Seattle Department of Transportation

CITY OF SEATTLE PEDESTRIAN MASTER PLAN



Mayor's Recommended Plan
April 2017

Seattle Department of Transportation


EXTREME
SLOW
ORDER
新星酒家
NEW STAR RESTAURANT
SOUND

CONTENTS

CHAPTER 1: INTRODUCTION **1**
Why Walkability and Accessibility Matter 1
Plan Purpose 3
Who Does the PMP Serve? 4
Community Engagement 6
Plan Organization 9

CHAPTER 2: POLICY FRAMEWORK **11**
Plan Vision, Goals, and Objectives 11
Planning Context 15

CHAPTER 3: MEASURING PROGRESS **25**
Understanding the Pedestrian System 25
Improving the Pedestrian System 26
Activities Guided by the PMP 27
Other Programs and Activities Providing Pedestrian Improvements 33
How has the PMP Guided Pedestrian Improvements? 34
Plan Performance 43
Lessons Learned 45

CHAPTER 4: PRIORITIZING PEDESTRIAN IMPROVEMENTS **49**
Prioritization Framework 49
Network Development: the Priority Investment Network 52
Opportunities for Pedestrian Improvements 62
Evaluating Pedestrian Opportunities 68
Implementation Plan Priorities 71

CHAPTER 5: IMPLEMENTING STRATEGIES AND ACTIONS **73**
Along-the-Roadway Strategies and Actions 78
Crossing-the-Roadway Strategies and Actions 89
Network-wide Strategies and Actions 100
Education, Encouragement, and Enforcement Strategies and Actions 104
Pedestrian Quality and Comfort Strategies and Actions 107

CHAPTER 6: PLAN IMPLEMENTATION **113**
PMP Implementation Plan 113
Prioritization Framework 114
Planning-Level Cost Estimates 115
Potential Funding Opportunities 119
Plan Performance Measures 124

ACKNOWLEDGMENTS **127**

LIST OF FIGURES

Figure 1-1: PMP Public Engagement by the Numbers 7
Figure 2-1: PMP Policy Framework 12
Figure 2-2: Traffic Fatalities on Seattle Streets 19
Figure 3-1: Programs and Activities that Provide Pedestrian Improvements 27
Figure 3-2: New Sidewalk Construction, 2009-2015 27
Figure 3-3: Crossing Improvements, 2009-2015 27
Figure 3-4: 2009 PMP High Priority Areas 35
Figure 3-5: Programs and Policy Changes Made Since 2009 PMP Adoption 38
Figure 3-6: High Vehicle Speeds Increase Likelihood of Pedestrian Injury 45
Figure 4-1: Prioritization Framework 51
Figure 4-2: Priority Investment Network, Northwest Sector 56
Figure 4-3: Priority Investment Network, Northeast Sector 57
Figure 4-4: Priority Investment Network, West Sector 58
Figure 4-5: Priority Investment Network, East Sector 59
Figure 4-6: Priority Investment Network, Southwest Sector 60
Figure 4-7: Priority Investment Network, Southeast Sector 61
Figure 4-8: Number of Vehicle Lanes at PIN Arterial Intersections 65
Figure 4-9: Distance to Nearest Controlled Crossing Opportunity on PIN Arterial Streets ... 67
Figure 4-10: Arterial Safety Analysis 70
Figure 4-11: Equity and Health Analysis 72

LIST OF TABLES

Table 1-1: PMP Community Events and Briefings ... 8
Table 3-1: Pedestrian Assets 25
Table 3-2: SDOT Pedestrian Improvements Located in PMP High Priority Areas 34
Table 3-3: Pedestrian Related BTG Accomplishments 36
Table 3-4: 2009 PMP Performance Measures Evaluation 43
Table 4-1: Walkshed Network Distances 53
Table 4-2: Blockfaces and Missing Sidewalks 62
Table 5-1: Implementing Strategies and Actions 74-77
Table 6-1: Qualitative Evaluation Criteria 114
Table 6-2: Sidewalk Maintenance Costs 115
Table 6-3: Along-the-Roadway Opportunities for Arterial Streets 116
Table 6-4: Along-the-Roadway Opportunities for Non-arterial Streets 117
Table 6-5: Cost Estimates for Various Types of Crossing-the-Roadway Improvements 118
Table 6-6: 9-year Levy Funding for Programs Implementing and Supporting the PMP 120
Table 6-7: 9-year Levy Funding for Pedestrian-Related Maintenance Activities 121
Table 6-8: 9-year Levy Funding for Capital Projects Implementing and Supporting the PMP 121
Table 6-9: PMP Performance Measures ... 125-126

APPENDICES

1. Public Involvement Plan
2. Public Survey Report
3. Evaluation of the 2009 PMP Performance Measures
4. 2014 Knowledge, Attitudes, and Behaviors Survey Responses
5. 2009 PMP Prioritization Methodology
6. Prioritization Best Practices
7. 2016 Prioritization Methodology
8. 2009 PMP Pedestrian "Toolbox"
9. Pedestrian "Toolbox" Best Practices

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

All photos provided by SDOT unless otherwise noted.


Rainier Ave S
THE
Royal Room


Look Out
for Each Other
seattle.gov/visionzero
VISION
ZERO
SDOT
Seattle Department of Transportation

CHAPTER 1: INTRODUCTION

IN THIS CHAPTER:

Why Walkability and Accessibility Matter 1

Plan Purpose 3

Who Does the PMP Serve? 4

Community Engagement 6

Plan Organization 9

Walking is the oldest and most efficient, affordable, and environmentally-friendly form of transportation. Nearly everyone at some point in the day is a pedestrian. Walking is how people taking transit reach their eventual destinations, how people driving get from the parking lot to the front door, how people moving packages get from the curb to their delivery point, and how people bicycling get from the bike rack to the business.

Walking is about more than transportation. As pedestrians, we meet new neighbors, explore treasured places, improve our bodies and minds, and support our local businesses.

For young people, walking affords a sense of independence. For seniors, walking is an effective means to stay physically and socially active. In addition, people living with disabilities may be more likely to be pedestrians, as some physical limitations make driving difficult. Our definition of walking includes mobility for all people—people of any age, people who use wheelchairs or other mobility devices, and people with visual, hearing, or other impairments.

SEATTLE PEDESTRIAN MASTER PLAN VISION:

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

As a City, we want people to walk safely and with pleasure in ever-increasing numbers. The Seattle Pedestrian Master Plan (PMP) demands respect for pedestrians as it defines the steps to make Seattle a more walkable, accessible, safe, livable, and healthy city.

WHY WALKABILITY AND ACCESSIBILITY MATTER

Walkability and accessibility are at the core of a strong and healthy community. We define walkability as a measure of how friendly an area is to pedestrians. Accessibility means we address the mobility needs of all people.

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 to live.

Walkable, accessible cities share common elements:

- A safe and connected pedestrian network that helps ensure a high quality of life for residents and visitors
- Direct connections to transit and the destinations it serves

- An age-friendly network of safe and barrier-free sidewalks, paths, walkways, and pedestrian crossings that provide essential connections for people of all ages and abilities
- Clear and inviting spaces to move along every street
- Well-maintained pedestrian facilities that are easy for everyone to navigate, including those who rely on wheelchairs and other mobility devices
- Destinations within walking distance that allow people to live close to transit, schools, jobs, services, and neighborhood businesses
- 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 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 and sustainable form of transportation that is available at no cost. As such, a quality pedestrian network is at the core of an equitable and accessible transportation system. It is essential for seniors, children and young adults, people with limited mobility, and people living in places with fewer transportation choices, including many low-income people and people of color.

When people choose to walk instead of drive, it reduces vehicle trips and greenhouse gas emissions and creates less wear on existing infrastructure. In addition, a well-connected, comfortable pedestrian network improves personal health by promoting physical activity.

DID YOU KNOW?

Customers and visitors access our neighborhood business districts in many ways. Since 2011, we have conducted intercept (in-person) surveys in business districts around the city to provide local business organizations and City departments with data to better understand:

- How often people visit neighborhood business districts
- The purpose of their visit
- How they got there (walking, driving, transit, biking, etc.)
- If they drove, where they parked

The data overwhelmingly shows that most residents who live near the business district arrive as a pedestrian. Columbia City, the only location surveyed twice, saw an increase from 49% in 2011 to 65% in 2016 of area residents walking to its neighborhood business district.

In contrast to area residents, visitors to our neighborhood business districts most often arrive by their own vehicle or transit. Having frequent transit and pedestrian connections upon arrival are integral to reducing driving trips and increasing those by transit or walking.

Surveys have been conducted in the neighborhood business districts of: Columbia City, Green Lake, Capitol Hill, Chinatown-International District, Ballard, Fremont, Admiral, and Othello.

PLAN PURPOSE

The PMP is a 20-year blueprint to achieve our vision of Seattle as the most walkable and accessible city in the nation. To achieve this outcome, we must focus on the safety and well-being of our residents and the vibrancy of our neighborhoods.

With limited funding to improve sidewalks and crossings each year, which facilities should be built first, and where? What actions should be prioritized to improve safety and pedestrian access in the city? What tools are appropriate to improve the quality and comfort of the pedestrian realm?

The PMP addresses these questions by establishing a prioritization framework and policies, programs, and project opportunity areas to advance pedestrian safety and accessibility. 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.



Making the case for investing in pedestrian mobility

Walking is the fastest growing mode of transportation in Seattle. Between 2009 and 2015, the number of people walking to work rose from 27,300 to over 43,500 people (60%).[1] This growth is even greater in the Center City, where walking to work increased by 10% between 2012 and 2014[2] (Center City includes Seattle's most dense neighborhoods: the Commercial Core, Uptown, Belltown, South Lake Union, Denny Triangle, Capitol Hill, First Hill, Pioneer Square, and the Chinatown-International District). City-wide growth in walking to work during this time was 3.6%.[3] Seattle ranked 5th in the country for the percentage of people who commute to work on foot.[4]

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. Seattle is consistently recognized as one of the nation's safest and most accessible cities for pedestrians, and we are tied for the second-lowest pedestrian fatality rate in the country.[5]

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 business district, many areas of the city lack sidewalks or other pedestrian infrastructure and have few accessible destinations. Between 2005 and 2012, we have

[1] United States Census American FactFinder
[2] 2014 Center City Commuter Mode Split Survey, Commute Seattle
[3] United States Census American FactFinder
[4] 2016 Benchmarking Report, Alliance for Biking & Walking
[5] Ibid.

seen an increase in the percentage of adults who are overweight, or who have diabetes.[6] And, despite our pedestrian fatality rate being one of the lowest in the country, we have seen an uptick in recent years.

The PMP will guide pedestrian investments to ensure Seattle is prepared for continued growth and to meet the Plan's vision and goals.

Seattle PMP Vision and Goals

The foundation of the PMP is expressed in its vision:

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

The vision statement is supported by the following 4 goals (described in Chapter 2):

Safety – Reduce the number and severity of crashes involving pedestrians

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

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

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

WHO DOES THE PMP SERVE?

This Plan is intended to improve mobility conditions for all who use our city's sidewalks, walkways, 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 or hearing impairments. Our definition of walking includes mobility for people who use wheelchairs or other mobility devices.



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

[6] 2016 Benchmarking Report, Alliance for Biking & Walking

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 would continue to reflect best practice in policy, planning, and design. This update also affords an opportunity to ensure the data and methodology we use to prioritize pedestrian improvements in Seattle continue 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 PMP include:

- An **assessment of Plan implementation** since 2009, including an evaluation of whether built projects are meeting Plan goals and 2009 performance measures.
- Identification of a **Priority Investment Network (PIN)** with a focus on safe access to schools and transit.
- An updated **prioritization framework**, to better align with Plan goals, community priorities, and City policies, including racial equity and social justice.
- **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 reflect City initiatives, provide consistency across department reporting metrics, and are based on available relevant data. The updated Plan also establishes performance targets or trends for each measure.

COMMUNITY ENGAGEMENT

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 engagements allowed us to learn from community members and organizations, who provided essential guidance for the plan.

The feedback we received 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.

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. As the steward of the PMP, the Board tracks 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 city-wide. 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.

Survey results are described in Chapter 4, and the full public survey report is provided in Appendix 2.

Public open houses

We held 2 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 Seattle Department of Transportation (SDOT) 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.



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

FIGURE 1-1: PMP PUBLIC ENGAGEMENT BY THE NUMBERS



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 Parkways, Ballard Summer Parkways, 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.

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

What we heard

During our outreach, we asked people "What is the single most important thing we can do to improve walking conditions in Seattle?" Event attendees and those who completed surveys 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.

Public review of the PMP

A final phase of engagement obtained public input on the draft PMP. Over 330 comments were received from 45 different individuals, advocacy groups, and City organizations during the public review period. Their comments were used to develop the final plan.

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 facility investment throughout Seattle.

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 developing an implementation plan, and identifying 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

IN THIS CHAPTER:

Plan Vision, Goals, and Objectives **11**

Planning Context **15**
Comprehensive Plan: Seattle 2035 16
Move Seattle 17
Modal Master Plans 19
Vision Zero 19
Climate Action Plan 20
Complete Streets policy 20
Right-of-Way Improvements Manual .. 21
Other planning efforts 22

PEDESTRIAN MASTER PLAN VISION, GOALS, AND OBJECTIVES

A policy framework is typical of all of our modal master plans, as illustrated in Figure 2-1. The policy framework for the Pedestrian Master Plan (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 the PMP is built on and are 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 SPAB recommended minor modifications to the Plan's vision, goals, and objectives, to:

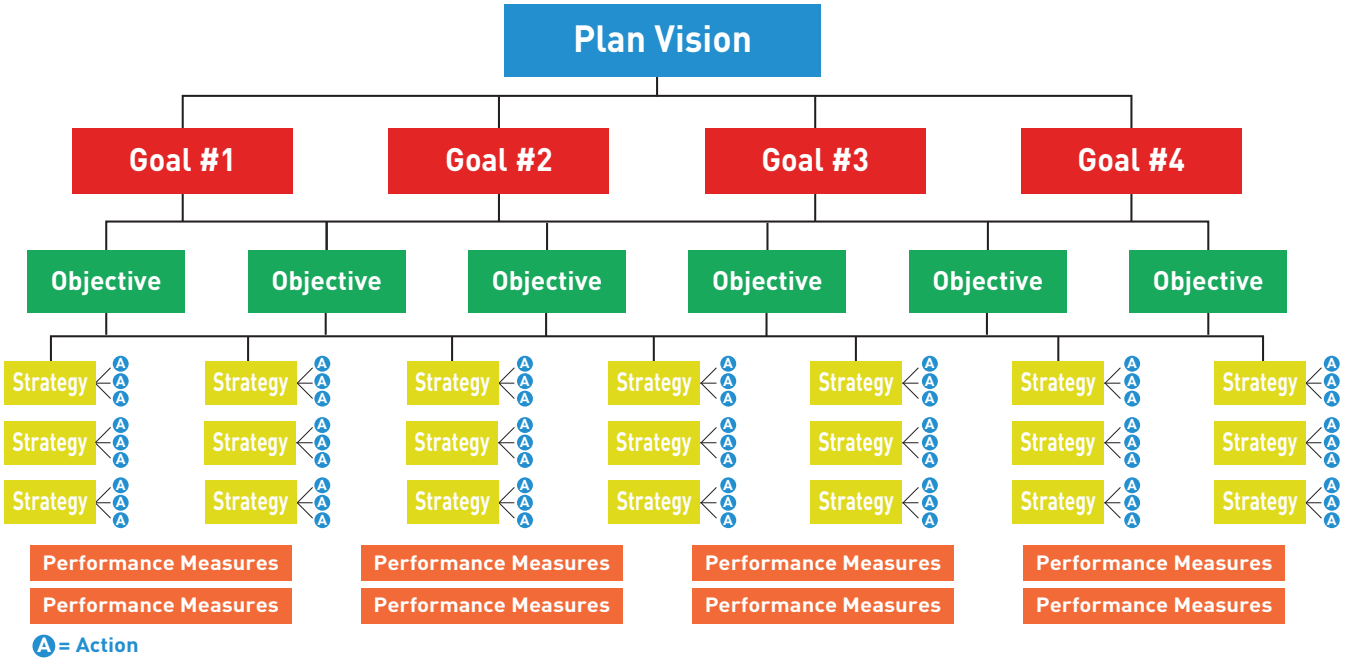
- Reflect the City's ongoing commitment to accessibility
- Explicitly identify walking and other means of active transportation as a way to improve public health and mobility
- Highlight the importance of connectivity within and between neighborhoods

Plan Vision

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

The PMP envisions Seattle as the most walkable and accessible city in the nation. We want Seattle to become a "pedestrian city" where people will use the 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 people who live and work in Seattle, and those who visit our city. People who live in accessible, pedestrian-friendly areas are more likely to be 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 all people—people of any age, people who use wheelchairs or other mobility devices, and people with visual, hearing, or other impairments.

Equitable services and investments provide the same opportunities for all people and strive to correct the historical inequities that exist in our society. This may require more investment in areas that have non-existent or deficient facilities, especially in areas where a greater share of the population rely most on our sidewalks and crossings. 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 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 is something that most people can do at almost any age. Seniors who walk regularly have a longer life expectancy than those who do not walk. And in addition to benefiting physical health, walking is 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, shifting trips from driving to walking can help 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. Developing safe, comfortable pedestrian facilities can help Seattle residents make walking part of their active and 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 - 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 2 - Improve walkability and accessibility on all streets

While certain streets within the city are prioritized for improvements, 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 - Complete and maintain the pedestrian system identified in the PMP

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

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

Complete Streets accommodate multi-modal travel and may include 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 PMP builds on 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 or updated since the original PMP was adopted. This section of the plan summarizes these policy documents including:

- Seattle Comprehensive Plan
- Move Seattle
- Modal master plans
- Vision Zero
- Climate Action Plan
- Complete Streets policy
- Right-of-Way Improvements Manual
- Other planning efforts

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 do not 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, Seattle 2035, is a 20-year vision and road map for Seattle's future. The Plan guides City decisions on where to support 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
- **Race and 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
- Monitoring growth in locations where low-income households and people of color are at risk of displacement
- Contributing to the vibrancy of our neighborhood centers
- Reinforcing the benefits of City investments in transit, parks, utilities, community centers, and other infrastructure
- Guiding how the City will engage the public in future planning and decision making

RIGHT-OF-WAY ALLOCATION POLICIES

The City's Comprehensive Plan contains a series of 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 (e.g., bus stops and short-term passenger vehicle parking)
- Access for commerce (e.g., loading spaces for trucks)
- Activation (e.g., parklets)
- Greening (e.g., street trees, green stormwater infrastructure)
- Storage (long-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 and priorities 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. These outcomes and actions helped shape the PMP strategies and actions identified in Chapter 5.

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
- Establish default speeds on arterial streets of 25 mph
- Create a traffic safety education kit for community groups and schools to promote road safety and Vision Zero
- Partner with Seattle Police Department (SPD) 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

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 parts 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

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

Modal Master Plans

In addition to the PMP, the City has 3 other city-wide modal master plans: the Transit Master Plan, the Bicycle Master Plan, and the Freight Master Plan. Adopted by the City Council, each of these plans reflect our core values; and identify policies, projects, programs, performance measures, and priorities to advance their respective transportation modes.

