

Banks Bicycle and Pedestrian Plan



Prepared by:



Prepared for:



August 2015

Banks Bicycle and Pedestrian Plan



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Acknowledgements

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Banks Bicycle and Pedestrian Plan



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Section 1 Executive Summary

Banks Bicycle and Pedestrian Plan



1. Executive Summary

Outlines purpose of document, process to develop it, application of plan. To be completed.



Section 2 Plan Goals and Objectives

2. Plan Goals and Objectives

The purpose of the City of Banks' Bicycle and Pedestrian Master Plan ("BPP") is to plan for a convenient and comfortable active (non-automobile based) transportation system for local trips within the community and connections with regional trail systems. The BPP identifies access points, preferred alignments, key potential road crossing options, trail standards, design elements, regulatory requirements, preliminary cost estimates, and potential sources of funding while ensuring compliance with state and local standards. The BPP builds from relevant planning documents for the City (outlined in Section 2). It responds to the active transportation needs and opportunities discussed in the TSP, including the need for "pedestrian and bicycle linkages both north-south within the existing Banks UGB (on the east side of Main Street) and connections from the UGB to other parts of the city, particularly to the downtown commercial area, the schools complex, and Sunset Park." The BPP also incorporates the findings of previous planning studies, such as the Banks Park and Recreation Plan Updated (2010) and Banks Main Street Revitalization (2014).



The City's BPP offers active transportation options for City residents and tourists. The planned bicycle and pedestrian routes are intended to provide convenient access to attractors within Banks, reduce reliance on the automobile, and improve safety by considering parallel routes to Highways 6 and 47.

Project goals and objectives for the BPP were developed with input from the project Stakeholder Advisory Committee (SAC). **Goals** provide direction for where the City would like to be in the future. A goal is met when outcomes can be cited for that goal. **Objectives** provide a more detailed breakdown of goals with more specific outcomes the City desires to achieve. The goals and objectives for the project are detailed below.

Goals

Project goals provide broad guidance for the BPP that help direct where the City would like to be in the future. The goals were developed with the project purpose in mind and include:

- **Livability:** provide for a high quality of life by providing transportation options and considering community values and interests.
- **Safety and Health:** enable people to safely walk, run or cycle in and through the City.
- **Accessibility:** develop a bicycle and pedestrian system that is accessible for all ages, skill levels, and interests.



- **Financial Responsibility:** use resources efficiently and invest in infrastructure that will serve the City for years to come.
- **Economic Vitality:** encourage visitors and investment in the downtown core.
- **Community:** encourage community interest and participation in walking and biking.

Project Objectives

The following project objectives more specifically describe the project purpose and outcomes the BPP intends to achieve.

- Increase the number of people that walk and bike in Banks.
- Link regional and local trails to key attractors on the main street and downtown area, such as shopping, schools, residential areas, and other community destinations.
- Provide connections to natural areas and resources and enhance appreciation for the City's natural assets.
- Increase transportation choices in the Highway 6 and 47 corridors by adding more bicycle and pedestrian routes and connections to transit.
- Provide well-designed, visible, safe, and convenient access points and street/highway crossings.
- Provide shorter trip lengths between destinations on the bicycle and pedestrian system than on-road networks.
- Identify the community vision for the overall bicycle and pedestrian route design, expressed through different treatments and design themes for distinctive sections.
- Address safety and security of bicycle and pedestrian route users.
- Link the urban growth areas to the downtown core and destinations on Main Street.
- Provide adequate funding to maintain the existing active transportation system while prioritizing investments in future facilities.
- Minimize conflicts between people biking and walking and farm equipment, logging trucks and forestry related trucks.
- Find innovative, efficient, low- or no-cost solutions to providing parking for trail users.

The intent of the BPP is to reach all current and potential users of the pedestrian and bicycle system.



Section 3 Background and Related Documents

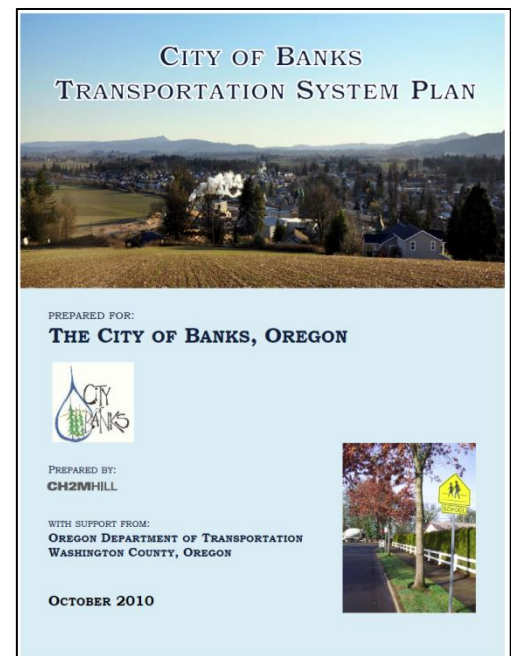
3. Background and Related Documents

Relevant federal, state, and local laws, plans, and policies were reviewed to provide background for the development of the Bicycle and Pedestrian Plan (BPP). The City of Banks has conducted several planning efforts for Main Street and multi-use trails in and around the City. These plans provided valuable information about existing needs and opportunities in the City and included potential projects for consideration in the BPP. A summary of a few key local planning documents is provided below. Table 3-1 follows with a summary of all documents reviewed as part of the development of the BPP.

City Transportation System Plan (TSP) (2010)

The TSP recognizes that Main Street also serves as a state highway and tries to balance the needs of pedestrians, shoppers, employees, business owners, and residents with the needs of through traffic. The plan recognizes the following opportunities for bicycle and pedestrian connections:

- Construct one or more pedestrian/bicycle overcrossings of the railroad to ensure east-west connectivity from the UGB expansion area east of the railroad to center city destinations.
- Better connect bicycle lanes and pedestrian sidewalks within the city. Improvements should focus on connecting the existing system of bike lanes and sidewalks to improve non-motorized mobility. A north-south bike route should be established in the city in the area east of Main Street, with direct connections to the schools complex.
- All new and modernized roadways should include bicycle and pedestrian accommodations.

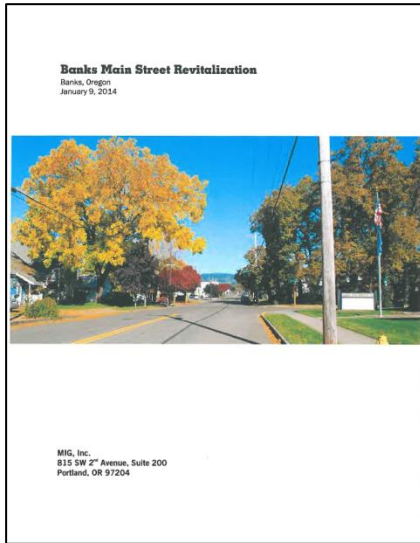


The following concepts were developed to address the needs identified in the TSP analysis:

- Install advanced warning signage at the intersection of Banks Road and Aerts Road to warn motorists of the reduced sight distance on the crest vertical curve, thereby improving safety conditions at the intersection.
- Reconstruct Banks Road to increase the safety for motorists, pedestrians, and cyclists traveling on Banks Road between Main Street (OR 47) and US 26.
- Establish an east/west bicycle and pedestrian circulation system to service the expanded UGB area.
- Install a bicycle/pedestrian overcrossing or undercrossing of the railroad from the area east of the Banks school complex to the eastside of Banks (UGB Expansion Area).

The TSP identifies and addresses key issues relating to transportation within the City. The TSP should be the starting point to identify and validate future bicycle and pedestrian improvements.

Banks Main Street Revitalization Plan (2014)



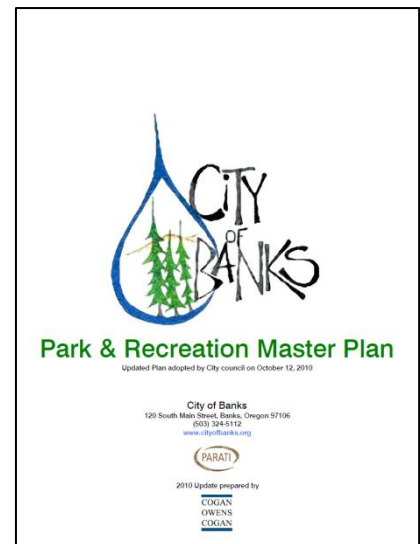
This plan recommends expanding the UGB and constructing a new westside circulator road that parallels Main Street. It also recommends Main Street safety improvements including pedestrian crossings, full curb extensions, and marked crosswalk at Banks Road and OR 47 to improve connections to the Banks-Vernonia Trail. A new sidewalk and curb at the SW corner at the Five Star complex is suggested to better delineate pedestrian and vehicle zones. An improved internal system of trails (as identified in the Banks Parks and Recreation Master Plan), traffic calming at OR 47 and Main Street, and an access management strategy to enhance the pedestrian experience is also recommended.

This plan provides a vision for Main Street and recommendations related to bicycle and pedestrian facilities and amenities in the area.

City Park and Recreation Master Plan (2010)

This plan recommends working with the County and State to explore the possibility of extending the Banks-Vernonia Trail to the south end of town or beyond. A separated walking path is proposed in the Highway 6 right-of-way and walking trails are also proposed to extend from the existing trails west of Arbor Village to the north and south.

This plan identifies specific recommendations for a trail system in Banks. These recommendations should be reviewed and validated as part of the BPP.



Urban Growth Boundary (UGB)

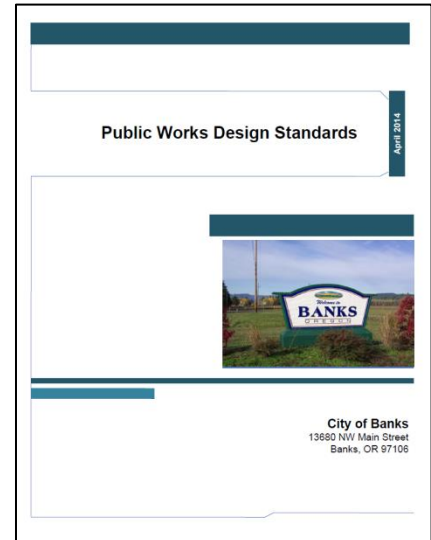
An expansion of Banks' UGB was approved in 2013. The expansion included approximately 400 acres of land that includes the Quail Valley Golf Course.

Housing tracts and other types of urban development are not allowed to occur beyond the UGB. The BPP should focus on improvements within the UGB or within expected amendments.

City of Banks Design Standards (2014)

This document provides local design standards and requirements for street design, bicycle and pedestrian facilities, on-street parking standards, and other related design standards.

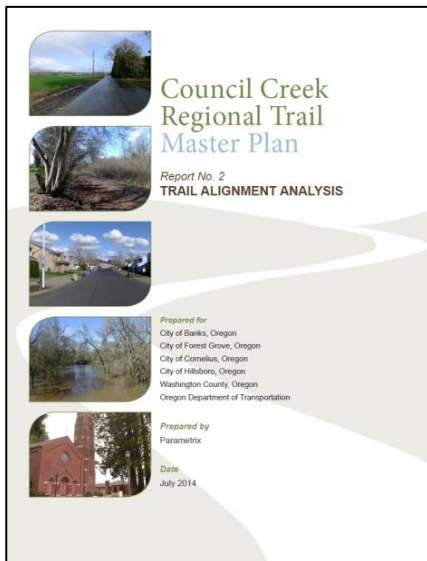
The bicycle and pedestrian facilities proposed in the BPP consider the local design standards to ensure conformity.



Council Creek Regional Trail (CCRT) Master Plan (Hillsboro to Forest Grove to Banks) (2014)

The Implementation Strategy Report recommends a widened sidewalk along the south side of NW Banks Road to better connect the Banks-Vernonia Trailhead to the City's planned Westside Circulator Roadway (WCR). A street-adjacent multiuse trail is recommended to run parallel on the west side of the WCR and connect to Main Street, south of downtown, running parallel with a proposed road connecting the WCR to Main Street. The recommended trail would continue on the west side of Main Street (OR 47) through the Oregon 6 undercrossing.

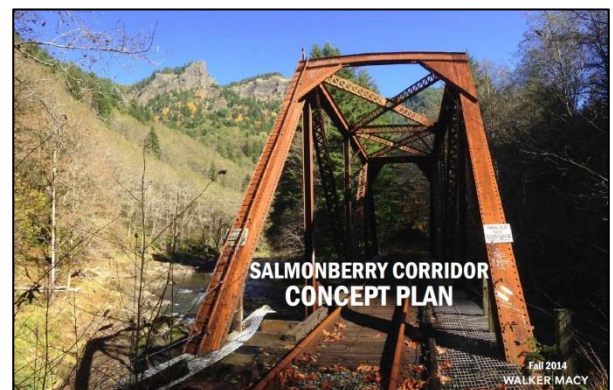
The BPP considers planning efforts, like the CCRT, so that the north-south connections through the City with the Banks-Vernonia Trailhead do not conflict with each other.



