

Pedestrian Master Plan

APPENDIX 7: 2016 PRIORITIZATION METHODOLOGY

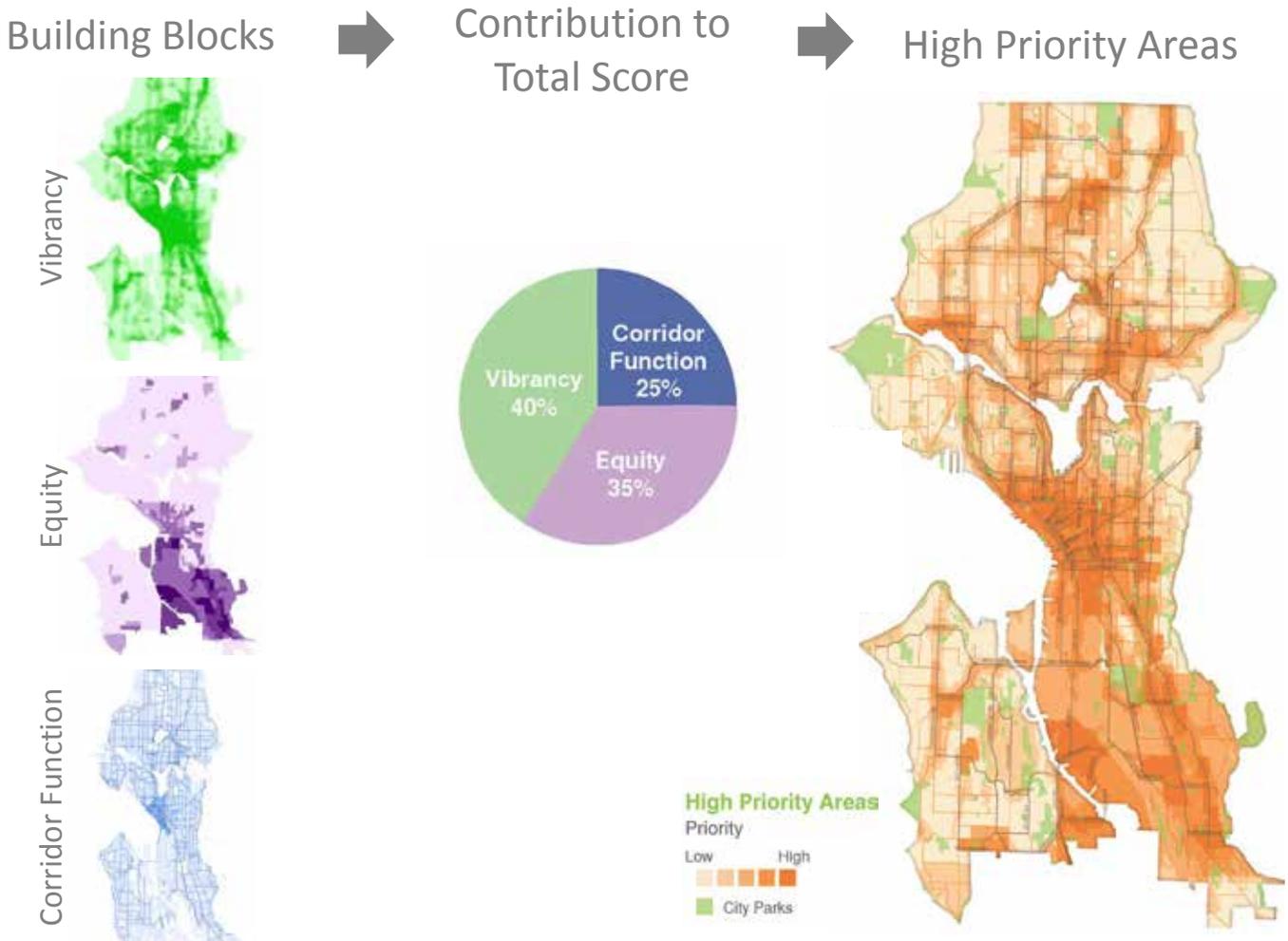
The purpose of this appendix is to describe the technical methodology used to prioritize pedestrian improvements in the 2016 Pedestrian Master Plan (PMP). The PMP prioritization methodology is intended to direct capital and programmatic improvements to improve walkability and accessibility based on a citywide analysis of data related to the Plan goals of safety, equity, vibrancy, and health. Since the PMP was adopted in 2009, this data-driven approach to prioritizing pedestrian improvements has become a broadly-emulated model. The Plan's data-based framework for evaluating priorities and directing pedestrian investments and programs in the city is a key product of the 2009 Plan, and this process remains a component of the Plan moving forward.

SUMMARY OF 2009 PRIORITIZATION PROCESS

The 2009 PMP provided a data-driven methodology for identifying priority locations for new sidewalks, curb ramps, crossings, signs, and other pedestrian improvements (see Appendix 5 for full technical methodology of the 2009 PMP). The Plan's prioritization process was a two-part, city-wide analysis of data related to:

- **“Vibrancy”** (demand) factors to identify pedestrian generators (existing and future land uses and destinations likely to generate the most pedestrian traffic);
- **“Corridor function,”** or street types and associated roadway characteristics,

FIGURE 1: “HIGH PRIORITY AREAS,” PER THE 2009 PMP



- including roadways that serve key functions within the pedestrian network; and
- **Equity** factors that look at underlying socioeconomic and health factors, like automobile ownership and diabetes rates, so the City can provide pedestrian improvements in the areas with the greatest need.

The second part of the analysis examined physical characteristics of the roadway (including vehicle volumes, vehicle speeds, roadway width, and collision data), and identified areas where crossing the roadway may be difficult, and where sidewalks are missing or there is no physical buffer separating pedestrians from moving traffic.

These “crossing-the-roadway” and “along-the-roadway” opportunity areas were then overlaid on top of the “high priority areas” map (see Figures 1 and 2). Locations where high priority crossing-the-roadway and along-the-roadway opportunity areas overlap with high priority areas became prioritized locations for potential pedestrian improvements. Since 2009, the Pedestrian Master Plan Implementation Program and other programs that provide pedestrian improvements, including Safe Routes to School, have referred to this list of priority areas to identify pedestrian improvement projects.

