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Pedestrian Element



Walking is the most affordable and accessible of all transportation modes. It is also clean, low-impact, and healthy for the individual. A safe and comfortable pedestrian environment allows people of all ages and abilities to travel independently. This chapter summarizes strategies used in evaluating the future needs of the city of Milwaukie's pedestrian network, recommends improvements for the network, outlines pedestrian needs for the next 20 years, and identifies projects that address the city's needs.

GOALS AND POLICIES

Milwaukie has developed a set of goals to guide the development of its transportation system (see Chapter 2). Listed below are the specific TSP Goals that guide the City's policies on pedestrian access and connectivity:

- **Goal 1 Livability** guides the City to provide convenient, accessible and coordinated pedestrian facilities and to minimize barriers to pedestrian travel.
- **Goal 2 Safety** calls for the design and maintenance of safe and accessible walkways.
- **Goal 3 Provide Travel Choices** directs the City to provide an integrated network of walkways that connect people with transit.
- **Goal 4 Quality Design** calls for pedestrian facilities to be integrated with street and development planning in a context-sensitive manner.
- **Goal 5 Reliability and Mobility** calls for enhanced connectivity, which particularly benefits pedestrians.
- **Goal 6 Sustainability** guides the City to increase the use of walking as a low-impact form of travel.

NEEDS

There are generally three different types of pedestrian trips - residential, service, and recreational trips. The deficiencies in Milwaukie's pedestrian system affect each group differently, but common to all three are the needs for connectivity, access and safety. The most common overall need is to provide a safe and interconnected system that makes pedestrian travel a viable option, especially for residential trips less than one-half mile in length and recreational trips less than one mile in length.

Connectivity

Milwaukie's pedestrian network is disconnected, largely due to the lack of convenient crossings of large regional facilities - Highways 99E, 224, and the Union Pacific Railroad. Without direct connections across these barriers, pedestrians are forced to travel out of direction and sometimes use busy arterial and collector streets to meet their destinations. Even where pedestrian crossings do exist, many are deficient. Improvements are needed in two key areas - crossing improvements at most highways, railroads and arterials,¹ and connections to schools, parks and transit routes.

Facilities

Throughout Milwaukie, pedestrian facilities are disconnected and deficient. Although some arterial and collector streets in the city provide limited sidewalks as shown in Figure 3-2, the north and east areas have many collectors and arterials lacking sidewalks. Many of the neighborhood and local streets throughout the city do not have pedestrian facilities. The perimeter of the city is well-served by two off-street multiuse paths, the Springwater Trail and the Milwaukie Riverfront trail, though gaps in the trail network exist to the east and south. Improvements are needed throughout the city, but especially on key connecting corridors that link neighborhoods to schools, parks, and commercial centers.

Policy

City policy directs most development to fill in sidewalk gaps directly adjacent to new development. There is currently no policy to allow development to fill gaps in the pedestrian network if the gap is not adjacent to the developing site. The City should explore a different policy to collect fees from new development to help improve connections and crossings that may not be adjacent to the developing parcel.

FACILITIES

The most common type of pedestrian facility is a concrete sidewalk that is separated from the roadway by an extruded curb. Sidewalks must be built to current City of Milwaukie design standards and comply with the Americans with Disabilities Act, which requires at least four feet of unobstructed sidewalk.² Wider sidewalks are desirable to promote pedestrian travel on all roadways.

Some of Milwaukie's streets are not only important local connections, but are also designated as regionally important pedestrian streets. Streets identified in the Metro 2004 RTP as transit/mixed use corridors (streets in downtown Milwaukie, 17th Ave, Harrison St, King Rd, and 32nd Ave) are areas that are served by quality transit service and will generate substantial pedestrian traffic near neighborhood-oriented retail development, schools, parks, and bus stops. These corridors should include such pedestrian design features as wide sidewalks with buffering from traffic, pedestrian-scale lighting, benches, bus shelters, and street trees.

