people with disabilities, seniors, and children. Installing pedestrian countdown signals helps pedestrians decide whether there is enough time to cross the street safely by displaying a countdown of the number of seconds remaining before the signal changes. Pedestrian countdown signals cut out guesswork in crossing busy intersections and minimize the number of pedestrians still in crosswalks during the "do not walk" phase.

Considerations

- Optimizing pedestrian crossing times can help ensure that people of all ages and abilities have sufficient time to cross the street
- Increasing pedestrian crossing times at signals can cause some vehicle travel time delay
- The Manual for Uniform Traffic Control Devices (MUTCD) stipulates that where pedestrians cross slower than 3.5 feet per second, or where people in wheelchairs routinely use the crosswalk, a crossing speed of less than 3.5 feet per second should be considered in determining the pedestrian clearance time
- SDOT reviews crossing times at intersections upon request. Where surrounding land uses include facilities frequented by slower-moving pedestrians (including senior or special needs facilities, elementary schools, and/or preschools), we will use a lower crossing speed of 3 feet per second to determine the pedestrian clearance time

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Optimizing crossing times and providing countdown displays can help ensure pedestrians have sufficient time to cross the street.

Actions associated with this strategy

2.3.1 Review current SDOT pedestrian crossing time standards and update as needed to reflect current best practices, factoring in pedestrian wait times

2.3.2 Provide sufficient countdown time at pedestrian crossing signals

2.3.3 Modify signal timing to favor pedestrians in neighborhood business districts

STRATEGY 2.4
REDUCE TURNING-MOVEMENT CONFLICTS AT INTERSECTIONS BETWEEN PEDESTRIANS AND VEHICLES

Intersections are areas where pedestrians and vehicles have the potential for the most conflict, including vehicles turning right across the path of pedestrians crossing the roadway (right hooks). Minimizing turning-movement conflicts can remove much of this potential conflict and facilitate more predictable behavior for both vehicles and pedestrians at intersections.

Reducing turning-movement conflicts at intersections can be done through a variety of treatments, including separating vehicle and pedestrian signal phases, restricting turns on red lights, creating dedicated turning signal phases or delayed turning that allows pedestrians and through vehicles to move first, and/or establishing right-in/right-out channelization. The appropriateness of any of these treatments is based on site-specific considerations including local circulation impacts.

Considerations

- Predictable turning movements reduce conflict and increase safety by clearly defining which users have the right-of-way
- System changes are relatively cost effective when signals are already in place
- Reconfiguring turning movements has potential for vehicle travel time delay
- Reconfiguring turning movements may require broader roadway reconfiguration and behavior change
- Longer wait time for a pedestrian crossing signal may result in non-compliant crossings
- Consideration must be given to how signal timing works with all users and modes, including travel-time impacts to transit
- Eliminating turning-movement conflicts can also benefit people who are biking

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Actions associated with this strategy

2.4.1 Consider leading pedestrian intervals

2.4.2 Implement pedestrian-only phasing, including scramble signals, factoring in pedestrian wait times

2.4.3 Review signal phasing for opportunities to eliminate shared phases that create conflicts between pedestrians and vehicles

2.4.4 Eliminate permitted "turn on red," where appropriate

2.4.5 Provide diverter islands at unsignalized arterial/non-arterial intersections

2.4.6 Develop internal policies and guidelines for implementing the approaches in 2.4

ACTION 2.4.1
CONSIDER LEADING PEDESTRIAN INTERVALS

Leading pedestrian intervals (LPIs) provide a pedestrian walk signal three or more seconds before vehicles receive a green light in the same direction of travel. This gives pedestrians a head start to begin their crossing, making them more visible to turning drivers. LPIs are particularly effective at mitigating vehicle encroachment into pedestrian crossing space at intersections with heavy pedestrian volumes and vehicle turning movements.

Seattle's rainy weather, short winter days and steep streets can make pedestrians hard to see. Leading Pedestrian Intervals can help make them more visible to drivers.

ACTION 2.4.3
REVIEW TRAFFIC SIGNAL PHASING FOR OPPORTUNITIES TO ELIMINATE SHARED PHASES THAT CREATE CONFLICTS BETWEEN PEDESTRIANS AND VEHICLES

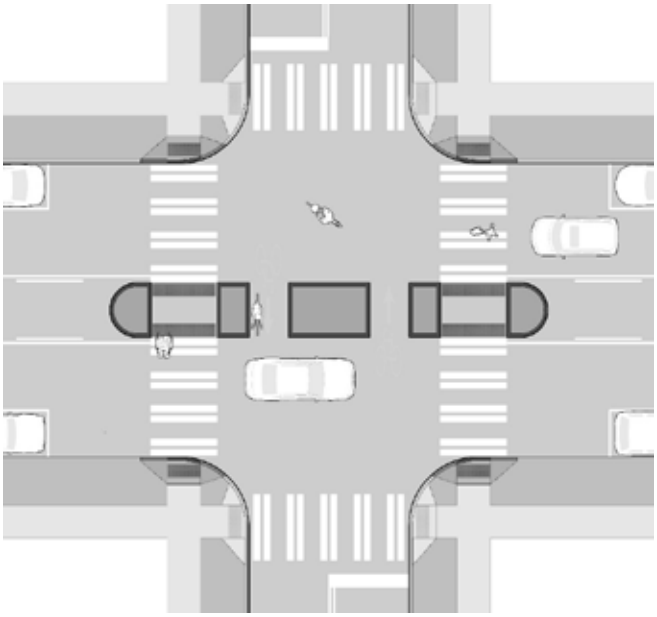
Shared traffic signal phasing, where crossing pedestrians and turning vehicles use the same green light/walk signal, increases the potential of conflict. Minimizing turning-movement conflicts between pedestrians and vehicles at signalized intersections facilitates more predictable behavior for all roadway users, creating a safer street environment. Shared signal phasing could be reconfigured by separating vehicle and pedestrian signal phases, restricting turns on red lights, or by creating dedicated turning signal phases or delayed turning that allow pedestrians and through vehicles to move first.