Salmonberry Trail (Banks to Tillamook) Concept Plan (2014)

The Salmonberry Corridor offers a potential connective trail link between the Willamette Valley and the Oregon Coast along the 86 miles of the Port of Tillamook Bay railroad. Segment 1 is the twenty-five mile easternmost segment of the corridor that connects Banks to Cochran. It is envisioned to link into the existing Banks-Vernonia Trail.

This trail may connect to the Banks-Vernonia Trail outside of the City limits, but could increase trail traffic and bring more bicyclists and pedestrians into the City of Banks.



Background and Related Documents

Banks Bicycle and Pedestrian Plan



Table 3-1. Relevant Federal, State and Local Documents

Document		Key Application for BPP
Federal	Americans with Disabilities Act (ADA)	Guidance related to designing and planning for pedestrians with disabilities.
	Manual on Uniform Traffic Control Devices (MUTCD)	Guidance on how to properly sign and designate bicycle and pedestrian facilities.
State	Oregon Transportation Plan (OTP) (2006)	Provides high-level guidance on system plans, particularly related to goals and evaluation metrics.
	Bicycle and Pedestrian Plan (1995) (<i>Currently being updated</i>)	Provides general principles and policies for bicycle/pedestrian facilities on state highways.
	Oregon Bicycle and Pedestrian Design Guide (2011)	Designates design standards and recommendations for bicycle and pedestrian facilities on state highways.
	Statewide Planning Goal #12 (Transportation)	Provides high-level guidance for local comprehensive planning as required by state law.
	Transportation Planning Rule	Implements Statewide Planning Goal #12 and provides rulemaking regarding the required Transportation System Plans.
	Statewide Transportation Improvement Program (STIP) (2015-2018)	Identifies funding for, and scheduling of, transportation improvement projects and programs.
Local	Washington County Flood Plain and Drainage Hazard Area Development Standards (2014)	Contains provisions for developing areas in Special Flood Hazard Areas. Recreation and nature trails are permitted uses and activities.
	City Comprehensive Plan (1979, Amended 1989)	Provides the long-term vision for the city and develops policies to help implement that vision.
	City Transportation System Plan (TSP) (2010)	Identifies key issues and makes recommendations relating to transportation within the City.
	City Park and Recreation Master Plan (2010)	Identifies specific recommendations for trail system improvements.
	Banks Main Street Revitalization Plan (2014)	Provides a vision for Main Street and recommendations related to bicycle and pedestrian facilities and amenities.
	Urban Growth Boundary (UGB)	Identifies areas where future growth may occur. Housing tracks and other types of urban development are not allowed to occur outside of the UGB.
	City zoning and related ordinances	Identifies appropriate and desired land use areas within the City.
	City of Banks Design Standards (2014)	Identifies standards and requirements for designing street and bicycle/pedestrian facilities in the City.
	City Capital Improvement Program (CIP)	Identifies capital projects that are planned or scheduled in the near-term and identifies proposed funding.
	Council Creek Regional Trail (CCRT) Master Plan (2014)	A new regional trail that proposes a route through Banks to connect with the Banks-Vernonia Trail.
	Tualatin Valley Scenic Bikeway	An established bikeway that routes through Banks from the Banks-Vernonia Trail to NW Wilkesboro Road via Main Street.
	Banks-Vernonia Trail	An established trail that generates additional bicycle and pedestrian traffic in the City.
	Salmonberry Trail (Banks to Tillamook) Concept Plan (2014)	A proposed regional trail with a possible link to the Banks-Vernonia Trail outside of the City.



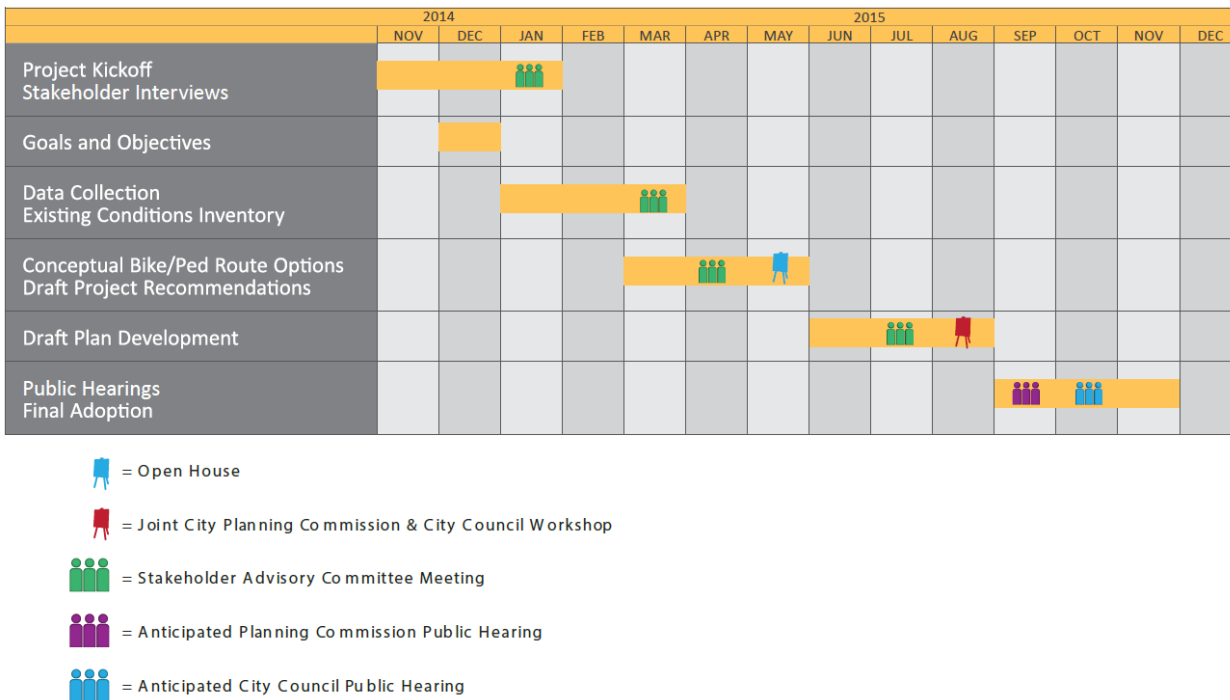
Section 4 Public Involvement Process



4. Public Involvement Process

Engagement with project stakeholders and the public was sought at regular intervals throughout the project. Public involvement was sought via regular meetings with a Stakeholder Advisory Committee (SAC), a website with project materials, an online and in-person open house, and online interactive maps for the public to comment on. In addition, joint pre-adoption work sessions were held with the City of Banks Planning Commission and City Council. Finally, public adoption hearings were held at the City. The project schedule in Exhibit 4-1 illustrates these public involvement activities at key points throughout the project. An overview of the activities is provided in the following sub-sections.

Exhibit 4-1 Project Schedule



Specific steps were taken to provide opportunities for participation by federal Title VI communities. Throughout the project, the City provided information and prepared updates on the BPP via the City’s website, Facebook, announcements sent with the water bill, mailings to residents, and flyers in businesses. Meetings were held at the City Council chambers, which is ADA accessible and a central location for City residents. The sections below provide additional details about the various public involvement activities. The Title VI report prepared by the City for the project is available in *Appendix A*.

Stakeholder Advisory Committee

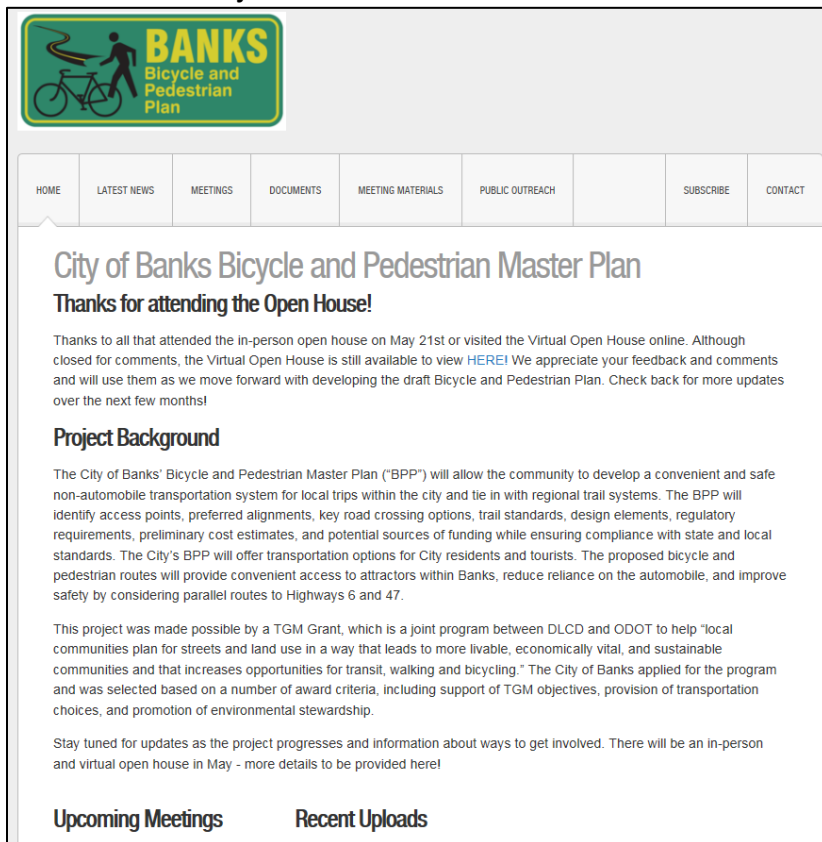
The Stakeholder Advisory Committee (SAC) was formed at the beginning of the project and met regularly throughout the project to review project materials and provide feedback to the project team. The SAC members were selected to provide representation from a variety of local agencies, businesses, property owners, ODOT departments, etc. The SAC helped kick the project off with a walking tour of the City and reviewed and provided comments on all Technical Memorandums prepared during the course of the project (provided in *Appendices B - F*). Key stakeholders were interviewed at the start of the project to provide

background and perspective for the project team. Summaries of the stakeholder interviews are provided in *Appendix G*. The SAC members also provided input on the first draft projects for inclusion in the BPP and the draft BPP document. Meeting notes from the SAC meetings are provided in *Appendix H*.

Website

The website for the Banks BPP (www.banksbpp.com) provided updates throughout the project and housed draft documents for the SAC review, information about meetings and public outreach, and final technical memorandums as well as the draft and final BPP. A screenshot from the website is shown in Exhibit 4-2.

