

CHAPTER 6: PLAN IMPLEMENTATION

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

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

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

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

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

PLANNING-LEVEL COST ESTIMATES

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

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

Along-the-roadway improvements

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



Arterial streets

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

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

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

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

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

* Based on SDOT asset management database. Not all locations noted as missing sidewalks may be feasible or desirable locations for new sidewalks.

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

Non-arterial streets

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

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



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

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

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

* Based on SDOT asset management database, and not validated via on-the-ground survey. May include full or partial blockfaces. Not all locations noted as missing sidewalks may be feasible or desirable locations for new sidewalks.

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

Crossing-the-roadway improvements

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

While the PMP identifies intersections within the PIN that should be evaluated for crossing improvements, the Plan does not prescribe the exact improvement needed at each location. In fact, the particular improvement appropriate at an individual intersection will vary, depending on a variety of factors. As the Plan is implemented, we will evaluate these high priority locations to determine the particular type of crossing improvement appropriate at each intersection. Because the Plan cannot prescribe the exact type of crossing improvements needed at each

intersection, it is difficult to accurately predict the full cost of providing crossing improvements within the PIN. We can, however, provide rough cost estimates for the various types of improvements that could be applied at prioritized intersections. Table 6-3 outlines the types of improvements that could be used to improve crossing conditions at prioritized intersections, as well as the approximate unit cost of each type of improvement.

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

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

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

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

FUNDING THE PLAN

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

Levy to Move Seattle

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

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



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

SDOT program	Total levy amount (9-year)	Levy deliverable
PMP Implementation Program	\$91M	See below
<ul style="list-style-type: none"> <i>Curb ramps and crossing improvements</i> 	\$30M	<ul style="list-style-type: none"> <i>Make curb ramp and crossing improvements at up to 750 intersections citywide</i>
<ul style="list-style-type: none"> <i>New sidewalks</i> 	\$61M	<ul style="list-style-type: none"> <i>Build 250 new blocks of sidewalk (traditional and low cost sidewalks)</i> <i>Make residential streets without sidewalks safe and more comfortable for pedestrians, including through partnership with Seattle Public Utilities in the flood-prone Broadview neighborhood</i>
Safe Routes to School	\$7M	Complete 9-12 Safe Routes to School projects each year
Vision Zero	\$23M	Complete 12-15 corridor safety projects, improving safety for all travelers on high-crash streets
Neighborhood Greenways	\$36M*	Complete 60 miles of new greenways
Neighborhood Street Fund Grant Program	\$26M	Complete 20-30 neighborhood priority projects to improve safety, mobility, access, and quality of life in those neighborhoods
Transportation Operations	\$37M	Maintain and improve the City's system of traffic signals, signs and markings

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

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

SDOT program	Total levy amount (9-year)	Levy deliverable
Sidewalk Repair Program	\$15M	Repair up to 225 blocks of sidewalk in urban centers and urban villages
Stairway Rehabilitation Program	\$4.6M	Not specified
Signs and Markings (crosswalk repainting)	\$4M	Crosswalk repainting frequency on a four-year or better cycle
Urban Forestry	\$20M	<ul style="list-style-type: none"> Tree Trimming: Add a new tree crew focused on quick response to critical pruning needs (such as clearances for people biking and using sidewalks, and at transit stops) and on ensuring clear sightlines to traffic signals and signs Tree Planting: Replace every tree removed due to disease or safety with two new trees

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

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

Program leveraging

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

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

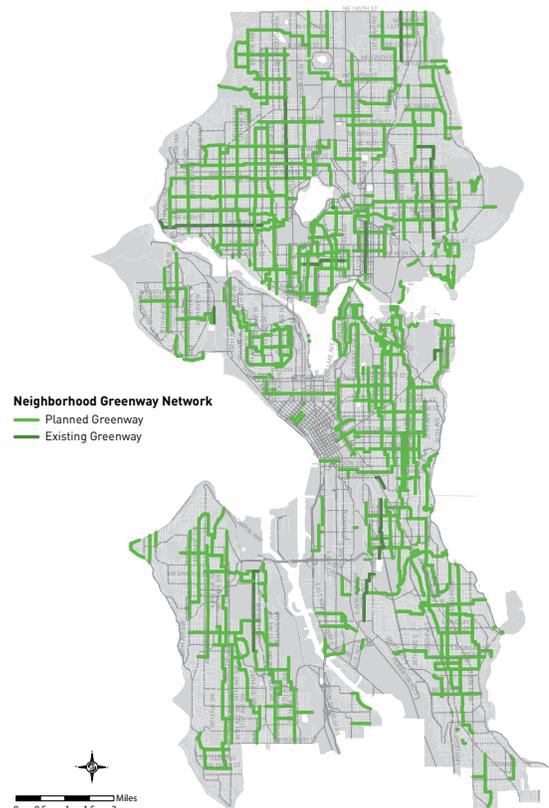
Identifying potential leveraging opportunities will also be a key strategy to provide pedestrian improvements on non-arterial streets. To stretch our dollars, the PMP Implementation Plan will identify opportunities to coordinate improvements with various SDOT programs (and programs from other City departments)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

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

- **Safe Routes to School:** SDOT's Safe Routes to Schools (SRTS) program provides new sidewalks and other pedestrian improvements to both arterial and non-arterial streets connecting families and children to schools. The program uses a variety of factors to prioritize improvements within school walksheds, including the priorities established in the Pedestrian Master Plan. Moving forward, SRTS will be a key source to identify non-arterial streets within the PIN for improvements, including low-cost improvements.

- **SDOT Neighborhood Greenways Program:** Neighborhood Greenways were introduced in the 2014 Seattle Bicycle Master Plan as a component of the citywide bicycle network. Greenways are intended to provide a low-stress network of calmed, non-arterial streets prioritized for walking and biking. As shown in Figure 6-1, the planned Neighborhood Greenway system extends across the city and overlaps many streets within the PIN currently lacking sidewalks. As the Neighborhood Greenways program prioritizes new projects moving forward, project leads will be able to identify any overlaps with prioritized non-arterials in the PMP, potentially enabling greenway and low-cost improvements to be delivered together.

FIGURE 6-1: NEIGHBORHOOD GREENWAY NETWORK



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

Grant funding opportunities

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

Pedestrian improvements not funded by SDOT

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

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



PLAN PERFORMANCE MEASURES

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

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

CHANGES TO PERFORMANCE MEASURES

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

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

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

TABLE 6-7: 2016 PMP PERFORMANCE MEASURES

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

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

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

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