FIGURE 2: HIGH PRIORITY “ALONG THE ROADWAY” AND “CROSSING THE ROADWAY” LOCATIONS, PER THE 2009 PMP



A PMP update presents an opportunity to “re-ground” the prioritization methodology in the Plan’s goals, and to ensure that the PMP prioritization continues to reflect City and SDOT policy objectives, national and international best practices, and community priorities moving forward.

The 2016 PMP maintains the structure of the 2009 prioritization framework, and analyzes data related to pedestrian vibrancy, safety, and equity and health to help identify opportunities for pedestrian investments. However, the datasets used in these analyses, as well as the framework for layering each of these factors have been updated. With new data available to more accurately measure pedestrian demand, pedestrian safety, and equity and health conditions in the city, the PMP is in a position to more accurately identify locations most in need of improvement to achieve the Plan goals

Additionally, several important SDOT programs and policy initiatives have evolved or been introduced since the adoption of the 2009 PMP. Of most significance is Vision Zero, the City’s goal of ending traffic deaths and serious injuries by 2030. The PMP update presents an opportunity to better reflect Vision Zero objectives and data to help prioritize pedestrian improvements moving forward.

Updating the Plan’s prioritization methodology also presents an opportunity to refine the PMP’s investment priorities to better match available resources. While the Plan has been successful in directing public investments to PMP high priority locations, the overwhelming number of priorities that arose from the 2009 Plan has not matched funding availability, resulting in an overall low rate of network completion. The updated prioritization process seeks to refine Plan priorities to better match funding availability and public priorities.

UPDATED PRIORITIZATION

The following section outlines the updated process for prioritizing pedestrian improvements, and identifies the locations throughout the city where SDOT will direct capital projects and program funds to improve pedestrian conditions. The prioritization directly relates to the Plan goals as well as public input received in the PMP Public Survey.

The key elements of the updated PMP prioritization framework include:

- Updated data used to measure vibrancy, safety, equity, and health. Since 2009, several GIS datasets have been updated or newly developed. Using this more recent data, the PMP prioritization can more accurately pinpoint specific locations most in need of improvement to achieve the plans goals.
- A narrowed list of potential pedestrian demand generators to key destinations (based on public input) in order to focus resources to the most critical components of the pedestrian network
- A clear, connected network of streets serving those key pedestrian destinations. Investments will be directed to this priority network to improve pedestrian conditions.
- An updated prioritization process that reflects the City’s Vision Zero objectives. SDOT has collected a wealth of new data since the Plan’s adoption in 2009 on where and how pedestrians are injured on Seattle streets each year. Some of this data is derived from new, safety prioritization modeling that helps identify roadway design and behavioral factors that may be correlated with pedestrian crashes. Using this data to help direct pedestrian investments helps ensure that the PMP is working toward achieving the vision of eliminating fatal and serious injuries on Seattle streets by 2030.

- More clarity regarding the location, number, and type of along-the-roadway improvements called for within the Plan, as well as the types of infrastructure analyses needed at identified crossing-the-roadway locations.

PRIORITIZATION STEPS

The prioritization framework for the 2016 PMP includes three steps:

- **Step 1:** Develop the network
 - We developed a citywide “Priority Investment Network” using vibrancy (or demand) factors where we will direct funds to improve conditions for people walking
- **Step 2:** Identify needs: Assess the opportunities for pedestrian improvements within the priority network
 - We identified the needs for walking along and crossing the streets within the Priority Investment Network to develop opportunity areas for improvements
- **Step 3:** Further prioritize needs using the Plan’s Safety, Equity and Health analyses
 - We established the criteria by which these opportunity areas will be prioritized as the Plan is implemented, applying the safety and equity/health analyses to further prioritize which opportunity areas within the network to evaluate first for pedestrian improvements

STEP 1: DEVELOP THE NETWORK

The “Vibrancy” analysis in the 2009 PMP identified existing and future land uses and destinations likely to generate the most pedestrian traffic, and proposed that pedestrian investments be directed to these areas where the most people are likely to walk. The evaluation included a long list of land-use based pedestrian generators, including retail destinations, high-density housing, employment centers, and tourist destinations.

While logically sound, this approach had the unintended impact of prioritizing locations for investment that already had relatively high-quality pedestrian infrastructure, namely, central neighborhoods within the City’s urban centers and urban villages. Less focus was directed to more peripheral areas of the city with lower intensity retail, housing, and employment land uses, areas where pedestrian infrastructure is often lacking.

The PMP public input echoed these concerns. When asked “where should the City prioritize walking improvements first?” residents ranked “streets connecting families and children to schools,” and “streets connecting people to transit stops” among the highest priorities, while “streets where the most people walk” received less support.

In response to these considerations, the updated PMP prioritization framework proposes a more narrow focus when evaluating pedestrian demand generators. In direct response to public feedback, the updated “vibrancy” (or demand) analysis identifies the network of streets that serve as key pedestrian routes to schools and transit stops, two generators dispersed throughout all areas of the city. The result is a more geographically distributed set of investment priorities, and a focus on the most critical components of the pedestrian network.

Schools and transit stops are arguably the most important walking destinations. As such, the

foremost priority of the updated PMP is ensuring that streets connecting pedestrians to these key destinations provide a safe and comfortable walking environment. This network of streets includes both arterial and non-arterials, and taken together, they create a clearly identified, interconnected pedestrian network that connects people to important pedestrian destinations. Funding to improve walking conditions both along-the-roadway and crossing-the-roadway will be directed to the streets within this “Priority Investment Network” (PIN).

The following sections outline the analysis used to identify streets for inclusion in the Priority Investment Network, including access to transit, access to schools, and further detail of the PIN.

Access to Transit

While quality pedestrian connections to all transit stops within the city are important, the PMP prioritizes connections to stops within the Frequent Transit Network (FTN), as identified in the 2015 Transit Master Plan (TMP). This approach helps to align investments between the Pedestrian Master Plan and the Transit Master Plan, maximizing impacts to both modes.