Many of the modal plans identify needs on the same streets and corridors. When implementing projects identified in one modal master plan, staff consult all other master plans to understand the demands on specific streets and corridors. At times, they must reconcile or make trade-offs between different needs identified in the respective plans. The right-of-way allocation policy developed as part of the Comprehensive Plan update provides the decision-making framework for these assessments.

Once a modal master plan is adopted, resources are required for implementation. In the recent Levy to Move Seattle, there is funding allocated for pedestrian improvements (see Chapter 6).

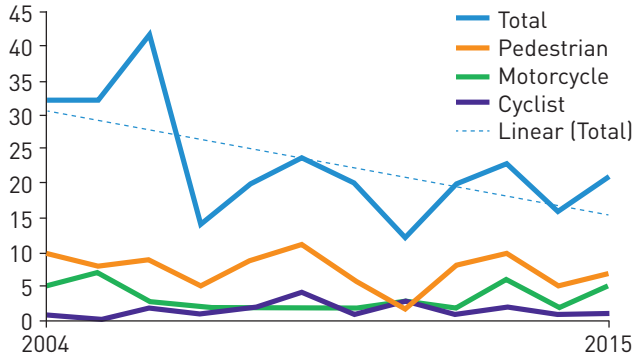
Vision Zero

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 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.

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: TRAFFIC FATALITIES ON SEATTLE STREETS



Pedestrians and bicyclists make up a disproportionate percentage of all traffic fatalities.

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 PMP 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 all projects (except maintenance) 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 address the access and mobility needs of everyone who uses the right-of-way.

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

The 2017 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.



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

Other planning efforts

The City has many planning efforts that provide a targeted look at a neighborhood, sub-area, or specific topic and that touch on pedestrian issues. These efforts include:

- Neighborhood, sub-area, and corridor planning
- Trails Upgrade Plan
- Trees and Sidewalks Operations Plan
- Pedestrian Lighting Citywide Plan

Neighborhood, sub-area, and corridor planning

Transportation planning is a vital element to develop in our neighborhoods to ensure safe and easy access for pedestrians, transit, people on bikes, trucks, and cars. Neighborhood, sub-area, and corridor planning helps communities identify major transportation issues and potential solutions, and prioritize and implement the solutions. By identifying strategies to improve access and mobility, we can work to accommodate the growth expected in our Comprehensive Plan.

These planning efforts complement our modal master plans, work to accomplish their goals, and set more localized priorities for implementation. Examples include the City's work on Move Ballard, Accessible Mt. Baker, and One Center City.

ONE CENTER CITY

One Center City is a sub-area plan that will create a 20-year vision and action plan to improve transportation and provide great public spaces for everyone. Center City includes 10 neighborhoods: Uptown, South Lake Union, Capitol Hill, Belltown, Denny Triangle, Pike Pine, Commercial Core, First Hill, Pioneer Square, and the Chinatown-International District.

The plan will set priorities for how we use our street, make sure that all the pieces of our transportation system work together, and identify opportunities to enhance the public realm. It builds from each of our modal master plans to develop integrated project solutions and more localized priorities.

Trails Upgrade Plan

The Seattle Trails Upgrade Plan builds from the Seattle Pedestrian and Bicycle Master Plans and supports safety, social equity, economic productivity, sustainability, and livable communities. Maintenance and improvement of the trails will increase the use of the network by making them safer and reducing barriers to use.

The Plan includes:

- Existing trail conditions assessment
- Updated maintenance plan
- Evaluation of trail expansion needs
- Updated design guidelines and policies
- Design concepts for 3 to 5 locations
- Determination of priorities at trail crossings (for example, who goes first?)

Trees and Sidewalks Operations Plan

To better address commonly occurring conflicts between trees and sidewalks, the City developed the Trees and Sidewalks Operations Plan. It clarifies responsibilities and work processes, and provides guidance on installation, repair, and maintenance of sidewalks and street trees in Seattle's rights-of-way.

The 2009 PMP included policy guidance for the development of the operations plan. The Trees and Sidewalks Operations Plan informs the work of SDOT, and 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.



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

Pedestrian Lighting Citywide Plan

The Pedestrian Lighting Citywide Plan provides the City's approach to pedestrian lighting within the right-of-way, and it outlines the needs and opportunities for pedestrian lighting city-wide. This plan is a follow-up implementing action of the 2009 PMP and is specific to pedestrian lighting located within the City-owned right-of-way. The plan also has implications for private lighting where noted. The goals of this plan are two-fold:

- To provide a data-driven approach to placing pedestrian lighting in the right-of-way for safety, security, economic development, active transportation, and access
- To improve how the City plans for, designs, and implements pedestrian lighting

Lighting for pedestrians is an integral part of Seattle becoming the most walkable and accessible city in the nation. Pedestrian lighting has multiple purposes including:

- Help pedestrians to safely navigate sidewalks and pathways
- Provide for visibility and security at all hours
- Extend the hours that a business district is active
- Encourage walking as part of an active lifestyle
- Improve access to transit and other services


GAP

CHAPTER 3: MEASURING PROGRESS

IN THIS CHAPTER:

Understanding the Pedestrian System 25

Improving the Pedestrian System..... 26

Activities Guided by the PMP 27

Other Programs and Activities Providing Pedestrian Improvements 33

How has the PMP Guided Pedestrian Improvements?..... 34

Plan Performance..... 43

Lessons Learned 45

Evaluating our asset investments and accomplishments helps to tell us whether the Pedestrian Master Plan (PMP) 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 existing pedestrian assets, how we typically improve the system, our progress implementing the PMP, and how well we've done in achieving its vision and goals, as indicated by the Plan's performance measures.

Since 2009, we have made notable progress toward achieving many of the performance measure trends established in the PMP. Furthermore, we have implemented several new projects and programs (for example, parklets) beyond what was originally recommended in the Plan in our effort to make Seattle a more walkable and accessible city. Even with these advances, however, there is room for improvement.

UNDERSTANDING THE PEDESTRIAN SYSTEM

The pedestrian system is made up of many components — from sidewalks and paths, to crosswalks and curb ramps. Each element is a key building block creating an effective pedestrian network. The cost to develop such a network is high. When taken together, our pedestrian facility assets are estimated be valued at $5.5 billion.

Table 3-1 shows a count of different pedestrian assets as of 2015.[1]

TABLE 3-1: PEDESTRIAN ASSETS*

Asset	Count	Unit
Sidewalks	33,650	Blockfaces**
Curbs	12,368,283	Linear ft
Marked crosswalks	5,509	Count
Curb ramps***	27,253	Count
Stairways	509	Count
Trails	40.2	Lane miles
Pedestrian Bridges	30	Count
Pedestrian/Bicycle counter	4	Count

*2015 SDOT Asset Management Status and Condition Report

**2016 PMP analysis. We use the term "blockface" as the measurement for missing sidewalks or walkways, which is 300 feet or the average length of one side of a city block

***2016 curb ramp survey

[1]Due to data limits, previous iterations of these counts are unavailable

SDOT ASSET MANAGEMENT

Asset management is a strategic approach to managing our transportation infrastructure assets. It is best understood as achieving the best performance results for the preservation, improvement, and operation of infrastructure assets given the resources available. The City's Asset Management Status and Condition Report provides a description of these transportation infrastructure assets; their value and condition; and the funding needed to maintain and preserve them. This document is typically updated every 2 years.

The report acts as a reference guide. It uses asset data to provide a baseline in prioritizing our efforts; for business process improvements; and for management decisions on the operation, maintenance, and preservation or replacement of SDOT-owned or -maintained infrastructure.

IMPROVING THE PEDESTRIAN SYSTEM

There are 3 principle ways that improvements to the pedestrian facility network are made in the City of Seattle:

1. City sponsored construction of new facilities or upgrades to existing facilities. The PMP guides many of these investment activities.
2. Sponsors of private development projects are required to build or improve pedestrian facilities along the frontage of or connecting to their projects. These assets represent a significant share of the new facilities built in the City each year.
3. Other City transportation programs provide pedestrian improvements consistent with Complete Streets policies 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.



ACTIVITIES GUIDED BY THE PMP

There are several programs and projects that use the PMP prioritization framework to steer pedestrian improvements to high priority areas. 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, according to SDOT's Asset Management database, the various programs and activities within and outside of SDOT that have provided sidewalk and crossing improvements city-wide since the Plan's adoption in 2009. Since 2009, the City has added 200 blockfaces of new sidewalks and made crossing improvements at over 800 intersections.

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

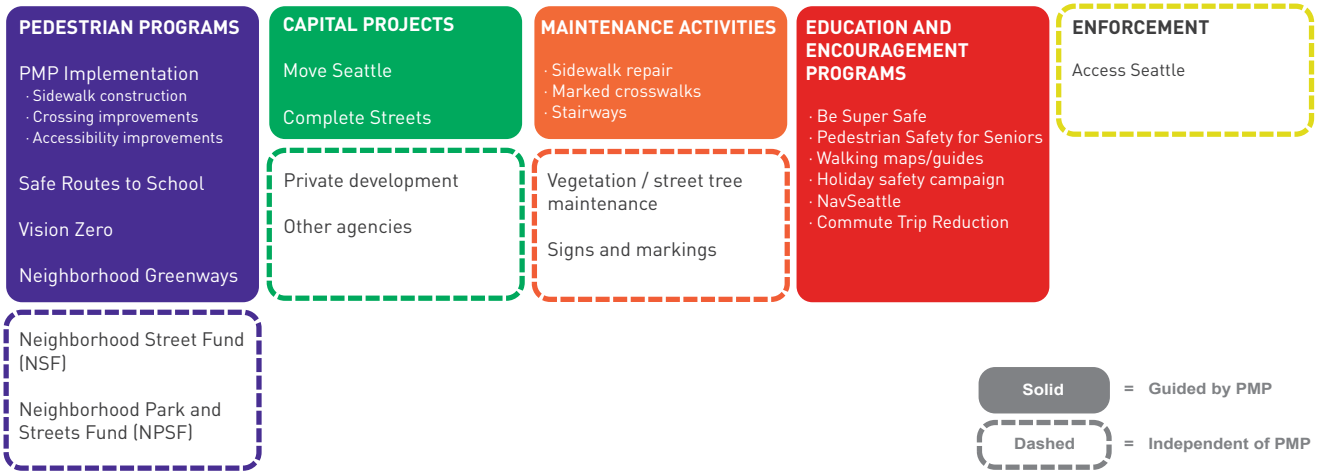


FIGURE 3-2: NEW SIDEWALK CONSTRUCTION, 2009-2015[2]

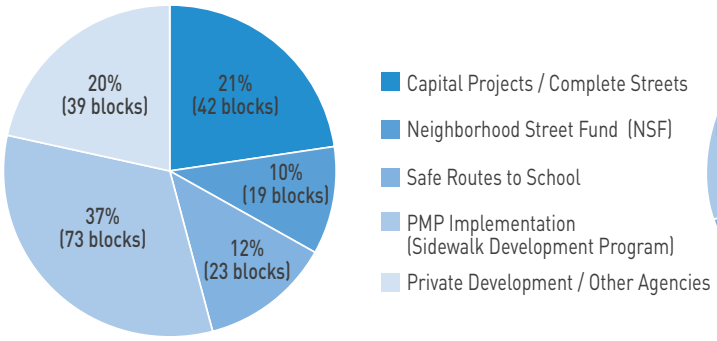
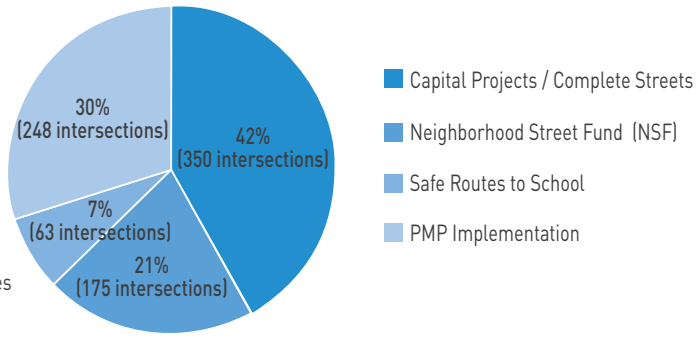


FIGURE 3-3: CROSSING IMPROVEMENTS, 2009-2015[2]



[2] Based on SDOT Asset Management database

Pedestrian programs

The following programs provide for 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 provides for constructing the recommendations of the PMP. It comprises 3 types of activities — sidewalk construction, crossing improvements, and accessibility improvements. It constructs sidewalks and provides crossing improvements in PMP 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. Accessibility improvements are further described on the following page.

The **Safe Routes to School** (SRTS) program funds engineering improvements to improve pedestrian safety within one mile of school walksheds. While SRTS improvements must be located in proximity to a public or private school, the program uses the PMP 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 city-wide 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 priority areas to identify potential opportunities to improve safety for pedestrians traveling along and crossing the roadway.

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 gentle 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 in the 2014 Bicycle Master Plan (BMP) as a key component of the city's bicycle network. Greenways also serve the needs of pedestrians by providing traffic-calming, crossing beacons, pedestrian refuge islands, and crosswalks.

Because Neighborhood Greenways benefit pedestrians and people biking, the Neighborhood Greenways program addresses priorities of both the PMP and the BMP.



Improved crossing along the 39th Ave NE Neighborhood Greenway.

ACCESSIBILITY IMPROVEMENTS

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 PMP 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. The City is currently in the process of updating its 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 installing curb ramps and accessible pedestrian signals (APS), and evaluating new technologies.

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 Implementation program, Neighborhood Park and Street Fund Improvements, and private development projects and utility work.

SDOT's team of engineers work to design and build curb ramps to best serve all pedestrians. This can be very challenging given the topography in Seattle and 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 Signals (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. These devices can be helpful to people who are visually or hearing impaired.

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.

Curb ramps and APS are sometimes requested to be installed for pedestrians with disabilities. The City installs these as soon as funding allows when requested by qualified individuals with disabilities at locations not otherwise scheduled for improvement. Any request is subject to prioritization of improvements as determined by SDOT and available funding. The program is not intended to address community concerns other than access for people with disabilities.

Capital projects

All SDOT capital projects are evaluated against the PMP as part of the Complete Streets assessment that considers 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 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 larger Complete Streets projects as illustrated in Figures 3-2 and 3-3. Examples of Complete Streets projects since 2009 that provided pedestrian improvements in accordance with PMP recommendations include Linden Ave N, the Mercer Corridor Project, NE 125th St, 23rd Ave, and Holman Rd.

Maintenance activities

Maintenance is important to keep existing infrastructure accessible for all people. This includes the sidewalk system, marked crosswalks, and stairways.

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. While the City strives to keep sidewalks in reasonably safe condition, property owners are responsible for maintaining and repairing sidewalks adjacent to their property. When sidewalk damage is the result of a publicly-owned tree, SDOT is responsible for the sidewalk repair.

The program's goal is to improve sidewalks so they are safe and accessible for all pedestrians. Among several other factors, the program prioritizes sidewalk repair projects across the city using the 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 installing, repairing, and maintaining sidewalks and street trees, the City developed the Trees and Sidewalks Operations Plan in 2015.

In 2007, SDOT performed an inventory of sidewalk assets within Urban Villages (25% of the total inventory). We then extrapolated those sidewalk conditions city-wide. While this method gave us a snapshot of potential system need, it was not based on actual conditions. In 2017, we will conduct a sidewalk condition assessment that will evaluate the city-wide system. The data from this project can be used to better understand maintenance needs throughout the city and to prioritize repairs.

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.



Transit island and protected bike lane along the Roosevelt Way NE corridor. In-lane transit stops improve transit speed. The protected bike lane provides an additional buffer between people walking and moving vehicles.

ROOSEVELT WAY NE PROJECT

Initially conceived as a repaving project, the Roosevelt Way NE capital 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 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 Roosevelt Way NE project also provided pedestrian and transit improvements between NE 65th St and the University Bridge, including:

- Replaced buckled sidewalks along the corridor
- Built curb ramps at 56 locations
- Installed 6 transit islands
- Constructed 1.5 miles of protected bicycle lane

Marked crosswalk maintenance is another important activity. The majority of our crosswalk markings have a useful life of 3 to 5 years. We estimate this useful life based on assets affected by heavy pedestrian and vehicle traffic use. Marked crosswalks wear in varying ways, so the City maintains some more frequently than others. The Levy to Move Seattle has a commitment of remarking all crosswalk assets on a 4-year cycle. There are 4 marked crosswalk categories:

- Raised – This includes a paved platform in addition to the striping
- Painted – Due to the short lifecycle, this type of marking will be phased out and replaced with torch-down or thermoplastic materials
- Torch-down – This type of crosswalk marking is where the material is integrated into the pavement through the application of intense heat provided by a torch
- Thermoplastic – This is a crosswalk marking where a plastic amalgam is applied to the pavement and it is the predominant marking used city-wide

Stairways are essential in Seattle due to the many hills and numerous locations where it becomes too steep for a street or sidewalk. They maintain the connection between adjacent neighborhoods and provide connections to the sidewalk system.

We conduct periodic inspections of our stairways, including emergency response to an incident or customer request. Inspectors assessed more than 50% of stairways for condition within the last 3 years. SDOT crews rehabilitate stairways on a priority basis based on condition within the available funding from the Levy to Move Seattle. Because the rate of deterioration of aging stairways exceeds the rate of rehabilitation, the backlog of stairways rated in poor condition will persist. We included an action in Chapter 5 to explore options to establish a fund to build and maintain stairways in the City.

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. The 2017 ROWIM update will include additional updates to pedestrian realm design standards to further implement PMP recommendations. These design standards require 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 more comprehensive 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 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 community-based organizations. 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.

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.

As shown earlier in Figure 3-2, 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 Right-of-Way Improvements Manual.



Sidewalk and drainage improvements along Rainier Ave S in Columbia City received funding from the NSF program.

HOW HAS THE PMP GUIDED PEDESTRIAN IMPROVEMENTS?

The 2009 PMP was intended to direct pedestrian improvements to designated "high priority areas," as illustrated in Figure 3-4. These priority areas were determined by a data-driven assessment that looked at 3 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 but have been designed primarily 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 SDOT-built pedestrian projects have been directed to PMP high priority areas. Table 3-2 includes new improvements added to our asset management database located within 2009 PMP high priority areas. Improvements constructed outside of high priority areas were typically the result of opportunities to leverage funding with other projects through the Complete Streets process.

