



CROOK COUNTY TRANSPORTATION SYSTEM PLAN



Adopted November 2017



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CROOK COUNTY TRANSPORTATION SYSTEM PLAN

PREFACE

The development of this plan was guided by the Project Management Team (PMT), Technical Advisory Committee (TAC), and Public Advisory Committee (PAC). Each individual devoted their time/effort and their participation was instrumental in the development of the plan update.

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VOLUME 2: TECHNICAL APPENDICES (SEPARATE COVER)

1. Technical Memorandum 1 – Plans and Policies Review
2. Technical Memorandum 2 – Goals, Objectives, and Evaluation Criteria
3. Technical Memorandum 3 – Existing Conditions
4. Technical Memorandum 4 – Future Conditions
5. Technical Memorandum 5 – Alternatives Analysis
6. Findings Memorandum
7. Transportation Planning Rule (TPR) Checklist
8. Implementing Ordinances Memorandum



SECTION 1. INTRODUCTION



1. INTRODUCTION

OVERVIEW

The Crook County Transportation System Plan (TSP) provides a long-range vision for the transportation system in Crook County and outlines a process for how it can be achieved with prioritized Plan elements. The Plan was developed through extensive coordination between local and state agencies and the involvement of local stakeholders, and summarizes the County's priorities to

meet existing and future transportation needs. It includes prioritized projects and costs, summarizes current funding, and provides recommendations for future potential funding sources. The TSP is intended to be flexible, allowing the County to modify Plan elements and priorities according to changing community needs and revenue sources over the next 20 years.

PLAN BACKGROUND AND REGULATORY CONTEXT

Crook County's previous TSP was developed in 2005. Since that time, growth, development, commuting patterns, and transportation priorities in the county have changed. The Great Recession of 2008 slowed the transportation system's growth, but economic recovery has since increased transportation demand, especially freight and multimodal travel. Similarly, the growth in destination resorts in the late 1990s and early 2000s halted during the Recession. However, several of these halted development projects have recently started to move forward again and construction is progressing. With this increased development will come increased transportation demand.

The Oregon Revised Statutes require that the TSP be based on current Comprehensive Plan land uses and that it provide for a transportation system that accommodates the expected growth in population and employment that will result from implementation of these

planned land uses. Development of this TSP was guided by Oregon Revised Statute (ORS) 197.712 and the Department of Land Conservation and Development (DLCD) administrative rule known as the Transportation Planning Rule (TPR, Oregon Administrative Rule 660-012).

The TPR requires that alternative travel modes be given consideration along with the automobile, and that reasonable effort be applied to the development and enhancement of alternative modes as part of the future transportation system. In addition, the TPR requires that local jurisdictions adopt land use and subdivision ordinance amendments to protect transportation facilities and to provide active transportation facilities between residential, commercial, and employment/institutional areas. It further requires that local communities coordinate their respective plans with the applicable County, regional, and State transportation plans.



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PLAN DEVELOPMENT PROCESS

The TSP planning process provided Crook County constituents with the opportunity to identify their vision and priorities for the County's future transportation system. The planning process was directly guided by a Technical Advisory Committee (TAC) and a Public Advisory Committee (PAC). The TAC and PAC comprised representatives from key stakeholder groups including the following:

- ▶ Crook County Community Development
- ▶ City of Prineville Public Works
- ▶ Public safety representatives
- ▶ Crook County Road Department
- ▶ Crook County Health Department
- ▶ Central Oregon Intergovernmental Council
- ▶ Oregon Department of Land Conservation and Development
- ▶ Central Oregon Trails Alliance
- ▶ The local freight industry
- ▶ Chamber of Commerce
- ▶ The Crook County Planning Commission



Members of the TAC and PAC reviewed the technical aspects of the TSP during the Plan development process. TAC and PAC members participated in four joint TAC/PAC meetings that focused on all elements of the TSP development including development of Plan goals, evaluation of existing deficiencies and future needs, selection of transportation alternatives, and presentation of the draft TSP and funding plan.

In addition to the established advisory committee meetings, two community workshops were held at key junctures in the process to gather public input regarding transportation needs and priorities.

This input was incorporated into the final Plan development. The draft Plan was discussed at a joint County Court and County Planning Commission work session and at public hearings.

Exhibit 1-1 summarizes the Plan development process and schedule, illustrating the meetings where key input was provided throughout the technical development process.

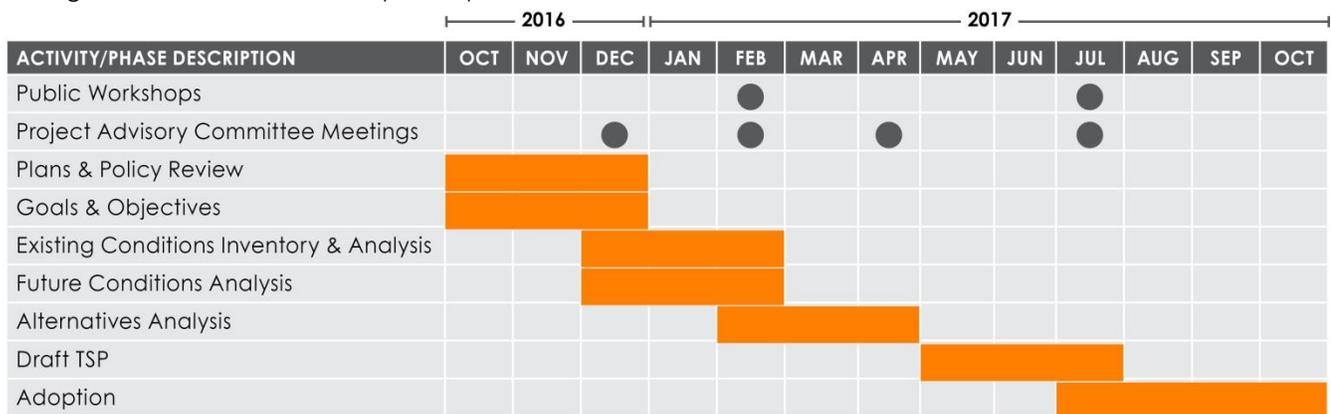


Exhibit 1-1. Plan Development Schedule



PRIORITIZATION OF PLAN ELEMENTS

Plan elements presented in the TSP were prioritized using evaluation criteria based on the TSP's goals and objectives, with input from advisory committee members and the public. The resulting priorities are grouped into four general categories: high priority, medium priority, low priority, and vision elements. High priority elements are those that meet many of the TSP's goals and objectives and should be considered for near-term implementation if funding allows. Medium and low priority elements are those projects, policies, and programs that are needed to support the transportation system but may not be needed until later in the planning horizon. Vision elements are those that are not anticipated to be needed within the 20-year planning horizon but represent the County's long-term vision for the transportation system. Vision elements are provided to assist with longer-term planning beyond the 20-year horizon.

ORGANIZATION OF THE TSP

The Crook County TSP is composed of a main document (Volume I) and a volume of supporting technical appendices (Volume II). Project Prospectus Sheets are provided in Appendix A of Volume I.

Volume I, the Transportation System Plan, is organized into the following sections.

- ▶ Section 1 – Introduction (current section)
- ▶ Section 2 – Goals and Objectives
- ▶ Section 3 – Roadway Plan
- ▶ Section 4 – Freight Plan
- ▶ Section 5 – Safety Plan
- ▶ Section 6 – Pedestrian and Bicycle Plan
- ▶ Section 7 – Transit Plan
- ▶ Section 8 – Bridge Plan
- ▶ Section 9 – Intelligent Transportation System Plan
- ▶ Section 10 – Funding and Implementation
- ▶ Appendix A – Project Prospectus Sheets

Volume II (under separate cover) contains the technical memoranda prepared during the development of the Transportation System Plan, including the detailed data and analysis that informed the final Plan. Those technical memoranda are as follows:

1. Technical Memorandum 1 – Plans and Policies Review
2. Technical Memorandum 2 – Goals, Objectives, and Evaluation Criteria
3. Technical Memorandum 3 – Existing Conditions
4. Technical Memorandum 4 – Future Conditions
5. Technical Memorandum 5 – Alternatives Analysis
6. Findings Memorandum
7. Transportation Planning Rule (TPR) Checklist
8. Implementing Ordinances Memorandum



SECTION 2. GOALS AND OBJECTIVES



2. GOALS AND OBJECTIVES

The goals and objectives for the TSP represent desired project outcomes and transportation needs to support land use and growth envisioned for Crook County. Plan goals were developed based on the 2005 TSP, the County's Comprehensive Plan, and input from the County, ODOT, and advisory committee members. Objectives outline the discrete elements that, taken as a whole, support and promote the goals. Evaluation criteria were formed from the objectives and used to guide project prioritization. The goals and their corresponding objectives are provided in the following sections.

GOAL 1: MOBILITY AND CONNECTIVITY

Promote a transportation system that links rural communities to key destinations in the County, Prineville, and adjacent counties, and serves existing and future needs for transporting goods and people.

Mobility and Connectivity Objectives

- 1.1 Identify 20-year roadway system needs to accommodate developing or undeveloped areas.
- 1.2 Promote transportation linkages that support local communities and regional connections by promoting an integrated system of principal highways that move people and goods throughout the county, a County road system that facilitates transportation between various areas of the county and between principal highways, and a local road system that provides access to commercial and residential areas.
- 1.3 Coordinate with ODOT and local communities to identify priority roadway improvements and maintenance needs.
- 1.4 Update roadway performance standards to ensure efficient movement of people, goods, commodities, and commercial waste.
- 1.5 Update policies and standards that address street connectivity, spacing, and access management.
- 1.6 Balance local community and State goals for State highways that run through Crook County communities.
- 1.7 Support transit service to improve mobility within the county and connectivity to major destinations outside of it, including regional jobs and higher education opportunities in Bend, Prineville, and Redmond.
- 1.8 Prioritize ADA compliance for County facilities to increase mobility options for all persons.

GOAL 2: ECONOMIC DEVELOPMENT

Plan a transportation system that supports existing industry and encourages economic development in the county.

Economic Development Objectives

- 2.1 Develop and promote a multimodal transportation network that supports the existing industrial, data storage, agricultural, and tourism industries and supports economic diversification in the future.
- 2.2 Promote railroad freight service when possible through integration of road and rail transportation, and upgrade highways in areas where rail is not an option.
- 2.3 Prioritize improving and maintaining the key freight routes of OR 26, OR 126, and George Millican Road.



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

- 2.4 Identify 20-year roadway system needs to accommodate developing or undeveloped areas.
- 2.5 Improve coordination between the private sector and the County to better integrate industrial areas with future transportation system improvements.
- 2.6 Encourage recreational tourism by developing connections and promoting access to major recreational locations and destinations and key services in the county, including the Ochoco National Forest, reservoirs, and trail systems.
- 2.7 Encourage bicycle tourism by prioritizing and improving recreational routes through the county.

GOAL 3: SAFETY

Provide a transportation system that promotes the safety of current and future travel modes for all users.

Safety Objectives

- 3.1 Promote a transportation system that balances the needs for mobility and accessibility to allow for efficient travel on state highways that also provides safe, livable, and vibrant multimodal corridors in the core of unincorporated communities.
- 3.2 Develop a multimodal transportation system that incorporates safety and operational improvements for bicyclists.
- 3.3 Ensure that roadways are designed, constructed, and maintained to an appropriate standard for their expected use, vehicle speeds, and vehicle traffic.
- 3.4 Reduce incidence and severity of crashes.
- 3.5 Provide a transportation system that allows for adequate emergency vehicle access to all land uses.
- 3.6 Promote railway and highway safety at and near railway intersections.
- 3.7 Update County access management standards and County design standards for all county roads.
- 3.8 Evaluate opportunities for Intelligent Transportation Systems (ITS) to address traffic safety by providing real-time information to drivers and to enhance transportation efficiency for all modes.
- 3.9 Develop traffic calming guidelines to encourage appropriate rural traffic calming methods and locations.
- 3.10 Evaluate increasing the number of options for reaching locations within the county to ensure a safe access point in case of natural disaster, especially in Juniper Canyon and other locations where the small number of access points may present a safety hazard.
- 3.11 Consider strategies to improve safe transport of farm equipment.
- 3.12 Consider traffic calming techniques to encourage appropriate use of local and residential roads and support the addition of pedestrian crossings along roads where appropriate.