Eliminating shared signal phases between turning vehicles and pedestrians crossing the roadway may include prohibiting vehicles from making right turns on red.

ACTION 2.4.5
PROVIDE DIVERTER ISLANDS AT UNSIGNALIZED ARTERIAL/NON-ARTERIAL INTERSECTIONS

Diverter islands manage a street's vehicular volume by reducing through-traffic on non-arterial streets. They reduce the number of potential vehicle turning movements at an intersection, making crossings easier to navigate for pedestrians crossing the street.

Where a non-arterial intersects an arterial street, a diverter island (a raised concrete median) prevents vehicles on the arterial from turning onto the non-arterial street. However, people walking and biking can pass through an opening in the diverter island to continue on their path of travel on the non-arterial. On non-arterial streets designated for pedestrian and bicycle travel, this keeps traffic volumes low, enhancing the comfort and safety of these non-motorized users.



Diverter islands reduce the number of potential vehicle turning movements, making crossings easier to navigate for pedestrians.

STRATEGY 2.5
INCREASE OPPORTUNITIES FOR CONTROLLED CROSSINGS ON ARTERIALS

Crossing busy arterial streets can be a major barrier, especially for children, seniors, and people with disabilities. In particular, widely spaced distances between traffic control devices can force pedestrians to go out of their way to safely cross a street and can result in non-compliant behavior such as pedestrians crossing arterials at unpredictable locations. An uncontrolled intersection crossing can be particularly problematic on routes that connect to key destinations, such as transit stops.

Traffic control devices that stop vehicles on arterials to provide an opportunity for pedestrians to cross the roadway include traditional traffic signals, pedestrian-actuated "half signals," high visibility crossing beacons such as rectangular rapid flashing beacons (RRFBs), and stop signs. The "crossing the roadway" analysis in Chapter 4 identifies opportunities to evaluate intersections for new controlled crossings.

Considerations

- For an intersection to be eligible for a new traffic signal, pedestrian-actuated "half" signal, or stop sign, the intersection must meet minimum thresholds (warrants) based on pedestrian demand and traffic volumes, as set forth in the Manual on Uniform Traffic Control Devices (MUTCD)
- High visibility crossing beacons, such as RRFBs, can be an effective tool at intersections that do not meet signal warrants. To be eligible for a new RRFB, intersections must meet thresholds based on the number and speed of people driving on the street, as well as the number of traffic lanes a person has to cross.
- Controlled crossings of arterials can be provided in conjunction with other treatments such as curb bulbs and crossing islands

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The Central District Neighborhood Greenway crossing at E Cherry Street provides a crossing beacon to alert vehicles to people crossing the roadway.

Actions associated with this strategy

2.5.1 Review and establish maximum controlled crossing spacing standards/guidelines for multi-arterials

2.5.2 Locate transit stops in proximity to controlled crossings, particularly on multi-lane arterials

3. NETWORK-WIDE STRATEGIES AND ACTIONS

STRATEGY 3.1 MANAGE VEHICLE SPEEDS

Vehicle speed is highly correlated with traffic crashes. Furthermore, as vehicle speeds increase, the likelihood that a crash will result in a serious or fatal injury to a pedestrian or bicyclist jumps dramatically. Vehicles traveling at lower speeds not only directly increase pedestrian safety, but also increase pedestrian level of comfort and the perceived attractiveness of the public realm.

To reduce the risk of serious and fatal pedestrian collisions, SDOT will reduce default and posted vehicle speeds on arterial and non-arterial streets. These efforts will be rolled out as part of SDOT's ongoing Vision Zero program.

Considerations

- Speed reductions on arterial and non-arterial streets pro-actively reduce the number and severity of serious and fatal pedestrian collisions, create conditions for a more vibrant streetscape, and may help decrease traffic noise in residential neighborhoods
- Washington State law, specifically RCW 46.61.415, limits how much cities can reduce speeds on their streets
- Some arterials may need additional design reconfigurations before speed limit reduction is appropriate
- Speed reduction on arterials needs to be considered on a case-by-case basis and may not be appropriate in some instances

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Actions associated with this strategy

3.1.1 Establish 20 mph speed limits on non-arterial streets, as part of Vision Zero implementation

3.1.2 Establish default speeds on arterial streets to 25 mph, as part of Vision Zero implementation

3.1.3 Consider posted speed reductions on arterial streets, as appropriate

STRATEGY 3.2
PROVIDE NEIGHBORHOOD AND ARTERIAL TRAFFIC CALMING MEASURES

Slowing vehicle speeds dramatically reduces the risk of serious and fatal pedestrian collisions, and increases safety for all roadway users. A broad range of design treatments can be used to visually narrow the roadway and slow vehicle traffic. Narrow streets, curved streets, trees, and parked cars can send visual cues to a driver to travel at slower speeds.

On neighborhood (non-arterial) streets, design treatments such as traffic circles, chicanes, and speed humps may be used to slow people driving on residential streets. Arterial traffic calming measures can include speed cushions, radar speed signs, and roadway rechannelizations.

The appropriate type of traffic calming approach depends on roadway geometry, sight distance, and traffic characteristics such as speed and volume.

Considerations

- To determine if traffic calming elements are appropriate, SDOT uses data to understand the number and speed of people driving on a street
- Arterial traffic calming can be challenging because of the multiple purposes served by these streets

Actions associated with this strategy

3.2.1 Continue to use lane reductions (or "rechannelizations"), as appropriate, as part of the engineering toolkit when making pedestrian or other safety improvements

3.2.2 Review capital projects for opportunities to implement lane reductions as part of the Complete Streets review

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Over the last 30 years, SDOT's Neighborhood Traffic Calming Program has installed over 1,000 traffic circles on city streets to help reduce collisions in residential neighborhoods.