Despite constructing the majority of our pedestrian investments in high priority areas, only a very small percentage of the 2009 PMP's top-tier projects have been completed to date. This is primarily due to funding constraints. Because so much of the city was identified as a high priority location in the 2009 Plan, this created 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 3-2: SDOT PEDESTRIAN IMPROVEMENTS LOCATED IN PMP HIGH PRIORITY AREAS, 2009-2015[3]

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%



[3] "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

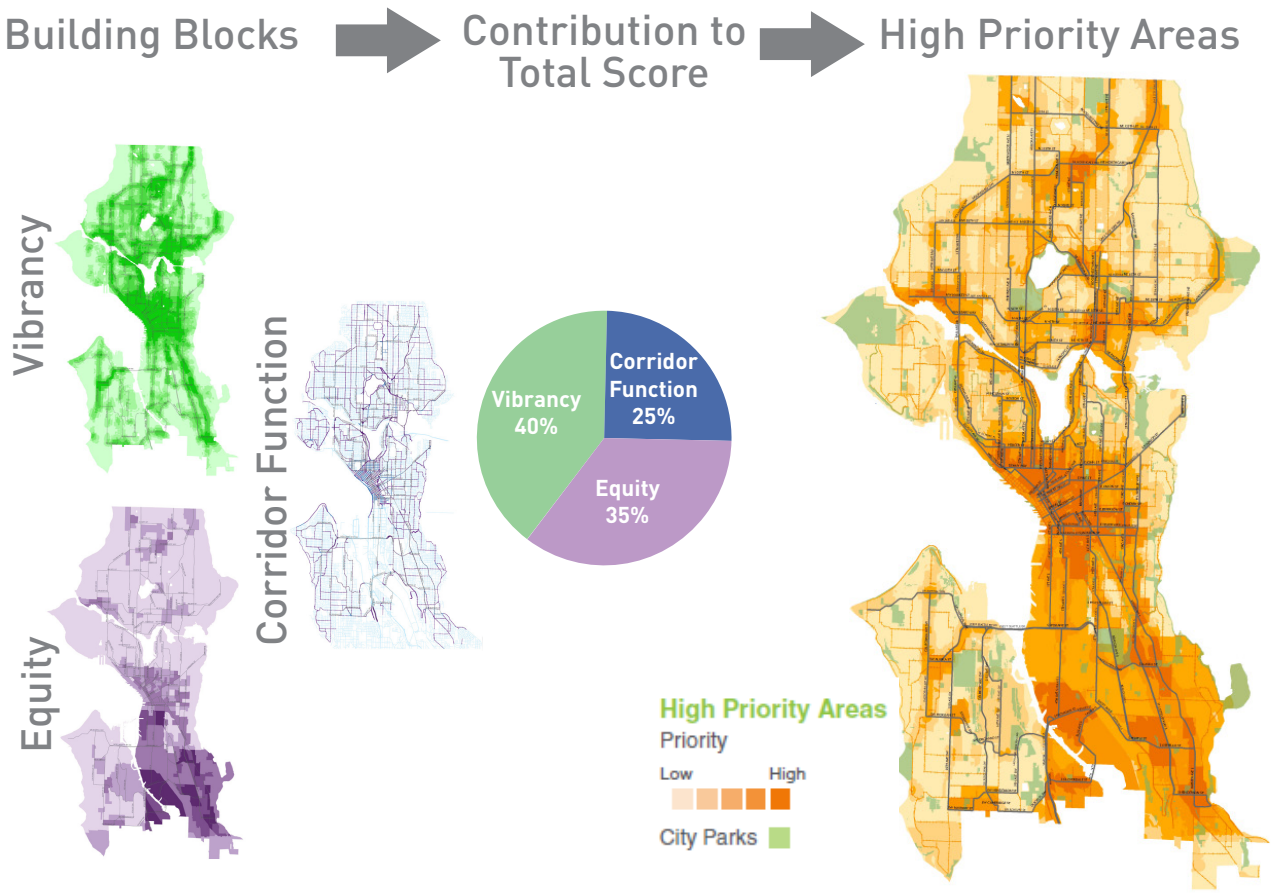
2009 PMP HIGH PRIORITY AREAS

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 2-part analysis of city-wide data is related to these 3 factors:

- **"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 the City can provide pedestrian improvements where they are needed the most

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

FIGURE 3-4: 2009 PMP HIGH PRIORITY AREAS



Accomplishments: Bridging the Gap Levy

In 2006, Seattle voters passed a 9-year, $365 million Bridging the Gap (BTG) Levy for transportation maintenance and improvements. The levy-funded programs address several transportation needs, including 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 Neighborhood Street Fund 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. Table 3-3 shows the pedestrian-related BTG accomplishments.

The 9-year Levy to Move Seattle was passed in 2015 and will continue to address Seattle's transportation needs, including helping to implement the PMP.

TABLE 3-3: PEDESTRIAN-RELATED BTG ACCOMPLISHMENTS

Accomplishment	Initial commitment	Delivered through BTG
Repaired or restored sidewalks	144	220
New sidewalk	117	118
Restriped crosswalks	5,000	5,766
New "safe routes to school"	30	64
Rehabilitated stairways	50	50
Street trees pruned to prevent safety and security hazards	25,000	29,902



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. Many 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 and from outside sources to make staff 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).
- SDOT is in the process of evaluating pedestrian features in the public right-of-way with respect to accessibility. In 2016, we completed a city-wide evaluation of all known curb ramps, totaling almost 28,000 curb ramps.
- Currently the City is updating the ADA Transition Plan to ensure access to city programs for people with disabilities. As the City 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.
- SDOT engineers and designers have 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 have developed a city-wide map to help pedestrians with disabilities plan routes according to varying features and conditions of Seattle sidewalks, curb ramps, and street crossings. This map is available online.

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 pedestrian access needs and abilities of all people.

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 complement 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, parklets and streateries)
- Updates to internal policies or design standards (including updates to SDOT Standard Plans, the Trees and Sidewalks Operations Plan, and the Right-of-Way Improvements Manual(

A list of a programs and policy changes we have made since the 2009 PMP was adopted is shown in Figure 3-5. Selected programs or activities are described in further detail in the following pages.

FIGURE 3-5: PROGRAMS AND POLICY CHANGES MADE SINCE 2009 PMP ADOPTION

2009	• Holiday Pedestrian Safety Campaign • 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 • Holiday Pedestrian Safety Campaign
2011	• Festival street/pedestrian plaza legislation • Mobile food vending legislation • Intercept surveys • McGraw Square opens • Holiday Pedestrian Safety Campaign
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 • Holiday Pedestrian Safety Campaign
2013	• Parklet pilot program • Public Space Management taskforce • Access Seattle construction coordination program • Holiday Pedestrian Safety Campaign
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 • Pedestrian-only streets pilot program • Summer Parkways
2016	• Bicycle and Pedestrian Safety Analysis • Trails Upgrade Plan • Pedestrian education in all public elementary schools • Speed limit reductions • Curb ramp survey • Summer Parkways

Holiday Pedestrian Safety Campaign

From 2009 – 2013, SDOT led a 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 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, cafés 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 underused 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 activation and safety. Our approach is characterized by short-term, low-cost, adaptive, and community-oriented interventions. They provide an opportunity to test the potential for long-term changes, which could include green stormwater infrastructure.



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

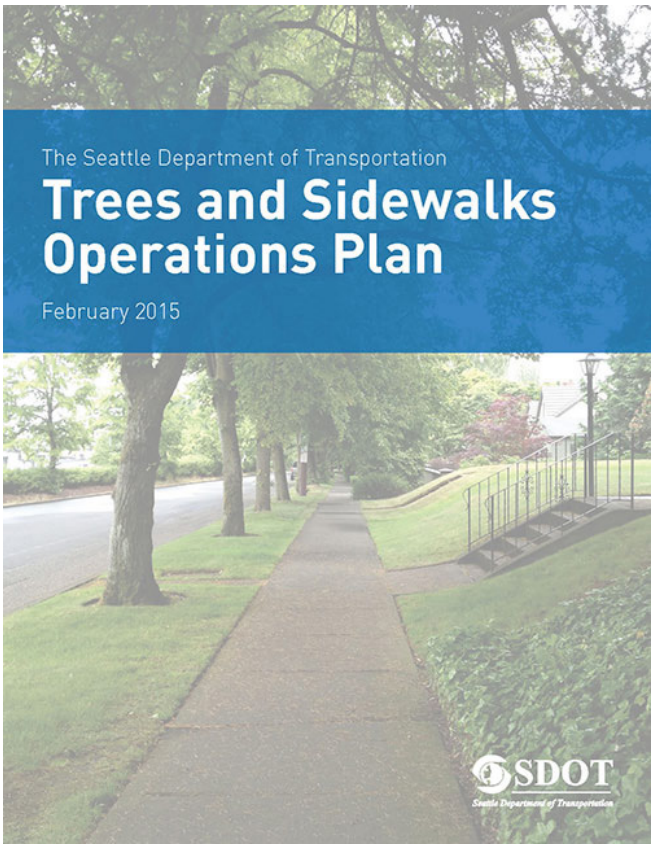
Seattle Summer Parkways are free all-ages events that open up the city's largest public space — our streets —for families, friends, and neighbors to have fun, celebrate the spirit and personality of their communities, discover active healthy transportation, support local businesses, and explore the city car- 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. In 2016, events were held in Rainier Valley, Ballard, and West 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 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. Further, conflicts between street trees and sidewalks can compromise tree health where roots do not have sufficient space. Our Trees and Sidewalks Operations Plan clarifies work processes for maintaining both sidewalks and trees in the right-of-way.



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 proactively 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, SDOT 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 successes and opportunities for improvement moving forward.

The PMP performance measures are primarily outcome-based and are directly tied to the Plan goals of safety, equity, vibrancy, and health. This assessment establishes whether the trends associated with each performance measure are moving in the direction of the desired outcome, facilitating achievement of Plan goals.

Table 3-4 outlines each of the 2009 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, Seattle has made notable progress in the desired direction on 8 of the 12 measures established in the 2009 PMP. The 4 we did not 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 and associated strategies and actions are 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 overall 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. The next section shares the lessons we have learned.

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 3-4: 2009 PMP PERFORMANCE MEASURES EVALUATION

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; no significant change
	Change in vehicle speeds on identified corridors	Reduction in 85th percentile vehicle speeds	No
	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; 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; no significant change
	Children walking or biking to or from school	Increasing number of trips by children	Yes

LESSONS LEARNED

There were several lessons we learned as we reviewed the 2009 performance measures:

- Pedestrian safety is a major concern
- Pedestrian activity continues to grow
- PMP priorities need refinement

Pedestrian safety

Six-in-ten residents think overall pedestrian safety is a problem in Seattle. In 2008, we administered a Knowledge, Attitude, and Behavior (KAB) survey to gauge public awareness of pedestrian/vehicle regulations and optimal safety behaviors for people driving and people walking. The survey was re-administered as part of the Plan update in 2014.

Survey respondents' agreement with the statement "Pedestrian safety is a big problem here in Seattle" significantly increased from 47% in 2008 to 59% in 2014. We also saw an increase in concern about pedestrian safety at downtown intersections.

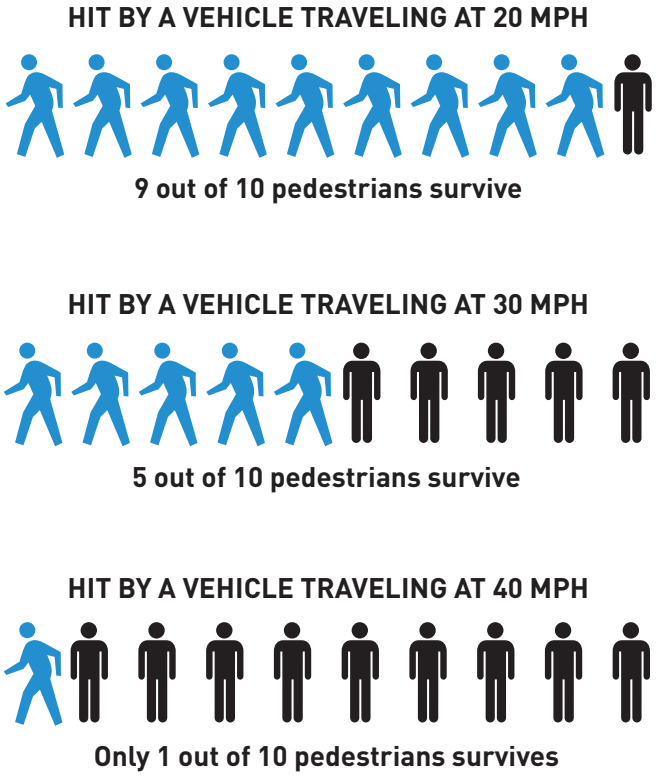
Our data supports these concerns. Between 2008 and 2015, the decline in the overall pedestrian crash rate per 100,000 residents has been insignificant. This is partly due to the relatively low number of pedestrian collisions in Seattle, and the crash rate fluctuating greatly from year to year. However, we have unfortunately seen an increase in the pedestrian crash rate each year from 2013 to 2015. Pedestrians 55 or older are particularly vulnerable and have made up 60.4% of pedestrian fatalities between 2009 and 2015.[4]

Speed is the most important factor in collisions. Higher speeds increase the likelihood and severity of crashes, while lower speed limits improve safety for everyone, especially people walking and biking. Speed consistently contributes to 25 percent of traffic fatalities on Seattle streets.[5] Figure 3-6 shows that speed is especially lethal for these vulnerable users, as the risk of injury and death increases as speed increases.

In 2016, the City adopted new default speeds on arterial streets of 25 mph, unless otherwise posted, as a measure to enhance street safety. We also established 20 mph speed limits on non-arterial streets. Both actions are part of our Vision Zero implementation.

We consider safety for people walking and biking a top priority since the likelihood of injury is nearly 100 percent if they are hit. And it is important to note that safety projects benefit all travelers — people driving, biking, and walking. Through context sensitive engineering and thoughtful enforcement patrols, we can improve our streets to reduce risk and improve conditions for everyone.

FIGURE 3-6: HIGH VEHICLE SPEEDS INCREASE LIKELIHOOD OF PEDESTRIAN INJURY



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

[4] Seattle's Vision Zero Program
[5] Ibid.

Vision Zero provides an opportunity to integrate our safety efforts by combining the street design recommendations of our Pedestrian, Bicycle, Transit, and Freight Master Plans with targeted enforcement patrols and educational outreach to address behavioral issues.

Safety is also a key element of the prioritization framework. Our safety analysis is described in greater detail in Chapter 4.

Growth in pedestrians

Walking is Seattle's fastest-growing mode share, fueled by the development boom across the city. The growth is especially apparent in some of our densest neighborhoods where we've seen large increases in new residents and new jobs. As more people live near shops or work, they are increasingly choosing to walk to their destinations.

The 2006 Puget Sound Regional Council (PSRC) Household Travel Survey showed that 18.1% of all trips in Seattle were made by foot that year. Eight years later, the 2014 Household Travel Survey reported that 24.5% of all trips were made by foot.[6]

We are working with PSRC to collect mode share data on a more regular basis. This will help us to better track this metric in the future.

The number of pedestrians we have counted in Seattle also continues to grow. Since 2011, we have been counting bicyclists and pedestrians at 50 locations across the city. These spot counts provide consistent, annual pedestrian volumes that we can track over time. In addition, the Downtown Seattle Association started counting pedestrians in the center city in 2007. Both count programs have generally seen an increase in pedestrian volumes each year.

Our Safe Routes to School (SRTS) program has also contributed to the growth in walking. Since 2008, we have had an increasing number of school safety, education, and encouragement programs delivered throughout the city — a total of 193 programs, 167 in public schools and 26 in private schools.[7] We extended the SRTS program to all public schools in the fall of 2016.

School travel surveys completed by schools participating in the SRTS program also show an increasing percentage of walking trips to school by children — from 14% pre-SRTS program, to 18.3% in 2011, and to 22.7% in 2013.[8] Currently, neither the City nor the Seattle Public School District tracks the total number or share of children walking to school throughout the city. SDOT is working with partners to develop ways to capture this data.

[6] Part of the growth in walking may be due to a slight change in survey methodology. The 2014 survey asked people to include reports on very short trips and exercise/recreational trips, such as walking around the neighborhood or walking the dog. The 2014 survey therefore includes recreational walking trips, while the 2006 survey focused primarily on transportation-related trips.
[7] SDOT Safe Routes to School program
[8] Ibid.

PMP priorities

The 2009 PMP identified much of the city as a high priority for pedestrian improvements. While this created many opportunities for pedestrian investments, it also made it challenging to substantially complete the high priority projects. In fact, only 2% of identified top tier "along-the-roadway" projects, and 4% of top tier "crossing-the-roadway" projects were completed between 2008 and 2015.

It is important to note that network completion is largely a function of available funding. Since 2009, the large majority (approximately 79%) of SDOT pedestrian improvements were located within PMP high priority areas. This shows the Plan was instrumental in guiding where improvements were made.

However, the low completion rate of high priority improvement needs indicates a need to match Plan priorities more closely to projected funding availability, while seeking new ways to fund additional priority projects. This is reflected in the development of the Priority Investment Network in Chapter 4.

The review also provided us the opportunity to reassess how we are tracking pedestrian assets. SDOT excelled at onboarding some assets, like those related to the Bridging the Gap Levy, better than others. Assets constructed by the private sector, other City agencies, or through large capital projects have not been tracked as closely. We now have processes and resources in place to better track these pedestrian improvements, including dedicated staff.

In addition, a sidewalk condition assessment will aid us in understanding sidewalk maintenance needs, prioritizing repairs, and developing a proactive sidewalk inspection program.

SIDEWALK CONDITION ASSESSMENT

In 2017, SDOT will conduct a sidewalk condition assessment. The project will update and verify our sidewalk asset inventory to give us a comprehensive set of data on system-wide defects, obstructions, widths, vegetation issues, and other risk elements.

The data will support both the PMP and the department's ADA transition plan decision framework. It will aid us in understanding sidewalk maintenance needs, prioritizing repairs, and developing a proactive sidewalk inspection program.



The sidewalk condition assessment will look at various attributes of the sidewalk system, including sidewalk uplifting due to tree roots.


STOP

CHAPTER 4: PRIORITIZING PEDESTRIAN IMPROVEMENTS

IN THIS CHAPTER:

Prioritization Framework 49

Network Development: the Priority Investment Network 52

Opportunities for Pedestrian Improvements 62

Evaluating Pedestrian Opportunities... 68

Implementation Plan Priorities 71

PRIORITIZATION FRAMEWORK

Full implementation of all needed pedestrian facilities across the city will require more funding than is available from the 9-year Levy to Move Seattle and other existing sources. Consequently, network completion is likely to take many years, extending beyond the 20-year horizon of the Pedestrian Master Plan (PMP).

A prioritization framework is needed to narrow the focus of the City's investments in pedestrian facilities to a limited, equitable, and realistic set of projects to complete over the course of the 20-year Plan.

With funding available to improve a limited number of sidewalks or crossings each year, which ones should be built first and where, within the timeline of the Plan?

KEY ELEMENTS IN THE UPDATED PMP PRIORITIZATION

We "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 public schools and the frequent transit network as key pedestrian destinations, directing resources to the most critical components of the pedestrian network
- A clear, connected network of streets linking pedestrians to key destinations; investments will be directed to this Priority Investment Network (PIN)
- Updated data to measure safety, vibrancy, 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 the PMP contributes toward the City's vision of eliminating fatal and serious injuries on Seattle streets by 2030
- Added clarity about the location, number, and type of "along-the-roadway" and "crossing-the-roadway" improvement opportunities within the PIN

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

Throughout the life of the PMP, there are annual opportunities for citizens and elected officials to consider PMP funding levels in the context of other City funding priorities. Decisions made during the annual City budget development process will determine the pace of PMP implementation.