GOAL 4: MULTIMODAL USERS

Provide a multimodal transportation system that permits safe and efficient transport of people and goods through active modes, which may also provide a benefit in improved health and environment.

Multimodal Users Objectives

- 4.1 Promote alternative modes, transit/dial-a-ride service, and rideshare/carpool programs through community awareness and education.
- 4.2 Promote an interconnected network of bicycle, pedestrian, and transit facilities throughout the county.
- 4.3 Promote a transportation system that includes pedestrian and bicycle facilities within the unincorporated communities to promote active transportation to and from schools, grocery stores, and other services.
- 4.4 Promote a transportation system that includes pedestrian and bicycle connections to recreational and tourist destinations countywide.
- 4.5 Support development of regional public transit opportunities, including park-and-ride.
- 4.6 Consider bicycle and pedestrian facility needs during construction of new roads and during upgrades of existing roads.
- 4.7 Develop plan elements that guide pedestrian and bicycle pathways and facilities to achieve maximum connectivity between bicycle, pedestrian, transit, and vehicle routes and facilities, securing an intermodal network of safety and access for all types of users.
- 4.8 Develop a plan that supports the Crook County Parks and Recreation Trail system plans and interfaces with the City of Prineville pedestrian and bicycle system.
- 4.9 Support widening shoulders for bicycle travel as part of roadway preservation and improvement projects or as separate projects.
- 4.10 Support efforts to improve connectivity to the Prineville and Redmond airports.

GOAL 5: ENVIRONMENT

Provide a transportation system that balances transportation services with the need to protect the environment.

Environment Objectives

- 5.1 Develop a multimodal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumption and air quality impacts.
- 5.2 Promote design standards that support acquiring only the minimum roadway width necessary for the roadway, including facilities for all users for the roadway classification.
- 5.3 Develop and upgrade transportation facilities to be consistent with the adopted Oregon Transportation Plan (OTP), the Oregon Highway Plan (OHP), and the Transportation Planning Rule (TPR), and ensure that valuable soil, water, scenic, historic, and cultural resources are preserved.
- 5.4 Comply with all applicable State and federal noise, air, water, and land quality regulations.



GOAL 6: PLANNING AND FUNDING

Maintain the safety, physical integrity, and function of the County's multimodal transportation network, consistent with Goal 6 of the OTP. Goal 6 of the OTP focuses on creating a transportation funding structure that serves both current and future needs.

Planning and Funding Objectives

- 6.1 Seek and maintain long-term funding stability for transportation maintenance projects.
- 6.2 Evaluate new, innovative funding sources for transportation improvements.
- 6.3 Ensure that the existing transportation network is conserved and enhanced through maintenance and preservation.
- 6.4 Identify areas where refinement plans or interim measures would increase the life of a facility or delay the need for improvements.
- 6.5 Continue to enhance relationships and improve coordination among Crook County, the City of Prineville, ODOT, and the Federal Highway Administration (FHWA).
 - a. Cooperate with ODOT in the implementation of the Statewide Transportation Improvement Program (STIP);
 - b. Encourage the improvement of state highways;
 - c. Encourage planning coordination between the City of Prineville, Crook County, and the State by establishing cooperative road improvement programs, funding alternatives, and schedules;
 - d. Work with applicable jurisdictions to establish the right-of-way needed for new roads identified in the TSP;
 - e. Leverage federal and State highway funding programs; and
 - f. Encourage citizen involvement in identifying and solving transportation issues.

GOAL 7: EQUITY

Provide access to the transportation system for all users.

Equity Objectives

- 7.1 Provide transportation mode choices to all users of the transportation system.
- 7.2 Consider the system's accessibility to those with sociodemographic characteristics that may make them less likely to rely on personal motor vehicles, including poverty status, race/ethnicity, youth populations, elderly populations, and persons with disabilities.
- 7.3 Consider impacts to low-income or minority populations when assessing the impacts of transportation infrastructure projects.



**SECTION 3.
ROADWAY PLAN**



3. ROADWAY PLAN

The Roadway Plan documents policies and projects anticipated to support operations and circulation needs through the year 2036 and provides guidance on how to facilitate vehicular traffic over the next 20 years. Projects in the Roadway Plan were identified based on a review of the 2005 TSP and the OR 126 Corridor Plan, existing and future conditions analysis, and input from the advisory committee members and general public.

ROADWAY SYSTEM NEEDS

The future conditions analysis conducted as part of the TSP update showed that the Crook County roadway system is expected to continue to operate within acceptable operational targets, based on capacity and delay, over the next 20 years. County growth is largely dependent upon the development of several potential destination resorts. The OR 126 Corridor Plan assumed more substantial build-out of these resort developments. Therefore, the TSP also includes projects identified in the OR 126 Corridor Plan to accommodate the potential for higher growth associated with destination resorts.

In addition to the capacity-enhancing projects from the OR 126 Corridor Plan, several additional roadway needs were identified, including:

- Secondary access to Juniper Canyon,
- Maintenance improvements, and
- Jurisdictional transfer guidance and opportunities.

The following sections document the Roadway System Plan.

FUNCTIONAL CLASSIFICATION

Functional classification of a roadway characterizes the intended purpose, amount, and type of vehicular traffic a roadway is expected to carry, provisions for non-auto travel, and the roadway's design standards. The classification considers access to adjacent land uses and transportation modes to be accommodated.





The functional classification system in Crook County, shown in Figure 3-1, includes: major arterials, minor arterials, major collectors, minor collectors, and local roads. As illustrated in Exhibit 3-1, higher-order facilities such as arterials are primarily intended to move traffic and provide mobility while lower-order facilities such as local roads are primarily intended to provide access. Roadway design standards and access management policies balance the function of the different classifications of roadways.

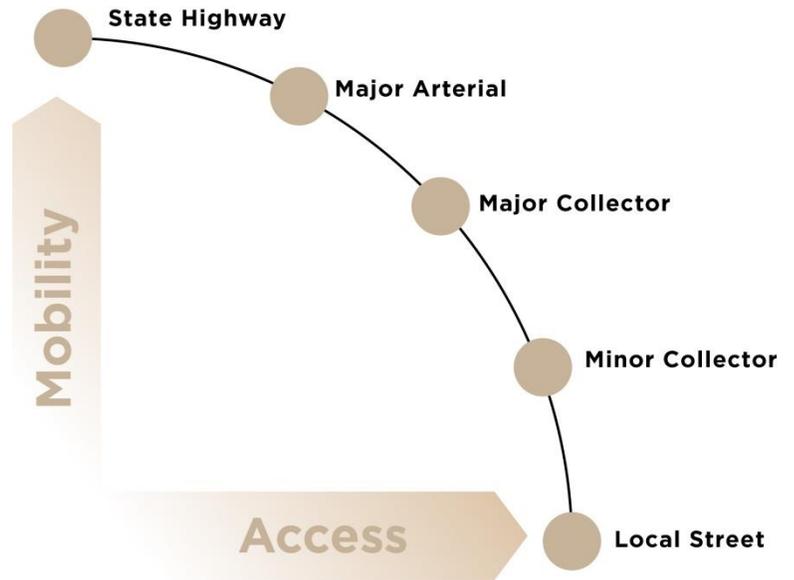
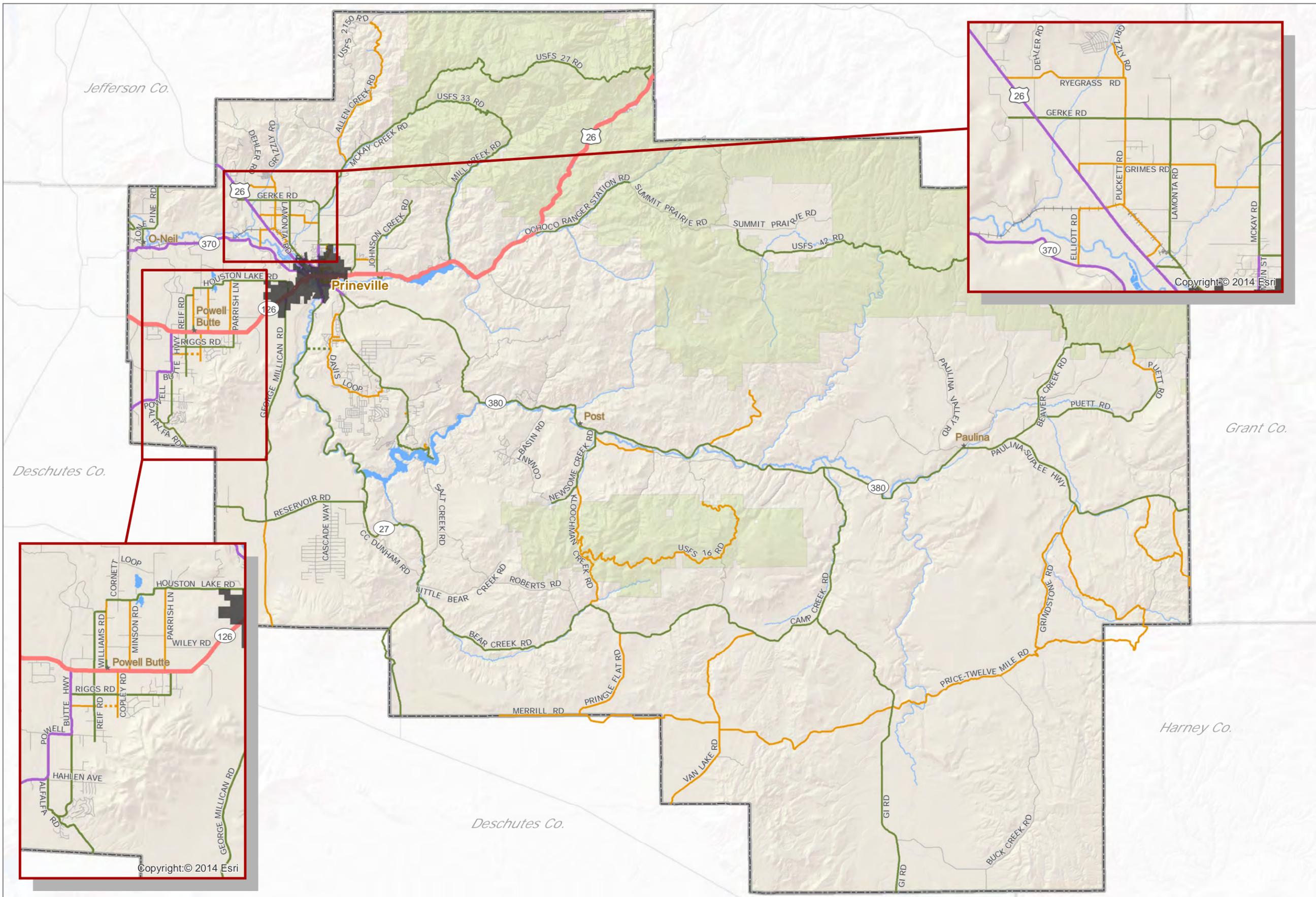


Exhibit 3-1. Relationship between Access, Mobility, and Functional Classification



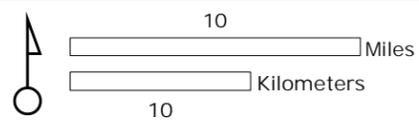
Road Classifications

- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- - - Major Collector (Future Development)
- - - Minor Collector (Future Development)

Base Layers

- ~ Main Rivers
- Lakes and Reservoirs
- County Boundary
- National Forest
- Prineville City Limits

Classifications provided by CC Roads Dept
Map created by CC GIS - Revised 6/27/2017



Crook County TSP
Figure 3 - 1
Functional Classification



ROADWAY DESIGN STANDARDS

Crook County's roadway design standards apply to new and reconstructed roads. The design standards take into consideration roadway function and operational characteristics, including traffic volume, capacity, operating speed, and safety. The design standards ensure that as the road system develops, it will be capable of safely and efficiently serving the traveling public, while also accommodating orderly development of adjacent lands. The minimum right-of-way required ensures that adequate space is provided not only to construct the minimum cross-section but also to accommodate utility needs.