Milwaukie has three identified off-street multiuse paths in the Metro 2004 RTP regional trails and greenways system: the Springwater Trail, the Trolley Trail, and the Kellogg Creek greenway. The majority of the Springwater Trail within the city has been constructed. However, there is a gap between the Milwaukie section of the Springwater Trail and the section along the east bank of the Willamette River. The Trolley Trail, a project led by the North Clackamas Parks

¹ Any potential new crossing location would need to meet Oregon Department of Transportation (ODOT) crossing guidelines and criteria to make sure the crossing is warranted and safe.

² *Americans with Disabilities Act*, Uniform Building Code.

District, is currently under construction. These facilities will be designed and built according to regional standards, as well as local jurisdictional standards.

RECOMMENDATIONS

Strategies

Milwaukie's pedestrian system is challenged by an incomplete arterial/collector sidewalk system, a lack of local street connectivity, arterial crossings with potential safety and connectivity issues, and a lack of complete multiuse trails (see Chapter 3).

The City has several strategies for addressing pedestrian system needs and guiding project prioritization. The prioritization process helps to focus community investment on those projects that are most effective at addressing critical needs, while deferring other projects of lesser importance. The strategies for pedestrian facilities include:

- Key pedestrian corridors to connect neighborhoods with schools, parks, activity centers, and major transit stops;
- Arterial crossing and safety enhancements;
- Fill gaps in the network where some sidewalks exist;
- Pedestrian corridors that connect to major recreational uses;
- Enforcement of laws that protect pedestrians;
- Education about pedestrian safety and available walking routes.

These strategies would be implemented by projects that address needs and deficiencies. The projects fall into three categories:

- **Capital:** projects that require construction of some sort of physical infrastructure. Capital projects typically require on-going maintenance that must be programmed into the maintenance schedule.
- **Operational:** projects which involve actions that make the existing transportation infrastructure more useable. They can include upkeep of existing facilities, educational campaigns, or distributing information about the use of the transportation network. They are typically smaller in scale and dollars than capital projects, and are implemented more broadly than in one specific location.
- **Policy:** Projects that improve the pedestrian environment that typically do not result in a physical improvement, but rather in a fundamental change in the way pedestrian travel is perceived or treated within Milwaukie. Proposed policy projects are listed below.
 - Ensure overhanging vegetation and other sidewalk obstructions are removed; ensure sidewalk safety hazards are repaired.
 - Enforce speeding laws, utilizing tools such as photo radar, to make the streets generally safer; enforce laws related to pedestrian crossings and crosswalks.
 - Utilize safe routes to schools programs and resources to increase pedestrian safety around schools.
 - Support mixed-use development and services near residential areas to encourage walking; reexamine vehicle-centered policies, such as high amounts of required parking.

- Construct sidewalks or appropriate walkways everywhere; i.e., complete streets as development occurs or capital funds become available.
- Educate the general public about pedestrian safety; inform the general public about traffic laws related to pedestrians.

Master Plan

The Pedestrian Master Plan includes a list of projects that could address system needs and achieve the strategies for improving the pedestrian system. Some projects from the Master Plan were selected for inclusion in a Pedestrian Action Plan, which consists of projects that the community has identified for the City to give priority in allocating funding and/or pursuing additional funding. As development occurs, streets are rebuilt, and as other opportunities (grant programs) arise, projects on the Master Plan should be pursued as well.

The planning-level cost estimates provided for each project in Table 5-1 are based on general unit costs for transportation improvements but do not reflect the unique project elements that can significantly add to project costs. For each of these projects, the City will refine the cost estimate to include right-of-way requirements and costs associated with special design details.



Transportation System Plan

FIGURE 5-1

PEDESTRIAN MASTER PLAN

December 2007

LEGEND

Existing Sidewalks

- < 5 ft. Width
- 5 ft. - 10 ft. Width
- Springwater Trail
- Kellogg Creek Trail

Proposed Improvement

- Pedestrian Facilities
- Pedestrian Intersection Safety Improvement
- Trolley Trail

- Schools
- Major Roads
- Streets
- Railroad
- 10' Contours
- County Line
- Parks
- Water
- City Limits