3.2.3 Increase funding for SDOT's Neighborhood Traffic Calming Program

3.2.4 Streamline the process for installing neighborhood traffic calming improvements

4. EDUCATION, ENCOURAGEMENT, AND ENFORCEMENT STRATEGIES AND ACTIONS

STRATEGY 4.1
ENFORCE VEHICULAR SPEED LIMITS AND SAFE DRIVING BEHAVIORS

Enforcing speed limits and fostering safe driving behaviors can help reduce the risk of serious and fatal pedestrian collisions. Enforcement efforts can target risky behaviors such as driver impairment and distraction, as well as speeding. Enforcement activities can take a variety of forms, including school zone photo enforcement, high visibility enforcement at high collision locations, corridor safety patrols on major arterial streets, pedestrian safety emphasis patrols such as "blocking the box," and loading and restricted areas enforcement.

We will continue to collaborate with other City departments and partners to enforce traffic safety laws. This work will stem from SDOT's Vision Zero program, and will complement traveler education campaigns and programs. Use of a variety of enforcement tools can help achieve sustained behavior change among all roadway users in Seattle.

Considerations

- SDOT and Seattle Police Department (SPD) routinely collaborate on effective traffic enforcement, using traffic data to target enforcement efforts to locations where risky traffic behavior and crashes are occurring
- "Re-enforcement" patrols are SPD and SDOT's commitment to work together to reward and reinforce good behavior on our streets
- Expanding automated photo enforcement could reduce the need for increased police resources

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Actions associated with this strategy

4.1.1 Continue to work with the City's Office of Intergovernmental Relations (OIR) on outreach to State legislators to expand the City's ability to deploy automated speed enforcement and other photo enforcement technologies

4.1.2 Continue to collaborate with the Seattle Police Department (SPD) on data-driven traffic enforcement

4.1.3 Pair speed limit reductions with education and public outreach

4.1.4 Utilize the network of dynamic messaging signs to raise awareness of enhanced traffic enforcement

ACTION 4.1.1
CONTINUE TO WORK WITH THE CITY'S OFFICE OF INTERGOVERNMENTAL RELATIONS (OIR) TO EXPAND THE CITY'S ABILITY TO DEPLOY AUTOMATED SPEED ENFORCEMENT

Automated photo enforcement can help reduce vehicle speeds, reduce dangerous behaviors, and prevent crashes. It can take many forms, including speed cameras, red light cameras, and mobile speed vans. Use of photo enforcement technologies combats aggressive and dangerous driving habits that endanger vulnerable roadway users, and it helps create a safer, more comfortable pedestrian environment.

Seattle has experienced a reduction in speeding violations in school zones where speed cameras have been installed. However, broader city-wide deployment of automated photo enforcement is currently limited by Washington State law, specifically RCW 46.63.170.

SDOT will continue to work with OIR on outreach to State legislators to expand the City's ability to deploy automated speed enforcement and other photo enforcement technologies to increase safety on our streets and protect vulnerable roadway users.

STRATEGY 4.2
EXPAND MULTIMODAL TRAVELER SAFETY EDUCATION AND ENCOURAGEMENT PROGRAMS

Dense, multimodal urban environments present unique challenges for travelers. Public education efforts can help communicate safe roadway behaviors for all roadway users, including people who drive, people who bike, people riding transit, and pedestrians.

Multimodal traveler education can raise awareness of the needs and challenges of all roadway users and can help clarify expected traffic safety behaviors. Increased awareness of traffic regulations can increase safety for all users.

Considerations

- Education can create a common understanding amongst all roadway users of safe, predictable behaviors
- Effectiveness of traveler education programs are based on user receptivity and understanding; enforcement should accompany education to affect behavior change
- Translation and culturally relevant communication will be important in serving historically underrepresented communities with traveler education programs

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Multimodal education and encouragement programs help educate all users about the laws and expectations of all roadway users. In this photo, City staff and volunteers help drivers learn about new bicycle signals and protected bike lanes on Second Avenue.

Actions associated with this strategy

4.2.1 Explore options to expand driver education courses for traffic citations within the City of Seattle

4.2.2 Work with partners to incorporate more active transportation education content into the Washington Driver Guide

4.2.3 Expand safety education programs to educate people about safe pedestrian practices

4.2.4 Leverage the Safe Routes to School program to provide bicycle and pedestrian safety training and encouragement to all public elementary schools

4.2.5 Create public outreach tools to communicate the top contributing factors to collisions in Seattle

4.2.6 Help employers develop walking programs for employees

4.2.7 Expand other programs that encourage and promote the benefits of walking

5. PEDESTRIAN REALM QUALITY AND COMFORT STRATEGIES AND ACTIONS

STRATEGY 5.1
PROVIDE PEDESTRIAN BUFFERS

Buffers provide a physical separation between pedestrians on the sidewalk and vehicles in the roadway, increasing pedestrian safety and comfort. Pedestrian buffers may include parked cars, bicycle facilities, sidewalk cafes, parklets, planting strips, street trees, green stormwater infrastructure facilities, street furniture, bollards, or railings. Buffers are especially important on streets with fast moving vehicles or high traffic volumes, and where transit or vehicular travel lanes are located adjacent to the curb.

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Considerations

- This furnishing zone of the sidewalk (located between the curb and the pedestrian clear zone) buffers pedestrians from the adjacent roadway and is the appropriate location for street furniture, art and landscaping/ street trees, pedestrian lighting, and other streetscape elements
- Buffers present opportunities to expand the urban forest and implement bioretention within the right-of-way
- Buffers provide a transition zone for driveway aprons, eliminating the need to "drop" sidewalks at driveways
- Planted buffers will increase vegetation maintenance demands
- There may not always be sufficient right-of-way available to provide pedestrian buffers
- There is a growing trend to use curb space for mobility uses including converting on-street parking to general-purpose travel lanes or transit lanes during peak travel times. This impacts pedestrian safety and comfort on arterials lacking buffers.

Landscaping within the sidewalk furnishing zone helps buffer people on sidewalks from fast moving traffic.

Actions associated with this strategy

5.1.1 Update the ROWIM to specify furnishing zone requirements for various street types and associated design requirements

5.1.2 Create a suite of options for buffer treatments that could be used when there is insufficient ROW/ sidewalk width to provide landscape buffers, particularly on streets where transit and/or vehicular uses are accommodated within the curb lane

STRATEGY 5.2
DEVELOP A COORDINATED WAYFINDING SYSTEM

A coordinated wayfinding system can facilitate pedestrian travel by clearly showing routes and distances to destinations. What's more, a coordinated wayfinding system facilitates travel between all modes of transportation and supports an interconnected, multimodal transportation system by clearly depicting the locations of transit stops and routes, bicycle routes, bike stations, and regional transportation centers. Legible wayfinding is particularly critical in areas with high pedestrian volumes and where multiple modes of transportation converge.