Crook County's roadway design standards are based on 20-year future average daily traffic volumes (ADT). Future

ADT is used to ensure that roadways are built to accommodate forecasted traffic and will not become obsolete within a few years of construction.

Improvements on State highways must meet ODOT's design and operating standards, as provided in the ODOT Highway Design Manual.



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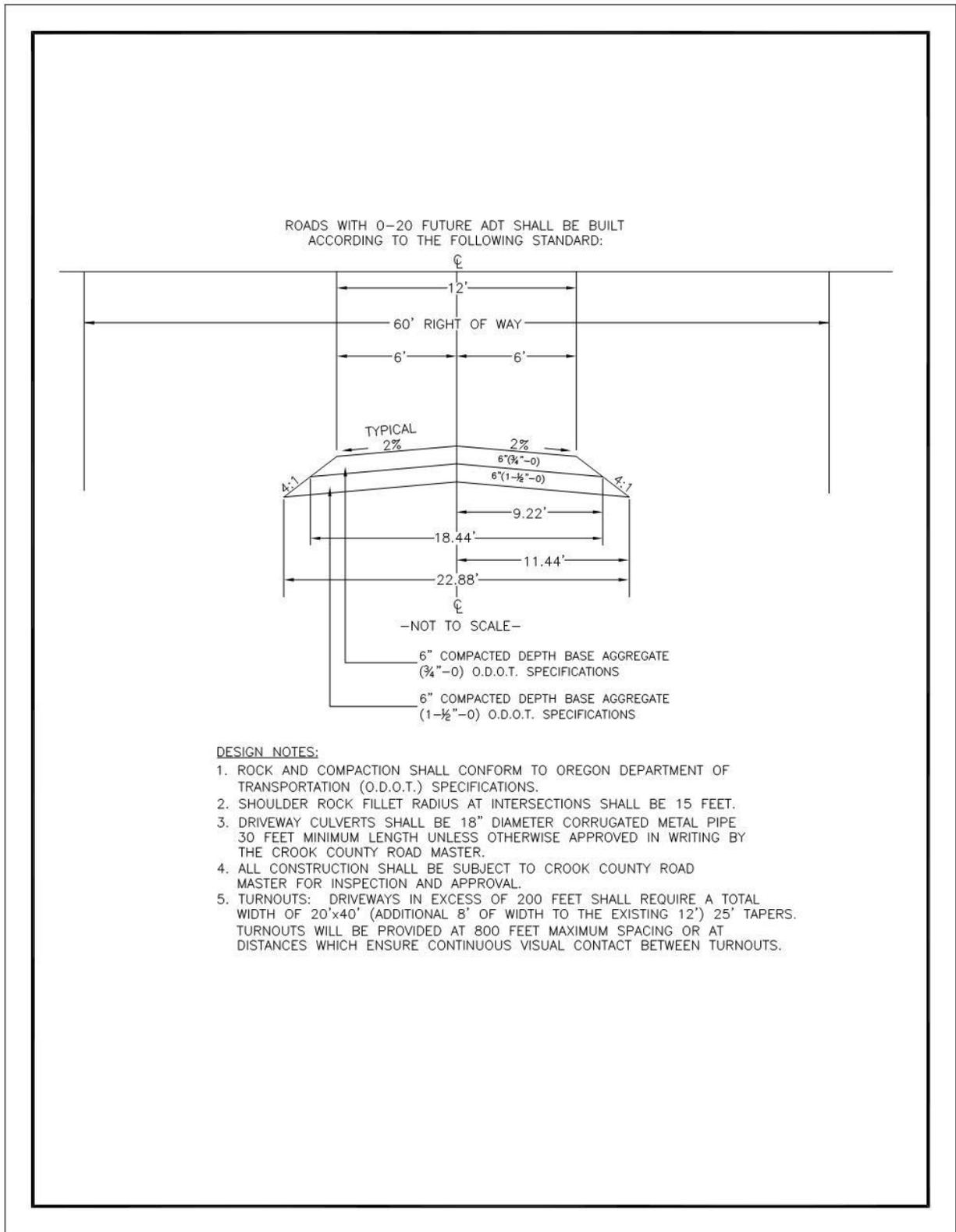
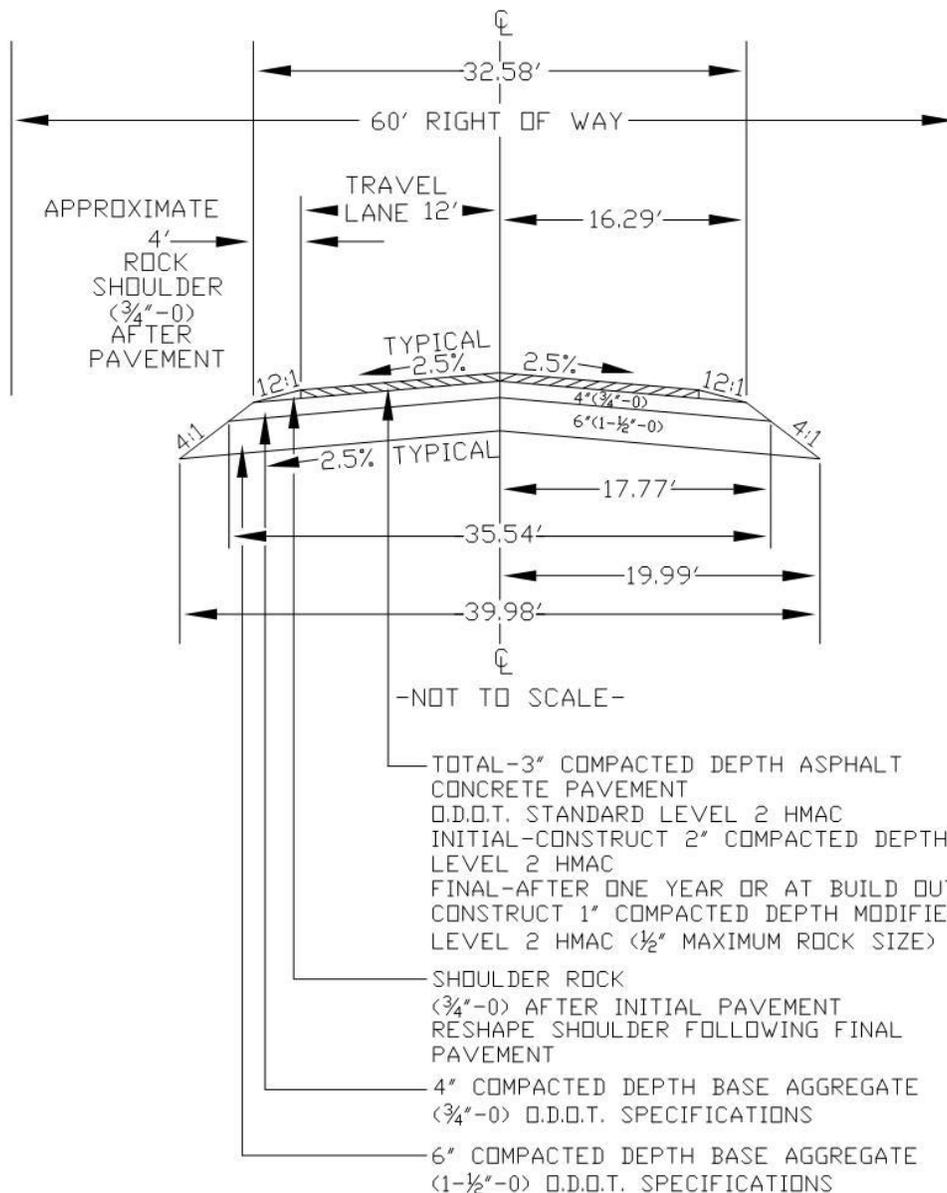


Exhibit 3-2. Roadway Design Standards for Roads with Future ADT of 0 – 20



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

ROADS WITH 21-99 FUTURE ADT SHALL BE BUILT ACCORDING TO THE FOLLOWING STANDARD:



DESIGN NOTES:

1. ROCK AND COMPACTION SHALL CONFORM TO OREGON DEPARTMENT OF TRANSPORTATION (D.D.O.T.) SPECIFICATIONS.
2. PAVEMENT FILLET RADIUS AT INTERSECTIONS SHALL BE 20 FEET OR GREATER UNLESS APPROVED BY CROOK COUNTY ROAD MASTER.
3. ALL PHASES OF ROAD CONSTRUCTION SHALL BE COORDINATED WITH ROAD MASTER FOR INSPECTION AND APPROVAL.