PROPOSED PROJECTS

Improve Intersection to Increase Pedestrian Safety

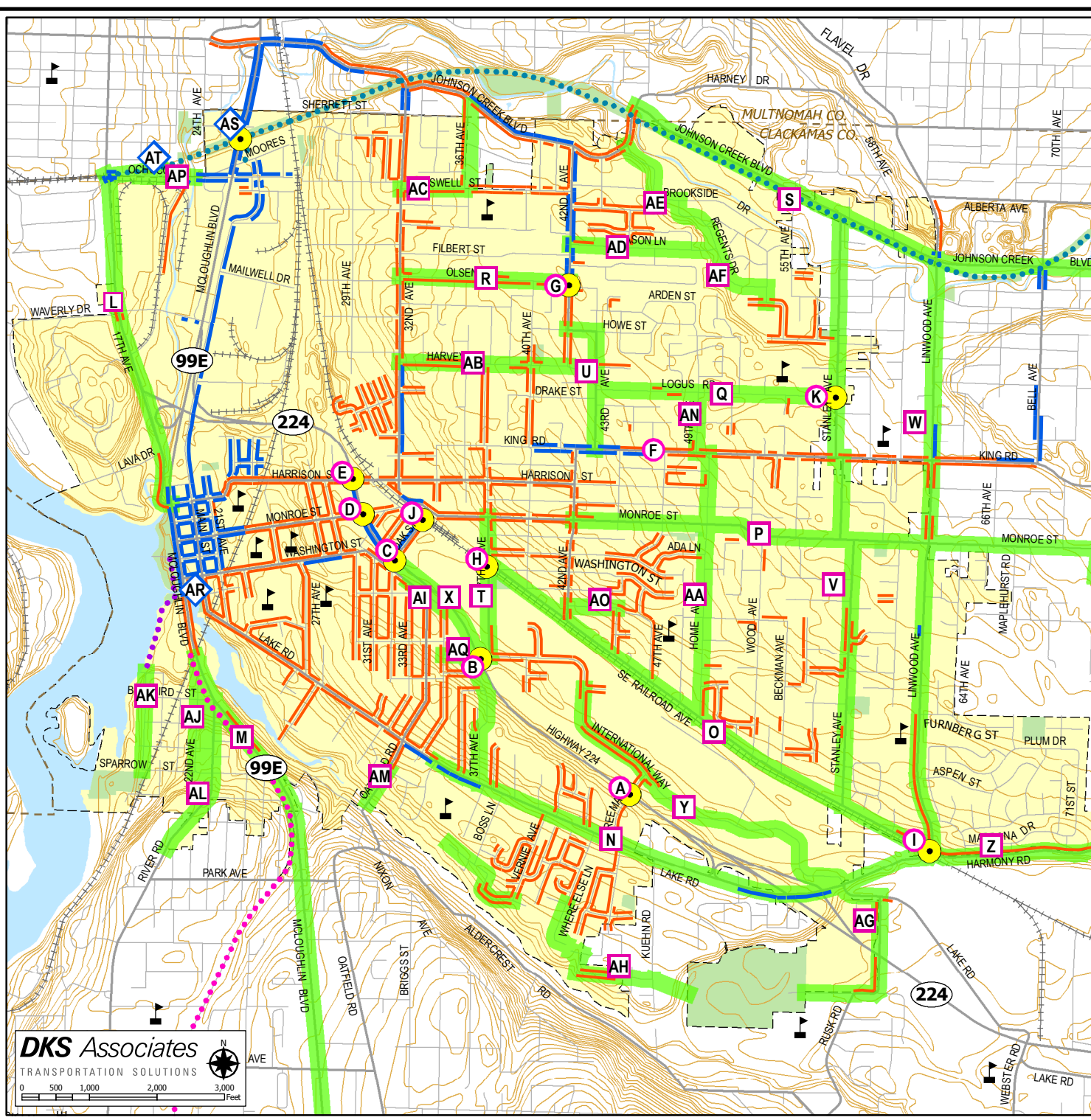
- A** Freeman Way/HWY 224
- B** 37th Ave/HWY 224
- C** Oak St/HWY 224
- D** Monroe St/HWY 224
- E** Harrison St/HWY 224
- F** King Rd crossing improvements
- G** Olsen St/42nd Ave
- H** Railroad Ave/37th Ave
- I** Harmony Rd/Lake Rd
- J** Oak St/railroad tracks
- K** Stanley Ave/Logus Rd