The TMP defines the Frequent Transit Network 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 defined as service occurring a minimum of every 15 minutes or better, and includes light rail, streetcar, RapidRide and bus rapid transit, and frequent bus service. The Frequent Transit Corridors, per the TMP, are shown in Figure 3.

The streets included within the Priority Investment Network that provide access to

frequent transit were determined in two ways. First, all frequent transit corridors themselves were included in the PIN. This helps to ensure that there is good pedestrian infrastructure both along and across all frequent transit routes, including between frequent transit stops. Because frequent transit corridors traverse some of the city’s key arterial corridors, focusing resources to improve conditions both along and across these FTN corridors also reflects the public’s desire to prioritize sidewalk and crossing conditions along busy arterial streets.

Second, to identify streets that connect pedestrians to frequent transit stops, we identified streets within the “walkshed” of each planned and existing frequent transit stop in the FTN, per the City’s Transit Master Plan. Streets within these identified walksheds are those that provide pedestrian routes to frequent transit stops. The size of the walkshed we used varies according to the type of transit mode served by the stop, and is based on transit planning and transit oriented development best practices¹.

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, and the PMP uses this data to determine walkshed locations. The TMP also identifies “priority bus corridors” where existing transit ridership is high and planned growth will continue to drive transit ridership demand. The TMP calls for transit speed and reliability improvements along these priority bus routes in order to upgrade these high ridership routes to frequent service levels. The PMP Priority Investment Network assumes that as these existing bus routes are upgraded, existing bus stops will be consolidated to approximately 1/4 mile spacing. This stop spacing assumption is consistent with the planning assumptions

¹American Public Transportation Association (APTA) Recommended Practice for Defining Transit Areas of Influence www.apta.com/resources/standards

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

Because the PMP seeks to direct pedestrian improvements to streets connecting people to both existing and future frequent transit stops, the PIN also includes streets within walksheds to all sited Link Light Rail stations (both existing and planned).

Table 1 outlines the transit data used for the PIN analysis, including walkshed distances used for each transit type. Figure 4 maps each of these walksheds.

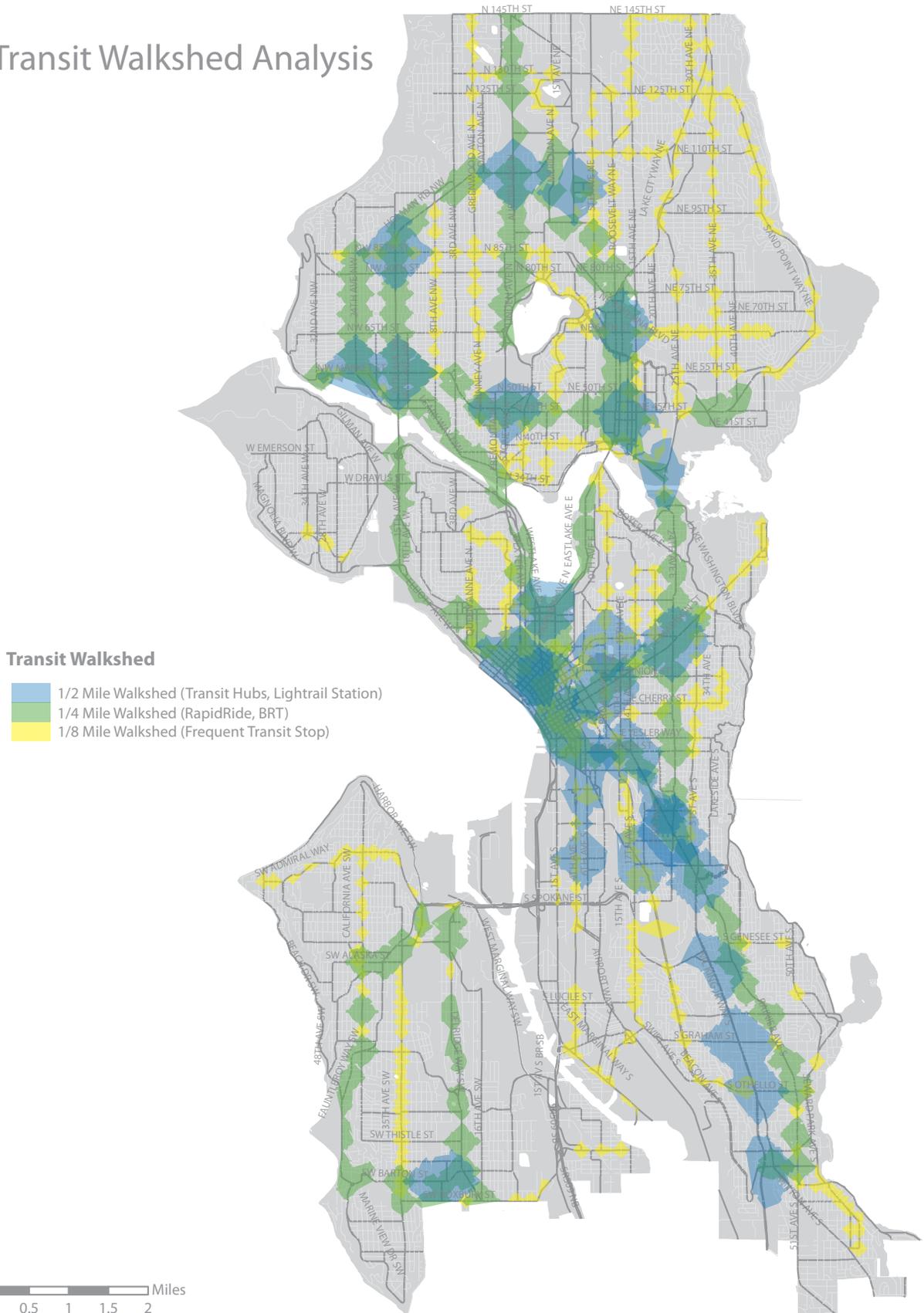
TABLE 1: TRANSIT DATA USED IN THE PIN ANALYSIS

Factor	Source	Scoring
Frequent Transit Network arterials	Seattle Transit Master Plan	Scoring is binary: either a segment is included or it is not.
Walksheds to Frequent Transit Network stops 1/8 mile to frequent bus stops 1/4 mile to all Bus Rapid Transit (BRT) and Streetcar stops 1/2 mile around all Light Rail Transit (LRT) stops 1/2 mile around all existing or planned transit hubs*	Seattle Transit Master Plan	Scoring is binary: either a segment is included or it is not. There is not a higher weighting for segments that fall within multiple walksheds. A street segment is included within the PIN if any portion of that segment lies within the prescribed walkshed distance to a frequent transit stop.