Exhibit 4-2 Project Website



Online and In-person Open House

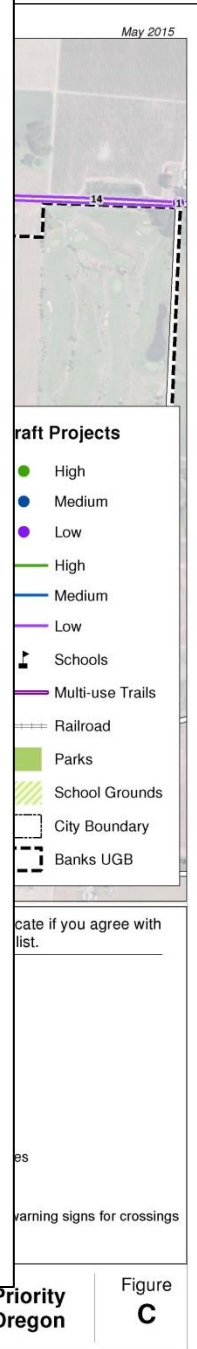
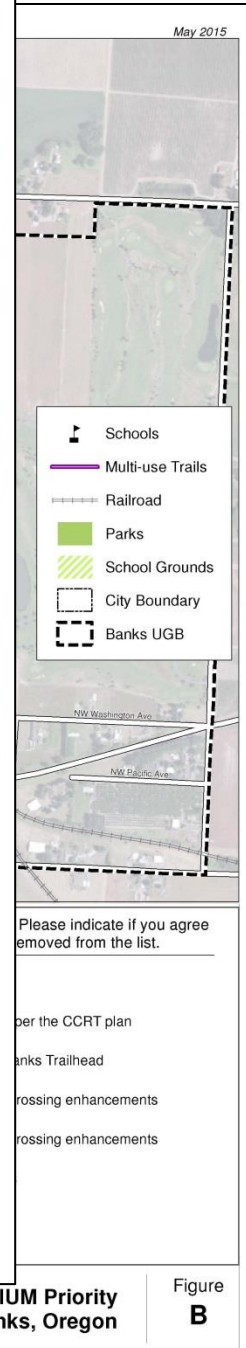
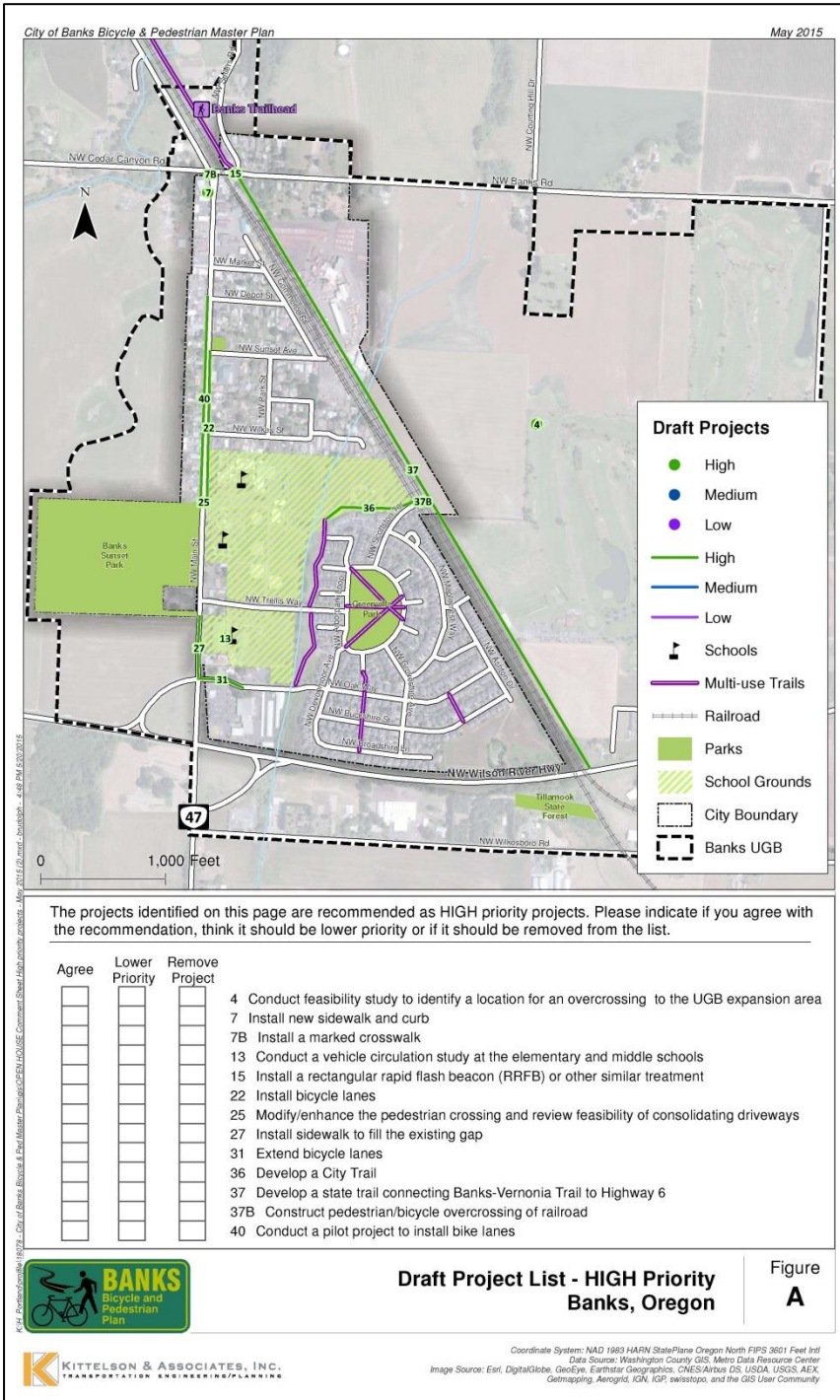
Online and in-person open houses were held in May to share the project progress with the public and gather input on the draft plan elements. Both open houses featured exhibits with information about the project, goals and objectives, existing plans and previously identified projects, and draft project recommendations categorized into three prioritization groups (high, medium, and low). The worksheets given to open house participants are shown in Exhibit 4-3.



Public Involvement Process Banks Bicycle and Pedestrian Plan



Exhibit 4-3 Open House Participant Worksheets



The Virtual Open House was available online from May 20th through May 31st. A screenshot from the opening page of the Virtual Open House is provided in Exhibit 4-4. The site was organized much like the in-person Open House, with “rooms” (stations) that included information about the project, goals and objectives, existing plans and previously identified projects, and draft project recommendations. The site also featured an interactive map that allowed participants to view the location and priority of recommended projects. A link was provided so users could e-mail comments regarding any other bicycle or pedestrian safety/operational issues not addressed with the proposed projects.

Exhibit 4-4 Virtual Open House



A summary of the open house is provided in *Appendix I*.

Interactive Maps

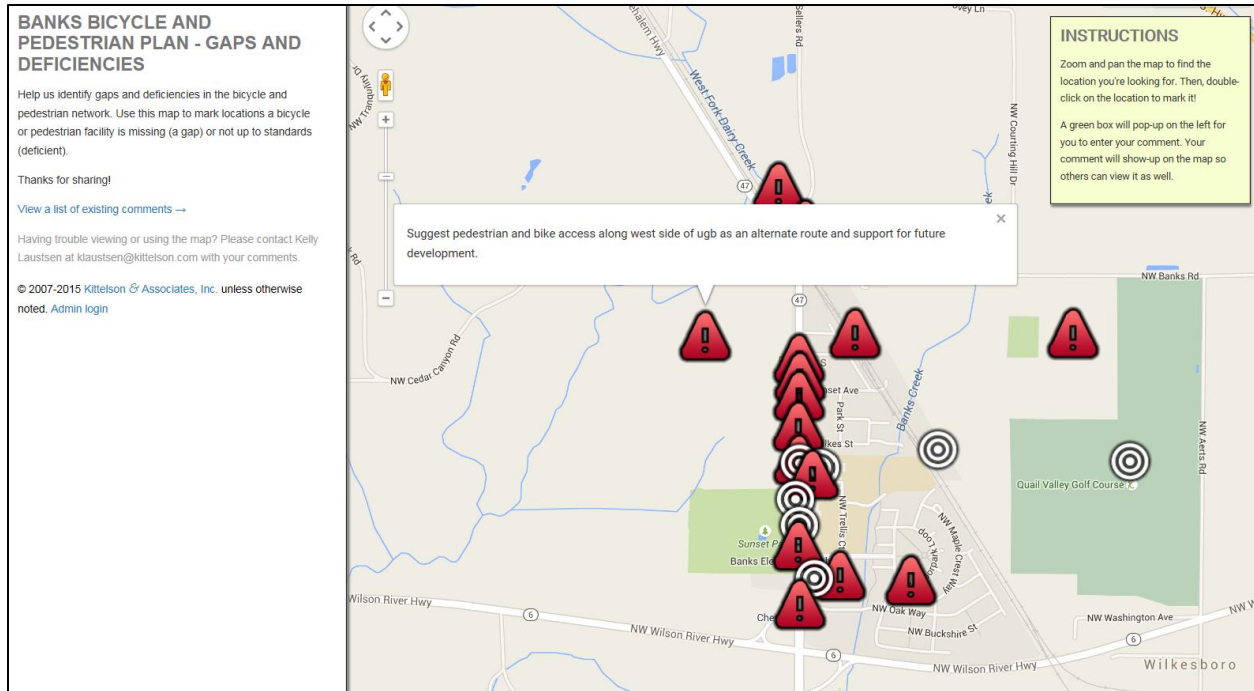
The project utilized two online interactive maps to gather feedback from the SAC and public during the development of the BPP. Each is described below:

- A. **Existing Gaps and Deficiencies** – this map was developed for gathering comments on the existing bicycle and pedestrian system and Banks and identifying locations without a facility (gap) or substandard facility (deficiency). SAC members and the public were invited to add their own comments. In addition, comments from SAC Meeting #1 were added to this map to provide a complete inventory of comments.. A screenshot of the map is shown in Exhibit 4-5.

Public Involvement Process Banks Bicycle and Pedestrian Plan

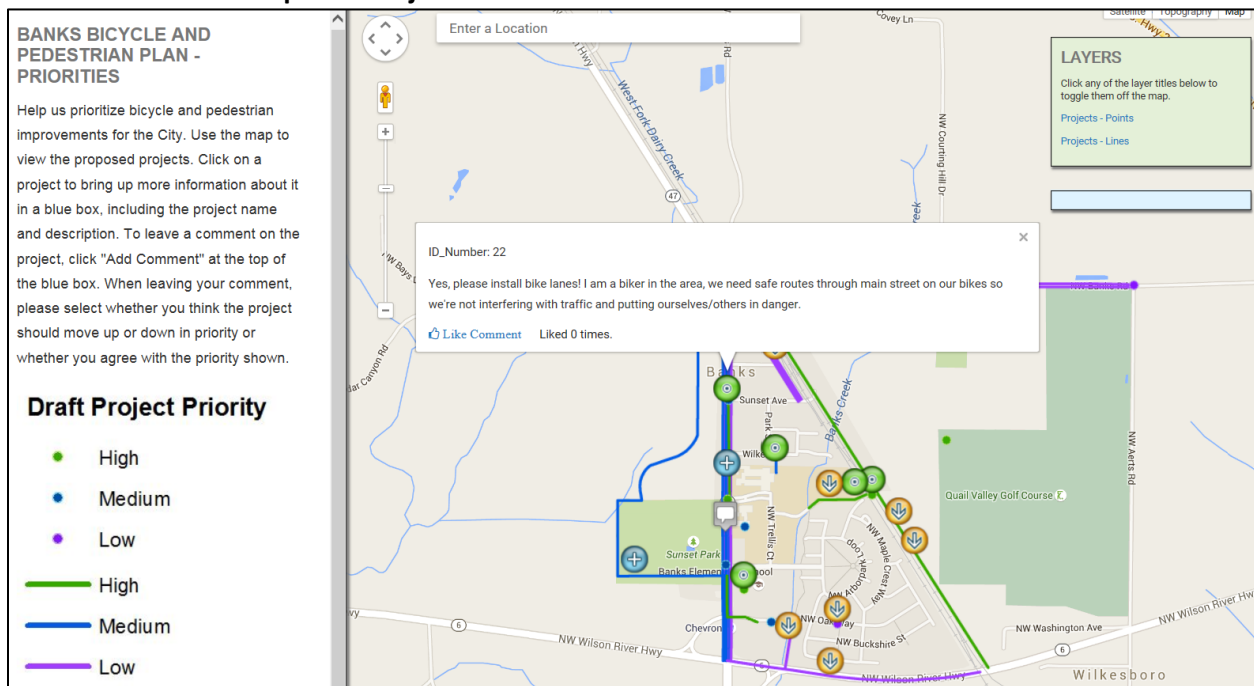


Exhibit 4-5 Interactive Map with Gaps and Deficiencies



B. **Draft Project List** – this interactive map was developed to present the proposed projects for inclusion in the BPP and gather input from the SAC and public. It was available via the website and interactive open house. The projects were presented by priority and users were invited to comment on the projects and indicate if they should move up or down in priority. A screenshot of the map is shown in Exhibit 4-6.

Exhibit 4-6 Interactive Map with Project Priorities





Section 5 Existing Conditions

5. Existing Conditions

This section provides an overview of existing conditions and facilities for bicycling and walking in and around the City of Banks. It largely draws from Technical Memorandum #3: Inventory and Evaluation, provided in *Appendix D*.

Existing Bicycle Network

Figure 5-1 identifies the existing bicycle infrastructure in Banks. Bicycle lanes are installed on Main Street (OR 47) between NW Oak Way and the Banks High School entrance. Bicycle lanes are currently prohibited from advancing north on Main Street (OR47) due to the existing roadway width and on-street parking, as shown in Exhibit 5-1.

Exhibit 5-1 Bicycle Facilities on Main Street

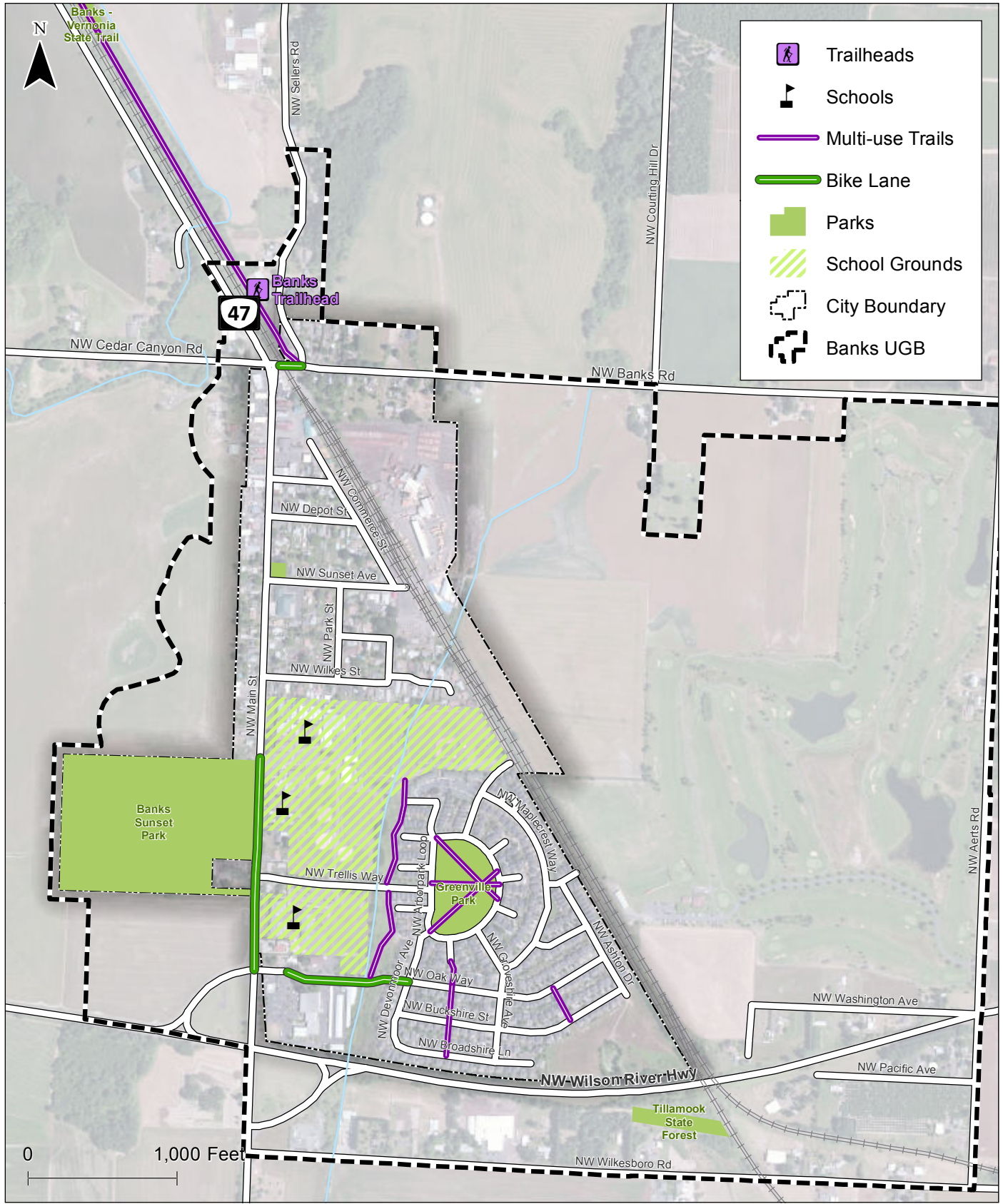


Storm drain grate in the bicycle lane along Main Street (OR47)