Currently, Seattle has a wide variety of disjointed wayfinding elements and systems in the right-of-way, including red pedestrian map kiosks and directional signage, blue map kiosks, bicycle wayfinding signage, and maps provided by transit providers. A coordinated, inter-modal wayfinding system can create efficiencies between various wayfinding efforts while increasing the legibility of the entire transportation system and facilitating movement between modes. An informed traveler may choose to reach his or her destination by walking.

Considerations

- Developing a coordinated, inter-modal wayfinding system will require a cooperative effort between various SDOT programs and local and regional transit providers
- Wayfinding efforts should include assumptions for ongoing maintenance and ownership, and wayfinding maps should be updated on a regular basis as transportation networks evolve over time
- As Seattle's bicycle network is built out, routes can be clearly shown on wayfinding maps to help increase system legibility, particularly for new users
- Real-time transit information can be incorporated into wayfinding elements

	OBJECTIVE 1: Complete and maintain the pedestrian system identified in the PMP
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Increase pedestrian safety
●	**OBJECTIVE 4:** Plan, design, and build Complete Streets to move people and goods
●	**OBJECTIVE 5:** Create vibrant public spaces that encourage pedestrian use
●	**OBJECTIVE 6:** Raise awareness of the important role of pedestrian movement for transportation, recreation, and in promoting health and preventing disease

Coordinated wayfinding systems can help encourage pedestrian travel and facilitate travel between all modes of transportation for both visitors and residents.

- Consider new frontiers in wayfinding, including digital kiosks and integration with mobile applications.

Actions associated with this strategy

5.2.1 Collaborate with external partners to develop a coordinated wayfinding plan to facilitate pedestrian travel and modal integration

STRATEGY 5.3
CREATE INVITING PEDESTRIAN SPACES

Infrastructure is not the only element needed to make a pedestrian-friendly city; the quality of the public realm also matters. From pop-up spaces and parklets to more significant design and programming interventions like woonerfs and pedestrianized streets, these humanizing treatments make Seattle not just a city where everyone can walk, but a city where everyone wants to walk. Urban design amenities and public space activation contribute to an interesting, active streetscape and a community's sense of place.

Seattle has been a leader in activating and enhancing the public realm, including permitting new parklets and "streateries," building festival streets, and creating new public spaces in the right-of-way through the Adaptive Streets program. SDOT will continue to implement these types of programs and projects with the goal of creating an inviting, engaging public realm for all.

Considerations

- SDOT's Public Space Management Program permits parklets, "streateries," and play streets
- The SDOT Adaptive Streets Program re-purposes underused roadway space for safety, mobility, and public space improvements using low-cost, temporary solutions
- SDOT's Complete Streets program helps identify opportunities for urban design enhancements that can be provided as part of capital projects, including landscaping amenities, upgraded materials, public art opportunities, and re-purposing underutilized portions of the right-of-way
- Adaptive Streets improvements can be a tool for providing public space in areas with increasing densities

●	**OBJECTIVE 1:** Complete and maintain the pedestrian system identified in the PMP
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SDOT's Adaptive Streets program has created inviting pedestrian spaces from underutilized rights-of-way (First Hill).

Actions associated with this strategy

5.3.1 Provide pedestrian amenities, including benches and resting opportunities, in the right-of-way

5.3.2 Consider opportunities to create pedestrian-only streets, whether temporarily, at key times, or on a permanent basis

ACTION 5.3.2
CONSIDER OPPORTUNITIES TO CREATE PEDESTRIAN-ONLY STREETS

Cities around the world have increasingly been experimenting with pedestrianizing streets (often within downtowns or historic districts) by banning private cars temporarily, at key times, or on a permanent basis. These initiatives promote less automobile congestion, contribute to decreased air pollution, help provide adequate space for people in areas with high pedestrian volumes, and foster an inviting public realm.

Car-free streets eliminate the potential for collisions between vehicles and pedestrians, and they dramatically increase pedestrian comfort. Pedestrian-only zones, even for parts of the day or weekend, create opportunities for streetscape enhancements, amenities, and pedestrian-focused commerce.

Led by SDOT, the City is currently piloting pedestrian-only streets in the Capitol Hill neighborhood.

In August 2015, E Pike St. was open to pedestrians only between Broadway and 12th Ave to pilot a nighttime pedestrian street concept.

STRATEGY 5.4
PROMOTE AND MAINTAIN GREEN INFRASTRUCTURE IN THE RIGHT-OF-WAY

Green infrastructure in the right-of-way offers myriad benefits for the pedestrian realm. Most often located between the pedestrian clear zone and the curb within the furnishing zone of the sidewalk, green infrastructure and landscaping can take the form of groundcovers, shrubs, and street trees, and stormwater planters.

Street trees and landscaping enhance the pedestrian realm by buffering pedestrians on the sidewalk from traffic in the roadway. Street trees can help slow traffic by narrowing the optical width of the roadway, and they can help to humanize the scale of the street. The presence of street trees has been shown to be positively correlated with the values of adjacent properties, as well as with positive public health outcomes. Street trees also provide a broad range of environmental benefits, including helping to manage stormwater and remove pollutants. Street trees and landscaping in the right-of-way can also serve as part of the City's public stormwater management system.