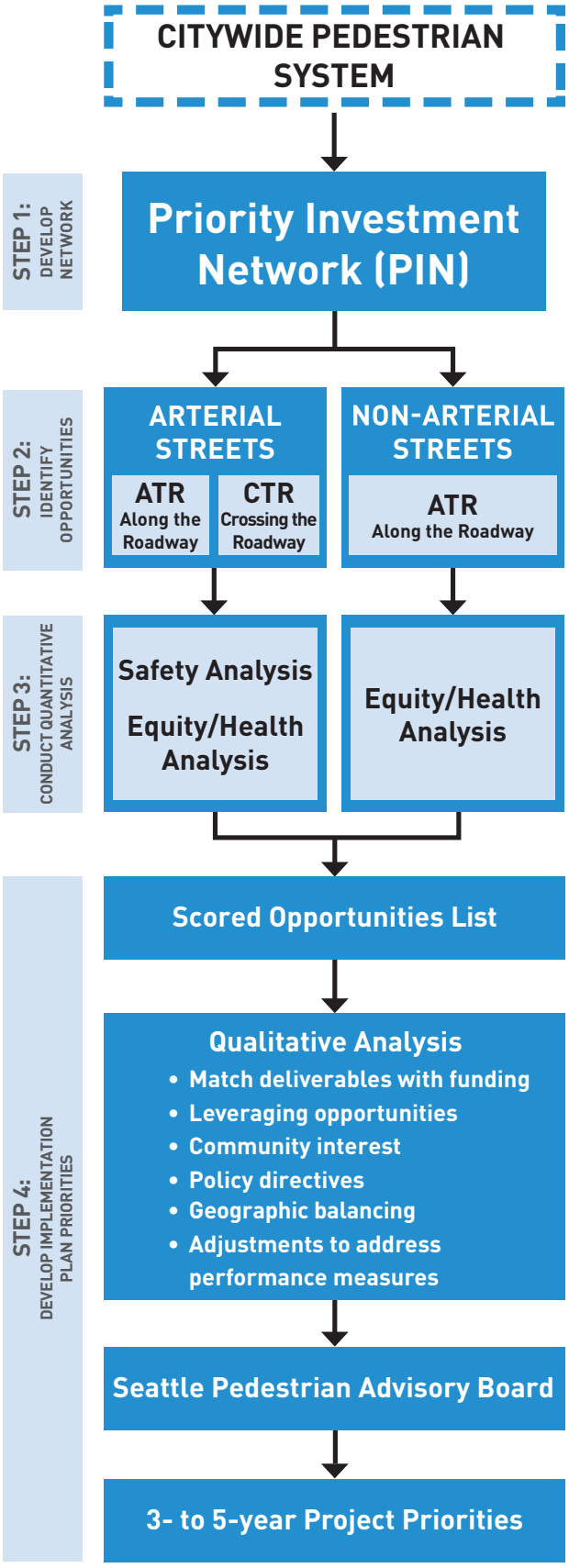
To narrow city-wide need into a 20-year plan, the prioritization framework for sidewalk development and crossing improvements includes 4 steps. These are diagrammed in Figure 4-1 and explained in more detail in this chapter.

- **Step 1:** Develop a city-wide PIN using access to public schools and the frequent transit network; these streets will be prioritized for pedestrian improvements.
- **Step 2:** Identify specific opportunities within the PIN to improve conditions along and across these streets, including locations with missing sidewalks and curb ramps and those with wide crossing distances or widely-spaced controlled crossing locations.
- **Step 3:** Conduct quantitative safety and equity/health analyses to score opportunity areas for sidewalk and crossing improvements within the PIN.
- **Step 4:** Create a 3- to 5-year implementation plan by applying qualitative criteria and input from the Seattle Pedestrian Advisory Board.

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



FIGURE 4-1: PRIORITIZATION FRAMEWORK



PMP IMPLEMENTATION PLAN

An implementation plan will be developed after PMP adoption. It will be similar to those developed for our other modal master plans and will include input from the Seattle Pedestrian Advisory Board. 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, equity, and 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.

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 city-wide public survey where we asked 3 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 framework which 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 kindergarten through 12th grade (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 where people most need to walk across the city.

Schools and transit stops are among the most important pedestrian destinations in the city. Public feedback confirms that residents want to prioritize improvements on streets connecting people — including seniors and people with limited mobility — 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 all people, including seniors, 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

A foundational concept of the PIN is the "walkshed," which includes those streets and paths 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 we overlaid these routes to create a clearly identified, interconnected PIN. Table 4-1 shows the walkshed distances we used for public schools and frequent transit stops. Every city street located within a walkshed of a school or frequent transit stop is included as part of the PIN.

TABLE 4-1: WALKSHED NETWORK DISTANCES*

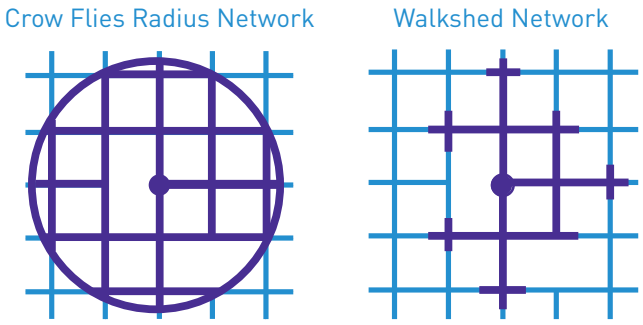
Pedestrian generator	Distance (miles)
K-12 Public Schools	1/4
Frequent Transit Network Stops	
Existing or planned transit hubs**	1/2
Link Light Rail (LRT)	1/2
RapidRide, future Bus Rapid Transit (BRT) and Streetcar	1/4
Frequent/priority bus	1/8

* School walksheds are a ¼ mile to prioritize streets closest to schools. Transit walksheds are based on transit planning and transit oriented development best practices

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

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 where there are 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.



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 PIN assumes that as these existing bus routes are upgraded, existing bus stops will be consolidated to approximately 1/4 mile spacing.

The stop spacing assumption is consistent with the planning assumptions underlying King County Metro's long-range transit plan. While it is not entirely possible to know what existing stops will be consolidated in the future and what 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 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 PIN, consistent with the methodology outlined in this Plan. Sound Transit will assess pedestrian needs for new stations, and provide funding for station access improvements to new and existing stations, consistent with the Sound Transit 3 (ST3) Regional Transit System Plan.

In addition to walksheds to schools and frequent transit stops, the PIN also includes crossings and roadside projects along each of the city's frequent transit corridors. This helps to ensure that there are good pedestrian conditions along, across, and to 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 along, across, and to these corridors also reflects the public's desire to prioritize sidewalk and crossing conditions along busy arterial streets.

The PIN includes 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 links people to important destinations. Funding to improve conditions 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