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

FIGURE 4: WALKSHEDS TO FTN ARTERIALS AND TRANSIT STOPS

Transit Walkshed Analysis



Access to Schools

The Plan’s public outreach efforts confirmed that providing safe and comfortable pedestrian access to schools is also a priority for Seattle residents. To reflect this, the updated Priority Investment Network also includes street segments within a ¼ mile walkshed of all K-12 Seattle public schools. While Seattle Public Schools uses a one mile walkshed to determine school walk boundaries and eligibility for school district transportation services, the PMP uses a smaller walkshed in order to adequately prioritize improvements. Because public schools are so broadly dispersed throughout the city, a larger walkshed would have resulted in a Priority Investment Network as broad as the city itself. Because the intent of the PMP prioritization process is to focus resources to areas where they are needed most, we determined that streets closest to schools were a greater priority than more distant streets.

Table 2 shows the data used to determine school walksheds. The walksheds to K-8 public schools are mapped in Figure 5.

Priority Investment Network

Taken together, the streets within walksheds to schools and walksheds to frequent transit stops create the PMP Priority Investment Network (PIN). Given the important function these streets play in connecting people to these key pedestrian destinations, these streets will be prioritized for pedestrian investments. Figure 6 illustrates the arterial and non-arterial streets within the PIN.

Why only public schools?

For this analysis, we chose to focus on Seattle’s K-12 public schools for a few reasons. First, based on Seattle Public Schools’ school assignment policies, public schools are more likely to draw directly from their surrounding neighborhoods, creating a higher-likelihood of more children and their families walking and biking to and from those schools. While some private schools draw from a similar local catchment, this pattern is inconsistent.

While not drivers of the PMP Priority Investment Network, streets within private school walksheds are still eligible for public improvements. SDOT’s Safe Routes to School program will continue to work with all schools in the City, including private schools, to invest in pedestrian improvements to enhance safety. For more information about the City’s Safe Routes to School program, visit: <http://www.seattle.gov/transportation/saferoutes.htm>.

TABLE 2: SCHOOL DATA USED IN THE PIN ANALYSIS

Factor	Source	Scoring
¼ mile walkshed to all Seattle Public Schools	SDOT GIS	Scoring is binary: either a segment is included or it is not. There is not a higher weighting for segments that fall within multiple walksheds. A street segment is included within the PIN if any portion of that segment lies within the prescribed walkshed distance to a K-12 Seattle Public School.

STEP 2: IDENTIFYING NEEDS: ASSESSING OPPORTUNITIES FOR PEDESTRIAN IMPROVEMENTS WITHIN THE PIN

The demand analysis described above helps to prioritize streets for investment that serve key pedestrian destinations. The following sections describe how we evaluated potential infrastructure needs within this Priority Investment Network that the PMP will seek to address over the course of the 20-year plan.

Along-the-Roadway Evaluation

The along-the-roadway evaluation identifies locations within the PIN where there may be opportunities to improve conditions for pedestrians moving along the roadway. It identifies locations where pedestrian walkways are missing along arterial and non-arterial streets, based on SDOT asset management data. Figure 7 identifies streets within the PIN where sidewalks or walkways are missing.

Because the prioritization criteria, funding sources, and design solutions for arterial and non-arterial streets differ, the sidewalk needs for each are assessed differently (see Table 3). Opportunities along arterial streets include all arterial blockfaces or partial blockfaces within the PIN where there is not currently a curb-separated sidewalk. Opportunities along non-

arterial streets include all blockfaces or partial blockfaces within the PIN where there is not a separated pedestrian path. Pedestrian paths may be separated horizontally by physical elements such as landscaping or wheel stops, or vertically by curbs. A “blockface” is the average length of one side of a city block. In Seattle that measures out to be 300 ft., or the length of a football field without end zones.

The along-the-roadway assessment only evaluates whether a facility does or does not exist. The assessment does not include sidewalk condition data, or whether facilities are built to current standards (including minimum widths and requirements for landscape/street tree buffers, as guided by the Right-of-Way Improvements Manual). This is primarily due to the large number of missing sidewalk locations throughout the city.