Considerations

- Providing a healthy, expansive urban forest aligns with the City's climate adaptation/mitigation goals
- Tree management reduces asset deterioration, giving street trees the greatest chance to thrive and minimizing the risk of injury
- As new green infrastructure elements are added to the right-of-way, management needs must be considered. Unmaintained vegetation can encroach onto sidewalks, damage sidewalks, and create an unsightly, unkempt appearance.
- In accordance with SMC 15.43.040, maintenance of street trees is the responsibility of the adjacent property owner(s). The exceptions to this policy are trees specifically designated for maintenance by SDOT Urban Forestry.
- Improving the maintenance of landscaping in the right-of-way may require more enforcement for privately-maintained areas
- Improved data gathering, including resident-reported data through systems such as iTree, can enhance asset tracking for right-of-way landscaping, particularly street trees
- Interdepartmental partnerships between SDOT and Seattle Public Utilities can help facilitate the provision of stormwater management facilities within the right-of-way

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Actions associated with this strategy

5.4.1 Update the Right-of-Way Improvements Manual minimum standards for landscape zones within the sidewalk and landscape maintenance requirements

5.4.2 Explore options to establish a capital budget for SDOT Urban Forestry to provide new street trees and other green infrastructure within the right-of-way

5.4.3 Increase funding for landscape and street tree management and maintenance

5.4.4 Continue to collaborate with Seattle Public Utilities to maximize opportunities to provide green stormwater infrastructure within the right-of-way

STRATEGY 5.5
PROVIDE PEDESTRIAN-SCALE LIGHTING

Pedestrian-scaled lighting encourages year-round pedestrian travel by increasing perceived personal security, illuminating potential hazards, and enhancing the visibility of pedestrians to vehicles. Each of these elements are foundational to creating a safe and comfortable public realm, particularly in Seattle where the winter days are overcast and relatively short. While Seattle's roadways are typically well lit, street trees and other overhead obstacles can obstruct street lights and leave sidewalks under-illuminated. Pedestrian-scale lighting should supplement street lights in high-demand pedestrian locations. The Right-of-Way Improvements Manual (ROWIM) currently encourages pedestrian-scaled lighting at pedestrian crossings, in transit zones and near pedestrian-supportive land uses.

Considerations

- The 2012 Pedestrian Lighting Citywide Plan guided new pedestrian lighting provided with Bridging the Gap funding. This funding source has since expired.
- Re-establishing SDOT's Pedestrian Lighting Program could help provide effective illumination levels for the pedestrian realm
- Maintenance cost assumptions for new pedestrian lighting fixtures may be based on new, longer-life LED technologies

Actions associated with this strategy

5.5.1 Update the Pedestrian Lighting Citywide Plan

5.5.2 Identify funding source(s) to provide pedestrian lighting as part of SDOT capital projects

5.5.3 Update the ROWIM to specify desired lighting levels and/or spacing standards where pedestrian-scale lighting is desired to help ensure that private frontage improvements include pedestrian-scale lighting

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Appropriate levels of pedestrian lighting create an inviting, safe-feeling public realm, which is particularly important during Seattle's dark winter months.

CHAPTER 6: PLAN IMPLEMENTATION

IN THIS CHAPTER:

Planning-level Cost Estimates **104**

Funding the Plan **108**

Plan Performance Measures **113**

To help translate the prioritized opportunities for improvement and the strategies and actions identified in this Plan into a list of improvement projects, we will develop an implementation plan following City Council adoption of the Pedestrian Master Plan. Typically implementation plans focus on the near term (3 to 5 years) and are regularly updated to ensure we can best:

- Match deliverables with annual funding availability
- Leverage opportunities and partnerships with other projects and programs to strategically stretch our resources
- Secure and meet delivery commitments for grants and funding partnerships
- Package projects for efficient delivery
- Make implementation plan adjustments based on performance measurement and evaluation

Along with the prioritization framework in Chapter 4 and strategies and actions in Chapter 5, information in this chapter will be used to create the PMP Implementation Plan. This information includes planning-level cost estimates for the Priority Investment Network (PIN) and other pedestrian program needs, an assessment of funding availability, and performance measures to gauge our progress in achieving Plan outcomes.

Implementation of the PMP will continue to occur through the efforts of multiple SDOT programs, as well as through private development activities. SDOT pedestrian programs directly charged with implementing the PMP and other programs and activities that support PMP implementation described in Chapter 3 include:

- PMP Implementation program
- Safe Routes to School
- Vision Zero
- Complete Streets / capital projects
- Neighborhood Greenways
- Neighborhood Street Fund (NSF) and Neighborhood Park and Street Fund (NPSF) community grants
- Sidewalk Repair Program (and other SDOT maintenance activities)

PLANNING-LEVEL COST ESTIMATES

While not all Plan implementation funding sources and amounts for the full 20-year planning horizon are fully known at this time, developing cost estimates to build out the Plan lets us understand the gap between known funding sources and the full funding need. When we size the potential funding gap, we gain information that can guide our future grant activities, leveraging strategies, and funding requests.

To develop planning-level cost estimates, we typically apply an average unit cost (e.g., the average cost to build a blockface of concrete sidewalk) to the number of desired units (e.g., the number of blockfaces missing a concrete sidewalk). Although this approach does not consider project-specific conditions that influence costs, nor does it account for any inaccuracies in determining the number of units, it is a reasonable approach to understanding funding requirements.

Along-the-roadway improvements

New sidewalk needs for both arterial and non-arterial streets within the Priority Investment Network (PIN) are identified in Chapter 4. The types of along-the-roadway improvements on non-arterial streets will differ from the type of improvements recommended for arterial streets. In most cases, arterial streets with along-the-roadway improvement opportunities will receive traditional concrete sidewalks, while non-arterial streets within the PIN are more likely to benefit from one of the low-cost walking improvements. For these reasons, the planning-level cost estimates must distinguish between arterial streets and non-arterial streets.

Arterial streets

Because traffic volumes and speeds tend to be higher on arterial streets, the PMP assumes that most new sidewalks provided along arterials will be traditional, curb-separated concrete sidewalks. Current SDOT cost estimates for building new concrete sidewalks with full curb and drainage are approximately $300,000 per blockface. Actual costs for specific projects may be higher or lower based on a variety of factors, including block length, amount of sidewalk needed (accounting for partial block improvements), and complicated site conditions such as steep grades. Nevertheless, this baseline cost assumption provides an order-of-magnitude understanding of the funding needed to provide new sidewalks along arterials prioritized within the Plan.