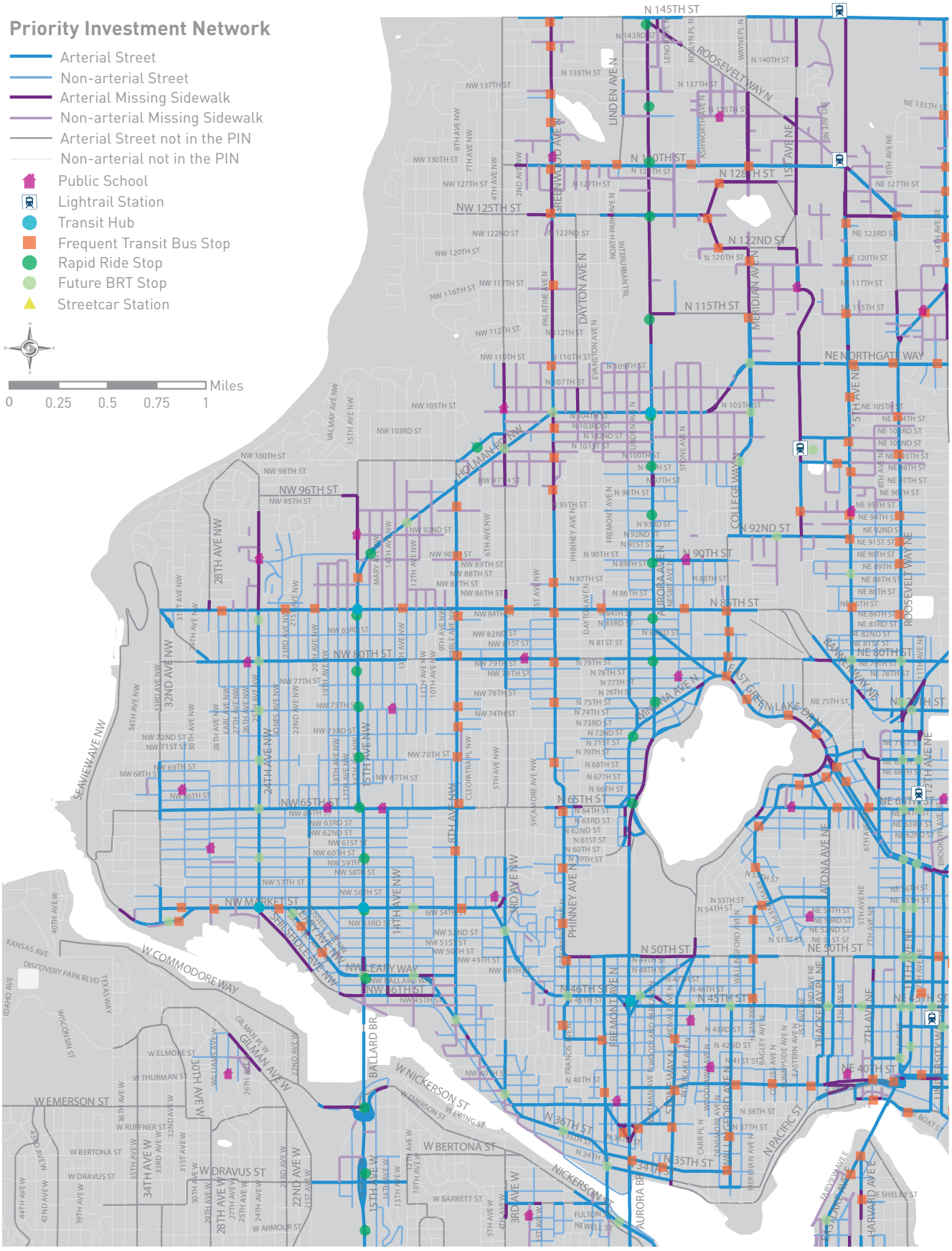


FIGURE 4-3: PRIORITY INVESTMENT NETWORK, NORTHEAST SECTOR

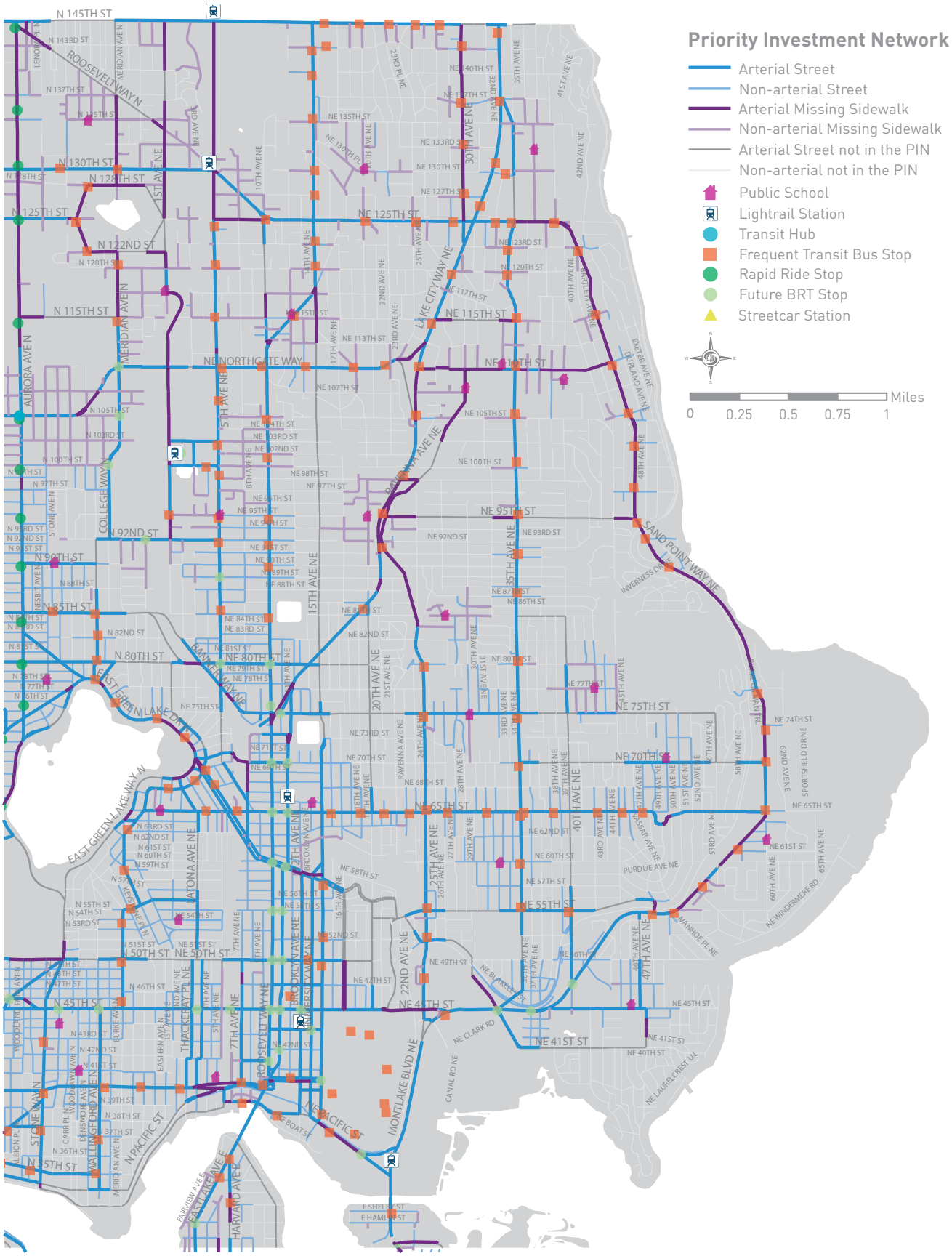


FIGURE 4-4: PRIORITY INVESTMENT NETWORK, WEST SECTOR

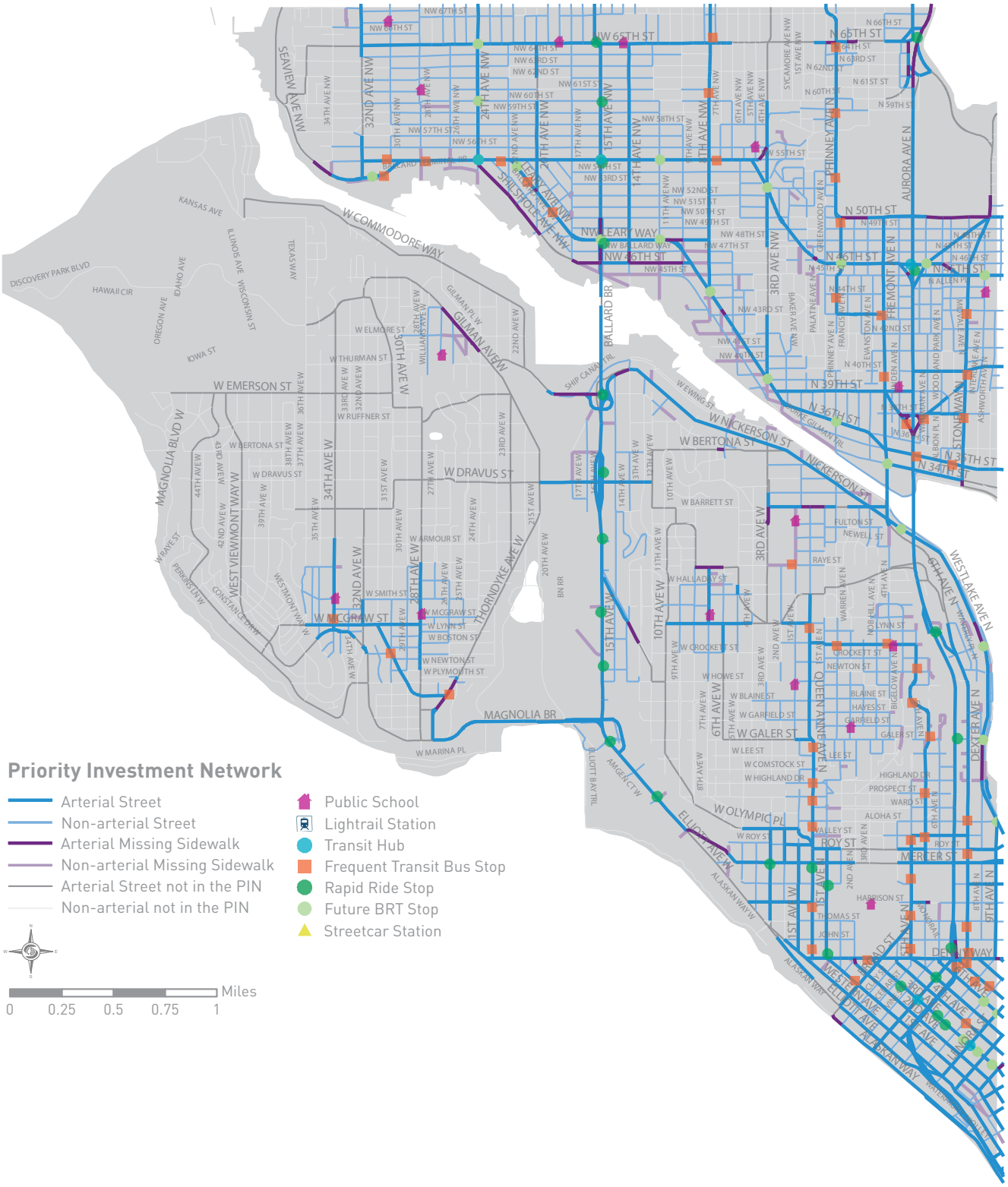


FIGURE 4-5: PRIORITY INVESTMENT NETWORK, EAST SECTOR

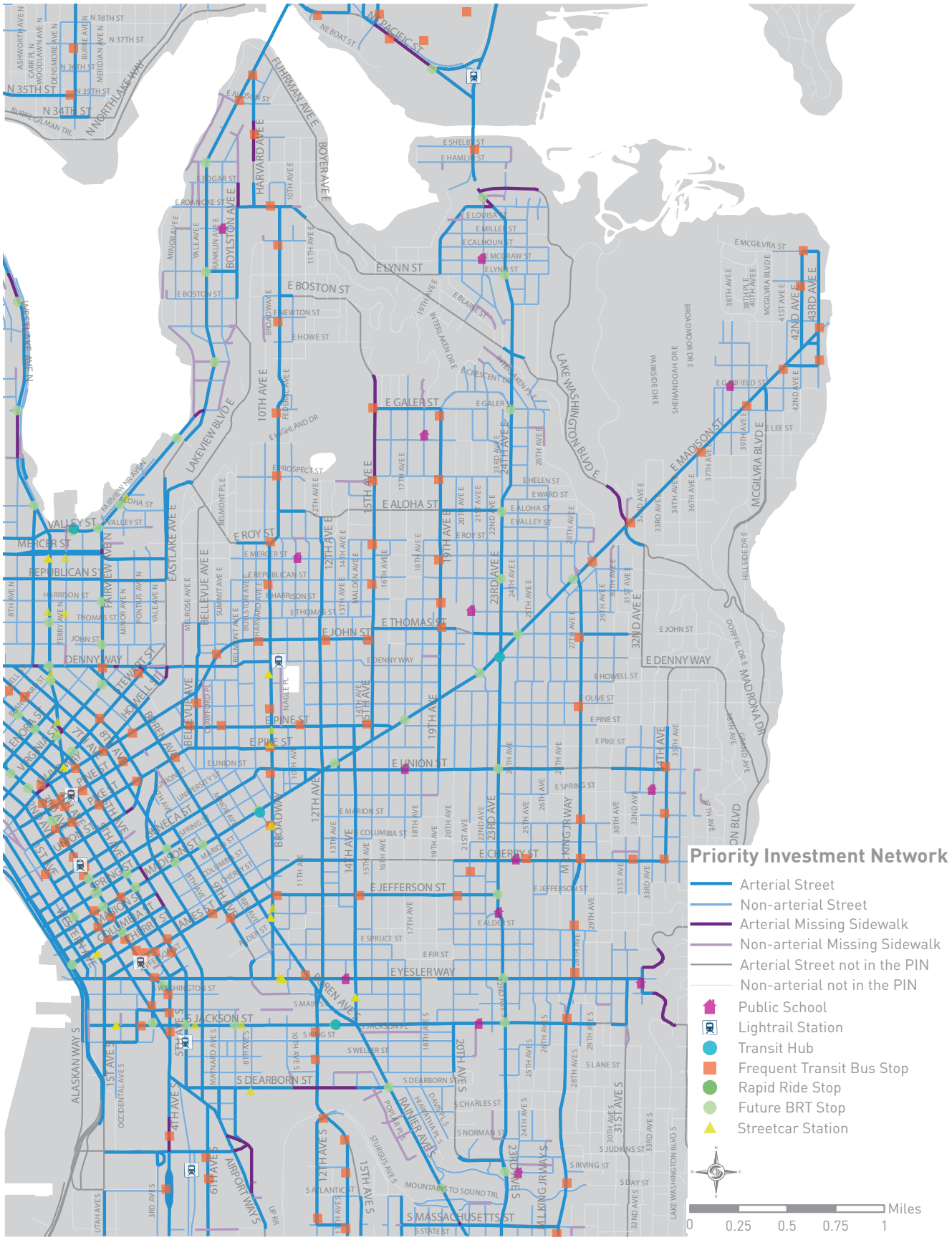


FIGURE 4-6: PRIORITY INVESTMENT NETWORK, SOUTHWEST SECTOR

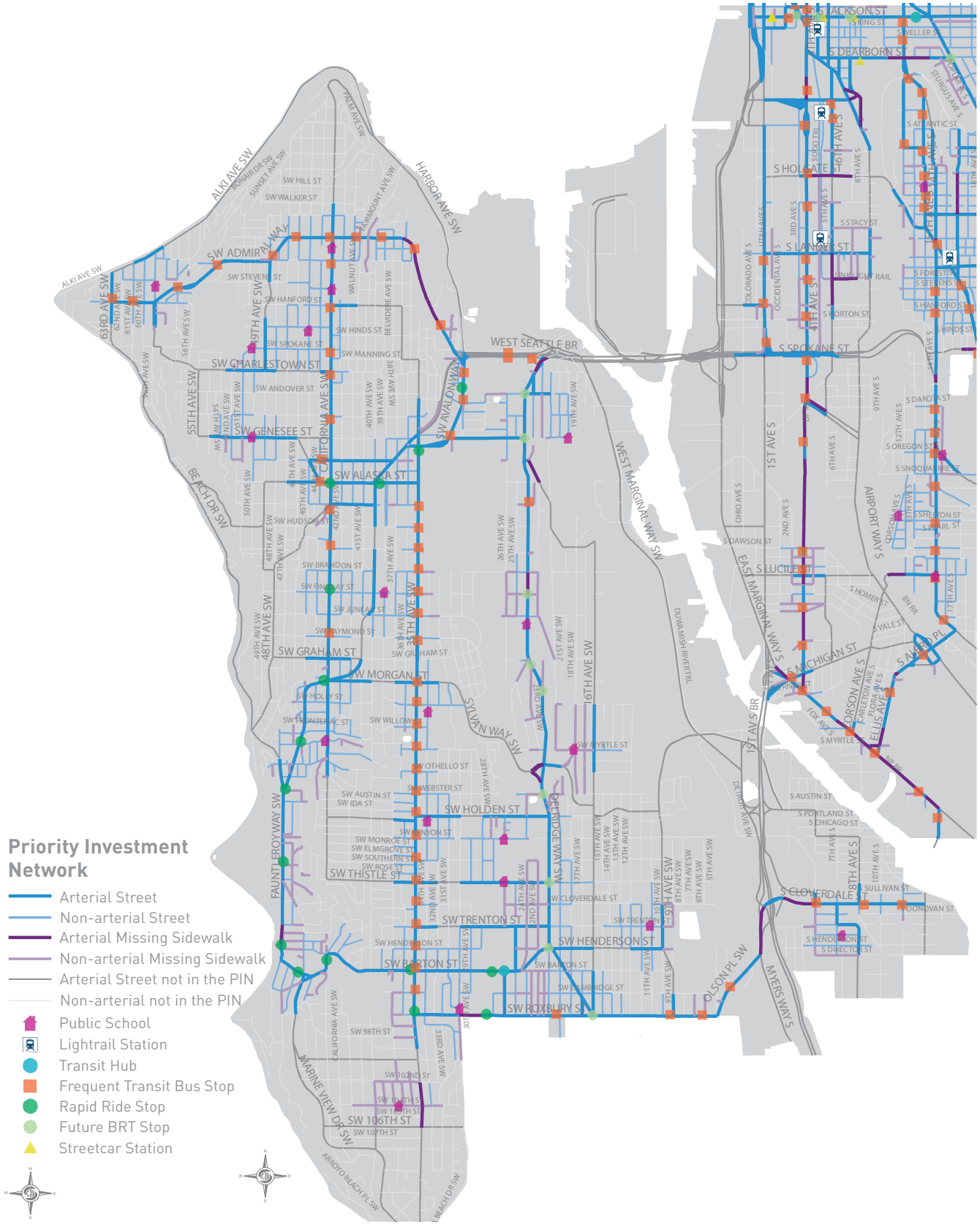
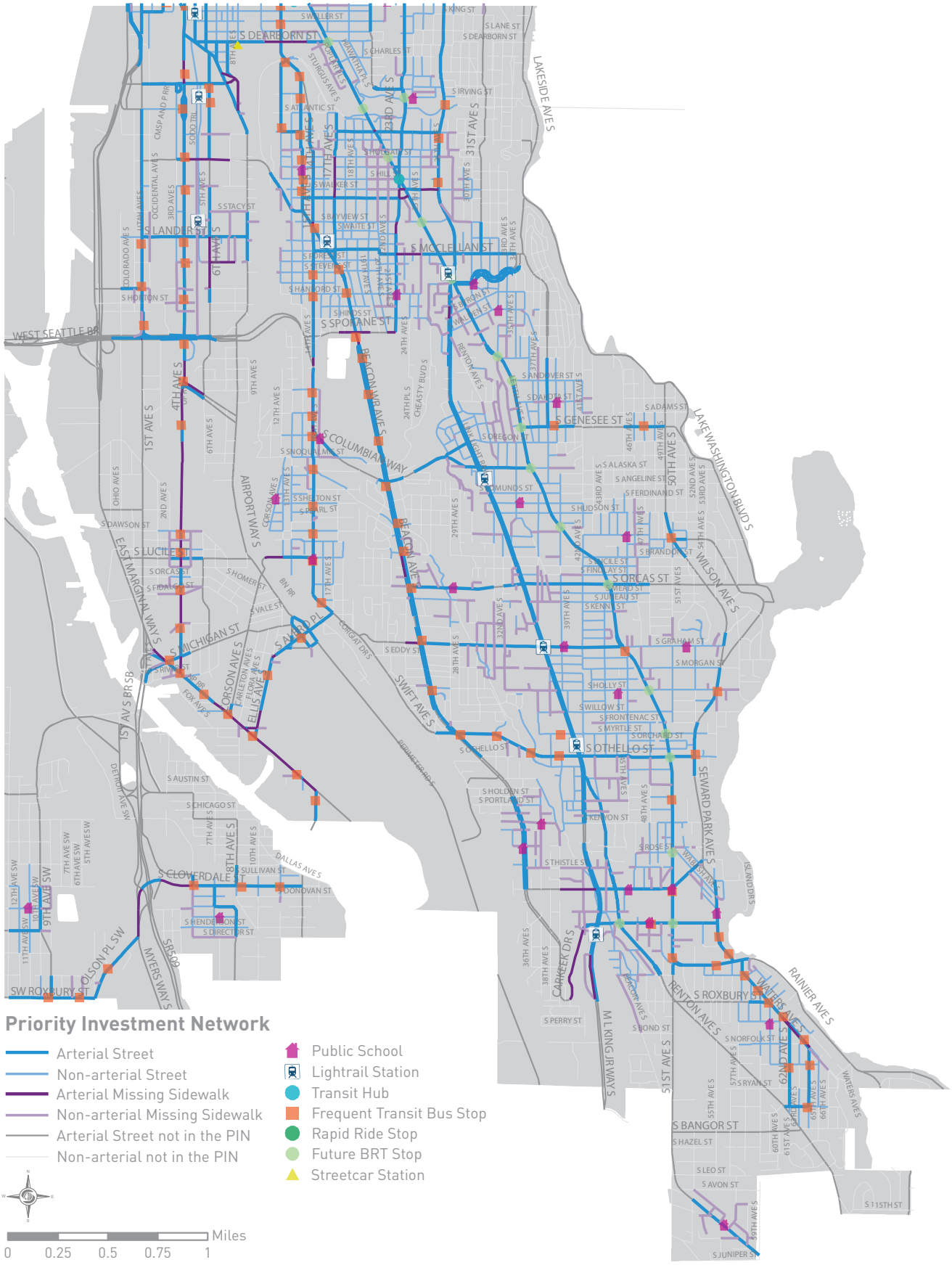


FIGURE 4-7: PRIORITY INVESTMENT NETWORK, SOUTHEAST SECTOR



OPPORTUNITIES FOR PEDESTRIAN IMPROVEMENTS

With a PIN defined in Step 1, our next step is to evaluate the needs and opportunities to improve conditions along- and crossing-the-roadway within that network. The 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 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.[1]

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, is on a block located along a steep embankment, or is adjacent to a freeway or other location without a pedestrian destination. 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.

TABLE 4-2: BLOCKFACES AND MISSING SIDEWALKS[2]

		Total blockfaces	Blockfaces missing sidewalk[3]	Percent missing sidewalk
Citywide	Arterials	12,835	1,804	14.1%
	Non-arterials[4]	32,609	9,990	30.6%
	Total	45,444	11,794	26.0%
Priority Investment Network (PIN)	Arterials	9,221	572	6.2%
	Non-arterials	14,884	3,109	20.9%
	Total	24,105	3,681	15.3%
PIN as a percent of Citywide	Arterials	71.8%	31.7%	N/A
	Non-arterials	45.6%	31.1%	N/A
	Total	53.0%	31.1%	N/A

[1] Based on 2015 SDOT Asset Management database. Not all locations may be feasible or desirable locations for new sidewalks.
[2] Ibid.
[3] Full or partial blockfaces
[4] 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, although the blockface numbers in the table reflect where sidewalks are missing on both sides of the street.

As shown in Table 4-2, there are more than 45,000 blockfaces in the city, and more than 24,000 (53%) are part of the PIN. The PIN includes more than 70% of all arterial blockfaces and 45% of all non-arterial blockfaces citywide. Sidewalks are missing on 26% of the blockfaces city-wide, and on 15% of the PIN.

Along all arterial blockfaces within the PIN, 572 blockfaces (6%) are estimated to be missing sidewalks, and 3,109 blockfaces (21%) of the non-arterial blockfaces lack a sidewalk or pedestrian walkway.

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 conventional, 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, lower-cost improvements, such as 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 conventional concrete sidewalks, and providing them on non-arterial streets will allow the City to provide more pedestrian improvements to more neighborhoods at a faster rate with limited funding.

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

While the prioritization framework is focused on new capital investments, maintaining the existing sidewalk network is also an important consideration for along-the-roadway improvement opportunities. Although the City strives to keep sidewalks in reasonably safe condition, adjacent property owners are typically responsible for sidewalk maintenance and 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.



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 and 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 assessed 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 prioritization framework focuses on capital investments, there are other types of pedestrian safety improvements that can be provided at crossings, including modifications to signal phasing and improved lighting conditions. Various 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 crossing improvements should be further evaluated as the Plan is implemented. As with the along-the-roadway evaluation, these locations may not necessarily be feasible locations for new curb bulbs, traffic signals, or other improvements.

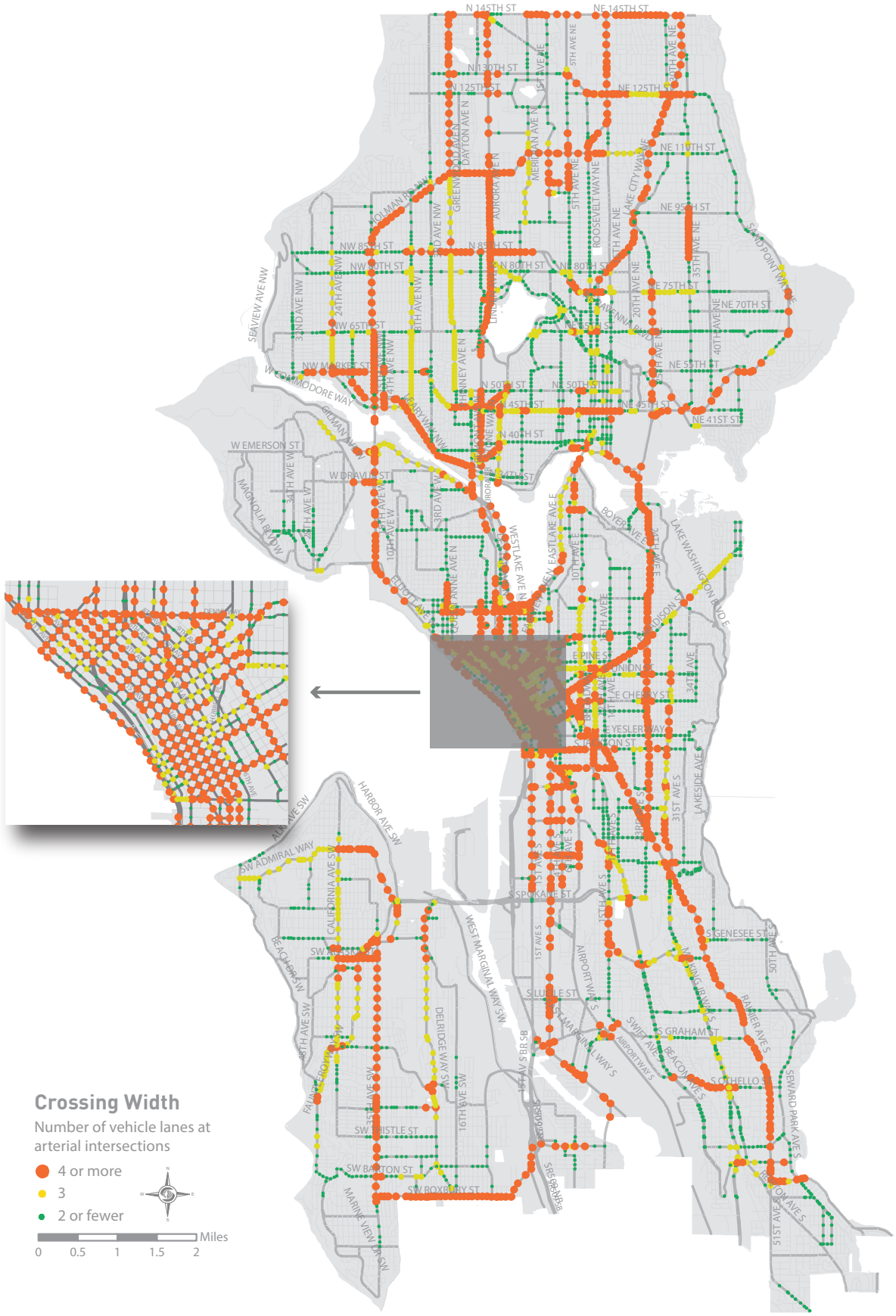
Chapter 5 discusses the types of crossing-the-roadway improvements that may be provided at prioritized intersections within the PIN.

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 2 or fewer, 3, or 4 or more 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 (e.g., pedestrian refuge islands, curb bulbs) and are outlined further in Chapter 5. As the City implements the PMP, it will prioritize arterial crossings within the PIN where pedestrians must cross 4 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 how far each arterial intersection within the PIN is from a controlled crossing 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.

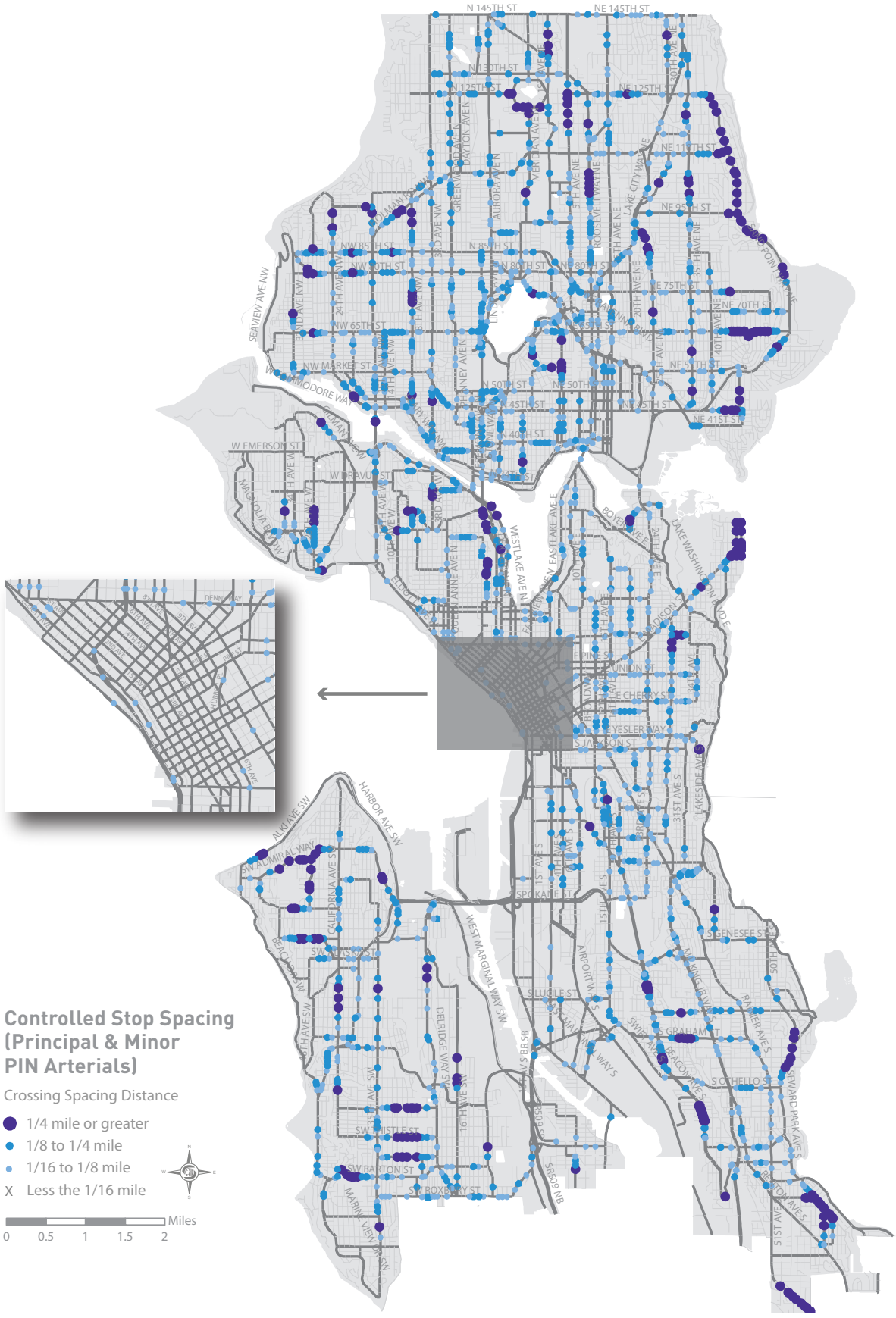
Curb Ramp Status

Curb ramps are an integral part of an age-friendly and accessible community. They make it easier to access the street from the sidewalk for all people, particularly for people who use wheelchairs or other mobility aids, 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).