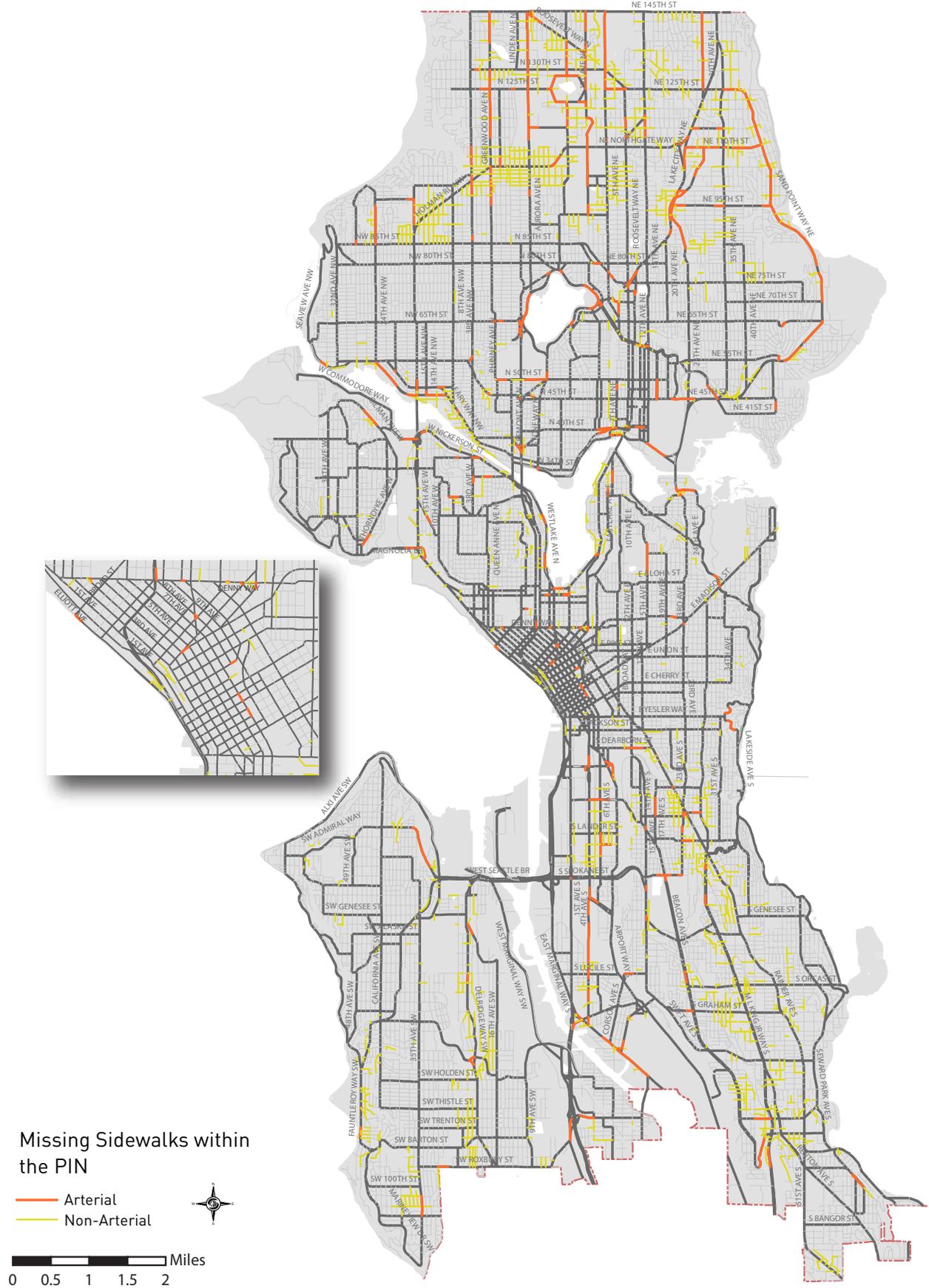
It is important to note that locations with missing sidewalks shown in Figure 7 are based on SDOT asset management data. Not all locations where the data indicates a sidewalk is missing are necessarily feasible or desirable locations for new sidewalks. As SDOT develops the PMP Implementation Plan, we will evaluate these individual opportunities to determine if new sidewalks are technically and financially feasible in the locations identified.

TABLE 3: ALONG-THE-ROADWAY EVALUATION DATA

Location	Factor	Source	Scoring
Arterial streets within the PIN	Presence of a curb-separated, concrete sidewalk	SDOT Asset Management Data	Scoring is binary: either a segment has a sidewalk or not.
Non-arterial streets within the PIN	Presence of a separated pedestrian path*	SDOT Asset Management Data	Scoring is binary: either a segment has a separated pedestrian path or not.

*Pedestrian paths may be separated horizontally by physical elements such as landscaping or wheel stops, or vertically by curbs.

FIGURE 7: MISSING BLOCKFACES/PARTIAL BLOCKFACES OF SIDEWALK WITHIN THE PIN



Crossing-the-Roadway Evaluation

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

The analysis is not intended to prescribe particular design solutions for individual locations, but rather, to identify locations where improvements should be evaluated. For example, not all intersections identified in the maps below may necessarily be appropriate locations for new curb bulbs or new traffic signals. The PMP Implementation Plan will evaluate these priority locations and determine the types of crossing improvements that may be suitable.

It is also important to note that while the PMP crossing-the-roadway evaluation helps to identify potential opportunities for new infrastructure to make arterial crossings more comfortable, there are other types of pedestrian safety improvements that can be provided at intersections, including modifications to signal phasing, providing new crosswalks or mid-block crossings, and improving lighting conditions. While outside of the PMP analysis, other SDOT programs (including the Vision Zero program) will continue to evaluate opportunities to provide these types of pedestrian safety improvements.

Crossing conditions evaluated at arterial intersections (shown in Table 5) include the following:

- **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.

TABLE 5: CROSSING THE ROADWAY EVALUATION DATA

Factor	Source	Scoring
Crossing distance	SDOT Asset Management Data	1-2 lane crossing = 0 points 3 lane crossing = 4 points 4 or more lane crossing = 5 points
Controlled-crossing spacing on principal & minor arterials	SDOT Asset Management Data	Under 1/16 mile between controlled crossing locations = 0 points Over 1/16 mile = 3 points Over 1/8 mile = 4 points Over 1/4 mile = 5 points
Curb ramp status	SDOT Asset Management Data	Scoring is binary: either an intersection has a curb ramp or not.

* Only arterial intersections analyzed in the “Crossing the Roadway” evaluation.

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.

The crossing distance analysis shown in Figure 8 assesses the number of vehicular travel lanes a pedestrian is required to cross at an intersection. Locations where pedestrians are required to cross four or more vehicular travel lanes are most highly weighted, and are identified as priority locations for further study.

Controlled-Crossing Spacing

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. 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 like pedestrians crossing arterials at unpredictable locations.

The controlled crossing spacing analysis in Figure 9 identifies opportunities to evaluate intersections for new controlled crossings. Locations where controlled crossings on principal and minor arterials are greater the ¼ mile apart are most highly weighted, and are identified as priority locations for further study to provide new traffic control devices to facilitate pedestrian crossings.