As shown in Table 6-1, within the PIN there are approximately 570 blockfaces (full or partial) on arterial streets that are missing sidewalks. At an average cost of $300,000 per blockface, the total planning-level cost to complete arterial sidewalks on the 20-year PIN is estimated to be $171 million.

It is important to note that the number of missing sidewalks provided in Table 6-1 is based on raw data from SDOT's asset management system. Not all locations shown as missing sidewalks within the asset management database are necessarily feasible (or desirable) locations for new sidewalks. For example, there likely are blockfaces shown in the database as missing sidewalks that closely parallel an off-street path or trail, lie along a steep embankment, or are adjacent to railroad tracks or highway on-ramps – all locations where new sidewalks may not be feasible or desirable. As SDOT implements the Plan, we will evaluate these individual locations to determine if new sidewalks are in fact feasible and desirable in the locations identified in the PMP.

TABLE 6-1: ALONG-THE-ROADWAY OPPORTUNITIES FOR ARTERIAL STREETS

	Missing sidewalks*		Average cost per blockface **	Total cost
	Blockfaces	Miles		
All arterials within Priority Investment Network	570	42.1	$300K	$171M

* Based on SDOT asset management database. Not all locations noted as missing sidewalks may be feasible or desirable locations for new sidewalks.
** Actual project costs can vary widely, based on site conditions, delivery method, and other factors. Approximate cost/blockface is provided in 2016 dollars and does not factor in future inflation.

Non-arterial streets

While traditional concrete sidewalks will typically be provided along arterial blockfaces within the PIN, non-arterial streets missing sidewalks are more likely to receive one of the various low-cost improvements outlined in Chapter 5. These low-cost walking paths will provide more pedestrian improvements to more neighborhoods faster, at an average of one-half the cost of a traditional concrete sidewalk.

Table 6-2 identifies more than 3,000 blockfaces (full or partial) of missing sidewalk on non-arterial streets within the PIN. With an assumed average cost of $150,000 per blockface to construct improvements, the total estimated planning-level funding need is $256 million to improve non-arterial walkway needs within the PIN. It should be noted that the actual cost for a new low-cost path will vary widely based on the type of low-cost facility, design, and other factors, such as site conditions and delivery method (i.e., by contractors or City crews).

Low cost improvements create safe spaces for pedestrians within the right-of-way and are nearly half the cost of traditional sidewalks. NE 135th Street is pictured above.

TABLE 6-2: ALONG-THE-ROADWAY OPPORTUNITIES FOR NON-ARTERIAL STREETS

	Missing sidewalks*			Average cost per blockface**	Total cost	
	Blockfaces	Street segments	Miles		Both sides of street	One side of street
All non-arterials within Priority Investment Network	3,109	1,704	206.4	$150K	$466M	$256M

* Based on SDOT asset management database, and not validated via on-the-ground survey. May include full or partial blockfaces. Not all locations noted as missing sidewalks may be feasible or desirable locations for new sidewalks.
** Actual project costs can vary widely, based on type of walking path provided, site conditions, delivery method, and other factors. Approximate cost/blockface provided in 2016 dollars, and does not factor in future inflation.

Crossing-the-roadway improvements

The crossing-the-roadway analysis in Chapter 4 evaluates all arterial intersections within the PIN for opportunities to make crossing the roadway easier for pedestrians. These new infrastructure investments include new signals, new curb ramps, and treatments to shorten crossing distances across wide roadways, such as curb bulbs and pedestrian refuge islands.

While the PMP identifies intersections within the PIN that should be evaluated for crossing improvements, the Plan does not prescribe the exact improvement needed at each location. In fact, the particular improvement appropriate at an individual intersection will vary, depending on a variety of factors. As the Plan is implemented, we will evaluate these high priority locations to determine the particular type of crossing improvement appropriate at each intersection. Because the Plan cannot prescribe the exact type of crossing improvements needed at each intersection, it is difficult to accurately predict the full cost of providing crossing improvements within the PIN. We can, however, provide rough cost estimates for the various types of improvements that could be applied at prioritized intersections. Table 6-3 outlines the types of improvements that could be used to improve crossing conditions at prioritized intersections, as well as the approximate unit cost of each type of improvement.

As for sidewalk cost estimates, it is important to note that actual project costs can vary widely from these baseline estimates. Site conditions, method of delivery, and other factors can greatly impact actual project costs. However, the rough estimates provide an order of magnitude understanding of the funding needed to provide crossing improvements within the PIN.

TABLE 6-3: COST ESTIMATES FOR VARIOUS TYPES OF CROSSING-THE-ROADWAY IMPROVEMENTS

Type of crossing improvement	Rough construction cost estimate*
New signal (full)	$350,000
New signal (pedestrian signal)	$150,000
Rectangular Rapid Flashing Beacons	$50,000
New crosswalk striping	$720
Curb bulb (single)	$40,000
Pedestrian refuge island	$4,000
Curb ramp (single)	$5,500

* Estimates are for construction costs only and do not include design costs or other soft costs. Actual project costs can vary widely, based on site conditions, delivery method, and other factors. Cost estimates are provided in 2016 dollars and do not factor in future inflation.

FUNDING THE PLAN

The PMP is a 20-year plan. While it is not possible to know all implementation funding sources for the full 20-year planning horizon at this time, we are able to project several known funding sources and amounts, as well as provide preliminary strategies for optimizing implementation dollars. While the PMP Implementation Plan will identify particular funding sources and project leveraging strategies to build sidewalk and crossing improvements, the following section provides a general overview of the funding sources we will use to implement the PMP.

Levy to Move Seattle

In November 2015, Seattle voters passed a 9-year, $930 million transportation levy to fund transportation improvements and maintenance activities across all parts of the city. The Levy to Move Seattle will fund improvements to reduce congestion, increase transportation safety, and address the city's transportation maintenance needs. It will provide roughly 30% of the city's transportation budget over the 9-year term. As a replacement of the 9-year, $560 million 2006 Bridging the Gap Levy, which expired at the end of 2015, the new levy provides a substantial increase in transportation revenues. Levy funding will be allocated to several pedestrian-related programs and projects, and will be a critical tool for implementing PMP recommendations through 2025.