In 2016, we conducted a city-wide curb ramp audit and conditions assessment. This up-to-date data will be used 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.

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



EVALUATING 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 next step is to assess the opportunity locations based on quantitative data (Step 3).

To help prioritize where we should focus sidewalk and crossing improvements within the PIN, the City will assess factors associated with the PMP's safety, equity, and health goals. By quantifying improvement needs of the various opportunity locations, we can design new pedestrian improvements that help to mitigate potential safety concerns and health and equity disparities in the city, reflecting the Plan's goals and the public's input.



The quantitative data we will use includes:

- **Safety** factors, to determine that 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 the City 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 only the equity and health analysis. Non-arterial street design characteristics and pedestrian collisions will be evaluated during project development when implementing pedestrian improvements.

The sections below describe the quantitative safety, equity, and health analyses in Step 3 and how they will be applied to the along-the-roadway and crossing-the-roadway opportunities identified within the PIN. In Step 4 of the prioritization framework, qualitative factors will be considered to inform the implementation plan.

Safety analysis

The PMP prioritization framework identifies 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 5 years, and roadway design characteristics that may be related to pedestrian crashes. The roadway design characteristics were sourced from the Bicycle and Pedestrian Safety Analysis (BPSA) that SDOT conducted (see sidebar).

The analysis data is derived from a model that identifies design and behavioral factors that may be correlated with collisions involving pedestrians. 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.

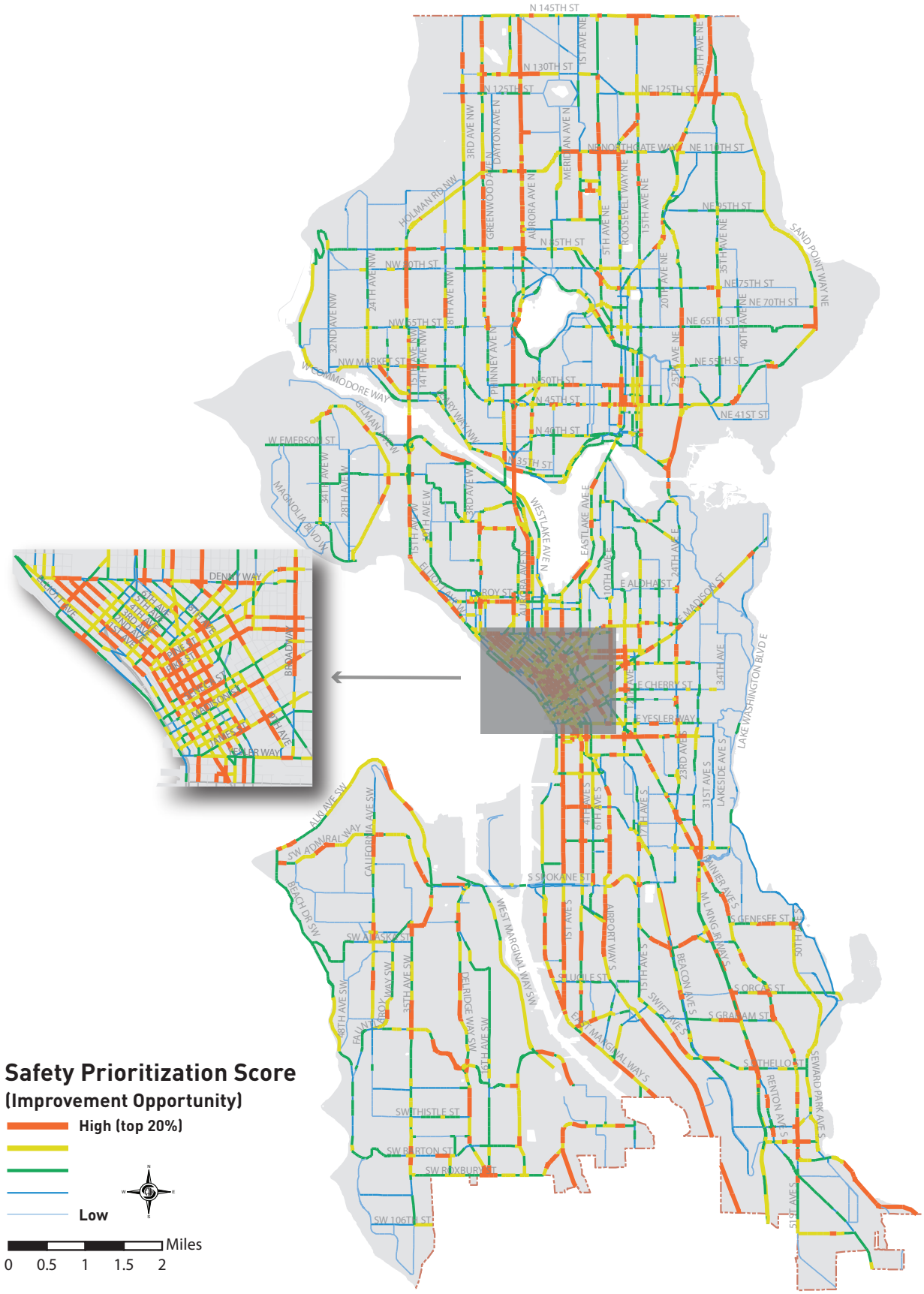
Figure 4-10 shows the results of this arterial safety prioritization analysis. The street segments with the greatest opportunities to provide pedestrian safety improvements include major corridors through the city, and several streets in the downtown commercial core (shown in orange in Fig. 4-10) This subset of streets represent the top 20% of PIN arterials. Along- and crossing-the-roadway opportunities within the PIN will be prioritized in these locations.

SDOT BICYCLE AND PEDESTRIAN SAFETY ANALYSIS (BPSA)

Understanding potential causes of bicycle and pedestrian crashes informs work towards our Vision Zero goal. 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. SDOT's Bicycle and Pedestrian Safety Analysis (BPSA), completed in early 2017, developed a safety prioritization model based on this assessment of pedestrian-involved collision locations. This model identifies: (1) roadway design and behavioral characteristics most highly correlated with non-motorized crashes in Seattle; and (2) opportunities for spot and corridor improvement projects that address these factors.



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.

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 Public Health–Seattle & King County, 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 the residential location of populations most reliant on the pedestrian network. Disparity factors evaluated include:

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

Figure 4-11 depicts the results of the equity and health analysis. The areas of the city with multiple disparity factors, and where pedestrian facility improvements would best promote equity and public health, are shown in dark purple. These included neighborhoods in southeast, southwest, and north Seattle. Along- and crossing-the-roadway opportunities within the PIN will be prioritized in these locations.

IMPLEMENTATION PLAN PRIORITIES

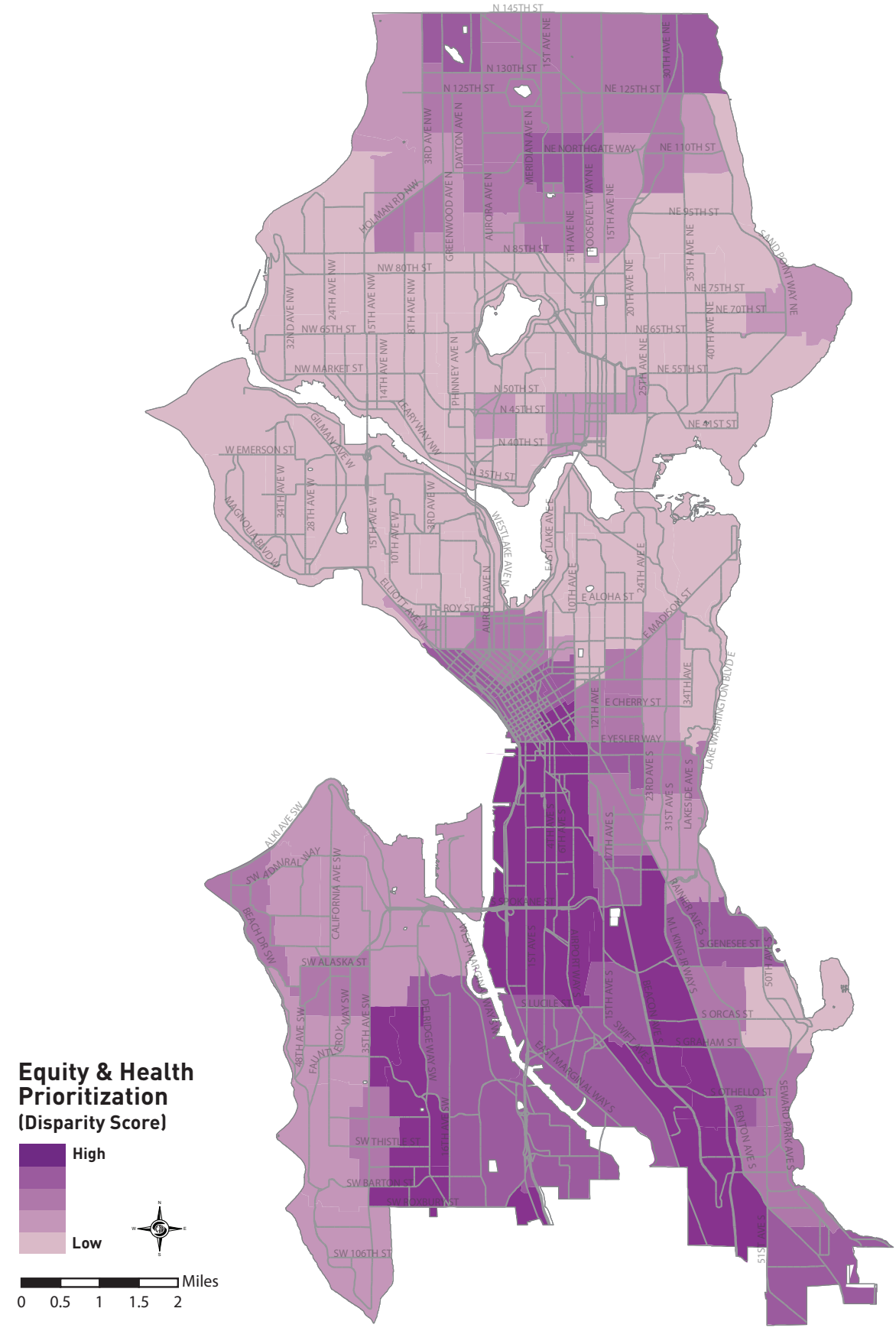
Following PIN development (Step 1), identification of opportunities (Step 2), and quantitative assessment of safety, equity, and health factors for the various investment opportunity locations (Step 3), the final element of the framework is to develop project priorities (Step 4). This includes applying qualitative factors to the list of scored opportunity locations. The end result will be a list of along- and crossing-the-roadway network investment priorities for inclusion in a 3- to 5-year implementation plan.

Qualitative factors include consideration of:

- Funding availability and delivery commitments
- Leveraging opportunities and efficient delivery packaging
- Policy directives from the Mayor and City Council
- Community interests
- Geographic balance
- Performance measurement progress.

As part of implementation plan development, the Seattle Pedestrian Advisory Board will consider how the qualitative factors are applied to determine recommended investment priorities. More information about the implementation plan and its contents can be found in Chapter 6.

FIGURE 4-11: EQUITY AND HEALTH ANALYSIS



CHAPTER 5: IMPLEMENTING STRATEGIES AND ACTIONS

IN THIS CHAPTER:

Along-the-Roadway Strategies and Actions **78**

Crossing-the-Roadway Strategies and Actions **89**

Network-wide Strategies and Actions **100**

Education, Encouragement, and Enforcement Strategies and Actions .. **104**

Pedestrian Quality and Comfort Strategies and Actions **107**

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

The 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. Items from the 2009 PMP that are still relevant are included. The strategies are organized into 5 groups:

1. **Along-the-Roadway** strategies address how we will improve pedestrian conditions and maintain a high-quality pedestrian realm for people traveling on sidewalks and other walkways 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 and comfortable pedestrian realm.

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

TABLE 5-1: IMPLEMENTING STRATEGIES AND ACTIONS

1. ALONG-THE-ROADWAY STRATEGIES AND ACTIONS
Strategy 1.1: Build out the PMP Priority Investment Network
Action 1.1.1: Provide sidewalks along arterials
Action 1.1.2: Prioritize new sidewalks on the Frequent Transit Network
Action 1.1.3: Prioritize new sidewalks that provide access to K-12 public schools
Action 1.1.4: Implement Neighborhood Greenways as part of the Priority Investment Network
Action 1.1.5: Provide low-cost improvements on non-arterial streets, including Neighborhood Greenways
Action 1.1.6: Explore options to establish a fund to build and maintain stairways
Action 1.1.7: Explore options to fund new sidewalks, including low-cost improvements
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: Promote the street concept plan tool to encourage developers to go beyond code requirements to enhance the pedestrian realm
Action 1.2.4: Explore options for developers to provide alternative mitigation in addition to required 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 for new sidewalks
Action 1.2.7: Improve the ability to track construction of new sidewalk assets by the private sector, the City, and other agencies
Strategy 1.3: Consolidate driveways and curb cuts
Action 1.3.1: Develop stronger code requirements or incentives to minimize the impact of curb cuts and driveway widths on all street types, particularly along the Priority Investment Network
Action 1.3.2: Use 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: 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 evaluate the feasibility of updating the City's "Find it, Fix it" service request mobile app to include a category for sidewalk repair needs
Action 1.4.3: Educate property owners about private sidewalk maintenance obligations (for example, repairs and snow removal) and increase enforcement
Action 1.4.4: Make it easier and more predictable for private property owners to complete required sidewalk repairs (for example, cost sharing and minimizing costs)
Action 1.4.5: Explore opportunities to increase funding for sidewalk maintenance

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

Strategy 1.5: Create and maintain a pedestrian clear zone on all sidewalks
Action 1.5.1: Update the Right-of-Way Improvements Manual to specify 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 and enforce keeping the pedestrian clear zone free of objects or impediments, including propped doors, A-frame signs, landscaping, outdoor seating, and displays
Action 1.5.3: Prioritize non-sidewalk locations for bike share stations, when possible
Strategy 1.6: Improve accessibility in Seattle
Action 1.6.1: Implement short-term improvements to ensure vegetation is cleared on critical routes
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
Action 1.6.4: Develop tools to communicate and report construction impacts to pedestrian access
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) on the Priority Investment Network
Action 2.1.2: Provide high-visibility treatments at crossings in the Priority Investment Network, including flashing crossing beacons, signage, and other appropriate treatments
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: Use Complete Streets project reviews to evaluate capital projects for opportunities to maximize pedestrian visibility
Strategy 2.2: Shorten pedestrian crossing distances
Action 2.2.1: Provide curb bulbs, pedestrian crossing islands, or pedestrian refuges, when possible
Action 2.2.2: Use lane reductions, as appropriate, 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
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
Action 2.3.4: Continue to review locations where a push-button is needed to activate a walk signal
Strategy 2.4: Reduce turning movement conflicts at intersections
Action 2.4.1: Adjust signalization to provide leading pedestrian intervals, where appropriate
Action 2.4.2: Implement pedestrian-only phasing (including scramble signals) where appropriate
Action 2.4.3: Review signal phasing for opportunities to eliminate shared phases that create conflicts between pedestrians and vehicles
Action 2.4.4: Eliminate permitted "turn on red" and dual turn-lane locations, 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 Strategy 2.4

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

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
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 of 25 mph as part of Vision Zero implementation
Action 3.1.3: Conduct data collection, analysis, and planning necessary to evaluate the opportunity for lowering speed limits on arterials with posted speed limits, as funding permits
Strategy 3.2: Provide neighborhood and arterial traffic calming measures
Action 3.2.1: Continue to redesign streets to meet current and future needs when repaving arterial streets, or when making pedestrian or other safety improvements
Action 3.2.2: Review capital projects for opportunities to implement roadway rechannelizations 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
Strategy 3.3: Evaluate pedestrian system needs consistent with the Complete Streets policy
Action 3.3.1: Continue to use the Complete Streets checklist tool to evaluate City transportation projects (except maintenance projects) for opportunities to make pedestrian system investments
Action 3.3.2: Apply Complete Streets principles to private development and other agency project reviews
Action 3.3.3: Periodically review and revise the City's Complete Streets Ordinance and checklist tool
Strategy 3.4: Employ new technologies
Action 3.4.1: Identify and employ innovative uses of technology to improve pedestrian safety and access
Action 3.4.2: Support research on emerging technologies that improve pedestrian safety, access, and system management
4. EDUCATION, ENCOURAGEMENT, AND ENFORCEMENT STRATEGIES AND ACTIONS
Strategy 4.1: Enforce vehicular speed limits and safe driving behaviors
Action 4.1.1: Continue 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 on data-driven traffic enforcement
Action 4.1.3: Pair speed limit reductions with communication and public outreach
Action 4.1.4: Use the network of dynamic messaging signs to raise awareness of enhanced traffic enforcement

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

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 factors contributing 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
Action 4.2.8: Evaluate the effectiveness of education and outreach programs
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/landscape zone requirements for various street types and associated design requirements
Action 5.1.2: Create a suite of buffer treatment options (for example, street furnishings, landscaping, and curb space uses) to separate pedestrians from moving vehicles
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, resting opportunities, and refuse receptacles, 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
Action 5.3.3: Continue to collaborate with other City departments and business organizations to improve business district streetscapes
Action 5.3.4: Explore opportunities to provide public art elements in the right-of-way (for example, public utility boxes, bridge pillars, and retaining walls)
Strategy 5.4: Promote and maintain green infrastructure in the right-of-way
Action 5.4.1: Update the Right-of-Way Improvements Manual minimum standards for furnishing/landscape zones within the sidewalk and landscape maintenance requirements
Action 5.4.2: Explore options for establishing a capital budget 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 sources to provide pedestrian lighting as part of SDOT capital projects
Action 5.5.3: Update the Right-of-Way Improvements Manual to require pedestrian-scale lighting fixtures downtown, and to specify a standard fixture, lighting levels, and spacing standards

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 for arterial intersection crossing improvements.