Curb Ramp Status

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

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

FIGURE 8: CROSSING DISTANCE AT ARTERIAL INTERSECTIONS

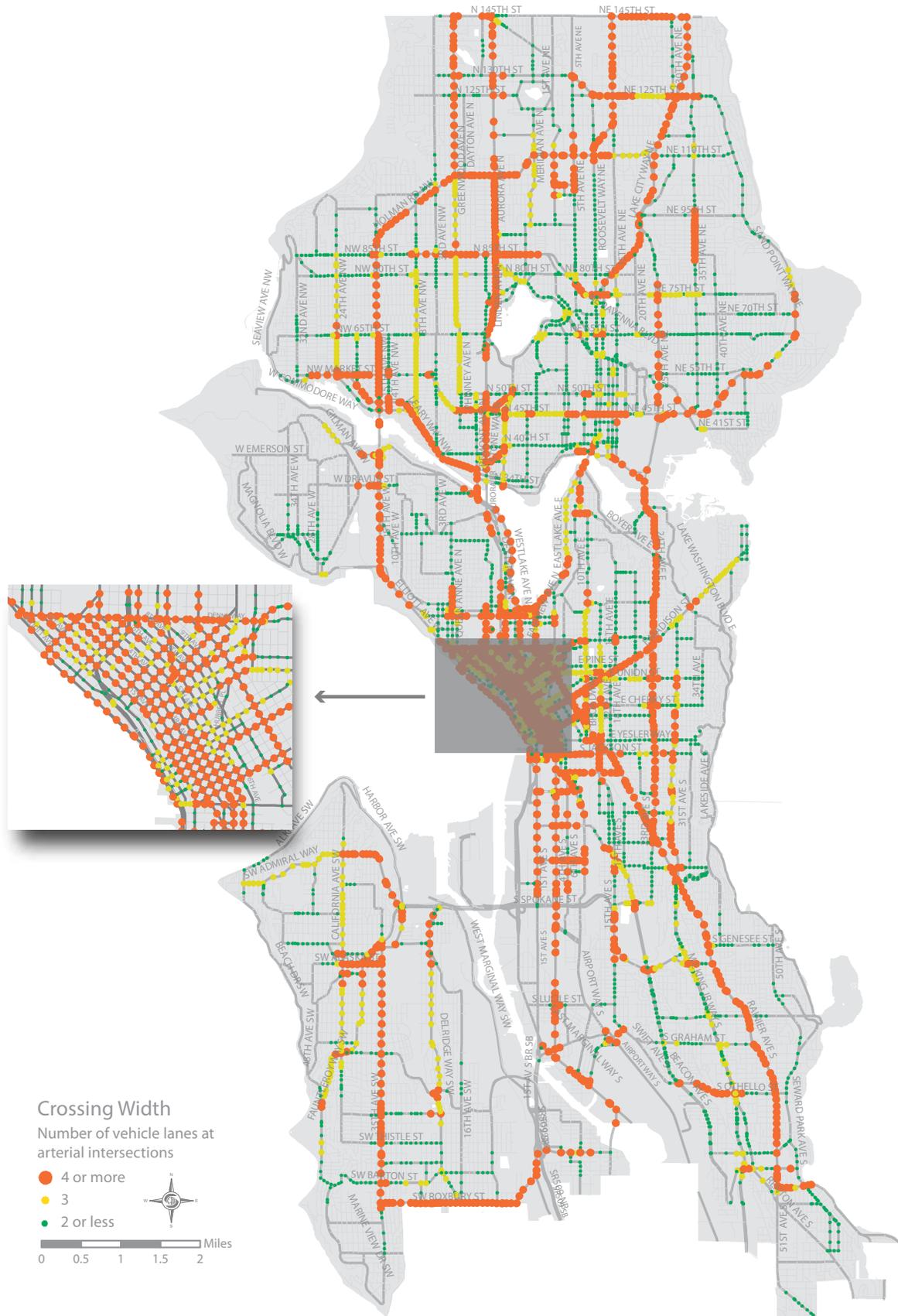
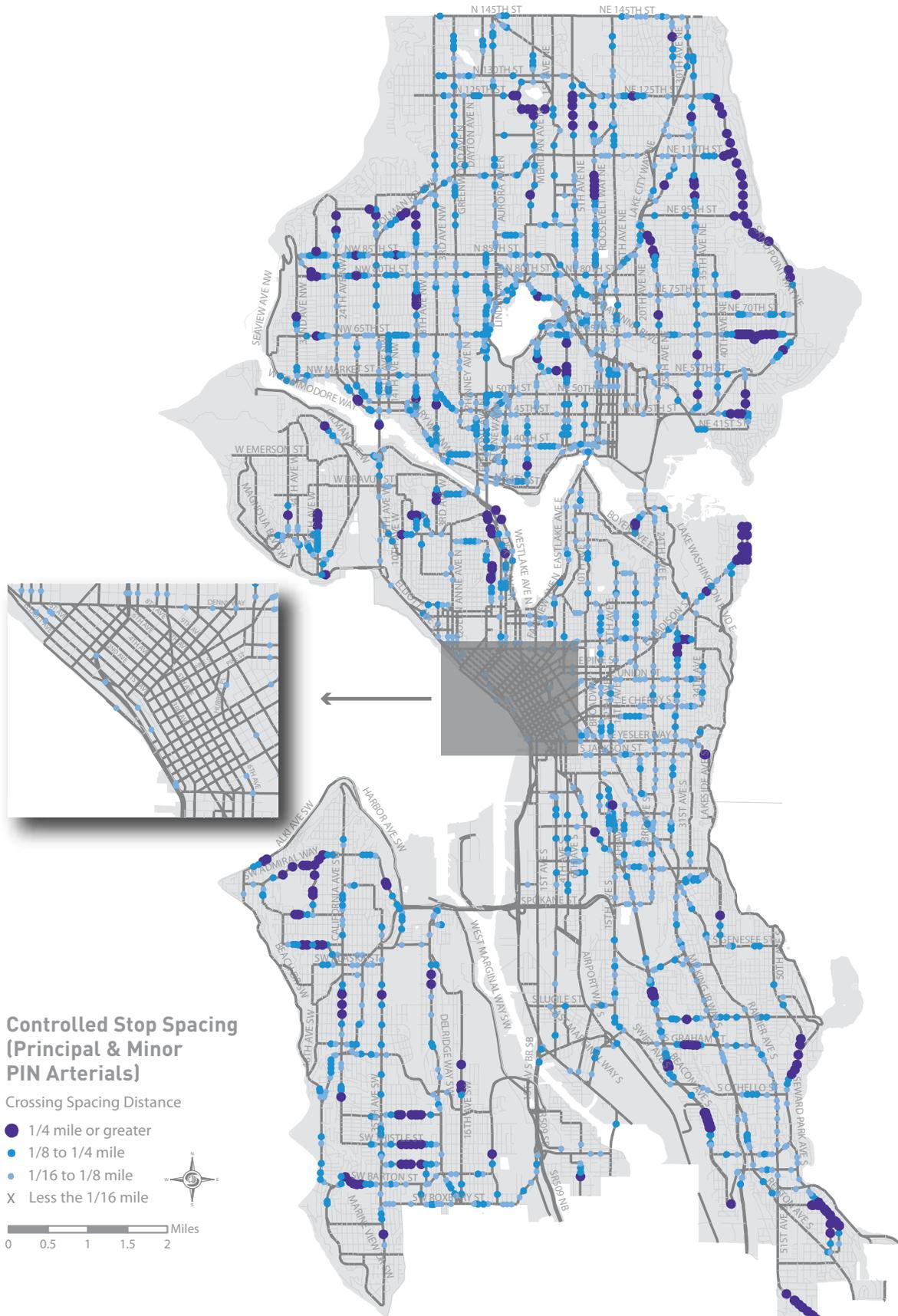