Bicycle lane ending at the high school entrance along Main Street (OR47)

Bicycle lanes are also provided on NW Oak Way connecting the residential neighborhood in the southeast part of the city to Main Street, as shown in Exhibit 5-2. The bicycle lanes originate approximately 250 feet east of the signal at Main Street and terminate at NW Devonmoor Avenue.

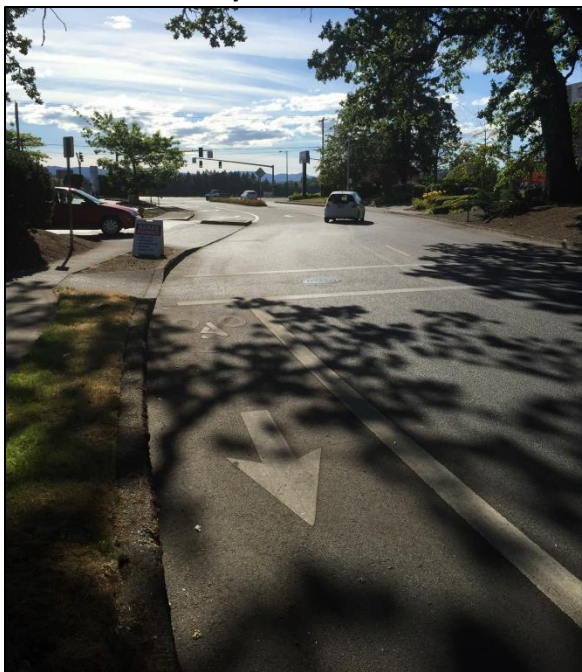


**Existing Bicycle Facilities
Banks, Oregon**

**Figure
5-1**

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Exhibit 5-2 Bicycle Facilities on NW Oak Way



Start of eastbound bicycle lane on NW Oak Way



Westbound bicycle lane on NW Oak Way, landscape strip, and sidewalk

Bicycle lanes are provided on NW Banks Road starting on NW Main Street and ending just east of the Banks-Vernonia Trailhead where the roadway narrows to provide two travel lanes and a minimal shoulder, as shown in Exhibit 5-3.

Exhibit 5-3 Bicycle Facilities on NW Banks Road



End of eastbound bicycle lane on NW Banks Road



NW Banks Road cross-section after termination of bicycle lanes east of Main Street

Bicycle Parking

Bicycle parking is provided at the locations shown in Exhibit 5-4.

Exhibit 5-4 Bicycle Parking

(Insert image)

Trailhead



Banks Café



Sunset Park



Middle School

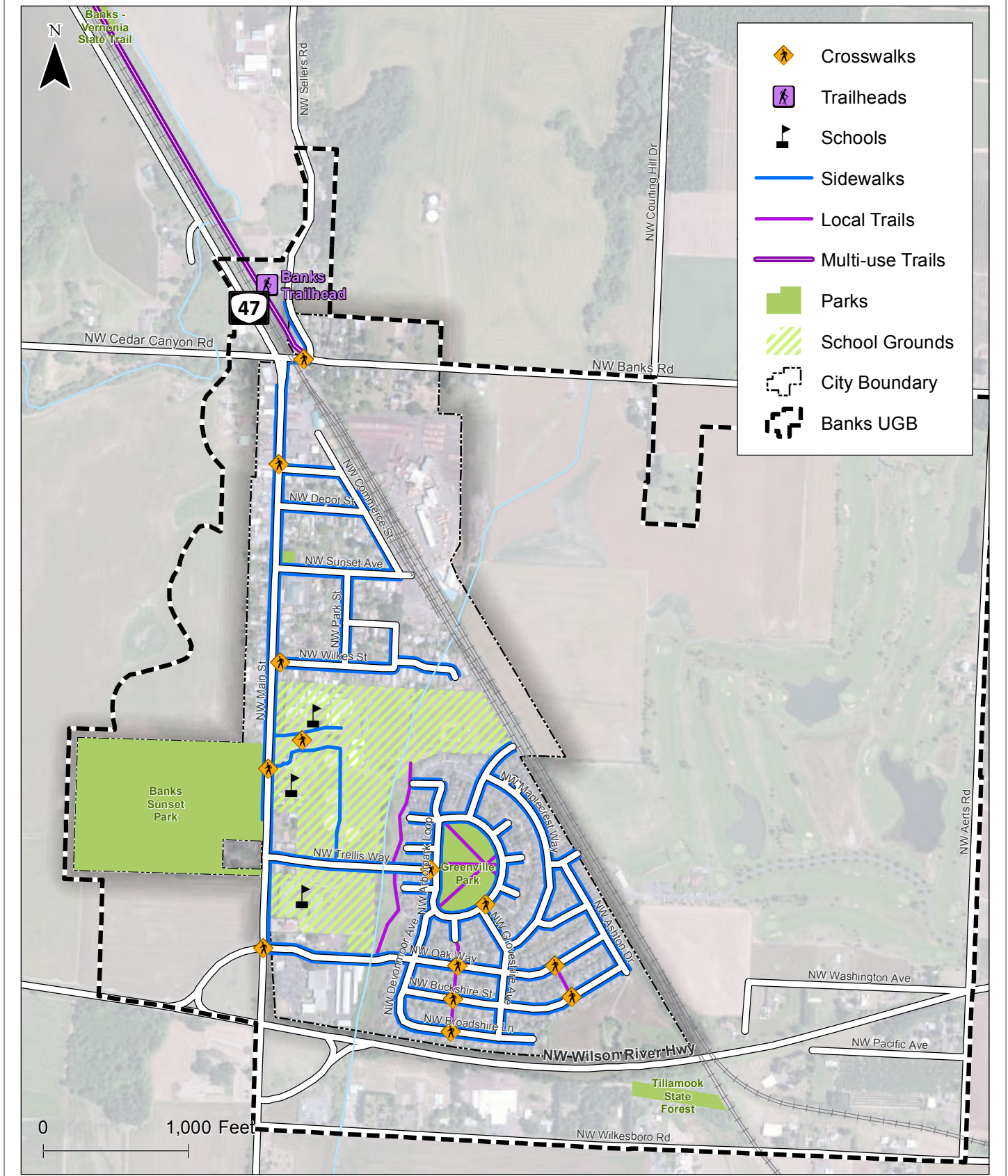
Bicycle Gaps and Deficiencies

There is a lack of bicycle infrastructure connecting the southern part of Banks with the Banks-Vernonia State Trail, as well as a comprehensive connected network within the City itself. Bicycle lanes are prevented from extending north of their current location on Main Street (OR 47) due to the roadway width and on-street parking. There is also a small gap between the Main Street (OR 47)/NW Oak Way intersection and where the bike lanes begin on NW Oak Way. The local neighborhoods have low volume roads and a trail system within them that helps provide connectivity and mode options. The Banks-Vernonia Trail provides an off-street, multi-use path connection between Banks and Vernonia and is a valuable asset to residents and visitors.

The Main Street (OR 47)/NW Banks Road/NW Cedar Canyon Road intersection is an important intersection linking the Banks-Vernonia State Trail with the City. A bicycle lane is installed on a small section of NW Banks Road between Main Street and NW Sellers Road, but no infrastructure in place to help bicyclists navigate the intersection.

Existing Pedestrian Network

Figure 5-2 identifies the existing pedestrian facilities within the City. Sidewalks are available on almost every roadway, with the exception of Woodman Avenue, NW Banks Road, NW Sellers Road and NW Cedar Canyon Road. The sidewalk on the west side of NW Main Street ends south of Sunset Park, as shown in Figure 5-2.



**Existing Pedestrian Facilities
Banks, Oregon**

**Figure
5.2**

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There are several locations within the City where the sidewalks are in poor condition, as shown in Exhibit 5-5. On Main Street, the sidewalk width varies from 9.5' wide to less than 4' wide. As noted in the Main Street Revitalization Plan, "tree root uplift, lack of or undersized planting strip buffers, poor pavement conditions, and the multitude of driveway curb cuts all degrade the pedestrian quality of sidewalks along Main Street." Conditions are similar on other sidewalks throughout Banks, particularly in the northeast residential areas.

Exhibit 5-5 Pedestrian Facilities on NW Main Street



Sidewalk ending at Banks Sunset Park along Main Street (OR47)



Sidewalk on east side of Main Street (OR47) with cracks and buckling

Pedestrian Crossings

There are three marked crosswalks along Main Street (OR 47) shown in Exhibit 5-6, including:

- Crosswalk with a bulbout at Market Street/Main Street
- Crosswalk with an overhead flashing pedestrian sign at the entrance to the High School on Main Street
- Signalized intersection with crosswalks on all four legs at NW Oak Way/Main Street

Exhibit 5-6 Pedestrian Crossings on NW Main Street



Crosswalk with bulbout at Market Street



Overhead flashing pedestrian sign at the High School entrance along Main Street

Arbor Village, the southeast neighborhood, has sidewalks on both sides of every street with multi-use trails connecting throughout the neighborhood. There are marked crosswalks throughout the neighborhood associated with the multi-use trail, some of which are obscured by trees as shown in Exhibit 5-7.

Exhibit 5-7 Pedestrian Crossings in Arbor Village



Multi-use path crossing partially obscured by tree



Multi-use path crossing partially obscured by tree

Pedestrian Gaps and Deficiencies

Sidewalks are in place on at least one side of almost every roadway in the city of Banks. Arbor Village has sidewalks on both sides of every street with trails and marked crosswalks leading to Greenville Park. The most notable gaps in sidewalk appear on the west side of Main Street (OR 47) from where the sidewalk ends next to Banks Sunset Park south to Highway 6 and the lack of designated facilities at the Main Street (OR 47)/NW Banks Road/NW Cedar Canyon Road intersection. Pedestrians have access to a sidewalk on the east side on Main Street and a crosswalk on NW Banks Road, but no facilities exist on the west side of Main Street at that intersection, as shown in Exhibit 5-8. Also, as previously noted, some sidewalks are narrow or in poor condition.

Exhibit 5-8 Main Street/NW Banks Roads/NW Cedar Canyon Road intersection



View from NW Cedar Canyon Road looking east



Sidewalk approaching the Main Street (OR47)/NW Banks Road/NW Cedar Canyon Road intersection.