The key strategies for implementing the PMP will be to provide walking paths along all streets in the PIN and to improve arterial crossings at selected high priority arterial intersections.

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/health 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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

Actions

1.1.1 Provide sidewalks along arterials

1.1.2 Prioritize new sidewalks on the Frequent Transit Network

1.1.3 Prioritize new sidewalks that provide access to K-12 public schools

1.1.4 Implement Neighborhood Greenways as part of the PIN

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

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

1.1.7 Explore options to fund new sidewalks, including low-cost improvements

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 (PIN).

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. In some locations, we will use alternative materials, such as permeable pavement, to build sidewalks.



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

ACTION 1.1.4 IMPLEMENT NEIGHBORHOOD GREENWAYS AS PART OF THE PRIORITY INVESTMENT NETWORK (PIN)

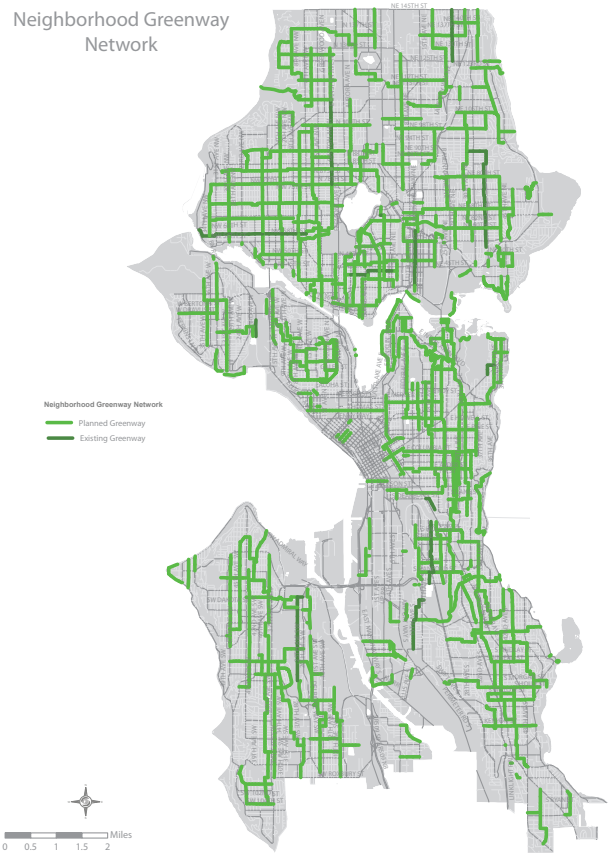
Neighborhood Greenways are a network of low-speed, low-volume streets with gentle grades designed to give priority to pedestrians and people biking. They are intended to provide safe arterial crossings and low-stress connections to key neighborhood destinations.

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 Neighborhood Greenways typically provide can also effectively serve pedestrians, the Neighborhood Greenway program should be leveraged to address pedestrian priorities of the PMP, and the bicycle network priorities of the BMP.

In many instances, non-arterial streets within the pedestrian PIN overlap with planned Neighborhood Greenway routes. As such, the Neighborhood Greenways program provides an opportunity to leverage funding for pedestrian and bicycle improvements.

As Neighborhood Greenways are planned and built, their precise routing should be reviewed and updated to ensure they help address needs within the PIN. 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 BMP.

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 1.1.5).



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 1.1.5
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, the City will provide innovative, lower-cost improvements on non-arterial streets lacking sidewalks within the Priority Investment Network (PIN). 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 conventional sidewalk, these lower-cost techniques will allow us to use limited resources for pedestrian facilities to provide improvements across a larger portion of the PIN, offering benefit to more people across the city. Lower-cost improvements are intended for residential streets to help connect people to important neighborhood destinations such as schools, parks, community centers, senior centers, and transit stops. Conventional 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 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.



Conventional concrete sidewalk with curbs on one side of the street only, with bioretention that could be implemented in coordination with Seattle Public Utilities to keep costs low. 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:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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.
- Guidance for and regulation of sidewalk improvements associated with 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.

Actions

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 Promote the street concept plan tool to encourage developers to go beyond code requirements to enhance the pedestrian realm

1.2.4 Explore options for developers to provide alternative mitigation in addition to required sidewalk construction



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

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 for new sidewalks

1.2.7 Improve the ability to track construction of new sidewalk assets by the private sector, the City, and other agencies

ACTION 1.2.3
PROMOTE THE STREET CONCEPT PLAN TOOL TO ENCOURAGE DEVELOPERS TO GO BEYOND CODE REQUIREMENTS

Street concept plans provide an opportunity for community groups, property owners, or the public sector to proactively develop a vision and a design concept for a street or series of streets. They can also formalize street designs prepared for large corridor projects to ensure future public improvements implement consistent design specifications. Street concept plans are intended to help implement broader planning and design objectives that go well beyond the design standards specified in Streets Illustrated–the Right-of-Way Improvements Manual. Street concept plans should not be done if the vision can be met using SDOT's new street typologies, as specified in Streets Illustrated. 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 realm by private developers and other public agencies. We will continue to develop and adopt street concept plans in the future to encourage streetscape improvements that are unique, customized to community needs and go well 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 or mobility challenges. Consolidating, minimizing, 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
	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.

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 Inspections (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

1.3.1 Develop stronger code requirements or incentives to minimize the impact of curb cuts and driveway widths on all street types, particularly along the Priority Investment Network

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

ACTION 1.3.1 DEVELOP STRONGER CODE REQUIREMENTS OR INCENTIVES TO MINIMIZE THE IMPACT OF CURB CUTS AND DRIVEWAY WIDTHS ON ALL STREET TYPES, PARTICULARLY ALONG THE PRIORITY INVESTMENT NETWORK (PIN)

Overly-wide driveways and curb cuts have a negative effect on the pedestrian realm, creating conflict points where pedestrians and vehicles must negotiate the sidewalk space. SDOT, the Seattle Department of Construction and Inspections (SDCI), and other City departments should examine opportunities to strengthen the land use and transportation sections of the Seattle Municipal Code to minimize curb cuts and driveways, particularly along the PIN. Design treatments include consolidating driveways, installing mountable curbs, and better delineating driveway entrances.



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 private property owners or with the City, depending on who owns the property, or the cause of the damage.

In 2017, SDOT will conduct a sidewalk condition assessment. This will aid us to understand sidewalk maintenance needs, prioritize repairs, and develop a proactive sidewalk inspection program. This program will help identify and prioritize sidewalk repair and replacement needs in advance of resident complaints.

The City recently passed legislation to allow property owners to contract directly with SDOT to make repairs. Although it may not lower project costs, this new choice will make sidewalk repair easier and is intended to increase compliance with sidewalk maintenance and repair requirements.

Considerations

- Section 15.72 of the Seattle Municipal Code notes that property owners are responsible for maintaining and repairing sidewalks adjacent to their property.
- 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.
- When sidewalk damage is the result of a publicly-owned street tree, SDOT is responsible for the sidewalk repair.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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

- 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.

Actions

1.4.1 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 evaluate the feasibility of updating the City's "Find it, Fix it" service request mobile app to include a category for sidewalk repair needs

1.4.3 Educate property owners about private sidewalk maintenance obligations (for example, repairs and snow removal) and increase enforcement

1.4.4 Make it easier and more predictable for private property owners to complete required sidewalk repairs (for example, cost sharing and minimizing costs)

1.4.5 Explore opportunities to increase funding for sidewalk maintenance

STRATEGY 1.5
CREATE AND MAINTAIN A PEDESTRIAN CLEAR ZONE ON ALL SIDEWALKS

Seattle's Right-of-Way Improvements Manual (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. Depending on the street type, the clear zone width may be greater. 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 pedestrian clear zone includes appropriately siting utilities, snow and debris removal, crack and damage repair, and vegetation management/tree limbing. Maintaining a pedestrian clear zone is important to creating a connected, accessible pedestrian network.

Considerations

- The ROWIM establishes minimum widths for all zones of the sidewalk.
- The pedestrian clear zone is the area of the sidewalk corridor that is specifically reserved for pedestrian travel, including movement by people who use mobility devices to get around, and people with visual or hearing impairments.
- The ROWIM notes that street furniture, plantings, and other fixed items should not protrude into travel routes.
- Utility poles or hydrants that impede the pedestrian clear zone can be costly to relocate.
- Maintaining a pedestrian clear zone may require increased enforcement.
- Currently, privately-funded signage, planters, cafés, and other unfixed encroachments must obtain an annual Public Space Management Street Use Permit from SDOT.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
	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 Ave offers an example of a well-maintained pedestrian clear zone. Signs, bike racks and plantings are located within the furnishing/landscape zone, and the pedestrian clear zone is unobstructed.

- Universal design principles can be applied along the pedestrian network.

Actions

1.5.1 Update the ROWIM to specify 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 and enforce keeping the pedestrian clear zone free of objects or impediments, including propped doors, A-frame signs, landscaping, outdoor seating, and displays

1.5.3 Prioritize non-sidewalk locations for bike share stations, 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 seniors, people who rely on wheelchairs or other mobility devices to get around, and people with visual 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, or hearing impairments.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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

- 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 Americans with Disabilities Act (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.
- Universal design principles can be applied along the pedestrian network to improve accessibility. Universal design refers to the design and composition of an environment so it can be accessed, understood, and used to the greatest extent possible by all people regardless of their age, size, ability, or disability.
- Coordinate with the Access Seattle Program, which identifies and proactively resolves potential right-of-way issues associated with work zones.

Actions

1.6.1 Implement short-term improvements to ensure vegetation is cleared on critical routes

1.6.2 Identify opportunities to restripe painted crosswalks to better align with curb ramps

1.6.3 Develop an updated ADA transition plan

1.6.4 Develop tools to communicate and report construction impacts to pedestrian access

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 conventional concrete extensions of the sidewalk or 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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

- 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 can be costly and may reduce on-street parking capacity.
- Curb realignment may provide opportunities for green stormwater infrastructure, in collaboration with Seattle Public Utilities (SPU).

Actions

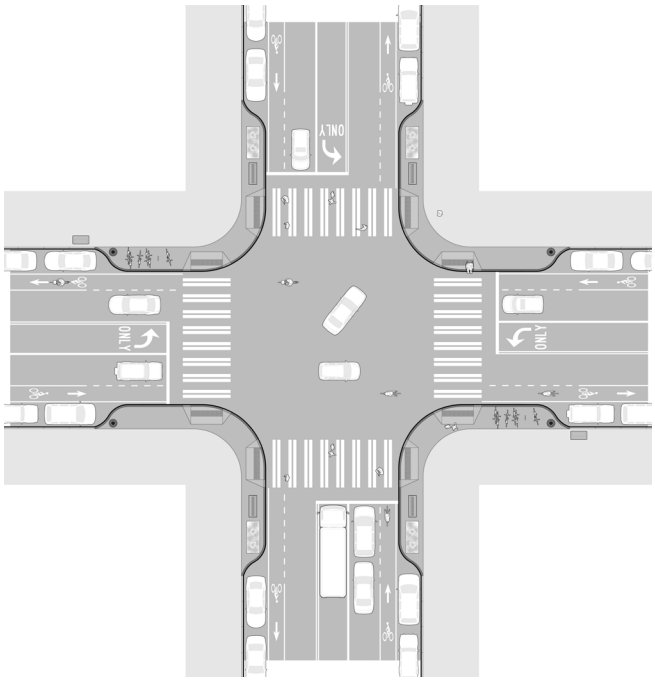
2.1.1 Provide curb bulbs (including low-cost installations) on the Priority Investment Network (PIN)

2.1.2 Provide high-visibility treatments at crossings in the PIN, including flashing crossing beacons, signage, and other appropriate treatments

2.1.3 Use high-reflectivity crosswalk markings on all projects

2.1.4 Provide lighting at marked pedestrian crossings

2.1.5 Use Complete Streets project reviews to evaluate capital projects for opportunities to maximize pedestrian visibility



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



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

The crossing-the-roadway analysis in Chapter 4 identifies arterial intersections within the PIN 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. Traffic controls that could be deployed in these locations 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 beacons increase driver yielding rates for people trying to cross the street.

RRFBs 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 crossing demand. RRFBs can be provided in conjunction with other intersection treatments such as curb bulbs 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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

- 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 conventional concrete extensions of the sidewalk, or 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 functions, including transit and bike lanes.
- 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

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

2.2.2 Use lane reductions, as appropriate, when making pedestrian or other safety improvements 

ACTION 2.2.1
PROVIDE CURB BULBS, PEDESTRIAN CROSSING ISLANDS, 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 conventional concrete extensions of the sidewalk or 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. Curb bulbs may be designed with green stormwater infrastructure in collaboration with SPU.

- **Crossing islands/refuges:** Pedestrian crossing islands, also called pedestrian or median 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 mid-block crossing.

ACTION 2.2.2
USE LANE REDUCTIONS, AS APPROPRIATE, WHEN MAKING PEDESTRIAN OR 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 transit lanes.

Careful analysis is required to evaluate 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 serve fewer than 25,000 vehicles per day, have a large number of driveways or driveways with frequent use, and have a history of rear-end collisions or collisions between people driving and pedestrians moving across or along the street.



NE 130th St before lane reduction.



NE 130th St 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
	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

- Optimizing pedestrian crossing times can help ensure that people of all ages and abilities have sufficient time to cross the street.
- Factor in pedestrian wait times when modifying signal timing.
- Increasing pedestrian crossing times at signals can cause some vehicle travel time delay.
- The Manual for Uniform Traffic Control Devices (MUTCD) states 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 (such as senior or special needs facilities, elementary schools, or preschools) frequented by slower-moving pedestrians, we will use a lower crossing speed of 3 feet per second to determine the pedestrian clearance time.



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

- Walk signals do come up automatically on most locations with high pedestrian activity.

Actions

2.3.1 Review current SDOT pedestrian crossing time standards and update as needed to reflect current best practices

2.3.2 Provide sufficient countdown time at pedestrian crossing signals

2.3.3 Modify signal timing to favor pedestrians in neighborhood business districts

2.3.4 Continue to review locations where a push-button is needed to activate a walk signal

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, 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.
- Factor in pedestrian wait times when modifying signal timing.
- 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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

- 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.

Actions

2.4.1 Adjust signalization to provide leading pedestrian intervals, where appropriate

2.4.2 Implement pedestrian-only phasing (including scramble signals) where appropriate

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" and dual turn-lane locations, 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 Strategy 2.4

ACTION 2.4.1
ADJUST SIGNALIZATION TO PROVIDE LEADING PEDESTRIAN INTERVALS, WHERE APPROPRIATE

Leading pedestrian intervals (LPIs) provide a pedestrian walk signal 3 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 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 or delayed turn signal phases that allow pedestrians and through vehicles to move first.

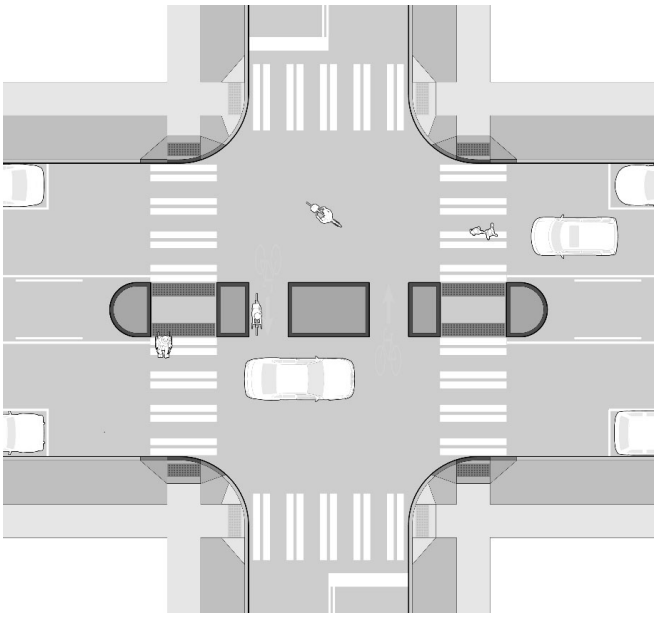


Eliminating shared signal phases between turning vehicles and pedestrians crossing the roadway may include prohibiting vehicles from making right turns on red.

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 provided for 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 and 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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



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

Actions

2.5.1 Review and establish maximum controlled crossing spacing standards/guidelines for multi-lane 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 comfort levels 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. The reduction of default vehicle speeds were rolled out as part of SDOT's ongoing Vision Zero program. We will continue to evaluate opportunities to lower posted speed limits on arterials.

Considerations

- Speed reductions on arterial and non-arterial streets proactively 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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

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 of 25 mph, as part of Vision Zero implementation

3.1.3 Conduct data collection, analysis, and planning necessary to evaluate the opportunity for lowering speed limits on arterials with posted speed limits, as funding permits

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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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



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.

Actions

3.2.1 Continue to redesign streets to meet current and future needs when repaving arterial streets, or when making pedestrian or other safety improvements

3.2.2 Review capital projects for opportunities to implement roadway rechannelizations as part of the Complete Streets review

3.2.3 Increase funding for SDOT's Neighborhood Traffic Calming Program

3.2.4 Streamline the process for installing neighborhood traffic calming improvements

STRATEGY 3.3
EVALUATE PEDESTRIAN SYSTEM NEEDS CONSISTENT WITH THE COMPLETE STREETS POLICY

The Complete Streets policy and program are key tools for PMP implementation. The Complete Streets ordinance directs us to design streets for pedestrians, bicyclists, transit riders, and persons of all abilities, while promoting safe operation for all users, including freight.

SDOT uses a rigorous process to evaluate planned projects for consistency with the policy. A Complete Streets checklist is used to collect data and information about the status of the street and surroundings, details of the project, and modal plan recommendations, with a goal of identifying specific improvements that can be incorporated into the project to balance the needs of all users.

Considerations

- The City Council passed Ordinance 122386, the Complete Streets policy, in 2007.
- The ordinance sets out strong policy direction to balance the needs of all users.
- Some streets are identified as priority corridors for more than one mode of transportation in our modal master plans (transit, freight, bicycle, pedestrian). Seattle 2035, the City's Comprehensive Plan, provides policies related to right-of-way allocation and how decisions are made with regard to using street space. These policies direct us to consider pedestrian safety and mobility in making right-of-way allocation decisions.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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



Our Complete Streets program assesses the needs for all modes when making project decisions. The Mercer St Corridor Project constructed a widened sidewalk on both sides of the street and a protected bicycle lane. Trees and landscaping provide a buffer between people walking and biking and people driving.