Exhibit 3-3. Roadway Design Standards for Roads with Future ADT of 21 – 99



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

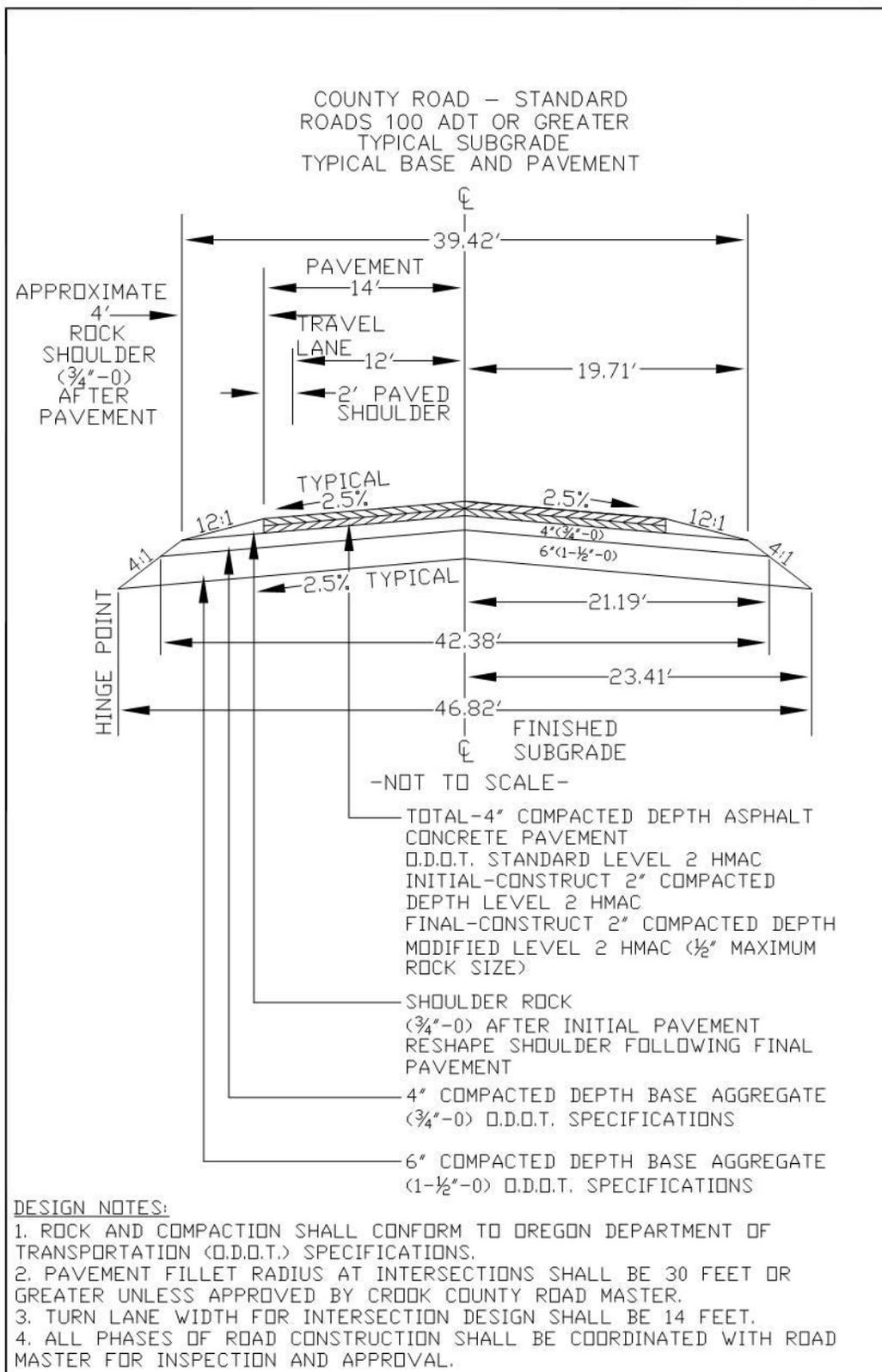


Exhibit 3-4. Roadway Design Standards for Roads with Future ADT of 100 or Greater



Roadway Design within Prineville Urban Growth Boundary

Roadways within the Prineville Urban Growth Boundary (UGB) have the potential to be annexed into the City of Prineville during future expansions. In the past, when the City expanded via annexation, the annexed roadways often had different cross-sections and roadway designs than existing city roads. To help prepare roadways for annexation and provide transition between unincorporated Crook County and the City of Prineville, County roadways constructed, reconstructed or relocated within the UGB should be consistent with City of Prineville roadway standards. Additionally, the City of Prineville/Crook County Urban Growth Management Agreement should be revisited and updated to improve the ease of transfer of lands and facilities between the jurisdictions.

ACCESS MANAGEMENT AND SPACING

Managing access to the County's road system is necessary to preserve capacity and maintain the safety of the arterial and collector system. Capacity is preserved by minimizing the number of points where traffic flow may be disrupted by traffic entering and exiting the roadway. Access management also enhances safety along roadways by minimizing the number of potential conflict points. The spacing standards are intended to be applied to newly constructed or reconstructed roads and new driveways as development or redevelopment occurs rather than to eliminate existing driveways.

Access Management for County Facilities

Access spacing standards for Crook County roadways and facilities are provided in Table 3-1.

Table 3-1. Access Management Spacing Standards for Crook County Roadways

Functional Classification	Minimum Posted Speed (mph)	Minimum Spacing Between Driveways/Streets (ft)	Minimum Spacing Between Intersections	Adjacent Land Use
Arterial	55	1200	1 mile	Undeveloped or agricultural land between major population centers
Major Collector	35-55	500	½ mile	Undeveloped or agricultural land between and through cities or rural service centers
Minor Collector	25-55	300	¼ mile	Undeveloped or agricultural land between and through cities or rural service centers
Local	25	Access to each lot permitted	150 feet	Residential

Access Management for State Facilities

Access management for State facilities is outlined in OAR 734-051, and spacing standards are dependent upon several variables, including average annual daily traffic (AADT) volumes, posted speed, and functional classification. The access management standards for State facilities in Crook County are presented in Table 13 of Appendix C of the Oregon Highway Plan.



ROADWAY PLAN ELEMENTS

The Roadway Plan elements were identified to address identified existing and future roadway needs and to accommodate future growth. The project list includes roadway widening, intersection redesign, roadway extension, overlay, reconstruction, realignment, and access closure projects. These projects are proposed to improve the overall road system by providing new roadway connections, realigning existing roadways, or improving the condition and safety of existing roadways.

Table 3-2 provides an overview of the expected County contribution to roadway projects by cost and priority. Although the majority of the projects are medium priority, low priority, or vision projects, the Davis Road connection to OR 27 (R-16) is shown as a high priority project and is estimated to cost between \$10 and \$15 million, resulting in high total cost for the high priority project category.

Table 3-2. Roadway Plan Elements – County Contribution Cost Summary

	High Priority	Medium Priority	Low Priority	Total
County Contribution	\$13,000,000	\$2,101,000	\$8,815,000	\$23,911,000
Total Cost	\$29,700,000	\$9,366,000	\$8,830,000	\$47,896,000

Table 3-3 provides details of the Roadway Plan elements, including project descriptions, cost, funding partners, and relative priority. Because no operational issues are forecast within the planning horizon, the majority of the intersection improvement projects are relatively low priority. Many of these projects were carried forward from previous planning efforts and are provided to prepare the County for any changes in expected growth within the planning horizon.

Table 3-3 also provides planning level cost estimates for each project. These do not include right-of-way. As appropriate, all cost estimates in the Plan include clearing and grubbing, excavation, embankment, materials, mobilization, traffic control, professional architecture/engineering fees, construction management fees, and contingency fees. The funding partners section indicates which agencies or organizations are anticipated to contribute to the cost of the project.

Figure 3-2 provides a map of the Roadway Plan elements listed in Table 3-3 based on their priority.



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 3-3. Roadway Plan Elements

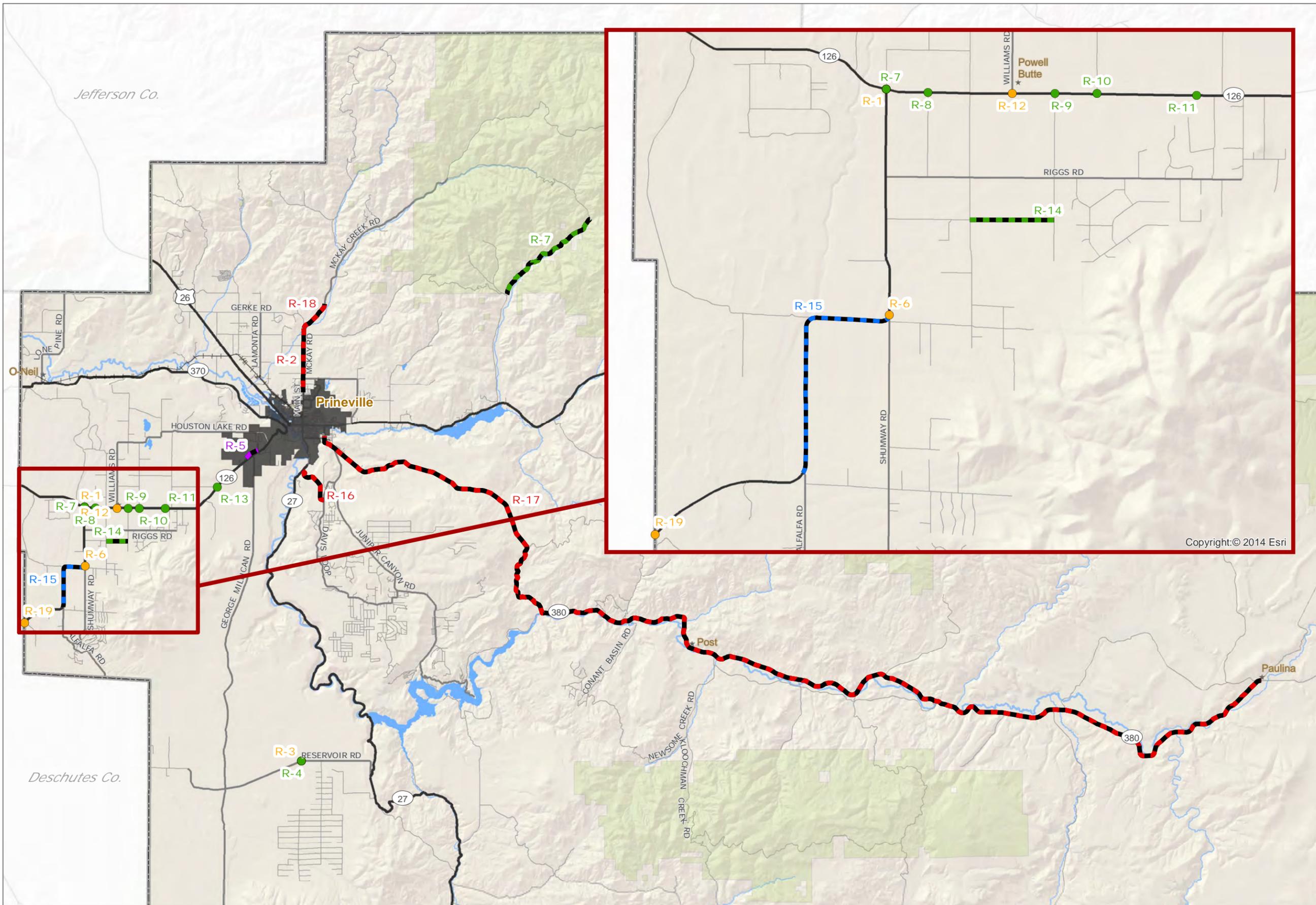
Project ID	Project Name	Project Description	Project Source	Cost Estimate	Expected County Contribution	Funding Partners				Priority
						ODOT	County	City of Prineville	Deschutes County	
R-1	Powell Butte Highway and OR 126 roundabout	Install roundabout with gradually increasing curve and illumination/treatments to facilitate deceleration. An operational analysis should be performed to determine the number of lanes that will be needed at the time of design. The OR 126 Corridor Plan identified a multilane roundabout at this location. If a single lane roundabout is determined to be sufficient, features to make it easily expandable to multiple lanes should be considered. The design of this project must consider all modes including farm equipment, freight vehicles, bicyclists, and pedestrians.	OR 126 Corridor Plan	\$3,500,000	\$385,000	X	X			Medium
R-2	McKay Road overlay	Overlay McKay Road from Gerke Road to the Prineville City Limits.	Identified need	\$500,000	\$500,000		X			High
R-3	Reservoir Road signage for sight distance restriction	Increase horizontal curve warning signage and add vertical hill warning signs.	Identified need	\$1,000	\$1,000		X			Medium
R-4	Improve sight distance at Reservoir Road blind hill	Reconstruct road to improve sight distance at blind hill approximately 4,800 feet west of Cascade Way.	Identified need	\$5,700,000	\$5,700,000		X			Low
R-5	Secondary Prineville Airport Access	Add roadway to connect Airport Road to Tom McCall Road. This is a City roadway and is planned as part of the Tom McCall Road/OR 126 intersection improvement project. The project is funded (and therefore not included in the cost estimates) and construction is expected in early 2018.	OR 126 Corridor Plan	Funded	\$0			X		N/A - in Prineville City Limits
R-6	Left turn lane at Powell Butte Highway and Shumway Road	Construct southbound left turn lane on Powell Butte Highway for intersection with Shumway Road.	Identified need	\$115,000	\$115,000		X			Medium
R-7	OR 126 access management at Bozarth Road	Consider implementing access management strategies (Project unnecessary if project R-1, the roundabout, occurs)	OR 126 Corridor Plan	\$5,000	\$2,500	X	X			Low
R-8	OR 126 access management at Kissler Road	Consider implementing access management strategies at Kissler Road	OR 126 Corridor Plan	\$5,000	\$2,500	X	X			Low
R-9	OR 126 access management at Copley Road	Consider implementing access management strategies at Copley Road	OR 126 Corridor Plan	\$5,000	\$2,500	X	X			Low
R-10	OR 126 access management at Minson Road	Consider implementing access management strategies at Minson Road	OR 126 Corridor Plan	\$5,000	\$2,500	X	X			Low
R-11	OR 126 access management at Yates ditch access	Consider implementing access management strategies at Yates ditch access	OR 126 Corridor Plan	\$5,000	\$2,500	X	X			Low
R-12	Williams Road and OR 126 Intersection	Convert existing intersection to two offset T intersections by relocating the access on the southern side of OR 126.	OR 126 Corridor Plan	\$5,000,000	\$1,225,000	X	X			Medium
R-13	OR 126 access closure from Wiley Road	Close the public access point from the minor road to OR 126.	OR 126 Corridor Plan	\$5,000	\$2,500	X	X			Low