Safety Assessment

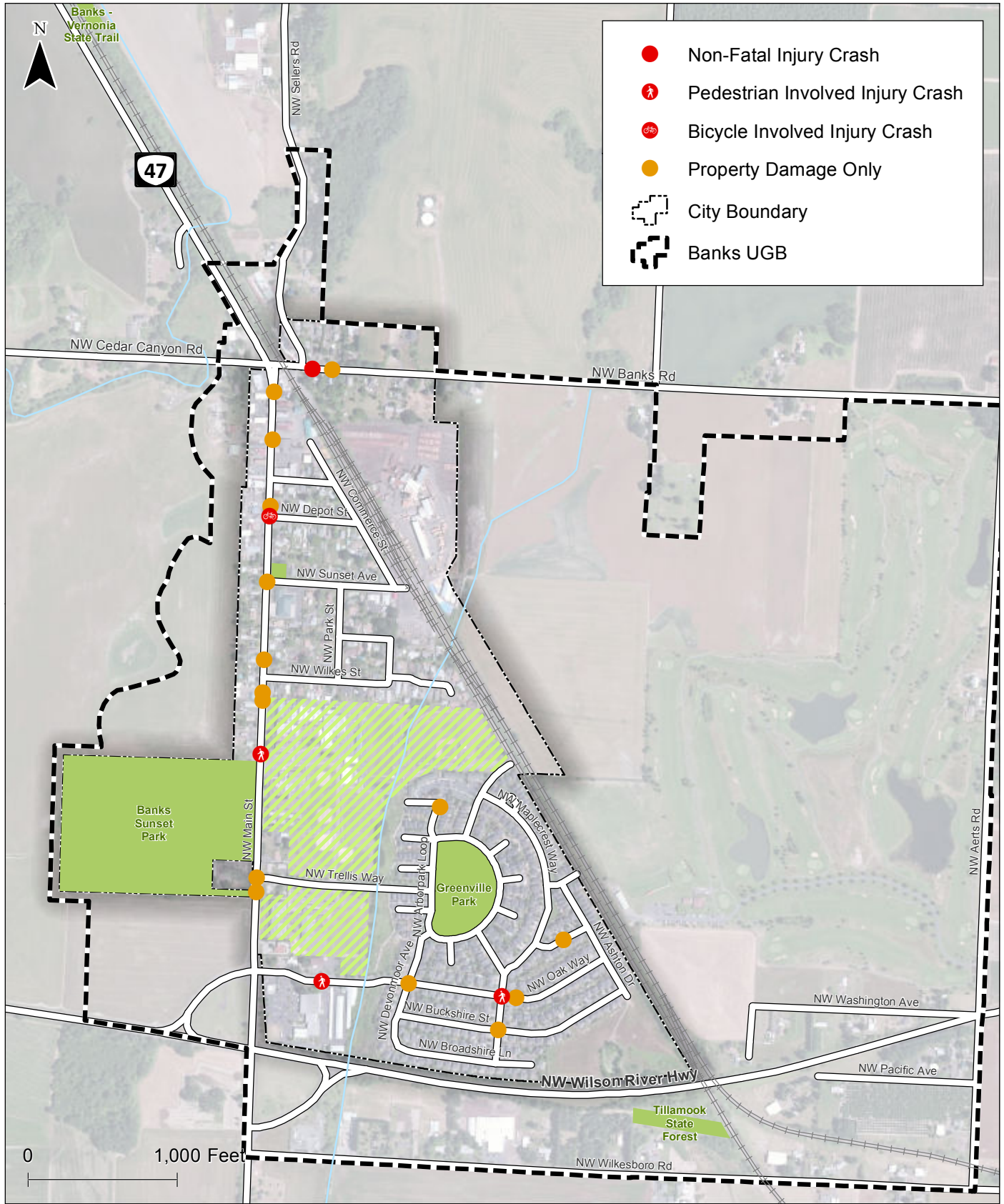
Figure 5-3 maps the reported crashes during the last five years of available data. Between January 1, 2009 and December 31, 2013, twenty reported crashes occurred in Banks. Four of the five non-fatal injury accidents involved bicyclists or pedestrians. The bicycle related crash occurred at the intersection of Main Street (OR47) and NW Depot Street and involved a vehicle turning, not yielding to the right-of-way. Two pedestrians were involved in a crash at or around the high school entrance off main Street (OR47) when a vehicle did not yield to the right of way. Another pedestrian was involved in a vehicle-related crash on NW Oak Way between Main Street (OR47) and NW Devonmoor Avenue. The pedestrian was illegally in the roadway. Three pedestrians were also hit by a vehicle near the intersection of NW Oak Way and NW Groveshire Avenue due to careless driving and the vehicle not yielding to the right of way. Table 5-1 summarizes all the reported crashes by type and severity.

Table 5-1 Crash Summary 2009-2013

Year	Crash Type						Severity	
	Bike/Ped	Backing	Fixed Object	Rear End	Sideswipe	Turning	PDO	Non-Fatal Injury
2009	0	0	1	3	1	0	4	1
2010	0	0	0	0	0	0	0	0
2011	1	1	1	2	1	1	6	1
2012	2	1	0	0	0	2	3	2
2013	1	0	1	0	0	1	2	1

PDO = Property Damage Only

As seen in Table 5-1, rear-end crashes are slightly more prevalent than the other crash types, but turning movement and bicycle and pedestrian related crashes are also predominant crash types. While no specific location was identified as a high crash location, 55% of all crashes occurred along the Main Street (OR47) corridor. Three of the four crash reports that involved bicycles or pedestrians noted the driver's inattention or failure to yield to the right of way.



**Reported Crashes from 1/1/2009 to 12/31/2013
Banks, Oregon**

**Figure
5-3**

H:\projects\16078 - City of Banks Bicycle & Ped Master Plan\GIS\Maps for BPP\5.3 Reported Crashes.mxd - klaussten - 12:06 PM 7/6/2015

Existing Conditions Banks Bicycle and Pedestrian Plan



Exhibit 5-10 Banks-Vernonia Trailhead



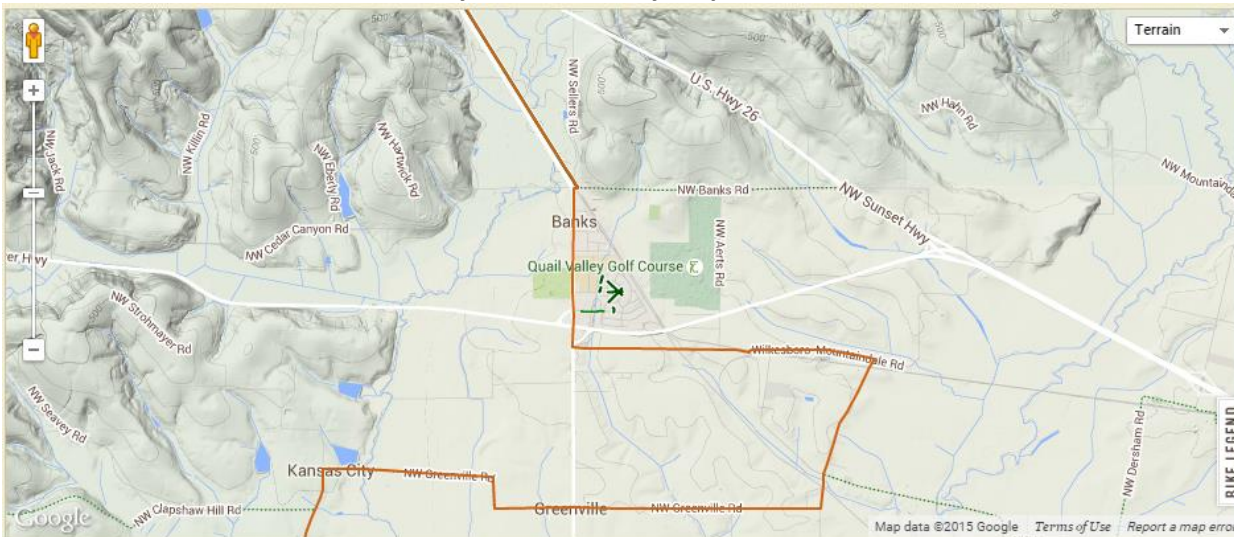
Trailhead parking area and restroom



Bicycle Maintenance Station

The Banks-Vernonia Trail provides a twenty one mile off-street multi-use path connection between Banks and Vernonia. It is part of the Tualatin Valley Scenic Bikeway, which runs between Hillsboro and Vernonia. The Scenic Bikeway program was launched in 2005 as a partnership between Cycle Oregon, Travel Oregon, the Oregon Department of Transportation, and the Oregon Parks and Recreation Department. The Tualatin Valley Scenic Bikeway connects to Banks via NW Wilkesboro Road and OR 47, as shown in Exhibit 5-11.

Exhibit 5-11 Tualatin Valley Scenic Bikeway Map



Source: Ride Oregon

The trail provides a high quality recreational facility that is comfortable for all riders in close proximity to the City. This is an asset for residents and attraction for bicycle tourists. However, the trail also presents some challenges, like providing sufficient parking at the trailhead and developing an attractive bicycle connection to the trailhead.

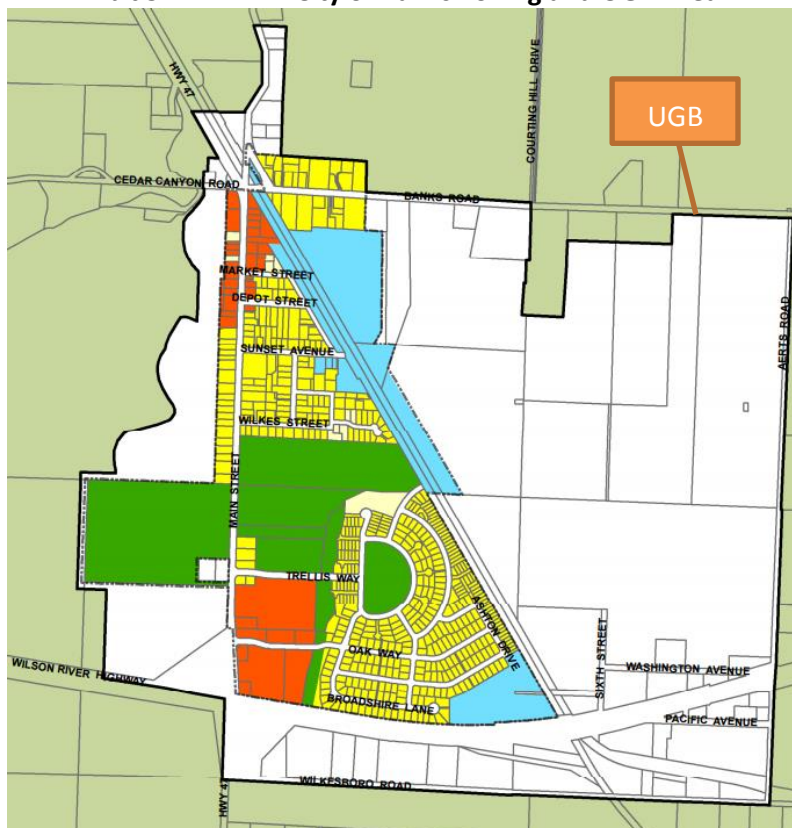
Local Connectivity

There is a need for more local connections by walking and biking throughout the City. Main Street is the only continuous north-south route, with some gaps in pedestrian and bicycle facilities. The railroad limits east-west connectivity. Routes to Banks' elementary, middle and high schools rely on Main Street, with limited other pedestrian and bicycle connections more comfortable for students. Similarly, Arbor Village has no pedestrian or bicycle route to the northern portion of Banks except Main Street. Alternate routes on lower-volume roadways and enhanced facilities would improve options for bicycling and walking within Banks. At the same time, Banks's compact-nature and size creates a great opportunity to develop a bikeable and walkable City.

Future Growth within the Expanded UGB

An expansion of Banks' UGB was approved in 2013, shown in Exhibit 5-12. The expansion included approximately 400 acres of land that includes the Quail Valley Golf Course. This additional land presents an opportunity for expansion and development. However, it also proposes challenges in planning multimodal facilities to connect the UGB expansion area to the rest of the City, namely crossing the railroad. The TSP identified the need to establish an east/west bicycle and pedestrian circulation system to service the expanded UGB area and install a bicycle/pedestrian overcrossing or undercrossing of the railroad to the east side of the City. A study was undertaken in the summer of 2015 to assess potential locations for the railroad crossing, considering current land use impacts, safety concerns, and traffic circulation benefits. The goal of the study is to identify a preferred location and develop a conceptual plan for the crossing.

Exhibit 5-12 City of Banks Zoning and UGB Area



Note: annexed areas shown in white



Section 6 Alternatives Evaluation

6. Alternatives Evaluation

The alternatives development process used a bottom-up approach, with involvement of the Stakeholder Advisory Committee (SAC) and public throughout. The process began with the identification of potential projects to include in the BPP, drawing on existing planning documents, public involvement, and a review of existing gaps and deficiencies in the transportation system. The projects were then evaluated and prioritized by the project team, SAC, and public to develop the final plan elements. This section describes the process that was used to develop alternatives for the BPP, evaluate the alternatives, and develop the final plan elements.

Projects for Evaluation

The first step in the alternatives evaluation was identifying projects to evaluate. A draft project list was developed based on the following:

- **Previously Identified Projects:** these projects were identified based on a variety of documents, including the City's Transportation System Plan, Park and Recreation Master Plan, Banks Main Street Revitalization Plan, and Council Creek Regional Trail (CCRT) Master Plan. The documents were reviewed and projects identified and mapped in *Technical Memorandum #2: Baseline Information*.
- **Stakeholder Advisory Committee (SAC) and Public Suggested Projects:** these projects were developed based on input received from the SAC during stakeholder interviews, a kick-off walking tour, and subsequent meetings. Public input was also gathered via the interactive map for the project, described in Section 4: Public Involvement Process.
- **New Identified Projects:** these projects are needed to address gaps or deficiencies in the existing transportation system that were not addressed in either of the project lists described above.