Tables 6-4, 6-5, and 6-6 detail the total Levy to Move Seattle funding amounts that will be distributed to SDOT pedestrian-related programs, maintenance activities, and capital projects, as well as the implementation deliverable associated with that levy funding.

TABLE 6-4: 9-YEAR LEVY FUNDING FOR SDOT PROGRAMS IMPLEMENTING AND SUPPORTING THE PMP

SDOT program	Total levy amount (9-year)	Levy deliverable
PMP Implementation Program	**$91M**	See below
• *Curb ramps and crossing improvements*	*$30M*	• *Make curb ramp and crossing improvements at up to 750 intersections citywide*
• *New sidewalks*	*$61M*	• *Build 250 new blocks of sidewalk (traditional and low cost sidewalks)* • *Make residential streets without sidewalks safe and more comfortable for pedestrians, including through partnership with Seattle Public Utilities in the flood-prone Broadview neighborhood*
Safe Routes to School	**$7M**	Complete 9-12 Safe Routes to School projects each year
Vision Zero	**$23M**	Complete 12-15 corridor safety projects, improving safety for all travelers on high-crash streets
Neighborhood Greenways	**$36M***	Complete 60 miles of new greenways
Neighborhood Street Fund Grant Program	**$26M**	Complete 20-30 neighborhood priority projects to improve safety, mobility, access, and quality of life in those neighborhoods
Transportation Operations	**$37M**	Maintain and improve the City's system of traffic signals, signs and markings

*The Levy to Move Seattle allocates a total of $65M to implementing the Bicycle Master Plan (BMP) citywide network, including protected bike lanes and greenways. The dollar amount shown is an estimate of the approximate portion of that aggregated funding that will be needed to complete 60 miles of new greenways. Actual project costs may be higher or lower based on site conditions, delivery method, and other factors.

TABLE 6-5: 9-YEAR LEVY FUNDING FOR PEDESTRIAN-RELATED MAINTENANCE ACTIVITIES

SDOT program	Total levy amount (9-year)	Levy deliverable
Sidewalk Repair Program	$15M	Repair up to 225 blocks of sidewalk in urban centers and urban villages
Stairway Rehabilitation Program	$4.6M	Not specified
Signs and Markings (crosswalk repainting)	$4M	Crosswalk repainting frequency on a four-year or better cycle
Urban Forestry	$20M	• Tree Trimming: Add a new tree crew focused on quick response to critical pruning needs (such as clearances for people biking and using sidewalks, and at transit stops) and on ensuring clear sightlines to traffic signals and signs • Tree Planting: Replace every tree removed due to disease or safety with two new trees

TABLE 6-6: 9-YEAR LEVY FUNDING FOR IDENTIFIED CAPITAL PROJECTS SUPPORTING/IMPLEMENTING THE PMP

SDOT program	Total levy amount (9-year)	Levy deliverable
Multimodal improvements	$104M	Complete 7+ multimodal corridor projects redesigning major streets with more frequent and reliable buses, upgraded paving, signals and other improvements to improve connectivity and safety for all travelers (projects will include pedestrian elements)
Natural Drainage partnership	$10M	Partner with SPU to pave streets, provide new pedestrian infrastructure and crossing improvements, and address drainage issues in the flood-prone South Park neighborhood
Northgate Pedestrian Bridge	$15M	Provide City funding contribution for a pedestrian and bicycle bridge over I-5 connecting to light rail in Northgate
Accessible Mt. Baker	$2M	Implement early portions of the Accessible Mt. Baker project (will include pedestrian improvements) near the light rail station area

Program leveraging

To provide as many pedestrian improvements across the PIN as possible, we will seek to maximize funding dollars by leveraging improvements between programs wherever possible. Identifying potential leveraging opportunities will be a key strategy in the PMP Implementation Plan.

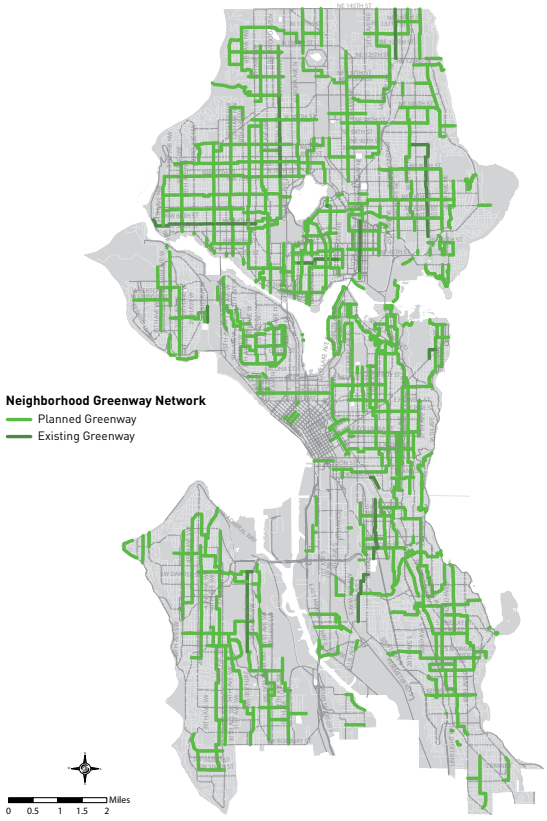
Where priority projects for various City programs overlap, improvements can be provided simultaneously to bring down cost. For example, where an arterial repaving project is located along a street that is also prioritized for pedestrian improvements in the PMP, the repaving and pedestrian improvements can sometimes take advantage of design and delivery efficiencies, thereby reducing project costs for both programs.

Identifying potential leveraging opportunities will also be a key strategy to provide pedestrian improvements on non-arterial streets. To stretch our dollars, the PMP Implementation Plan will identify opportunities to coordinate improvements with various SDOT programs (and programs from other City departments) that provide improvements to residential streets.