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Project ID	Project Name	Project Description	Project Source	Cost Estimate	Expected County Contribution	Funding Partners				Priority
						ODOT	County	City of Prineville	Deschutes County	
R-14	Copley Road extension	Connect Copley Road to Weigand Road.	2005 TSP	\$3,100,000	\$3,100,000		X			Low
R-15	Powell Butte Highway realignment	Realign the 90 degree turns at Alfalfa Road and Shumway Road by continuing Powell Butte Highway south along Shumway Road and using an appropriate 50 mph curve to connect back to the existing Powell Butte Highway alignment.	2005 TSP	N/A-vision project	N/A- vision project		X			Vision
R-16	Davis Road to OR 27 Connection ("Brummer Road")	Construct an additional connection from the rural residential area of Juniper Canyon to OR 27. This will provide emergency access for Juniper Canyon and also reduce some traffic on 3 rd Street in Prineville.	2005 TSP	\$12,500,000	\$12,500,000		X			High
R-17	OR 380 overlay	Overlay/repave OR 380 from Prineville City Limits to Paulina. This is a maintenance project.	Identified need	\$16,700,000	\$0	X				High
R-18	McKay Creek Road overlay	Overlay McKay Creek Road from gravel pit to Gerke Road. Project was completed in summer 2017 and therefore not included in the cost estimate.	Identified need	Completed in 2017	\$0		X			High
R-19	Powell Butte Highway reconstruction at Deschutes County Line	Reconstruct Powell Butte Highway at the Deschutes County line to remove the sight distance restriction caused by the blind hill. Deschutes and Crook Counties should enter into cooperative agreement to complete this project.	Identified need	\$750,000*	\$375,000		X		X	Medium

*Cost estimate provided by County Roadmaster.



Project Areas

- Medium Priority Roadway Project
- Low Priority Roadway Project
- High Priority Roadway Project
- Low Priority Roadway Project
- Within Prineville City Limits
- Vision Roadway Project

Transportation

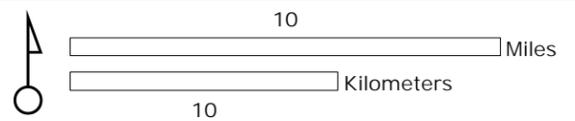
- Railroad
- 26 Major Roads
- Arterial Roads
- Minor Roads

Base Layers

- ~ Main Rivers
- Lakes and Reservoirs
- County Boundary
- National Forest
- Prineville City Limits

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Map created by CC GIS - Revised 9/20/2017



Crook County TSP
Figure 3 - 2
Roadway Plan



SECTION 4. FREIGHT PLAN



4. FREIGHT PLAN

The Freight Plan presents projects identified to support the County freight system. Highway and rail are the two most heavily used transport methods for freight in Crook County. OR 126 and US 26 are ODOT freight routes. In addition, Millican Road carries a large amount of freight traffic and is frequently used by oversized loads traveling up and down the West Coast. Millican Road connects US 20 in Deschutes County to OR 126 in Crook County and also provides connections to industrial land on the western side of Prineville.

FREIGHT SYSTEM NEEDS

The identified freight system needs focus on an existing height constraint located on US 26, which serves as an ODOT freight route. The railroad trestle over US 26 creates a 15-foot height restriction that prevents oversized freight transport on US 26. However, this section of US 26 serves as an important freight connection for movement along the West Coast. Currently, the oversized freight trucks divert onto Bus Evans Road and Elliot Lane to circumvent the railroad trestle, putting additional burdens on these roads. The trestle should be evaluated and a solution implemented to eliminate the height restriction. In addition, Bus Evans Road and Elliott Lane provide access to the Prineville Freight Depot but are not built to freight standards.

FREIGHT PLAN ELEMENTS

Table 4-1 presents the freight plan elements in the TSP, developed to address the height restriction on US 26. The recommended freight plan elements include reconstructing Elliot Lane and Bus Evans to freight route standards (project F-1). The upgrades would serve freight traffic accessing the freight depot as well as the oversized loads that must divert to avoid the height restrictions on US 26. In addition, a study (project F-2) is recommended to evaluate the feasibility and cost of reconstructing the railroad trestle or lowering US 26 to allow trucks and loads of all sizes to pass beneath the trestle.

Table 4-1 provides a summary of the freight plan elements by cost and priority and indicates which organizations or agencies are expected to contribute to the cost of each project. These are planning level cost estimates and do not include right-of-way costs. Table 4-2 provides a summary of the total County cost by priority. Additionally, Figure 4-1 provides a map of the freight plan elements.



Photo Source: Google Earth



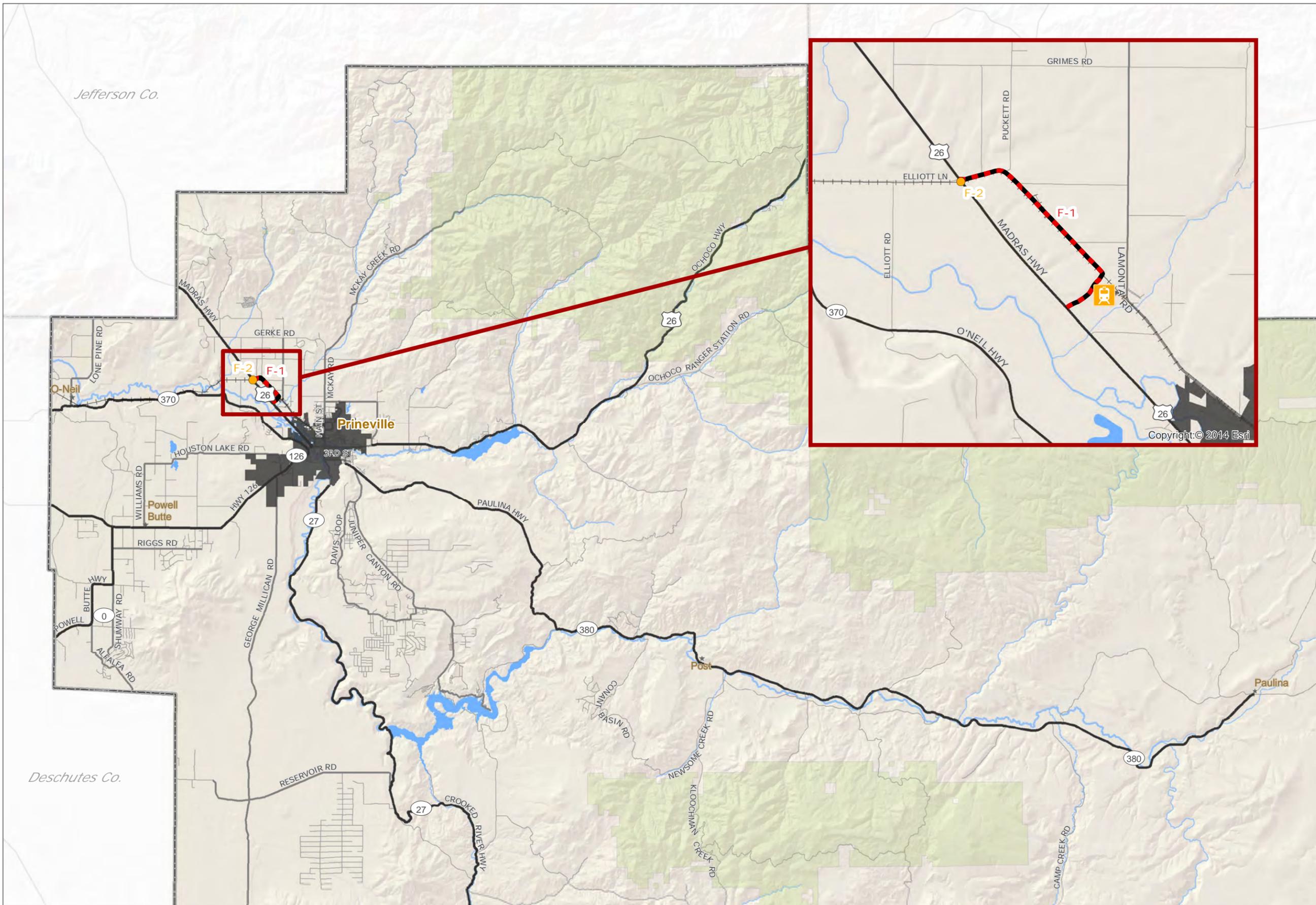
CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 4-1. Freight Plan Elements

Project ID	Project Name	Project Description	Cost Estimate	Expected County Contribution	Funding Partners			Priority
					ODOT	County	City of Prineville	
F-1	Bus Evans Road and Elliott Lane reconstruction to freight route standards	Reconstruct Bus Evans Road and Elliot Lane to freight route standards, with 12-ft lanes, 2-ft shoulders on each side, including 17.14 feet of rock shoulder, and the appropriate roadway base.	\$10,000,000	\$5,000,000	X	X		High
F-2	US 26 railroad bridge feasibility study	Conduct a feasibility study regarding the reconstruction of the US 26 railroad bridge or lowering of OR 126 to accommodate oversized loads on US 26.	\$20,000	\$ -	X		X	Medium

Table 4-2. Freight Plan Elements County Contribution Cost Summary

	High Priority	Medium Priority	Low Priority	Total
County Contribution	\$5,000,000	\$0	\$0	\$5,000,000
Total Cost	\$10,020,000	\$0	\$0	\$10,020,000



Project Areas

- Medium Priority Freight Project
- High Priority Freight Project

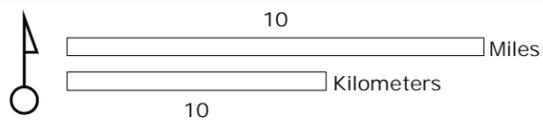
Transportation

- Railroad
- 26 Major Roads
- Arterial Roads
- Minor Roads

Base Layers

- 🚂 Train Depot
- ~ Main Rivers
- ☪ Lakes and Reservoirs
- County Boundary
- National Forest
- Prineville City Limits

Data created by Kittleson and Crook County GIS
 Map created by CC GIS - Revised 4/13/2017



Crook County TSP
 Figure 4-1
 Freight Plan Elements



SECTION 5. SAFETY PLAN



5. SAFETY PLAN

The Safety Plan presents the elements that were identified to address existing or future safety needs. These were identified by reviewing crash data and by consulting advisory committee members and the public regarding perceived safety needs.

SAFETY NEEDS

Safety needs were determined through an analysis of reported crashes within Crook County between 2010 and 2014, previously identified safety needs from various planning efforts, and input from the public, advisory committees, and Crook County staff. Previous safety analysis efforts that were considered include ODOT All Roads Transportation Safety (ARTS) program projects, the ODOT Roadway Departure Implementation Plan, the ODOT intersection Safety Implementation Plan, and the ODOT Pedestrian and Bicycle Safety Implementation Plan. The ODOT ARTS program produced no hotspot or pedestrian and bicycle projects in unincorporated Crook County, but roadway departure and intersection projects were identified and incorporated into the elements list.