Provide Pedestrian Facilities Where Not Currently Present

See Table 5-1 for L - AQ project descriptions

Enhance Existing Pedestrian Connection

- AR** Construct pedestrian underpass under HWY 99E at Kellogg Creek
- AS** Improve ramp at Springwater Trail/HWY 99E
- AT** Complete Springwater Trail along Ochoco St



DKS Associates
TRANSPORTATION SOLUTIONS

0 500 1,000 2,000 3,000 Feet

Table 5-1 Pedestrian Master Plan Projects

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(s) \$1,000s ⁵
A	Low	C	Hwy 224 Intersection Improvements at Freeman Way	Improve pedestrian crossing.	Location specific	Location specific	\$20
B	Low	C	Hwy 224 Intersection Improvements at 37 th	Improve pedestrian crossing.	Location specific	Location specific	\$20
C	Low	C	Hwy 224 Intersection Improvements at Oak	Improve pedestrian crossing.	Location specific	Location specific	\$20
D	Low	C	Hwy 224 Intersection Improvements at Monroe	Improve pedestrian crossing.	Location specific	Location specific	\$15
E	Low	C	Hwy 224 Intersection Improvements at Harrison	Improve pedestrian crossing.	Location specific	Location specific	\$20
F	High	C	King Road Boulevard Treatments	Install street boulevard treatments: widen sidewalks and improve multiple crossings.	42 nd Ave	Linwood Ave	\$500
G	Low	C	Intersection Improvements at Olsen and 42 nd	Improve pedestrian crossing.	Location specific	Location specific	\$20
H	Low	C	Intersection Improvements at Railroad and 37 th	Improve pedestrian crossing.	Location specific	Location specific	\$10
I	Low	C	Intersection Improvements at Harmony and Lake	Improve pedestrian crossing.	Location specific	Location specific	\$15
J	Med	C	Railroad Crossing Pedestrian Improvements at Oak	Improve intersection for pedestrians.	Location specific	Location specific	\$15

³ See Figure 5-1.

⁴ The projects in this table assume traditional sidewalks on both sides of the street. In some cases it may be appropriate to construct a nontraditional pedestrian facility on one side of the street. See Chapter 10 Street Design for more information on the City's approach to designing pedestrian facilities.

⁵ Project costs are in 2007 dollars. Future costs may be more due to inflation. Costing details can be found in the Technical Appendix. In the case of operational projects, estimated costs are for the entire 22-year planning period.

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(s) \$1,000s ⁵
K	Low	C	Intersection Improvements at Stanley and Logus	Improve pedestrian crossing.	Location specific	Location specific	\$15
L	High	C	17 th Avenue Sidewalks	Fill in sidewalk gaps on both sides of street and improve intersections.	Ochoco St	McLoughlin Blvd	\$920
M	Med	C	McLoughlin Boulevard Sidewalks	Fill in sidewalk gaps on both sides of street.	Washington St	Southern city limits	\$596
N	Med	C	Lake Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Kuehn Rd	Hwy 224	\$2,049
O	High	C	Railroad Avenue Sidewalks	Fill in sidewalk gaps on both sides of street (part of Railroad Avenue road widening project).	37 th Ave	Harmony Rd	\$1,625
P	High	C	Monroe Street Sidewalks	Fill in sidewalk gaps on both sides of street.	42 nd Ave	City limit	\$1,631
Q	High	C	Logus Road Sidewalks	Fill in sidewalk gaps on both sides of street.	43 rd Ave	49 th Ave	\$771
R	Low	C	Olsen Street Sidewalks	Fill in sidewalk gaps on north side of street.	32 nd Ave	42 nd Ave	\$432
S	Low	C	Johnson Creek Blvd Sidewalks	Fill in sidewalk gaps on both sides of street.	Harney Dr	City limits	\$378
T	Med	C	37 th Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Lake Rd	Harrison St	\$794
U	Low	C	43 rd Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Howe St/42 nd Ave	King Rd/43 rd Ave	\$550
V	High	C	Stanley Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	Railroad Ave	\$4,304
W	Low	C	Linwood Avenue Sidewalks	Fill in sidewalk gaps on both sides of street (part of Linwood Avenue road widening project).	Johnson Creek Blvd	Railroad Ave	\$2,960
X	Low	C	Hwy 224 Sidewalks	Fill in sidewalk gaps on both sides of street.	Oak St	37 th Ave	\$420
Y	Low	C	International Way Sidewalks	Fill in sidewalk gaps on both sides of street.	Criterion Ct	Lake Rd	\$767
Z	Low	C	Harmony Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Linwood Ave	City limits	\$38
AA	Low	C	Home Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Railroad Ave	King Rd	\$756
AB	Low	C	Harvey Street Sidewalks	Fill in sidewalk gaps on both sides of street.	32 nd Ave	42 nd Ave	\$534
AC	Low	C	Roswell Street Sidewalks	Fill in sidewalk gaps on both sides of street.	32 nd Ave	36 th Ave	\$192
AD	Low	C	Mason Lane Sidewalks	Fill in sidewalk gaps on both sides of street.	42 nd Ave	Regents Dr	\$671