FIGURE 9: DISTANCE TO NEAREST CONTROLLED CROSSING OPPORTUNITY



STEP 3: FURTHER PRIORITIZE NEEDS USING THE PLAN'S SAFETY AND HEALTH/EQUITY ANALYSES

While the PMP identifies the arterial and non-arterial street segments within the city that will be prioritized for pedestrian improvements, and the locations within that network where opportunities exist to improve conditions both along and across the roadway, the Plan does not prioritize locations within this network for near-term improvements.

To meet this need, SDOT will develop a PMP Implementation Plan to accompany the 20-year needs identified in this Plan. The Implementation Plan will identify particular locations within the Priority Investment Network for improvements based on annual funding availability, program and project leveraging opportunities, and other balancing factors to help ensure that improvements are packaged for efficient delivery.

To reflect the PMP goals as well as public input received via the PMP Public Survey, the Implementation Plan will prioritize locations within the PIN where sidewalk and crossing improvements could maximize safety improvements and help mitigate health and equity disparities. The Implementation Plan will consider:

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

The sections below describe the factors evaluated within the PMP safety and equity/health analyses that the Implementation Plan will use to prioritize improvements within the Priority Investment Network. Because the Implementation Plan will be updated regularly, the data used in the safety and equity/health analysis outlined below can also be updated as needed.

Safety Analysis

The PMP safety prioritization analysis identifies arterial street segments where opportunities may exist to provide infrastructure improvements to make Seattle streets even safer for pedestrians. It evaluates locations where pedestrian crashes have occurred over the last five years, and consistent with the City's Vision Zero objectives, weighs most highly locations where serious and fatal pedestrian collisions have occurred.

In addition to evaluating pedestrian crash data, the PMP safety prioritization analysis also evaluates roadway design characteristics that may be correlated with pedestrian crashes in order to proactively prioritize locations for pedestrian safety improvements. This data was gleaned from SDOT's Bicycle and Pedestrian Safety Analysis (BPSA). The BPSA is in the process of studying all bicycle and pedestrian crashes in the city over the last eight years to help identify the roadway design and behavioral characteristics that may be correlated with non-motorized crashes in Seattle. Using pedestrian crash data and information provided by SDOT safety prioritization modeling helps ensure that the PMP prioritizes improvements in accordance with the City's Vision Zero objectives. As the PMP Implementation Plan is updated, the data included in the PMP safety prioritization analysis will also be updated to help ensure that improvements are prioritized in accordance with the most current SDOT traffic safety data.

Every arterial street segment in the PIN was given a safety prioritization score. The score for each factor is tallied to create a cumulative safety prioritization score, with a maximum of 30 points. After determining the cumulative scores, all PIN arterial street segments were divided into five quantiles (five groups with relatively equal records in each group). The top quantile are those arterials receiving the highest safety prioritization scores, where investments in safety improvements may have the biggest impact on pedestrian safety.