The majority of reported crashes within the study period in Crook County were roadway departure crashes and overturned vehicle crashes. Low cost, systemic treatments including alignment delineation, edgeline and centerline rumble strips, edgeline striping, speed feedback signs, curve pavement markings, and curve warning signs are included in the proposed plan elements to address these crash types throughout the County.

Additional safety needs identified through crash analysis include:

- ▶ **Juniper Canyon Road** – Juniper Canyon Road has a high crash rate with a high frequency of fixed-object crashes. Advisory committee members expressed concern about safety on this road in locations with steep grades during times of snow and ice.
- ▶ **Traffic Calming/Speed Reduction** – The advisory committee expressed concern about traffic speed at several locations throughout the County. High priority locations for considering traffic calming and speed enforcement include locations with high frequency of run-off-the-road crashes, roadways that serve rural communities, locations with frequent driveways and intersections, and locations that carry higher volumes of pedestrians and bicyclists.
- ▶ **Blind Hills** – Several County roads were identified with blind hills that may be unsafe if drivers choose to pass.
- ▶ **Turning Lanes** – As traffic increases on County roads, some higher volume intersections may need turning lanes to reduce the risk of rear-end crashes.



SAFETY PLAN ELEMENTS

Safety Plan elements include several projects to address issues at locations with high crash frequency or severity, including intersection warning signage at the intersection of Shumway Road and Powell Butte Highway and a variable speed limit (and signs) on Juniper Canyon Road. Input from advisory committee members indicates that the steep grade on Juniper Canyon Road paired with winter weather conditions and drivers traveling at high speeds make it difficult for drivers to slow down and maintain their lane. The variable speed limit sign would allow for the speed limit to be reduced as needed based on weather conditions.

The Safety Plan also includes several low-cost systemic treatments. These proven treatments are relatively easy to implement on a large scale and should be completed with routine maintenance projects when possible. Several systemic ARTS projects are included in the Safety Plan elements, including alignment delineation on Juniper Canyon Road, alignment delineation and edgeline striping on Davis Loop Road, signage and pavement markings at horizontal curves on Juniper Canyon Road, pavement markings at horizontal curves on Davis Loop Road, and pavement markings at horizontal curves on Powell Butte Road. In addition to the specific systemic safety projects, alignment delineation and rumble strips are recommended for consideration when ODOT facilities are upgraded, repaved, or reconstructed.

Table 5-1 provides a summary of the expected County contribution to the Safety Plan elements. Table 5-2 provides a detailed description of the Safety Plan elements. The cost estimates provided are planning level cost estimates and do not include right-of-way costs. Figure 5-1 illustrates the location of the Safety Plan elements by priority.

Table 5-1. Safety Elements – County Cost Summary

	High Priority	Medium Priority	Low Priority	Total
County Contribution	\$117,000	\$36,500	\$303,000	\$456,500
Overall Costs	\$159,000	\$149,000	\$618,000	\$926,000



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

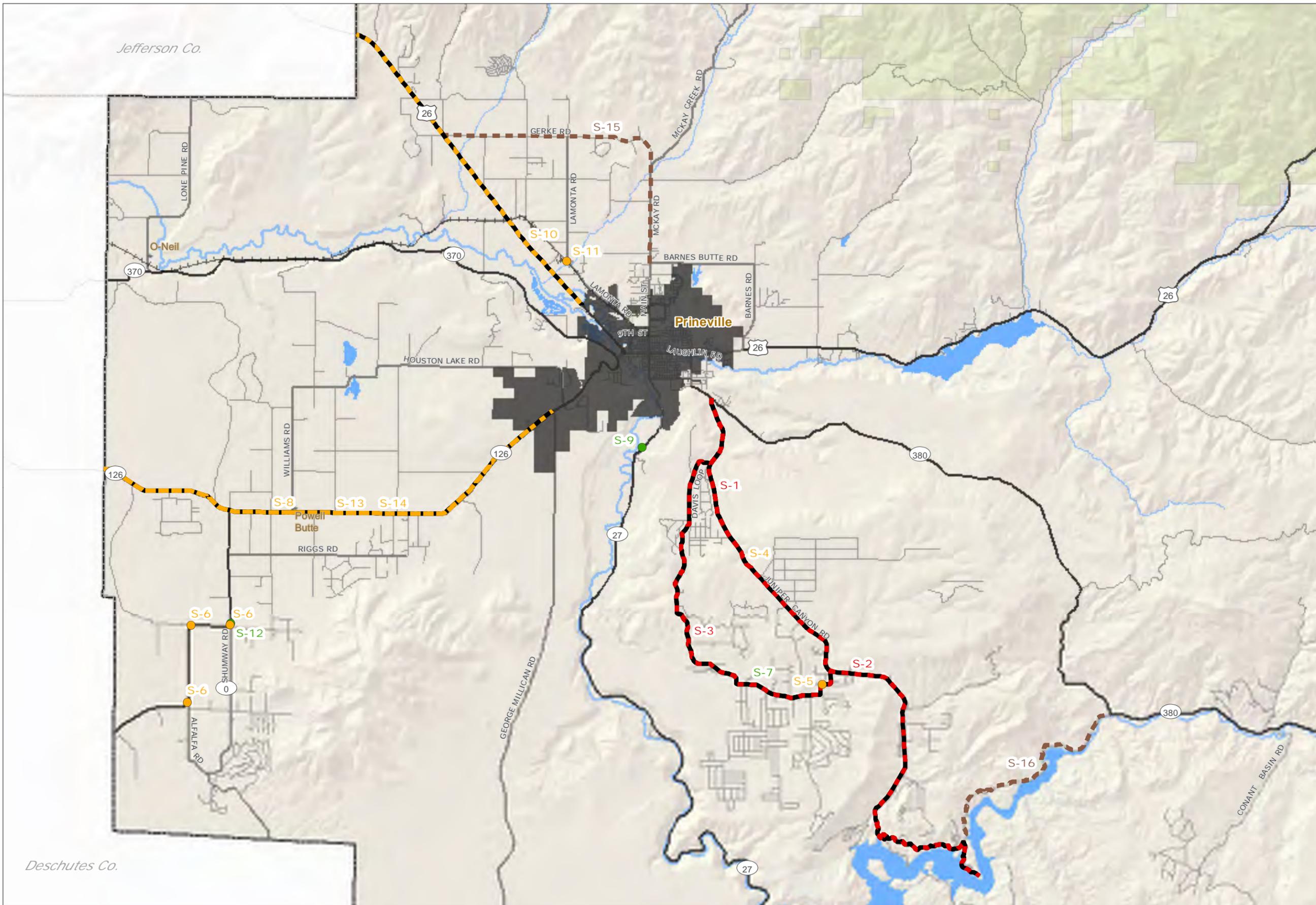
Table 5-2. Safety Plan Elements

Project ID	Project Name	Project Description	Identified through ODOT screening project?	Cost Estimate	Expected County Contribution	Funding Partners				Priority
						Bureau of Land Management (BLM)	ODOT	County	City of Prineville	
S-1	Juniper Canyon Road variable speed limit	Implement variable speed limit based on weather conditions.	N/A	\$75,000	\$75,000			X		High
S-2	Juniper Canyon Road alignment delineation	Add raised pavement markers to delineate alignment of the roadway for night driving on Juniper Canyon Road; add edgeline rumble strips to Juniper Canyon Road to reduce roadway departure crashes.	ARTS Roadway Departure Project	\$84,000	\$42,000		X	X		High
S-3	Davis Road alignment delineation and edgeline striping	Add raised pavement markers and edgeline striping to delineate alignment of the roadway for night driving on Davis Loop Road. This project was completed in summer 2017 and is therefore removed from the cost estimate.	ARTS Roadway Departure Project	Completed in 2017	Completed in 2017		X	X		High
S-4	Juniper Canyon Road horizontal curve signage and markings	Add or enhance curve warning signs and pavement markings per recommendation of ODOT's Roadway Departure Plan.	ARTS Roadway Departure Project	\$2,000	\$1,000		X	X		Medium
S-5	Davis Loop Road horizontal curve pavement markings	Add or enhance curve warning signs and pavement markings per recommendation of ODOT's Roadway Departure Plan for horizontal curves at SE Manning Road and SE Olsen Lane; also, replace sign prior to horizontal curve with Manning Road for vehicles traveling southbound on Davis Loop Road. This project was completed in summer 2017 and is therefore removed from the cost estimate.	ARTS Roadway Departure Project	Completed in 2017	Completed in 2017		X	X		Medium
S-6	Powell Butte Road horizontal curves pavement markings	Add or enhance curve warning signs and pavement markings per recommendation of ODOT's Roadway Departure Plan.	ARTS Roadway Departure Project	\$2,000	\$1,000		X	X		Medium
S-7	Davis Loop Road tree removal	Remove trees within the clear zone on Davis Loop Road as appropriate to reduce fixed-object crashes with trees.	ARTS Roadway Departure Project	\$600,000	\$300,000		X	X		Low
S-8	Powell Butte (OR 126) traffic calming/speed reductions	Install/maintain speed feedback signs and narrow lane striping to 11-ft lanes to reduce vehicle travel speeds on OR 126.	N/A	\$34,000	\$ -		X			Medium
S-9	Crooked River Highway speed feedback signs	Install a speed feedback sign on Crooked River Highway through River Canyon Recreational Area to deter speeding.	N/A	\$15,000	\$ -		X			Low
S-10	US 26 systemic safety treatments	Add edgeline rumble strips to reduce roadway departure crashes.	N/A	\$25,000	\$ -		X			Medium
S-11	Lamonta Road horizontal curve signage, speed feedback sign, and delineators	Install oversized advanced fluorescent yellow curve warning signs with advisory speed plates beneath the advanced warning signs on Lamonta Road near NW Rye Lane, at the curve in the road.	N/A	\$33,000	\$33,000			X		Medium
S-12	Shumway Road intersection signage	Add "intersection ahead" signage on Shumway Road on the approach to the intersection with Powell Butte Highway and Bussett Road (signage on each of the four legs).	ODOT Intersection Safety Implementation Plan	\$3,000	\$3,000			X		Low
S-13	OR 126 systemic safety treatments	Install edgeline and centerline rumble strips on OR 126. As vehicle fleet technology changes in the future to provide warnings when drivers cross center and edgelines, the use of these treatments may begin to decrease. However, it will take many years for the vehicle fleet turnover to be complete; therefore rumble strips continue to serve as effective safety treatments.	N/A	\$50,000	\$ -		X			Medium



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Project ID	Project Name	Project Description	Identified through ODOT screening project?	Cost Estimate	Expected County Contribution	Funding Partners				Priority
						Bureau of Land Management (BLM)	ODOT	County	City of Prineville	
S-14	Systemic safety intersection treatment on OR 126	Upgrade unsignalized intersection signs at intersections of OR 126 and Reif Road as well as OR 126 and Copley Road with enhanced signage and pavement markings to increase intersection visibility and awareness.	ODOT Intersection Safety Implementation Plan	\$3,000	\$1,500		X	X		Medium
S-15	McKay Road and Gerke Road paved shoulders	Widen McKay Road from 32 ft to 36 ft to bring it up to future bicycle route standards (7-ft shoulders). Coordinate with projects R-11 and R-12 for efficiency. McKay Road provides connectivity to the City of Prineville, specifically to Main Street, which currently has bicycle lanes. Serves residential areas just north of the city limits. This is redundant with project B-13 and will also serve bicyclists and pedestrians on McKay Road and Gerke Road.	N/A	N/A - Vision Project	N/A - Vision Project			X		Vision
S-16	Emergency access to Juniper Canyon	Improve existing fire access road from OR 380 to the Juniper Canyon area. Widen sections of the road to create pull-out areas to allow vehicles to pass at strategic locations, widen the corners of the roadway, and add gravel to improve conditions. This road is envisioned to remain gravel in the future.	N/A	N/A - Vision Project	N/A - Vision Project	X		X		Vision



Project Areas

- Medium Priority
- Low Priority
- High Priority
- Medium Priority
- Low Priority
- Vision Safety

Transportation

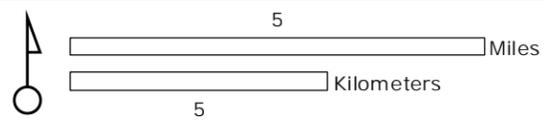
- Railroad
- Major Roads
- Arterial Roads
- Minor Roads

Base Layers

- ~ Main Rivers
- █ Lakes and Reservoirs
- County Boundary
- National Forest
- Prineville City Limits

Crook County TSP
Figure - 5-1
Safety Plan

Data created by Kittelson and Crook County GIS
Map created by CC GIS - Revised 8/17/2017





**SECTION 6.
PEDESTRIAN AND
BICYCLE PLAN**



6. PEDESTRIAN AND BICYCLE PLAN

The Pedestrian and Bicycle Plan presents the policies, programs, and projects planned to accommodate and support pedestrian and bicycle travel over the next 20 years. Plan elements were identified based on a review of the 2005 TSP elements, existing pedestrian and bicycle facilities, bicycle route demand data, the ODOT Region 4 Active Transportation Needs Inventory, and input from the advisory committee members and general public.