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(s) \$1,000s ⁵
AE	Med	C	Brookside Drive Sidewalks	Fill in sidewalk gaps on both sides of street.	Johnson Creek Blvd	Regents Dr	\$15
AF	Low	C	Regents Drive Sidewalks	Fill in sidewalk gaps on both sides of street.	Brookside Dr	Winsor Dr	\$494
AG	Low	C	Rusk Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Lake Rd	North Clackamas Park	\$662
AH	Low	C	Pedestrian Connection to North Clackamas Park	Create pedestrian connection between the school and the park.	North Clackamas Park	Rowe Middle School	\$1,284
AI	Low	C	Washington Street Sidewalks	Fill in sidewalk gaps on both sides of street.	35 th Ave	37 th Ave	\$115
AJ	Low	C	22 nd Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	McLoughlin Blvd	Sparrow St	\$325
AK	Low	C	19 th Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	Kellogg Creek Trail	Sparrow St	\$305
AL	Low	C	River Road Sidewalks	Fill in sidewalk gaps on both sides of street.	McLoughlin Blvd	City limits	\$626
AM	Low	C	Oatfield Road Sidewalks	Fill in sidewalk gaps on both sides of street.	Guilford Ct	City limits	\$132
AN	Low	C	49 th Ave Sidewalks	Fill in sidewalk gaps on both sides of street.	Logus Rd	King Rd	\$250
AO	Med	C	Franklin Street Sidewalks	Install sidewalks on both sides of street to connect to Hector Campbell Elementary School.	42 nd Ave	45 th Ave	\$200
AP	Low	C	Ochoco Street Sidewalks	Construct sidewalks on Ochoco Street to connect bus stops to Goodwill.	19 th Ave	McLoughlin Blvd	\$\$\$
AQ	Low	C	Edison Street Sidewalks	Fill in sidewalk gaps on both sides of street.	35 th Ave	37 th Ave	\$116
AR	High	C	Kellogg Creek Dam Removal and Hwy 99E Underpass	Replace 99E bridge over Kellogg Creek, remove dam, restore habitat; construct pedestrian undercrossing between downtown Milwaukie and Riverfront Park.	Site specific	Site specific	\$9,000
AS	Low	C	Springwater Trail Ramp Improvement at McLoughlin	Improve ramp at Springwater Trail and McLoughlin Blvd.	Location specific	Location specific	\$15
AT	High	C	Springwater Trail Completion	Contribute to regional project to complete Springwater Trail ("Sellwood Gap") along Ochoco Street.	17 th Ave	19 th Ave	\$80

Map ID ³	Priority	Type	Project Name	Project Description ⁴	From	To	Cost(s) \$1,000s ⁵
NA	Med	O	Pedestrian Walkway Signage	Provide maps and wayfinding signage on streets that identify ways to get around the city.	Citywide	Citywide	\$10
NA	High	C	Downtown Streetscape Improvements	Install sidewalk bulbouts, lighting, and pedestrian amenities.	Downtown	Downtown	\$6,700 ⁶
NA	Med	O	Pedestrian Walkway Amenities	Install amenities, such as benches, along key walking routes.	Citywide	Citywide	\$50
NA	Low	C	Intersection Curb Ramp Improvements	Install curb ramps at all intersections with sidewalks.	Citywide	Citywide	\$5

Notes:






C = Capital Project
O = Operational Project
P = Policy Project

High = High priority
Med = Medium priority
Low = Low priority

⁶ Estimated \$500,000 per block face.