Actions

3.3.1 Continue to use the Complete Streets checklist tool to evaluate City transportation projects (except for maintenance projects) for opportunities to make pedestrian system investments

3.3.2 Apply Complete Streets principles to private development and other agency project reviews

3.3.3 Periodically review and revise the City's Complete Streets Ordinance and checklist tool

STRATEGY 3.4
EMPLOY NEW TECHNOLOGIES

Emerging technologies may improve pedestrian safety and access. The City should continue to explore and support research, development, and employment of technologies related to pedestrian use of the right-of-way.

For example, technology can improve safety and access for people with mobility impairments by providing sensory information on personal devices indicating when it is safest to cross a street.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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

- Real-time travel information data can inform travel mode choice.
- Tools may enable better data collection and system management.
- With appropriate regulation, infrastructure changes, pricing, and safety measures, autonomous vehicles hold promise to reduce crashes with pedestrians.

Actions

3.2.1 Identify and employ innovative uses of technology to improve pedestrian safety and access

3.4.2 Support research on emerging technologies that improve pedestrian safety, access, and system management



We install transit information kiosks at bus stops with the highest activity and served by many routes. The kiosks include real-time transit arrival information to inform travel mode choice, and can include transit pass readers.

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, and 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, portable speed trailers to provide real-time speed data, pedestrian safety emphasis patrols such as "blocking the box," and loading and restricted areas enforcement.

The Seattle Department of Transportation (SDOT) will continue to collaborate with other City departments and partners to enforce traffic safety laws. This work will stem from our 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 the 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
	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

Actions

4.1.1 Continue 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 SPD on data-driven traffic enforcement

4.1.3 Pair speed limit reductions with education and public outreach

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

ACTION 4.1.1 CONTINUE 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 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, bike, ride transit, and walk.

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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
	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

- Education can create a common understanding amongst all roadway users of safe and 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.



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 2nd Ave.

Actions

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 factors contributing 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

4.2.8 Evaluate the effectiveness of education and outreach programs

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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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

- The furnishing/landscape 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, 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.
- Not all right-of-way widths are sufficient to provide pedestrian buffers.
- There is a growing trend to convert curb space from on-street parking to mobility purposes (transit lanes, bike lanes, or general-purpose travel lanes during peak travel times), which may adversely impact pedestrian safety and comfort on arterials lacking buffers.
- Curb space used for activation (parklets), greening (landscape), or loading zones may provide additional buffer between pedestrians and moving vehicles, increasing safety and comfort on arterials lacking buffers.

Actions

5.1.1 Update the Right-of-Way Improvements Manual to specify furnishing/landscape zone requirements for various street types and associated design requirements

5.1.2 Create a suite of buffer treatment options (for example, street furnishings, landscaping, and curb space uses) to separate pedestrians from moving vehicles

STRATEGY 5.2
DEVELOP A COORDINATED WAYFINDING SYSTEM

A coordinated wayfinding system can facilitate pedestrian travel by clearly showing routes and distances to destinations. A coordinated wayfinding system also 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 agencies. 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.

	OBJECTIVE 1: Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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.

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

Actions

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, and gives guidance on public art in the right-of-way.
- 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.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
●	**OBJECTIVE 3:** Complete and maintain the pedestrian system identified in the PMP
●	**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

- Adaptive Streets improvements can be a tool for providing public space in areas with increasing densities.
- The SDOT Art Plan is a reference for project managers and special projects ideas.

Actions

5.3.1 Provide pedestrian amenities, including benches, resting opportunities, and refuse receptacles 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

5.3.3 Continue to collaborate with other City departments and business organizations to improve business district streetscapes

5.3.4 Explore opportunities to provide public art elements in the right-of-way (for example, public utility boxes, bridge pillars, and retaining walls)

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 started piloting pedestrian-only streets in the Capitol Hill neighborhood in 2015.



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 many benefits for the pedestrian realm. Most often located between the pedestrian clear zone and the curb within the sidewalk's furnishing/ landscape zone, green infrastructure and landscaping can take the form of groundcovers, shrubs, street trees, and bioretention.

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 perceived width of the roadway, and they can help to humanize the street's scale. The presence of street trees has been shown to be positively correlated with the values of adjacent properties, and with positive public health outcomes. Street trees also provide a broad range of environmental benefits, including helping to manage stormwater and remove pollutants.

Considerations

- Providing a healthy, expansive urban forest aligns with the City's climate impact mitigation and adaptation 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 Seattle Municipal Code (SMC) 15.43.040, street tree maintenance is the responsibility of the adjacent property owner. The exceptions to this policy are trees specifically designated for maintenance by SDOT Urban Forestry.

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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

- 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 can help facilitate the provision of stormwater management facilities within the right-of-way.

Actions associated with this strategy

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

5.4.2 Explore options to establish a capital budget 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-scale 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 winter days are relatively short and often overcast. 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

5.5.1 Update the Pedestrian Lighting Citywide Plan

5.5.2 Identify funding sources to provide pedestrian lighting as part of SDOT capital projects

5.5.3 Update the Right-of-Way Improvements Manual to require pedestrian-scale lighting fixtures downtown, and to specify a standard fixture, lighting levels, and spacing standards

●	**OBJECTIVE 1:** Increase pedestrian safety
●	**OBJECTIVE 2:** Improve walkability and accessibility on all streets
	OBJECTIVE 3: Complete and maintain the pedestrian system identified in the PMP
●	**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



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:

PMP Implementation Plan 113

Prioritization Framework 114

Planning-level Cost Estimates.....115

Potential Funding Opportunities.....119

Plan Performance Measures 124

The Pedestrian Master Plan (PMP) provides a 20-year blueprint to improve conditions for walking in Seattle. It encompasses prioritized pedestrian improvement opportunities along with implementing strategies and actions. This chapter discusses how we will incrementally deliver the Plan in coming years. Drawing on the prioritization framework (Chapter 4) and the implementing strategies and actions (Chapter 5), it includes:

- Implementation plan development
- Planning-level cost estimates
- Assessment of funding opportunities
- Performance measures to track our progress moving forward

Fully implementing pedestrian improvements to address the needs identified in the PMP will take major funding and many years of construction, and will likely extend beyond the Plan's horizon. Even with the 9-year Levy to Move Seattle funding and other City resources, the cost to address city-wide pedestrian system needs still exceeds available funding.

Throughout the life of the PMP, there are annual opportunities for citizens and elected officials to consider PMP funding levels in the context of other City funding priorities. Decisions made during the annual City budget development process will determine the pace of PMP implementation.

Given the funding constraints, the City will need to carefully prioritize expenditure of available funding to first take care of the most essential and beneficial improvements. Additionally, we will need to seek opportunities and partnerships to further fund pedestrian facility maintenance and repair, build-out the rest of the city-wide pedestrian network, make crossing improvements, and deliver safety education and encouragement programs.

Timely and cost-effective delivery of prioritized pedestrian improvement projects, using available funds, will be essential for Plan implementation and building support for further public and private investments.

PMP IMPLEMENTATION PLAN

Following PMP adoption, we will develop a 3- to 5-year implementation plan to outline near-term actions SDOT will take to implement the plan. The implementation plan will be updated regularly and will include input from the Seattle Pedestrian Advisory Board to achieve the following:

- Match deliverables with annual funding availability
- Pursue opportunities and partnerships (public and private) with other projects and programs to strategically leverage City 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

Implementing the PMP will continue to occur through the efforts of multiple SDOT programs, and through private development activities. SDOT programs directly charged with implementing or supporting the PMP are described in Chapter 3 and 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)

The implementation plan will identify particular locations within the Priority Investment Network (PIN) 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.

PRIORITIZATION FRAMEWORK

The City's approach to pedestrian project prioritization will shape the environment of our streets and sidewalks in the near- and long-term. Fully implementing the PMP will take many years given the expected funding availability, which makes it important to have a prioritization framework.

Chapter 4 outlines the data-driven prioritization framework used to align PMP implementation with the Plan's vision and goals, while providing flexibility for the City and its partners to pursue projects based on specific opportunities.

Both quantitative and qualitative data will be accounted for in plan implementation. The PIN is defined by analysis of quantitative data. Quantitative data also inform the safety and equity/health analyses (see Chapter 4 for details). Qualitative information and criteria are important considerations in the prioritization process, and include: potential to leverage other funding, community interest, policy directives, geographic balance, or other factors, as appropriate (see Table 6-1).

TABLE 6-1: QUALITATIVE EVALUATION CRITERIA

Criteria	Description
Leveraging opportunities	Coordinate delivery with other projects to reduce costs
Policy directive	Project specified by plan, policy, Mayor, or City Council
Community interest	Local community or stakeholders have expressed interest in improvements
Geographic balancing	Project improves the balance of funding spent among geographic sectors of the city

PLANNING-LEVEL COST ESTIMATES

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 (for example, the average cost to build a blockface of concrete sidewalk) to the number of desired units (for example, 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 need.

Along-the-roadway improvements

Along-the-roadway improvements within the PIN include maintenance and new construction. Maintenance improvements typically include 2 basic types of repairs: preliminary or permanent.

A preliminary repair typically involves a site visit where we may treat defects with paint, place a barricade, install a shim, or apply an asphalt patch to correct faults, settlement, or other distress. The intent of permanent repairs is to extend the life of the sidewalk surface. Table 6-2 shows the typical costs for some of these activities. In 2017, we will conduct a city-wide sidewalk condition assessment that will better inform sidewalk maintenance needs throughout the city.

Recommended along-the-roadway improvements for new construction differ between arterial streets and non-arterial streets. In most cases, arterial streets will receive conventional 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, planning-level cost estimates in this plan distinguish between arterial and non-arterial streets.

New sidewalk needs for arterial and non-arterial streets within the PIN are identified in Chapter 4.



TABLE 6-2: SIDEWALK MAINTENANCE COSTS

Maintenance activity	Average replacement value*
Sidewalk replacement	$55/sf
Asphalt patch	$32/sf

* Actual project costs can vary widely, based on site conditions, delivery method, and other factors. Approximate cost is provided in 2016 dollars and does not factor in future inflation.

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 conventional curb-separated concrete sidewalks. Current 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. 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 6-3, within the PIN there are approximately 572 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.

As SDOT implements the Plan, we will evaluate these individual locations during project planning and design to determine if new sidewalks are in fact feasible and desirable in the locations identified in the PMP.

TABLE 6-3: ALONG-THE-ROADWAY OPPORTUNITIES FOR ARTERIAL STREETS

	Missing sidewalks*		Average cost per blockface **	Total cost
	Blockfaces	Miles		
All arterials within Priority Investment Network	572	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 per blockface is provided in 2016 dollars and does not factor in future inflation.

Non-arterial streets

While conventional 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 and at an average of one-half the cost of a conventional concrete sidewalk.

Table 6-4 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 (that is, 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 6-4: 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 per 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 safer and 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 6-5 outlines the types of improvements that could be used to improve crossing conditions at prioritized intersections, and 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 6-5: 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.

POTENTIAL FUNDING OPPORTUNITIES

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, and provide preliminary strategies for optimizing implementation dollars. While the PMP Implementation Plan will identify particular funding sources and project leveraging strategies for pedestrian improvements, the following section provides a general overview of the funding sources we will use to implement the PMP.

Local

In addition to traditional City of Seattle transportation funds, in 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.

Tables 6-6, 6-7, and 6-8 detail the total Levy to Move Seattle funding amounts that will be distributed to SDOT pedestrian-related programs, maintenance activities, and capital projects, and the implementation deliverable associated with that levy funding.

By using levy funding with other City funds, we can make progress on signature projects and system-wide pedestrian needs. Once the levy expires, additional local funding will need to be identified in future years to complete the vision of this 20-year plan.



TABLE 6-6: 9-YEAR LEVY FUNDING FOR 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 (SPU) 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 6-7: 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
Bridge and Structures (stairways)	$5M	Other bridge safety investments including stairway and structure repair and rehabilitation
Signs and Markings (crosswalk repainting)	$4M	Crosswalk repainting frequency on a 4-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 clearing sightlines to traffic signals and signs • Tree Planting: Replace every tree removed due to disease or safety with two new trees

TABLE 6-8: 9-YEAR LEVY FUNDING FOR CAPITAL PROJECTS IMPLEMENTING AND SUPPORTING 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)
South Park 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 Mount Baker	$2M	Implement early portions of the Accessible Mount Baker project (pedestrian improvements) near the light rail station area

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. Specifically, SDOT will pursue grants 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.

State

The State of Washington supports pedestrian investments with grant programs that are dedicated to pedestrian safety, accessibility, and active transportation needs. One source is the Washington State Department of Transportation's Safe Routes to Schools program that provides children with a safe, healthy alternative to riding the bus or being driven to school. The State Transportation Improvement Board is another source that provides funding for sidewalks in several programs, and Washington State promotes pedestrian-supportive features as standard practice in its own transportation projects.

Federal

Federal grant funds are available to the City of Seattle for pedestrian improvements through programs administered by Washington State and our federally-designated Metropolitan Planning Organization, the Puget Sound Regional Council (PSRC). The federal Transportation Alternatives Program sets aside funds for pedestrian and bicycle facilities, non-driver access to public transportation, and federally-funded safe routes to school projects. The Highway Safety Improvement Program funds engineering designs that reduce fatalities and serious injuries. Overall, federal transportation and congestion/air quality programs encourage pedestrian components in a wide range of capital projects, including roadway, transit, and ferry facilities.

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.

We also make pedestrian improvements as part of SDOT investments for other purposes. As an example, the S Lander Street bridge being built over railroad tracks to ease freight traffic will also include dedicated space for people walking and biking. SDOT reviews each of its capital investments to consider benefits to pedestrians as part of the City's Complete Streets policy.

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. An example is coordinating Safe Routes to School and Neighborhood Greenways projects.

Other leveraging opportunities to provide low-cost (or other) pedestrian improvements to non-arterial streets within the PIN include:

- **SDOT Neighborhood Greenways Program:** Neighborhood Greenways were introduced in the 2014 Seattle Bicycle Master Plan as a component of the city-wide 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.
- **Safe Routes to School:** SDOT's Safe Routes to Schools (SRTS) program provides new sidewalks and other pedestrian improvements to 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.
- **Inter-departmental partnerships:** Seattle Public Utilities (SPU) provides natural drainage system improvements (roadside rain gardens) within identified creek watersheds to capture and treat stormwater runoff. Some of the streets prioritized by their Natural Drainage Systems program do not currently have sidewalks. 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.

Pedestrian improvements funded by public and private partners

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. Looking to 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 PMP implementation, and measure our progress toward achieving Plan goals of safety, equity, vibrancy, and health. They are generally outcome-based and focused on achieving policy objectives, rather than concrete project or program deliverables. The intent of this approach is to focus evaluation on achieving desired Plan outcomes.

Table 6-9 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, where available, 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 and Appendix 3 provide an evaluation of progress toward meeting each of the 2009 PMP performance measures since the Plan's adoption.

We updated these performance measures based in part on our ability to collect the relevant data (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 on metrics that most directly relate to PMP implementation.

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

TABLE 6-9: PMP PERFORMANCE MEASURES

Measure	PMP performance measure	Desired trend	Performance target	Data source	Baseline	PMP goal addressed			
						Safety	Equity	Health	Vibrancy
1	Number of pedestrian fatalities and serious injury collisions	Decreasing number 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 all crashes involving pedestrians, reported both by pedestrian crashes per 100,000 residents, and pedestrian crashes per pedestrian trips	Decreasing rate of all pedestrian crashes per 100,000 residents, and per pedestrian trips	50 or fewer pedestrian collisions per 100,000 residents by 2035	SDOT collision database, sourced from police traffic collision reports American Community Survey population estimates Puget Sound Regional Council (PSRC) Household Travel Survey	2015: 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	2015 percent PIN arterials with sidewalks: 93% _____ 2015 percent PIN non-arterials with sidewalks: 79%	X	X	X	X

TABLE 6-9: PMP PERFORMANCE MEASURES (CONTINUED)

Measure	PMP performance measure	Desired trend	Performance target	Data source	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	35% of all trips are made on foot by 2035	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	Double the number of pedestrians at SDOT count locations by 2035	Downtown Seattle Association (DSA) counts SDOT citywide counts	2015 downtown count average: 48,600 _____ 2015 city-wide count average: 91,200	X		X	X
6	Children walking or biking to or from school	Increasing percentage of trips by children	None recommended	SDOT Safe Routes to School (SRTS) Program	2013: 22.7%	X	X	X	X

ACKNOWLEDGMENTS

MAYOR ED MURRAY

OFFICE OF THE MAYOR
Kiersten Grove
Kevin Shively

SEATTLE CITY COUNCIL
Sally Bagshaw
Tim Burgess
Lorena Gonzalez
Bruce Harrell
Lisa Herbold, Alternate,
Sustainability & Transportation
Rob Johnson, Vice-Chair,
Sustainability & Transportation
Debora Juarez
Mike O'Brien, Chair,
Sustainability & Transportation
Kshama Sawant, Member,
Sustainability & Transportation

SEATTLE PEDESTRIAN ADVISORY BOARD
Christina Billingsley, Janine Blaeloch,
Ryan Bondroff, Angela Davis, Joanne Donohue,
April Kelley, Afra Mashhadi, Catherine Morrison,
Beau Morton, Paul Muldoon (Chair),
Carly Nations, Gordon Padelford

Former members: David Amiton, Devor Barton,
David Goldberg, Lydia Heard, Lorena Kaplan,
Jeffrey Linn, Jennifer Olegario, Jacob Struiksma,
Bevin Wong, Cameron Zapata

CITY OF SEATTLE BOARDS AND COMMISSIONS
Bicycle Advisory Board, Freight Advisory Board,
Transit Advisory Board, Planning Commission,
Design Commission, Commission for People with
DisAbilities, Immigrant and Refugee Commission,
Urban Forestry Commission

Additional thanks go to all the people in Seattle who participated in surveys, meetings, and open houses, and provided their comments during plan development.

SEATTLE DEPARTMENT OF TRANSPORTATION (SDOT)
Executive Steering Committee
SDOT Director: Scott Kubly
Mark Bandy, Barbara Gray, Tracy Krawczyk,
Karen Melanson, Kevin O'Neill, Kristen Simpson,
Darby Watson

SDOT Project Team
Project Managers: Ian Macek, Michelle Marx
Project Team: Chad Lynch

Other SDOT Staff:
Kenny Alcantara, Krista Bunch, Emily Burns,
Sue Byers, Dongho Chang, Jim Curtin,
Ahmed Darrat, Monica Dewald, Monty Dhaliwal,
Brian Dougherty, Katherine Faulkner,
Allie Gerlach, Joel Hancock, Elliot Helmbrecht,
Michael James, Aditi Kambuj, Hannah Keyes,
Terry Martin, Susan McLaughlin, Darren Morgan,
Dawn Schellenberg, Allison Schwartz,
Michael Shaw, Chris Svolopoulos, Cheryl Swab,
Joe Taskey, Mayumi Thompson, Gabriela Vega,
Jude Willcher, Jonathan Williams, Howard Wu,
Chris Yake

CONSULTANT TEAM
Lead: MIG|SVR
Project Manager: Peg Staeheli, Brice Maryman
Supported by: Studio Matthews

The Seattle Department of Transportation
700 5th Avenue, Suite 3800
PO Box 34996
Seattle, WA 98124-4996
(206) 684-ROAD (7623)
www.seattle.gov/transportation

Seattle
Department of
Transportation

3.2017