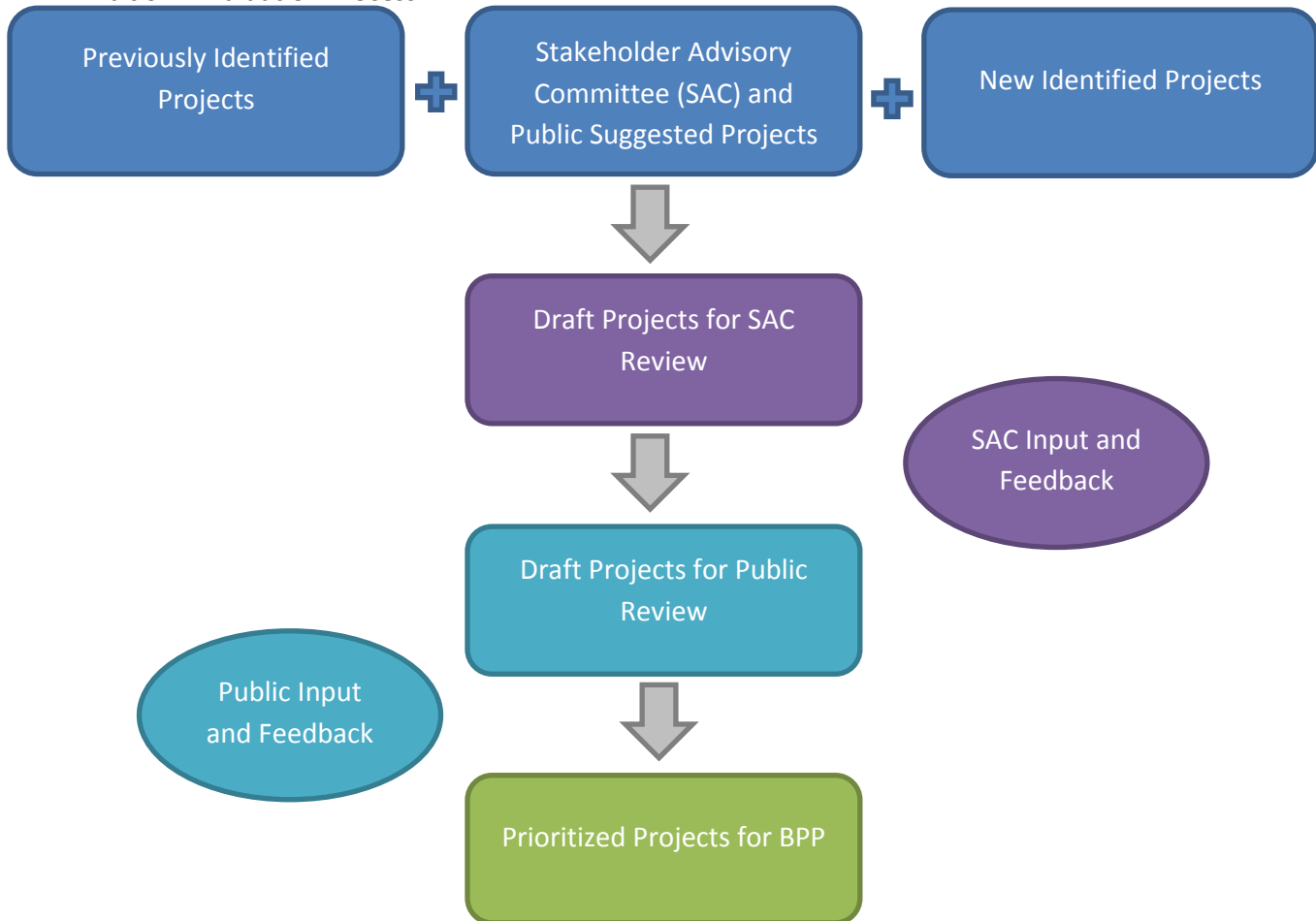
New Identified Projects

As indicated above, additional projects were developed beyond those previously identified or suggested by the SAC or public to address remaining gaps or deficiencies in the existing transportation system. The project team developed these projects based on the assessment of the existing transportation system. Projects to fill gaps in the bicycle and pedestrian system were selected based on high-priority needs, considering the following:

- **Connectivity:** projects that connect existing bicycle facilities or key areas (i.e. residential and commercial areas, existing trail networks);
- **Gaps:** projects that fill gaps in the existing bicycle network (i.e. segment of roadway missing bicycle lanes);
- **Proximity to activity centers and destinations** such as schools, commercial areas, residential areas, parks, natural resources, trails, etc.;
- **Proximity to transit** stops and routes; and
- **Roadway volumes:** as a general rule of thumb, bikeways are recommended on roadways with AADTs over 3,000.

Exhibit 6-1 provides an overview of the evaluation process, with the projects for evaluation listed in the dark blue boxes.

Exhibit 6-1 Evaluation Process



Project Evaluation Methodology

The projects for evaluation were compiled and evaluated based on whether or not it supports the previously identified goals and objectives. Each goal (livability, safety and health, accessibility, financial responsibility and economic vitality) is supported with at least one objective. The objectives provide a more detailed breakdown of goals with more specific outcomes the City desires to achieve. Evaluation criteria were developed for each objective to provide a definable measure of how a proposed project may make progress towards the established objectives. The evaluation criteria are listed below:

- **Cost** – what is the planning-level cost estimate of the element?
- **Potential Funding Mechanisms** – what funding sources are available that could potentially be applied to the element?
- **Feasibility** – are there any significant barriers to the element, such as ownership of the connection, limited right-of-way, the presence of significant natural resources?

Alternatives Evaluation

Banks Bicycle and Pedestrian Plan



- **Connectivity** – does the element fill an existing gap in the bicycle or pedestrian network or create a new connection?
- **Accessibility** – does the element enhance access to the active transportation system for all users, regardless of ability?
- **Destinations served by project** – how many activity centers and/or destinations (i.e. schools, commercial areas, residential areas, parks, natural resources, trails, transit stops, etc.) does the element serve?
- **Expected safety impact** – does the element address an area with a crash history? Is it expected to improve the safety performance of a facility, based on available research on pedestrian/bicyclist safety? Does the element impact an area with a higher volume of trucks or vehicles?
- **Level of traffic stress** – according to the methodology presented in the ODOT *Analysis and Procedures Manual*, what level of traffic stress does the element provide for bicyclists?
- **Population served** – does the element serve people that live in, work in, and/or visit Banks (i.e. is it located in an area with a demand for walking/biking? Does it appeal to a wide level of riders?)?
- **Anticipated economic impact** – does the element increase bicycle or pedestrian activity in the downtown core or other business areas?

The projects were scored based on this criteria and sorted in to high, medium and low priority based on this scoring. The intent of this evaluation was to provide a base for the SAC to review and refine.

As shown in Exhibit 6-1, the projects were then reviewed and refined by the SAC. Each SAC member was asked to review each project and indicate whether they agreed with the project’s priority, thought it should move up or down in priority, or should be removed from the project list. The SAC were also asked for any additional projects that should be included on the project list.

The next step in the process was public review, which occurred at the in-person and virtual open house (VOH). Using paper handouts or the online interactive map tool, the public were also asked for feedback on the project priority. Ultimately this feedback was reviewed by the Project Management Team (PMT) and used to develop the plan elements provided in Section 9. The plan elements include the following:

- **Projects** – capital investments made to improve the existing bicycle and pedestrian system. Examples include bike lanes, sidewalk improvements, and benches.
- **Policies** – statements adopted in the BPP that are intended to influence and guide City decisions and actions relating to bicycle and pedestrian planning. As an example, policies could be related to sidewalk design guidelines, bicycle treatment at intersections, or requirements for new development. Ultimately, the BBP will be incorporated in the Transportation System Plan, comprehensive plan and zoning code.
- **Programs** – plans of action aimed at accomplishing an identified county goal(s) and/or objective(s) that commonly include such details on what work is to be done, by whom, when, and the intended outcome of the action. An example is implementing a walking bus program.
- **Pilot Projects** – activities planned as a test or trial of a proposed transportation project or program. An example is temporarily striping a bike lane to test its performance over a 6-month time period.

Key Opportunities and Constraints

Throughout the development of the BPP, several issues rose to the surface as key opportunities or constraints for the bicycle and pedestrian system and Banks. Each is discussed below.

Main Street

The Banks Main Street Revitalization Plan, dated January 2014, recognizes the opportunities for revitalization on Main Street and assets along the corridor, including several parks, civic buildings, historic homes and commercial buildings, local shops and services, and walkability. However, there are several issues that present challenges for bicyclists and pedestrians on Main Street, including speeding, truck traffic, sidewalk width and condition, insufficient crossings, limited right-of-way, lack of street furnishings and pedestrian-scaled lighting, and disconnect between the north and south commercial areas. Images highlighting these issues are provided in Exhibit 5-9.

Exhibit 5-9 Main Street



Speed feedback sign on north side of Main Street headed southbound



Constrained right-of-way on north side of Main Street

Banks-Vernonia Trailhead

The Banks-Vernonia Trailhead is located on the north side of the City. Parking is provided for the Trailhead, accessible off NW Sellers Road. The parking lot currently provides 27 spaces (including two accessible spaces), restrooms, a water fountain, and a bike repair station, shown in Exhibit 5-10. The parking lot commonly reaches capacity, particularly on weekends in the summer, so vehicles overflow into neighboring lots or businesses along Main Street.

Alternatives Evaluation

Banks Bicycle and Pedestrian Plan



- **Future Studies** – research and investigation to be completed by the City after the BPP is completed. Such studies will not be done during the BPP process due to lack of available data, a need for guidance and/or analysis from responsible agencies, and/or the need for a focused public involvement and analysis process beyond the BPP scope of work and budget.



Section 7 Potential Funding Sources



7. Potential Funding Sources

Projects identified in the BPP can be funded from a number of federal, state and local sources. Most federal and state funding programs are grant programs, which typically have eligibility requirements and applications required. This plan helps confirm the priority of key improvement projects and document their importance to the City. Tables 7-1 and 7-2 document potential federal/state and local funding sources, respectively.

Table 7-1 Potential Federal and State Grants for BPP Projects

Source	Award Cycle	Intended Use	Applicable Project Types	Administration Agency	Local Match
Rivers, Trails, and Conservation Assistance Program	Annual	Technical assistance for recreation and conservation projects.	Shared-use paths	National Park Service	None
Highway Safety Improvement Program	Annual	Address safety issues on highways and High Risk Rural Roads	All	ODOT	10%
Oregon Parks and Recreation Local Government Grants	Annual	Primary use is recreation; transportation allowed. Construction limited to outside road right-of-way, only in public parks or designated recreation areas	Shared-use paths	OPRD	20%
Recreational Trails Program	Annual	Recreational trail-related projects, such as hiking, running, bicycling, off-road motorcycling, and all-terrain vehicle riding.	Shared-use paths	OPRD	20%
Land and Water Conservation Fund	Annual	Acquire land for public outdoor recreation or develop basic outdoor recreation facilities	Shared-use paths, bikeways, sidewalks	OPRD	50%
Statewide Transportation Improvement Program	Biennial	Multi-year, statewide, intermodal program of transportation projects	Sidewalk, bikeways, crossing improvements	ODOT	Varies
ATV Grant Program	Annual	Operation and maintenance, law enforcement, emergency medical services, land acquisition, leases, planning, development, and safety education in Oregon's OHV (off-highway vehicle) recreation areas	Shared-use paths	OPRD	20%
Immediate Opportunity Funds	Biennial	Support primary economic development through the construction and improvement of street and roads.	All	ODOT	50%

Potential Funding Sources

Banks Bicycle and Pedestrian Plan



Source	Award Cycle	Intended Use	Applicable Project Types	Administration Agency	Local Match
Enhance (STIP)	Biennial	Activities that enhance, expand, or improve the transportation system. Projects that improve or enhance the state's multimodal transportation system.	All	ODOT	10%
ConnectOregon	Biennial	Non-highway transportation projects that promote economic development in Oregon.	Non-highway modes	ODOT	20%

Table 7-2 Potential Local Funding Sources for BPP Projects

Source	Description	Comments
General Fund	Property taxes from the county's permanent tax rate.	Diverting general fund revenue to the Road Fund would have significant consequences for other county services.
Supplemental 5-year Serial Levy	Voter approved property tax levied in addition to the county's permanent tax rate.	A road fund serial levy would have to be approved by voters every five years. A one-time approval would buy time for the county to develop other options. This method could fund operations and capital programs, some of which might reduce future maintenance requirements.
Road Utility Fee	Monthly user fee with revenue dedicated to road operations. May be enacted legislatively but could be challenged and brought to a vote.	This type of fee is becoming more common in cities but would require substantial investment in rate studies, administrative staffing, software and computer systems to enable the county to collect the revenue. This source is generally better suited to funding operations than for capital improvements, but it may free up existing resources for capital projects.
Vehicle Registration Fee	An extra fee on all registered motor vehicles in the county. May be authorized legislatively but could be challenged and brought to a vote.	State must be willing to act as a collection agent for the county, otherwise would be easy to implement. This source could fund operations or capital programs.
Motor Vehicle Title Fee	Require that all motor vehicles registered in the county also have their title recorded as personal property with the City.	This would generate two sources of revenue: from the fee itself and from personal property taxes levied on motor vehicles. This could be problematic for renters and would increase taxable property that the Assessor must account for.
City Gas Tax	May be enacted legislatively but could be challenged and brought to a vote.	A local-option fuel tax would be easy to collect because the infrastructure is already in place. Would generate revenue for the county from motorists passing through the county. This method could fund operations and capital programs.