Programs that will be evaluated for potential leveraging opportunities to provide low-cost (or other) pedestrian improvements to non-arterial streets within the PIN include:

- **Safe Routes to School:** SDOT's Safe Routes to Schools (SRTS) program provides new sidewalks and other pedestrian improvements to both arterial and non-arterial streets connecting families and children to schools. The program uses a variety of factors to prioritize improvements within school walksheds, including the priorities established in the Pedestrian Master Plan. Moving forward, SRTS will be a key source to identify non-arterial streets within the PIN for improvements, including low-cost improvements.
- **SDOT Neighborhood Greenways Program:** Neighborhood Greenways were introduced in the 2014 Seattle Bicycle Master Plan as a component of the citywide bicycle network. Greenways are intended to provide a low-stress network of calmed, non-arterial streets prioritized for walking and biking. As shown in Figure 6-1, the planned Neighborhood Greenway system extends across the city and overlaps many streets within the PIN currently lacking sidewalks. As the Neighborhood Greenways program prioritizes new projects moving forward, project leads will be able to identify any overlaps with prioritized non-arterials in the PMP, potentially enabling greenway and low-cost improvements to be delivered together.

FIGURE 6-1: NEIGHBORHOOD GREENWAY NETWORK



- **Inter-departmental partnerships:** Seattle Public Utilities (SPU) provides natural drainage system improvements (roadside rain gardens) within identified creek watersheds to capture stormwater runoff. Some of the streets prioritized by their Natural Drainage Systems program do not currently have sidewalks. When natural drainage improvements are provided on streets without sidewalks, a sidewalk must be constructed as part of the project. SDOT and SPU can work together to look for opportunities to prioritize and construct natural drainage and sidewalk improvements on non-arterial street segments prioritized in the PMP.

Grant funding opportunities

In addition to the funding sources and leveraging strategies outlined above, we will continue to pursue federal and state grant dollars to fund pedestrian infrastructure improvements prioritized in the PMP. Specific grant programs are targeted to non-motorized improvement projects such as new sidewalks and crossing improvements. The PMP Implementation Plan will leverage potential grant opportunities when prioritizing improvements within the PIN.

Pedestrian improvements not funded by SDOT

A significant number of new pedestrian improvements built in Seattle are constructed in association with frontage improvements required as part of the approval process for private development. Similarly, other public agencies also often build or improve sidewalks and curb ramps when engaging in construction work within the right-of-way.

As a 20-year plan, the PMP intentionally exceeds known public funding projections, and it assumes that many of the improvements called for in the PIN will be delivered by private developments or other agencies making improvements within the right-of-way. Leveraging private development to help provide pedestrian system improvements will also be a key tool to implement PMP improvements moving forward.

PLAN PERFORMANCE MEASURES

Performance measures help track the PMP's effectiveness over time and measure our progress toward achieving the Plan goals of safety, equity, vibrancy, and health. They are generally outcome-based and are focused on achieving policy objectives rather than concrete project or program deliverables. The intent of outcome-based performance measures is to determine whether investments are effectively achieving desired Plan outcomes.

Table 6-7 identifies the 6 PMP performance measures we will use to track our progress moving forward and the Plan goals each measure supports. The table also provides targets or desired trends for each measure and 2015 baseline data to provide a foundation for comparing Plan performance moving forward.

CHANGES TO PERFORMANCE MEASURES

The 2009 PMP was one of our first modal master plans to develop performance measures. Chapter 3 provides a detailed evaluation of progress toward meeting each of the 2009 PMP performance measures since the Plan's adoption.

We updated the performance measures based in part on our ability to collect the relevant data (both now and in the future), to align with department initiatives (like Move Seattle and Vision Zero), and to provide some consistency across department reporting metrics. The update also provided an opportunity to focus the performance measures on metrics that most directly relate to PMP implementation.

In total, there are 6 performance measures for the PMP moving forward. Two of the original 2009 measures are retained verbatim, 2 have been modified, 2 have been combined, and 6 have been eliminated. One new measure has also been created.

TABLE 6-7: 2016 PMP PERFORMANCE MEASURES

Measure	PMP performance measure	Desired trend	Performance target	Data source	2015 Baseline	PMP goal addressed			
						Safety	Equity	Health	Vibrancy
1	Number of pedestrian fatalities and serious injury collisions	Decreasing rate of pedestrian fatalities and serious-injury collisions	Pedestrian fatalities and serious-injury collisions reach zero by 2030	SDOT collision database, sourced from police traffic collision reports	53 pedestrian fatalities and serious injury collisions in 2015	X	X	X	X
2	Rate of crashes involving pedestrians, reported both by pedestrian crashes per 100,000 residents, and pedestrian crashes per pedestrian trips	Decreasing rate of pedestrian crashes per 100,000 residents	None recommended	SDOT collision database, sourced from police traffic collision reports American Community Survey population estimates Puget Sound Regional Council (PSRC) Household Travel Survey	78 pedestrian collisions per 100,000 residents _____ 2014: 74 pedestrian collisions per 100,000 pedestrian trips	X	X	X	
3	Percent of sidewalks within the Priority Investment Network completed	Increasing percentage of Priority Investment Network arterial sidewalks completed	100% of Priority Investment Network arterial sidewalks complete by 2035	SDOT Asset Management	Percent PIN arterials with sidewalks: 93% _____ Percent PIN non-arterials with sidewalks: 79%	X	X	X	X

TABLE 6-7: 2016 PMP PERFORMANCE MEASURES (CONTINUED)

Measure	PMP performance measure	Desired trend	Performance target	Data source	2015 Baseline	PMP goal addressed			
						Safety	Equity	Health	Vibrancy
4	Mode share (percentage of trips made on foot as measured in the PSRC Household Travel Survey)	Increasing percentage of trips	None recommended	PSRC Household Travel Survey	2014: 24.5%	X	X	X	X
5	Pedestrian activity (number of pedestrians in selected count locations)	Increasing number of pedestrians at count locations over time	None recommended	Downtown Seattle Association (DSA) counts SDOT citywide counts	Downtown average: 48,600 _____ Citywide average: 91,200	X		X	X
6	Children walking or biking to or from school	Increasing number of trips by children	None recommended	SDOT Safe Routes to School (SRTS) Program	2013: 22.7%	X	X	X	X

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