PEDESTRIAN AND BICYCLE NEEDS

Crook County currently does not have any sidewalks outside of incorporated areas. Some roadways have narrow shoulders that may be used by pedestrians. With a predicted population increase and a growing tourism industry, pedestrian connections in the form of shared-use paths are likely to be needed in the future. In addition, the community of Powell Butte is bisected by OR 126, a state highway that serves as a connection between Prineville, Bend, and Redmond. There is an existing pedestrian crossing at this location that connects a school and church with the community store and gas station on the other side of OR 126. Enhancing this crossing to increase visibility and awareness of pedestrians and to reduce and enforce vehicle speeds through the community was identified as a need.

Crook County is a popular location for recreational cycling. Some state highways have shoulders that can accommodate bicyclists. On other roads, cyclists share the lane with vehicles. In addition to recreational cyclists, the County also serves a number of people who commute into Prineville by bicycle. The County's bicycle system should provide options for users at all levels to improve comfort and safety.

PEDESTRIAN PLAN

The recommendations in the Pedestrian Plan focus on improving the pedestrian crossing of OR 126 at the intersection with Williams Road in Powell Butte, as shown in Exhibit 6-1. Several destinations, including a school, church, and store are located at this intersection. The existing crossing is a ladder crosswalk with a school crossing sign. The speed limit through Powell Butte community is 45 mph except during school hours, when it drops to 20 mph.

The lighting and pedestrian crossing elements summarized in Table 6-1 are intended to improve safety and comfort for pedestrians at this crossing of OR 126. Both of the pedestrian projects are identified as high priority projects.

In addition to the pedestrian crossing elements, several elements identified in the Bicycle Plan are shared-use path projects intended to serve both bicyclists and pedestrians.



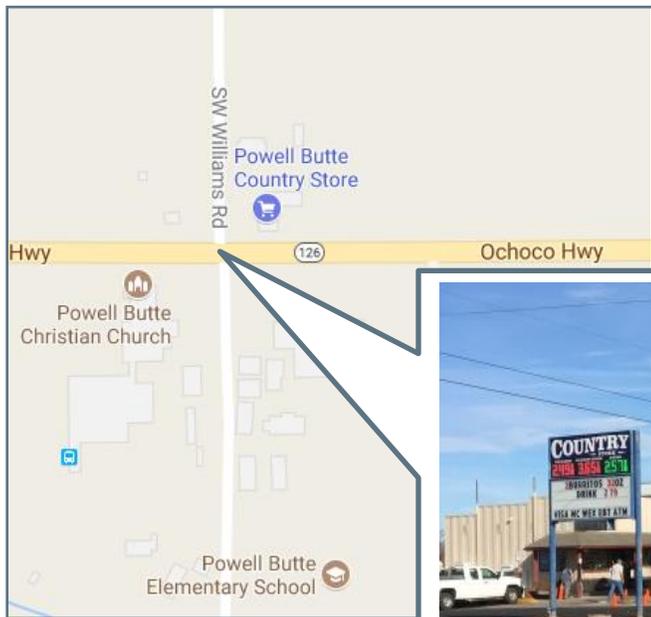


Exhibit 6-1. OR 126 and Williams Road Location

Source: Google Maps

Table 6-1. Pedestrian Plan Elements

Project ID	Project Name	Project Description	Cost Estimate	Expected County Contribution	Funding Partners	Priority
P-1	Powell Butte lighting	Install lighting on OR 126 within Powell Butte to improve comfort and safety for those in the Powell Butte community.	\$240,000	\$ -	ODOT	High
P-2	OR 126 enhanced pedestrian crossing in Powell Butte	Install an enhanced pedestrian crossing with a rectangular rapid flashing beacon (RRFB) on OR 126 within Powell Butte. Due to the proximity to the existing flashing warning sign, replace the flashing "School: Speed 20 When Flashing" signs with "School Speed Limit 20, 7:30-8:30 AM 2:30-3:30 PM" signs.	\$20,000	\$ -	ODOT	High



BICYCLE PLAN

The recommendations in the Bicycle Plan provide guidance on policies and projects to support recreational and commuter bicyclists in Crook County.

Bicycle Network Design Standards

Table 6-2 documents shoulder width recommendations for Crook County bicycle routes. The shoulder width recommendations are proposed to provide guidance on the appropriate width of roadway shoulders on bicycle routes based on vehicular volumes, speeds, and roadway functional classification. As vehicular volumes and speeds increase, shoulder width should increase as well. These recommendations are intended to apply to roads identified in the Bicycle Plan Elements of the TSP. The guidance is based on Table 3-1 of the *Federal Highway Administration (FHWA) Small Towns and Rural Multimodal Network Guide*.

Table 6-2. Recommended Shoulder Width for Bicycle Routes¹

Functional Classification	Volume (AADT)	Speed (mph)	Recommended Minimum Paved Shoulder Width (ft)
Minor Collector	up to 1,100	35	5 ft
Major Collector	up to 2,600	45	6.5 ft
Minor Arterial	up to 6,000	55	7 ft
Principal Arterial	up to 8,500	65	8 ft

There may be some locations or situations with geographic or financial constraints that do not allow the recommended shoulder widths to be carried throughout the entire bike route length. In those situations, shoulder widening should be prioritized at key locations such as hill climbs, horizontal or vertical curves, and in and around unincorporated communities.

Bicycle Plan Elements

The Bicycle Plan elements presented in this section were identified to address the need to support recreational riders as well as provide connections to the City of Prineville to support commuter bicyclists.

The Bicycle Plan elements are primarily bicycle routes with a need for widened shoulders or separated shared-use paths. The roadways identified for shoulder bikeways should be designed according to the bicycle route recommended shoulder widths provided in Table 6-2. To improve roadways to meet these standards, most of the identified roadways require widening. The cost estimates in this Plan assume widening for the entire roadway. However, as identified above, if geographic or financial constraints prohibit widening for the entire project, the widening should be prioritized at locations such as hill climbs, horizontal and vertical curves, and unincorporated communities.

¹ Table 3-1: Recommended Minimum Paved Shoulder Widths by Roadway Conditions from FHWA's *Small Town and Rural Multimodal Networks* guide



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 6-3 presents a summary of the Bicycle Plan cost estimates by priority. Low-cost, easy-to-implement projects such as wayfinding signage are given high priority. The remaining projects are higher in cost and are identified as medium or low priority, with higher priority being given to projects that support commuter travel and locations with high recreational ridership.

Table 6-3. Bicycle Elements County Cost Summary

	High Priority	Medium Priority	Low Priority	Total
County Contribution	\$2,500	\$7,350,000	\$8,580,000	\$15,932,000
Total Cost	\$5,000	\$17,340,000	\$25,620,000	\$42,965,000

Table 6-4 summarizes the Bicycle Plan elements and provides details documenting the need for each project. Figure 6-1 shows the location of the Bicycle Plan elements.

Several bicycle projects were identified as vision projects for Crook County. These are not likely to be feasible within the 20-year planning horizon. However, these projects are identified and documented in Table 6-5 to assist with long-term planning efforts. Vision projects are not included in the cost summary provided in Table 6-3 but are shown in the Bicycle Plan map in Figure 6-1.