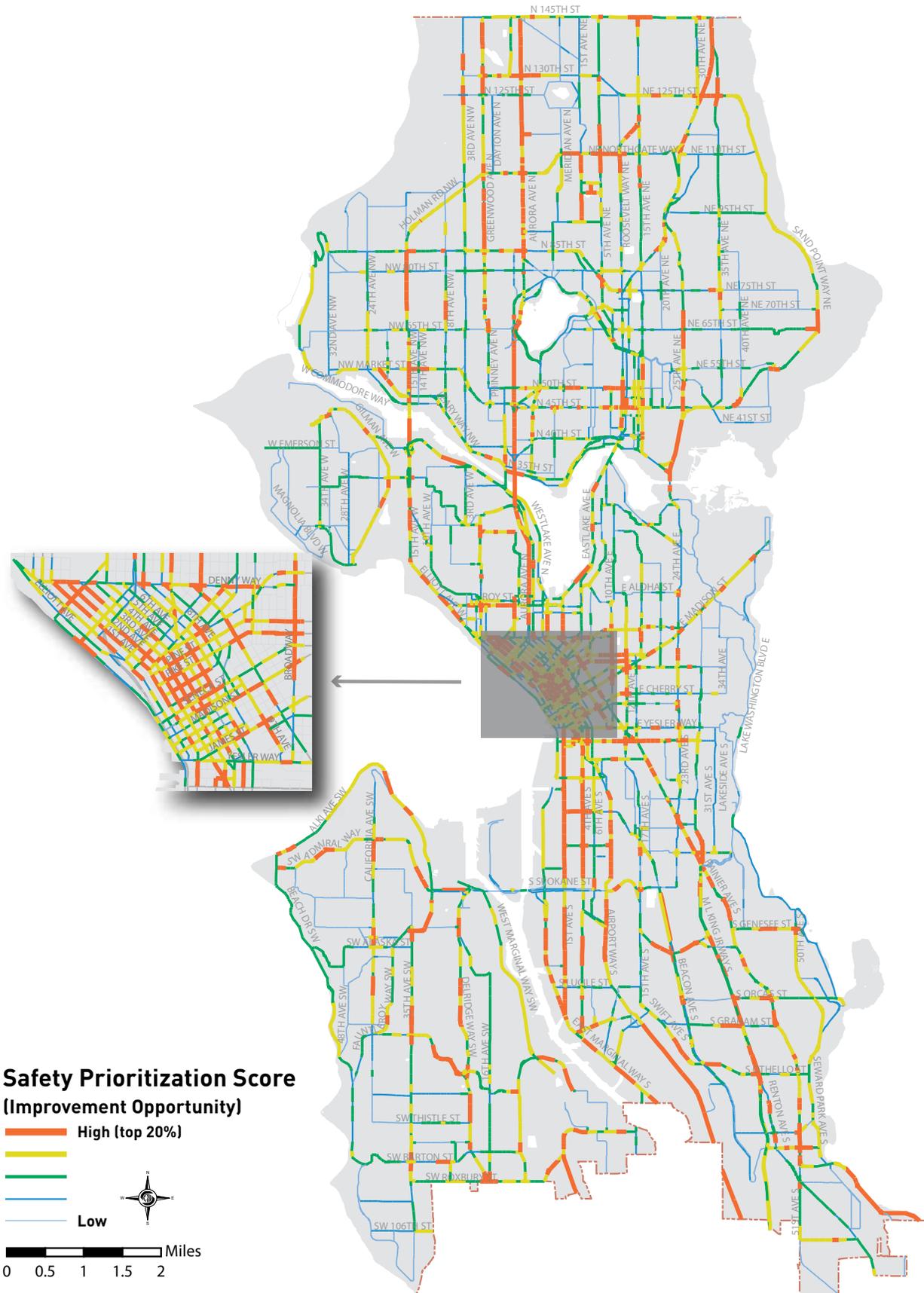
Figure 10 shows the arterial street segments within the Priority Investment Network with the safety prioritization scores applied. The top 20% of PIN arterial street segments with the greatest opportunities to provide pedestrian safety improvements are shown in orange. Along- and crossing-the-roadway improvements will be prioritized in these locations.

The factors included in the PMP safety prioritization analysis are shown in Table 6

TABLE 6: SAFETY FACTORS

Factor	Source	Scoring
Pedestrian collisions **Includes intersection and block-level data.	SDOT/SPD Data (5 years)	Serious/Fatal Collisions = 10 points 4+ collisions = 8 points 2-3 collisions = 6 points 1 collision = 4 points
Arterial classification	SDOT GIS	Principal Arterials = 5 pts Minor Arterials = 4 pts Collector Arterials = 3 pts*
Roadway width	SDOT GIS	61'+ = 5 points 48' - 60' = 3 points 36' - 47' = 1 point
Vehicle speed	85th% speed where available, otherwise posted speed	40+ mph = 5 points 35+ mph = 4 points 30+ mph = 3 points 26+ mph = 1 point*
Controlled-crossing spacing on principal & minor arterials	SDOT GIS	Over 1/4 mile = 5 points Over 1/8 mile = 4 points Over 1/16 mile = 3 points Under 1/16 mile between controlled crossing locations = 0 points
Maximum Possible Safety Score		30 points

FIGURE 10: ARTERIAL SAFETY ANALYSIS



Equity and Health Analysis

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

The PMP equity and health analysis assesses socio-economic data to help identify populations most reliant on the pedestrian network, including income, race, and disabled communities. To help ensure that walking improvements are prioritized to help facilitate better health outcomes across the city, the analysis also includes self-reported health data provided by King County Health, including self-reported physical activity rates, and rates of obesity and diabetes. Table 7 summarizes the data used in the PMP equity and health analysis.

Each of the six equity and health factors were broken into five quantiles (five groups with relatively equal records in each group) based on census tract. The top quantile for each factor received 5 points, the second highest quantile received 3 points, and the third highest quantile received 1 point. The lowest 2 quantiles for each factor received 0 points. The scores from each factor analysis are tallied to create a cumulative equity and health score, with a maximum of 30 points.

Figure 11 shows the areas of the city prioritized for pedestrian improvements based on these equity and health factors. The areas of the city that would benefit the most from pedestrian infrastructure to improve equity and health disparities are shown in dark purple.

TABLE 7: EQUITY AND HEALTH FACTORS

Factor	Source	Scoring
Low income population	2010 Census	5 points max*
Disabled population	2010 Census	5 points max*
Communities of color	2010 Census	5 points max*
Physical activity	Public Health – Seattle and King County, King County Health Planning Areas (HPA) 2013	5 points max*
Obesity rates	Public Health – Seattle and King County, King County Health Planning Areas (HPA) 2013	5 points max*
Diabetes rates	Public Health – Seattle and King County, King County Health Planning Areas (HPA) 2013	5 points max*
Maximum possible equity and health score		30 points

Applying the Safety and Equity/Health Analyses to the PIN

The PMP Implementation Plan will assign each street segment within the Priority Investment Network a score based on the safety and equity/health analyses above. That score will inform the phasing of PMP pedestrian improvements, indicating where pedestrian improvements could improve safety conditions the most, and where pedestrian investments can help address health and equity disparities

The Implementation Plan will prioritize arterial streets separately from non-arterial streets. Non-arterial street segments will be prioritized based exclusively on the equity and health analysis score, as traffic safety data is limited for non-arterial streets. Arterial street segments will be prioritized using a weighted cumulative score based on both the safety and equity and health analyses. A street segment's safety prioritization score will contribute to 60% of the total score, and the equity and health analysis will contribute to

40% of the total score, as detailed in Table 8. The weighting percentage is based on public feedback we received, and our Vision Zero objectives. The higher the street segment's score, the higher priority it is for improvement.

TABLE 8: PIN ARTERIAL PRIORITIZATION WEIGHTING

Prioritization	Maximum Raw Score	Weighting Value	Maximum Weighted Score
Health and Equity	30 points	1.33	40
Safety	30 points	2	60