The Pedestrian Master Plan project list includes several enhanced pedestrian crossing projects. These crossings are located on major roadways with volumes and speeds that would require significant crossing enhancements based on published guidelines in the *Traffic Control Devices Handbook*.⁷ Table 5-2 provides a description of possible crossing enhancements.

Table 5-2 Potential Measures for Enhancing Pedestrian Crossings

Improvement	Description	Illustration	Cost Range
Marked Crosswalk	White thermoplastic markings at street corner. Alternative material could include non-white color or textured surfaces.		\$1,000 to \$1,500 per crossing. Textured crossing materials beyond thermoplastic markings could be more expensive depending on materials used.
New Corner Sidewalk Ramp	Construct ADA compliant wheelchair ramps consistent with City standards.		\$3,000 to \$5,000 per corner.
Median Refuge	Construct new raised median refuge area. Minimum width 6 feet, and minimum length of 30 feet. Curb can be mountable to allow emergency vehicles to cross, if required.		\$5,000 to \$15,000 depending on overall length and amenities.
Pedestrian Countdown Timer Signal	Install supplemental pedestrian signal controls to indicate the time remaining before crossing vehicles get 'green' signal indication.		\$1,000 per signal head
Curb Extensions	Construct curb extension on road segments with on-street parking. Reduces pedestrian crossing area, and exposure to vehicle conflicts.		\$5,000 to \$8,000, depending on design amenities and aesthetic treatments.

Source: DKS Associates

⁷ *Traffic Control Devices Handbook*, Institute of Transportation Engineers, 2001; Chapter 13, Table 13-2.

ACTION PLAN

The Pedestrian Action Plan identifies projects that are reasonably expected to be funded with local funds by 2030, which meets the requirements of the Transportation Planning Rule.⁸ The Action Plan project list is the result of a citywide project ranking process. All of the modal master plan projects were ranked by the TSP Advisory Committee after consideration of the Working Groups' priorities, other public support for the project, and how well each project implements the TSP goals and policies. The highest-ranking pedestrian projects that are reasonably expected to be funded (see Chapter 13) with local funds are shown in Table 5-3.

Table 5-3 Pedestrian Action Plan

Project Name	Project Description	From	To	Direct Funding or Grant Match
17 th Avenue Sidewalks	Fill in sidewalk gaps on both sides of street and improve intersections.	Ochoco St	McLoughlin Blvd	Direct
Springwater Trail Completion	Contribute to regional project to complete Springwater Trail ("Sellwood Gap") along Ochoco Street.	17 th Ave	19 th Ave	Direct
Logus Road Sidewalks	Fill in sidewalk gaps on both sides of street.	43 rd Ave	49 th Ave	Match
Kellogg Creek Dam Removal and Hwy 99E Underpass	Replace 99E bridge over Kellogg Creek, remove dam, restore habitat; construct pedestrian undercrossing between downtown Milwaukie and Riverfront Park.	Site specific	Site specific	Match
Monroe Street Sidewalks	Fill in sidewalk gaps on both sides of street.	42 nd Ave	City limits	Match
Railroad Avenue Sidewalks	Fill in sidewalk gaps on both sides of street.	37 th Ave	Harmony Rd	Match
Downtown Streetscape Improvements	Install sidewalk bulbouts, lighting, and pedestrian amenities.	Downtown	Downtown	Match
King Road Boulevard Treatments	Install street boulevard treatments: widen sidewalks and improve crossings.	43 rd Ave	Linwood Ave	Match

⁸ OAR Chapter 660, Department of Land Conservation and Development, Division 012, Transportation Planning, adopted on March 15, 2005, effective April 2005.

REGIONAL TRANSPORTATION PLAN (RTP) COMPLIANCE

The projects identified in the Master Plan list and further refined in the Action Plan list are compatible with the 2004 Metro RTP. Specifically, the projects identified comply with Metro's goal for regional mobility and non-SOV modal targets.