Additional non-traditional funding sources include:

- **Public/private sponsorships** involve a private entity such as a local business owner working with the public agency to fund a project. In return for their investment in the community, these business owners



often have recognition for their role, providing a marketing venue for the business. In Banks, one potential opportunity for this type of partnership is the bicycle wayfinding signage project. Private organizations that sponsor a sign may have the opportunity to provide their logo on a sign to help direct cyclists to their community and business.

- **Local taxes and user fees** may be collected to finance road construction and operations. On that premise, it is assumed that the City will need to develop local revenue sources to supplement or replace federal resources if it hopes to maintain current levels of service and assuming that changes in state of federal financing, coupled with efficiency measures are not enough to close the funding gap. Table 8-2 lists options that the City may wish to consider for funding local roads. The sources include a mix of fees and taxes, some of which if implemented would have implications for other aspects of the City budget. Some of these fees could also be used to provide a local match to obtain greater federal or state funding, further stretching local dollars.
- **Development code updates** may be beneficial to provide an additional funding source. The development code identifies the requirements that a developer must meet before obtaining permission to build. Banks may choose to require developers to complete sidewalks in locations where they are identified in the BPP and enforce the completion through the development code. The City may also choose to collect a payment in lieu of sidewalk construction from the developers and then use the money to construct complete sections of sidewalk when enough is collected to create efficiencies.

The following section presents specific plan elements, with potential funding sources applicable to each element identified.

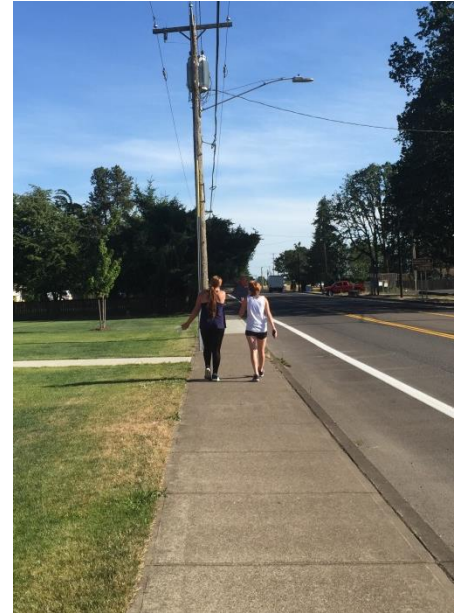


Section 8 Bicycle and Pedestrian System Plan

8. Bicycle and Pedestrian System Plan

This section presents the bicycle and pedestrian system plan for the City of Banks. Its purpose, as stated in Section 2, is to plan for a convenient and comfortable active (non-automobile based) transportation system for local trips within the community and connections with regional trail systems. It considers existing conditions for bicyclists and pedestrians in the City, but also needs to provide for future growth. Public involvement played a critical role in both developing and prioritizing elements of the plan.

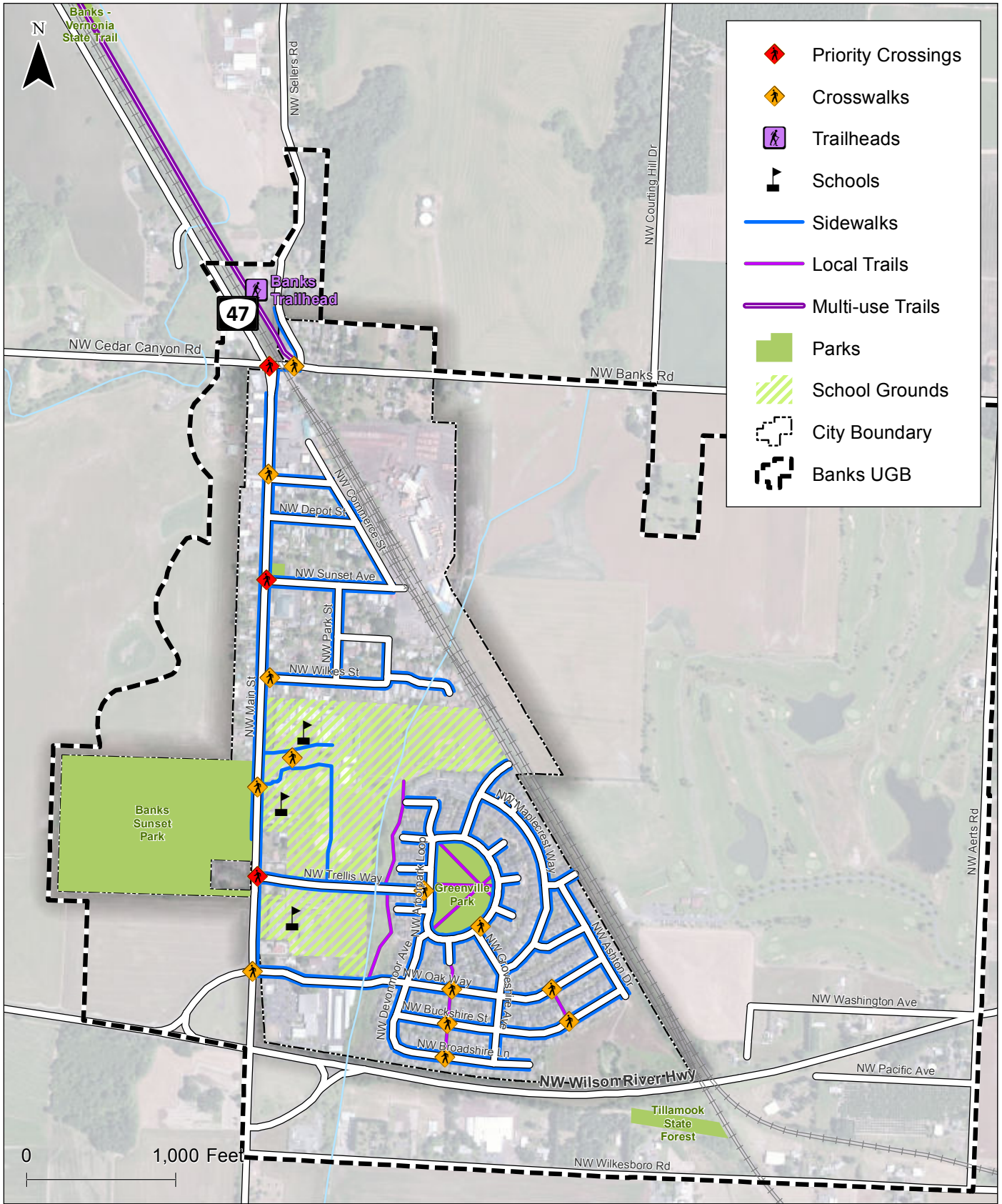
This section includes a review of high priority crossings, connections and routes needed to enhance the existing system and provide for future development. This provides a high-level view of the preferred bicycle and pedestrian system, intended to capture the vision for the future system. The specific plan elements follow, including prospectus sheets for each element that include a project description, cost estimate, and image.



High Priority Crossings

As described in Section 5, there are currently three marked crossings of Main Street. Given the density of destinations along Main Street and desire to make the corridor more walkable, additional crossings are recommended. Crossings are recommended to provide more route options and minimize out of travel required and jaywalking. The location and spacing of crossings should balance pedestrian needs with vehicular mobility on Main Street. The following locations, shown in Figure 8-1, are recommended as high priority crossings:

- **Main Street/Cedar Canyon/NW Banks Road:** there are currently no marked crosswalks at this intersection, which is a critical connection between Main Street and the Banks-Vernonia Trailhead.
- **Main Street/Sunset Avenue:** the closest crossings of Main Street in this area are Market Street 700 feet to the north and at the high school 1200 feet to the south. A crossing at this location would serve Sunset Park on the west side and residential and commercial uses in the vicinity.
- **Main Street/Trellis Court:** this location services Sunset Park on the west side and Arbor Village on the east side. The west side of the sidewalk on Main Street ends just south of this location, so a crossing would provide pedestrians the option to cross to the east side of Main Street where sidewalks continue south.



**High Priority Crossing Locations
Banks, Oregon**

**Figure
7.1**

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High Priority Connections

Locations were identified where a new or improved bicycle/pedestrian connection is needed in Figure 8-2. Primarily these connections are needed to serve existing or future activity centers and key destinations, or to connect to regional trail systems, including the future Council Creek Regional Trail and Salmonberry Trail. The recommended time-frame for each connection is noted.

1. **NW Banks Road to the East:** NW Banks Road currently does not have pedestrian or facilities further east of NW Sellers Road, with the exception of a side path north of the roadway for a small section. As the east side of Banks develops in the future, this connection is important for linking the east side to the trailhead and Main Street. *Long-term need.*
2. **Main Street to Banks Vernonia Trailhead:** bicycle lanes on Main Street currently end at the high school entrance, with no direction provided for bicyclists continuing north to the trailhead. This connection could be enhanced to provide a more comfortable, safe connection from Main Street to the trailhead. This route is currently included in the Tualatin Valley Scenic Bikeway. *Near-term need.*
3. **West side of railroad – East side of railroad:** with the annexation of the land to the east of the railroad in to the UGB, multimodal connections are needed to connect the east and west sides of the City. The TSP proposed a connection north of Arbor Village. Studies are currently underway to identify the preferred crossing location, with NW Sunset Avenue and NW Wilkes Street potential locations. *Long-term need.*
4. **Wilkes Street to middle and high school:** there is no bicycle or pedestrian connection between the residential areas on and north of Wilkes and the middle or high school that avoids Main Street. This connection would provide a safer, more comfortable route by foot or bike for students living in the northern residential areas of Banks. *Near-term need.*
5. **OR 47 south of OR 6 to Main Street:** Bicycle and pedestrian facilities on Main Street do not extend south of NW Oak Way. While development on the south side of OR 6 is limited, OR 47 connects Banks to regional destinations and trails, such as the Tualatin Scenic Valley Bikeway. OR 47 is narrow with limited to no shoulders. *Mid-term need.*

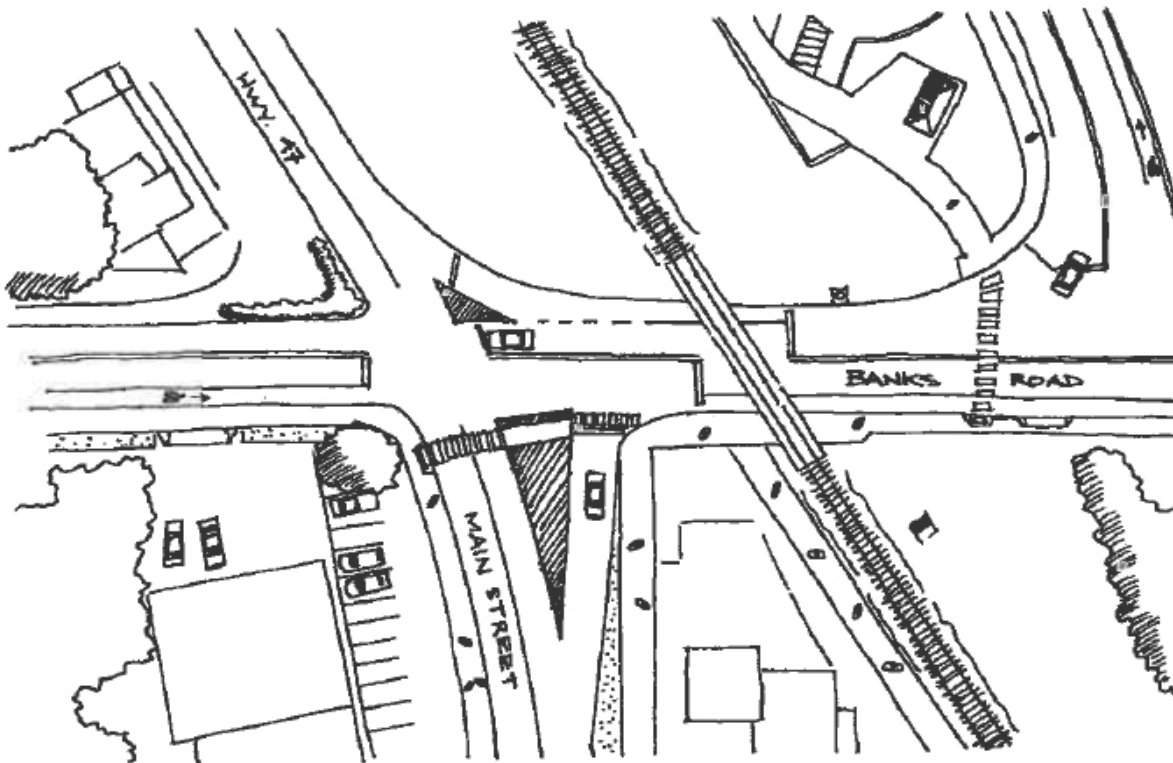
High Priority Routes

Based on the review of background and related documents, existing conditions review, and public outreach, Main Street is clearly a high priority route for both bicyclists and pedestrians. It connects town with the Banks-Vernonia Trailhead and is part of the Tualatin-Valley Scenic Bikeway. The City's schools are located along Main Street, as are numerous commercial destinations and attractions. Much work has already been done to identify key recommendations for this corridor, namely the Banks Main Street Revitalization Plan. The BPP seeks to support this plan's recommendations, specifically those related to conditions for bicycling and walking, including:

- **Beautification Plan** – develop a Beautification Plan with a focus on pedestrian-friendly design and amenities.

- **Design Standards and Guidelines** – develop standards and guidelines specific to Main Street in collaboration with ODOT.
- **Site Furnishing** – including pedestrian-scaled street lighting, gateway signage, benches, trash and recycling receptacles, banners, and bike parking on the corridor.
- **Main Street Safety Improvements** – including a crosswalk at the Main Street/Banks Road intersection and a new sidewalk and curb on the southwest corner of the intersection along the Five Star complex, shown in Exhibit 8-1.

Exhibit 8-1 Main Street Safety Improvements from Main Street Revitalization Plan



Above: Banks Main Street safety improvements at Highway 47 should include a new sidewalk at the Five Star complex, gateway treatment and crosswalks.

- **Traffic calming along Highway 47/Main Street** – review opportunities with ODOT to identify methods for reducing speeds along Highway 47.
- **Access management study** – conduct a study to identify opportunities to consolidate the numerous curb cuts and driveways along Main Street.
- **Comprehensive signage program** – develop a sign program that includes pedestrian and bicycle wayfinding signage.
- **Banks plaza** – create a destination on the north end of town in the form of a plaza that can host events and create a pedestrian space.
- **Historical walking tours** – host tours or use signage to highlight significant architecture and history on Main Street.

Other priority routes to provide for current and future bicycle and pedestrian demand include:

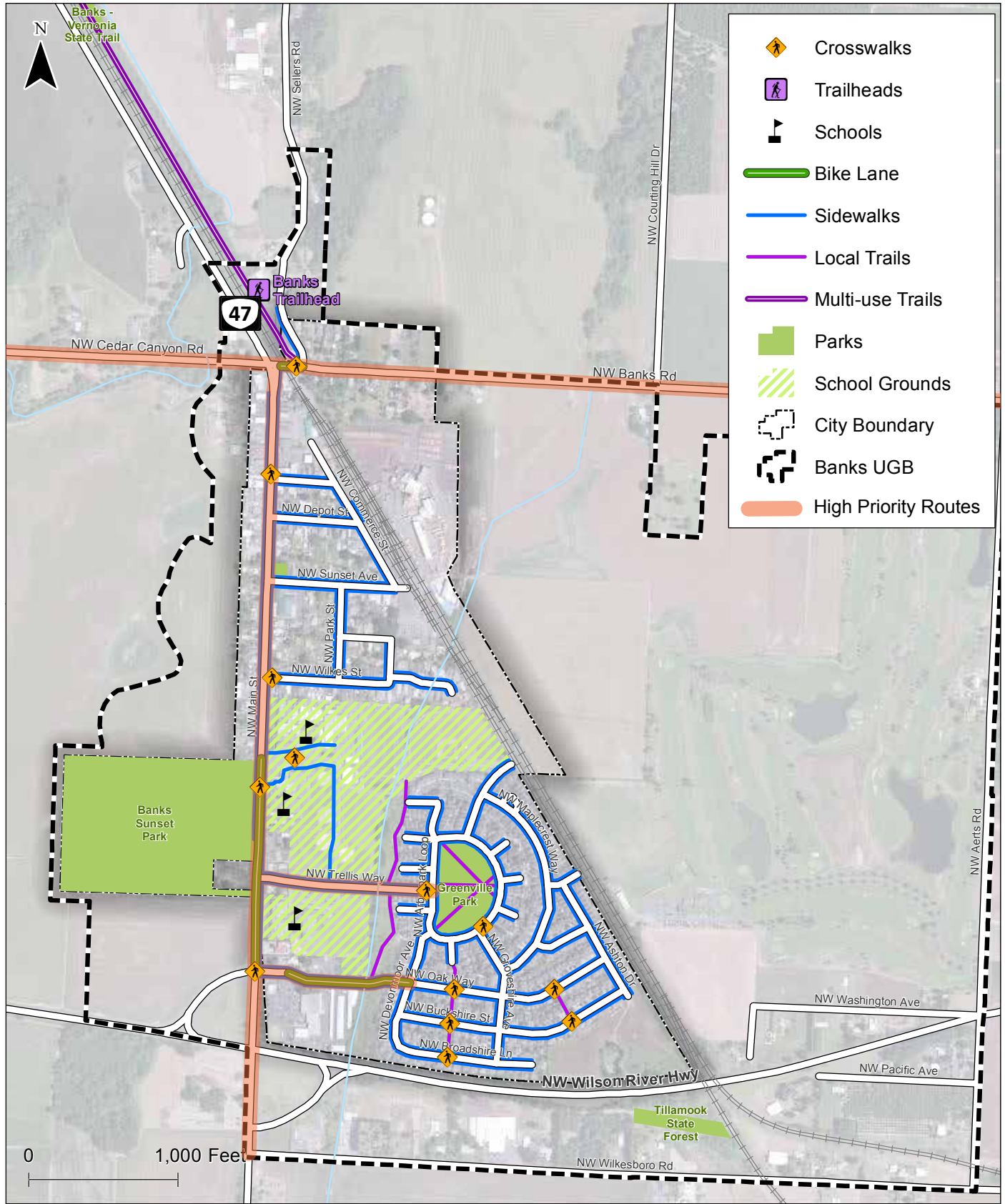
- **NW Banks Road:** this route is a future priority to provide a connection between downtown and the Banks-Vernonia Trailhead and future growth to the east. *Long-term need.*
- **NW Cedar Canyon Road:** this route is a future priority to provide a connection between Banks and future development to the west, include anticipated future attractions like the Killin Wetlands. *Long-term need.*
- **NW Oaks Way:** this route provides access to the commercial development on the south east side of Main Street/NW Oaks Way and access to the Arbor Village Neighborhood. It currently provides sidewalks and bike lanes on a portion of the segment. There is a pedestrian crossing just east of the turn in to the Thriftway with a sign on either side alerting drivers, as shown in Exhibit 8-2. *Near-term need.*

Exhibit 8-2 NW Oaks Way looking West



- **NW Trellis Way:** this route provides access to Banks Elementary School and the Arbor Village Neighborhood. It currently provides sidewalks but no marked bicycle facilities. *Near-term need.*

The priority routes discussed above are illustrated on Figure 8-3.



High Priority Routes
Banks, Oregon

Figure
7.3

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Typical Cross-Sections

The City's Public Work Design Standards, adopted in April 2014, call for the facilities shown in Exhibit 8-4.

Figure 8-4 Bicycle, Pedestrian, and On-Street Parking Standards

Street Classification	Planting Strip Minimum	Sidewalk Width Minimum	Bicycle Facilities Minimum	On-Street Parking Minimum
Arterial*	5'	6'	6' shoulder bikeways	none
Arterial - Main Street*	0' (street trees in sidewalk tree wells)	6' walkways 4' furnishing zone 2' bldg zone	6' shoulder bikeways	8' lanes
Residential Collector	5'	5'	Shared roadway	8' lane on one side
Residential Street	5'	5'	Shared roadway	8' lanes
Multi-Use Trail (no autos)	Optional (edging)	10' – 12' trail with 2' shoulders, and 8' minimum vertical clearance		None
Marginal Access	5'	None	None	None
Alleys	0'	None	None	None

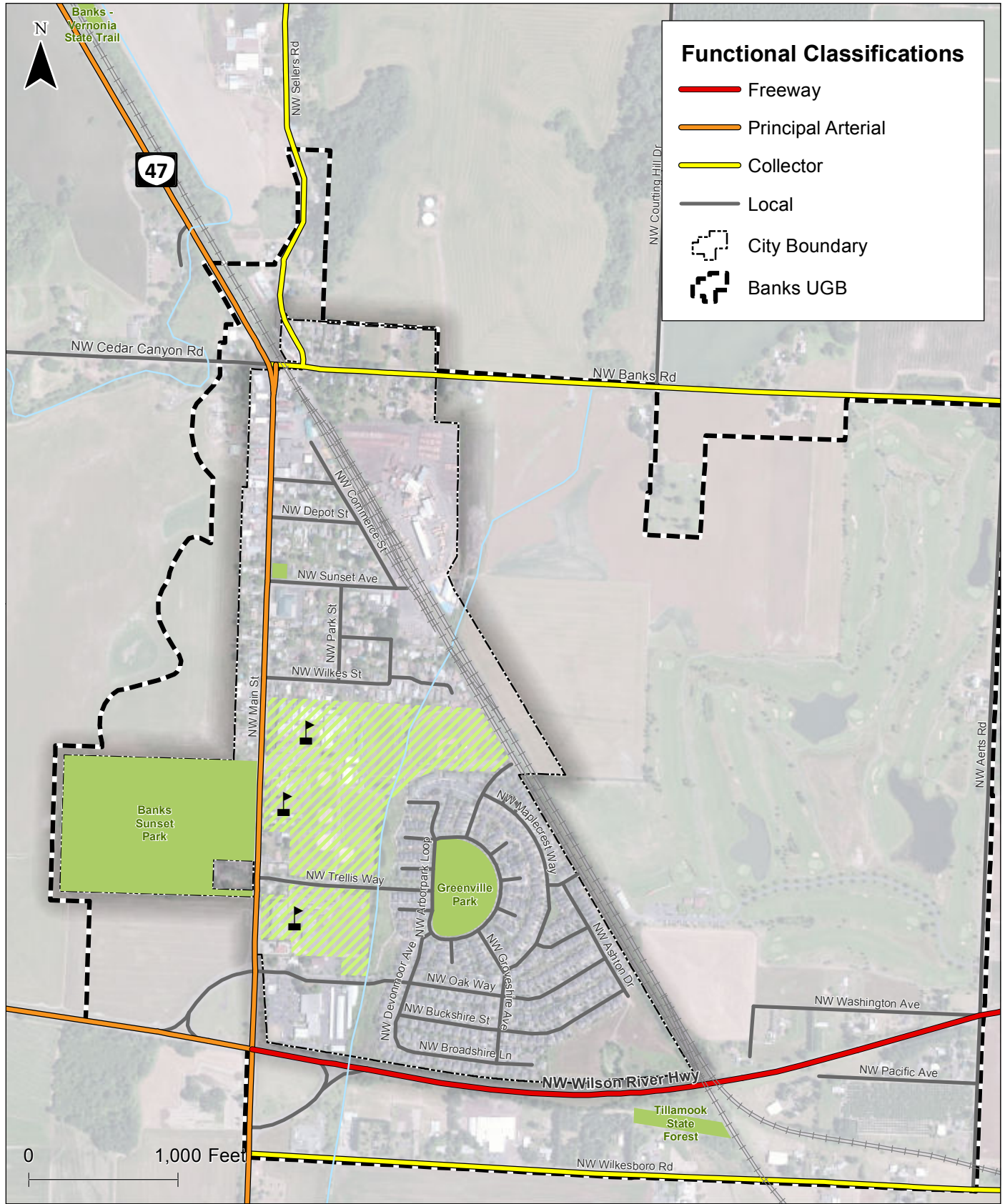
*Unless otherwise specified, all standards apply to two sides of street.

The City's roadway classifications for utilizing the standards are shown in Figure 7-4. The design standards also refer to the guidelines in other federal and state documents, including the AASHTO "Guide to Development of Bicycle Facilities," "Oregon Bicycle & Pedestrian Plan," and Manual on Uniform Traffic Control Devices (MUTCD). As described in the standards, bicycle and pedestrian facilities should meet or exceed minimum standards and be designed in accordance with best practices. While the standards do not require any separation between bicycle lanes and vehicle travel lanes, it is recommended where possible that separation is provided via a buffer and a physical barrier, such as planters, flexible posts, parked cars, or a mountable curb. Guidance on the use of different

Plan Elements

Based on the evaluation process described in Section 6, specific plan elements were identified for the City needed to address gaps and deficiencies in the existing system and provide for future growth. These plan elements build off the priority crossings, connections, and routes described above and consider the City's design standards. The plan elements are prioritized based on the magnitude of benefit they provide, per review by the project team, SAC, and public. Table 8-1 lists the plan elements. Prospectus sheets are provided following the table that offer more detailed information on each project.

To be completed



**Roadway Functional Classifications
Banks, Oregon**

**Figure
7-4**

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Appendices

- A. Title VI Report
- B. Technical Memorandum #1 – Refined Goals, Objectives, and Evaluation Criteria
- C. Technical Memorandum #2 – Baseline Information
- D. Technical Memorandum #3 – Inventory and Evaluation
- E. Technical Memorandum #4 – Crossing Options
- F. Technical Memorandum #5 – Conceptual Bicycle and Pedestrian Route Options
- G. SAC Meeting Summaries
- H. Key Stakeholder Interviews
- I. Open House Summary