CROOK COUNTY TRANSPORTATION SYSTEM PLAN

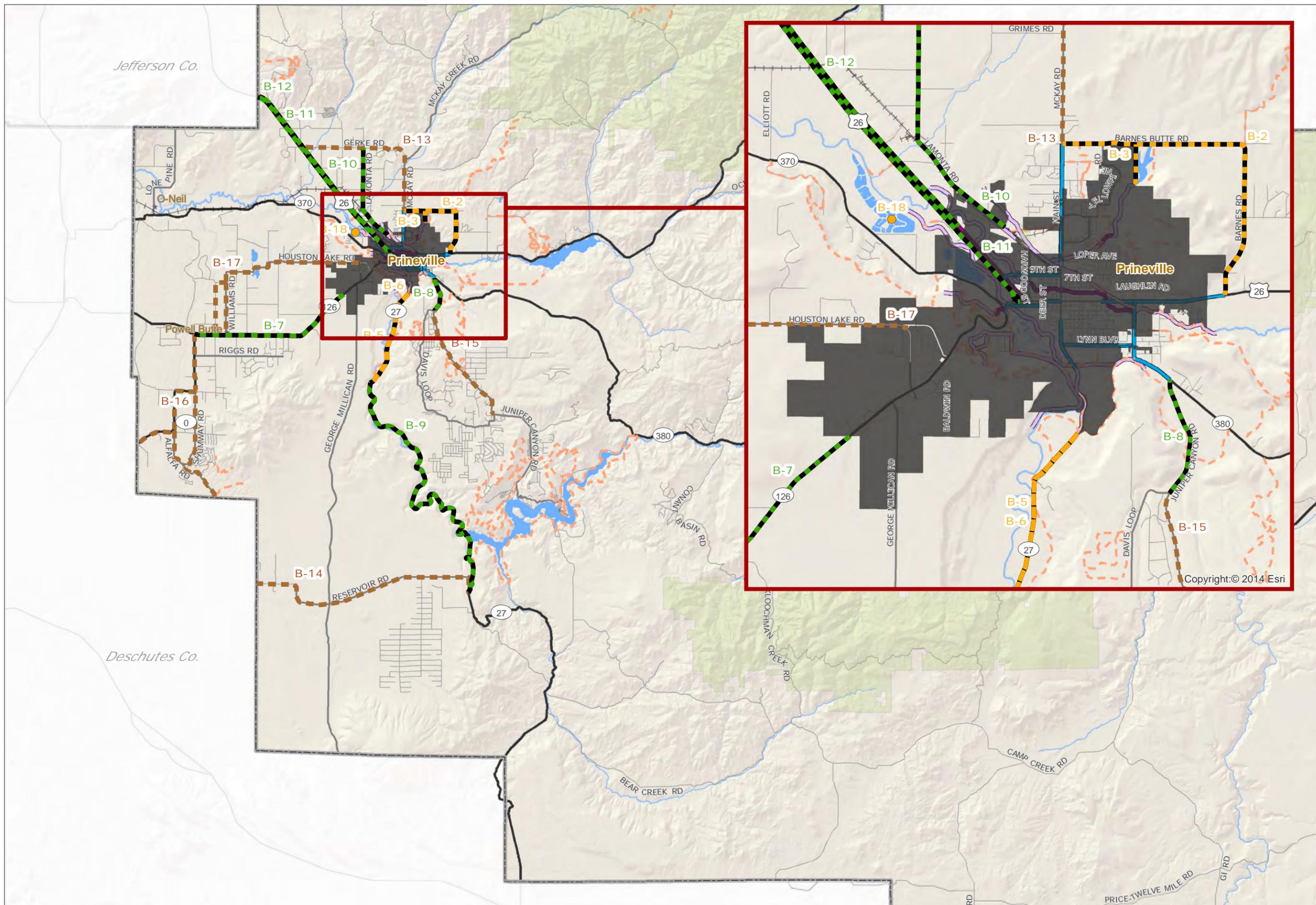
Table 6-4. Bicycle Plan Elements

Project ID	Project Type	Project Name	Project Description	Cost Estimate	Expected County Contribution	Funding Partners				Priority
						Bureau of Land Management (BLM)	ODOT	County	Private	
B-1	Signage	Bicycle signage	<p>Install wayfinding signage to Prineville Reservoir, Prineville, and other major destinations. This project should include the identification of a bicycle route system that may include lower volume, low speed roadways. The bicycle route system should be signed to include "Bicycle Route" and/or "Bicycles on Roadway" signage, particularly on collector and arterial roads in the County without bicycle lanes. Low volume, low speed roadways should serve as preferred bicycle routes when connectivity to destinations allows. Bicycle route maps/ wayfinding maps should be placed at key locations within the network to inform bicyclists of their best route options.</p> <p>The signage program should be completed in conjunction with an education and outreach program to inform bicyclists of proper riding techniques, such as riding in the same direction as traffic, and also to inform drivers that bicyclists are allowed to be on the roadway.</p>	\$5,000	\$2,500		X	X		High
B-2	Paved shoulders	Barnes Butte Road paved shoulders	Add paved shoulders to Barnes Butte Road to increase roadway width from 22 ft to 36 ft, bringing it up to future bicycle network standards (7-ft shoulders). Barnes Butte Road is a standard rural road, but is close to Prineville city limits and a new school, and has evidence of high existing ridership based on Strava data. The project is intended to connect to the multiuse path B-3 for connectivity to future trails in Prineville. The bridge on Barnes Butte Road will also need replacement to accommodate the widening; however, the provided cost estimate does not include the cost of bridge replacement.	\$7,000,000	\$7,000,000			X		Medium
B-3	Multiuse path	Barnes Butte multi-use trail connection	Construct a multiuse trail to connect Barnes Butte Road to the planned Iron Horse multiuse trail in Prineville. This will provide connectivity from Barnes Butte and the residential area of Wainwright Road to the Prineville multimodal system, enabling bicycling and walking to the Barnes Butte Elementary School.	\$4,900,000	\$4,900,000			X		Medium
B-4	Other	Bicycle support hub	Construct a bicycle hub, or "rest stop," for hikers, bicyclists, recreationalists, and community members along the OR 27 scenic bikeway corridor; provide small shelter, information kiosk (map/community calendar), bicycle tool station, and bench/sitting area. This could be coordinated with sponsors as a potential project funding mechanism.	\$20,000	\$ -	X	X		X	Medium
B-5	Paved shoulders	OR 27 (north) paved shoulders	Add or widen paved shoulders to bring OR 27 up to future bicycle route standards from Prineville to MP 6.7. The roadway width of OR 27 currently varies, but the provided cost estimate is based upon widening the roadway from 24 ft to 38 ft to bring it up to future bicycle route standards (7-ft shoulders). This is an alternative to B-6 below and is needed due to high bicyclist ridership along this roadway.	\$7,300,000	\$ -		X			Medium
B-6	Multiuse path	OR 27 multiuse path parallel to OR 27	Install a 10-ft-wide multiuse path parallel to OR 27 to connect with the planned path in Prineville. This is an alternative to B-5 above and is necessary due to high bicyclist ridership along this roadway.	\$3,000,000	\$330,000		X	X		Medium
B-7	Paved shoulders	OR 126 paved shoulders	Widen paved shoulders to bring OR 126 up to future bicycle route standards. OR 126 provides local connectivity between Prineville and Powell Butte and provides regional connectivity between Prineville and Redmond. It is also part of the national bikeway corridor. The OR 126 Plan also recommends shoulder widening on OR 126 to better facilitate vehicle recovery, emergency stops, and service vehicles, and to allow wide loads and farming equipment to traverse the highway more safely.	N/A- see safety project list	N/A- see safety project list		X			Low



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Project ID	Project Type	Project Name	Project Description	Cost Estimate	Expected County Contribution	Funding Partners				Priority
						Bureau of Land Management (BLM)	ODOT	County	Private	
B-8	Paved shoulders	Juniper Canyon Road (north) paved shoulders	Widen Juniper Canyon Road from 27 ft to 38 ft from OR 380 to Davis Loop Road North to bring it up to future bicycle route standards (7-ft shoulders). This is important to providing multimodal connectivity between the City and the Juniper Canyon residential area, which has a higher population density than much of unincorporated Crook County. This may also help reduce run off the road crashes, which are prevalent on Juniper Canyon Road.	\$2,300,000	\$2,300,000			X		Low
B-9	Study	OR 27 (south) shoulder feasibility study	Perform a feasibility study to determine appropriate pedestrian and bicycle facilities or enhancements through Crooked River Canyon on OR 27 south of MP 6.7 to Reservoir Road. This is a separate project from B-5 and B-6 due to expected physical constraints along this portion of OR 27. This project is needed due to high bicycle ridership on OR 27 and high motor vehicle demand for access to the reservoir. The designation of a scenic bikeway corridor is expected to generate an increase in bicycle traffic through this corridor. The constrained area makes it difficult for motor vehicles to safely pass bicyclists.	\$20,000	\$20,000		X			Low
B-10	Paved shoulders	Lamonta Road paved shoulders	Widen Lamonta Road from 30 ft to 38 ft to bring it up to future bicycle route standards (7ft shoulders) and connect to the future bicycle lanes planned for the City of Prineville. This will connect to Gerke Road (B-13), providing multimodal connections between Prineville and the residential areas just north of Prineville.	\$5,700,000	\$5,700,000			X		Low
B-11	Paved shoulders	US 26 (Madras Highway) paved shoulders	Widen OR 26 from 30 ft to 38 ft to bring OR 26 up to future bicycle route standards (7-ft shoulders). This will provide multimodal connectivity between Prineville and Madras, and will connect with the current Prineville shared-use path system that ends near Green Acres Mobile Park. This project is an alternative to B-12.	\$12,500,000	\$ -		X			Low
B-12	Shared-use path	US 26 (Madras Highway) shared-use path	Extend existing shared-use path northwest to the County line parallel to US 26. This will provide multimodal connectivity between Prineville and Madras, and will connect with the current Prineville shared-use path system that ends near Green Acres Mobile Park. This project is an alternative to B-11.	\$5,100,000	\$560,000		X	X		Low
B-18	Study	Feasibility study for a bicycle connection to Prineville's wetland park	Perform a study to determine the preferred facility type and route for a connection to the Crooked River Wetlands Complex trail system off of OR 370. The purpose is to find a feasible connection to the park that provides low stress bicycling facilities suitable for family use.	\$20,000	\$20,000			X		Medium

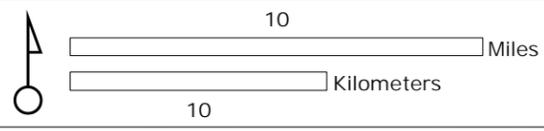


- ### Project Areas
- Medium Priority Bike/Ped Project
 - Medium Priority Bike/Ped Project
 - Low Priority Bike/Ped Project
 - Vision Bike/Ped Project
 - Prineville TSP Proposed Trails
 - Prineville TSP Existing Trails
 - Existing Bicycle Shoulder
 - COTA Proposed Trails

- ### Transportation
- Railroad
 - 26 Major Roads
 - Arterial Roads
 - Minor Roads

- ### Base Layers
- Main Rivers
 - Lakes and Reservoirs
 - County Boundary
 - National Forest
 - Prineville City Limits

Data created by Kittelson and Crook County GIS
 Map created by CC GIS - Revised 9/20/2017



Crook County TSP
 Figure 6 - 1
 Bicycle Plan Elements



Table 6-5. Bicycle Plan Vision Elements

Project ID	Project Type	Project Name	Project Description	Funding Partners				Priority
				Bureau of Land Management (BLM)	ODOT	County	Private	
B-13	Paved shoulders	McKay Road and Gerke Road paved shoulders	Widen McKay Road from 32 ft to 36 ft to bring it up to future bicycle route standards (7-ft shoulders). Coordinate with projects R-11 and R-12 for efficiency. McKay Road provides connectivity to the City of Prineville, specifically to Main Street, which has bicycle lanes. Serves residential areas just north of the city limits. This is redundant to project S-15 and will also serve as a safety treatment to address the crash patterns on McKay Road.			X		Vision
B-14	Paved shoulders	Reservoir Road paved shoulders	Widen Reservoir Road and Willard Road from 24 ft to 36 ft to bring them up to future bicycle route standards (7-ft shoulders). This will provide connectivity to the Prineville Reservoir and Bend. Willard Road is currently about six feet wider west of Crook County than in Crook County. Coordination with Deschutes County to encourage the addition of bicycle shoulders west of Crook County would allow for improved connectivity across the jurisdictions.			X		Vision
B-15	Paved shoulders	Juniper Canyon Road (south) paved shoulders	Widen Juniper Canyon Road from 28 ft to 38 ft from Davis Loop Road North to Davis Loop Road South to bring it up to future bicycle route standards (7-ft shoulders). This will also improve safety on Juniper Canyon Road by providing for additional correction time for run-off-road crashes, which have been identified as an issue on Juniper Canyon Road. This project is also important for providing multimodal connectivity to the Juniper Canyon residential area, which has a higher population density than most of the rest of unincorporated Crook County.			X		Vision
B-16	Paved shoulders	Alfalfa Road, Shumway Road, and Powell Butte Highway paved shoulders	Provide bicycle shoulder facilities on Powell Butte Highway, Alfalfa Road, and Shumway Road. These roads have all been identified through Strava data as having high or medium bicycle usage, and they will provide a network of roadways with bicycle facilities west of Prineville to improve connectivity with the communities west of Crook County. Coordination with Deschutes County will be important to provide connectivity on Powell Butte Highway west of the Deschutes/Crook County line to the City of Bend.			X		Vision
B-17	Paved shoulders	Houston Lake Road, Williams Road, and Reif Road paved shoulders	Widen Williams Road from 25 ft to 36 ft and Reif Road from 22 ft to 36 ft to bring them up to future bicycle route standards (7-ft shoulders). This network is important to providing connectivity to the Cascades East Transit (CET) bus stop in Powell Butte, Powell Butte Elementary School, Prineville City limits, and OR 126.			X		Vision



**SECTION 7.
TRANSIT PLAN**



7. TRANSIT PLAN

Transit service within Crook County is provided by Cascades East Transit (CET), a regional transportation provider. The Transit Plan identifies priorities to support growth and maintenance of the transit system, given the county's rural nature.

TRANSIT NEEDS

There is one bus stop in unincorporated Crook County serviced by the Route 26 bus, which provides connections to Prineville, Redmond, and Bend. Dial-A-Ride service in unincorporated Crook County is limited and only provided for select areas near Prineville. CET also provides scheduled twice-a-day service to Juniper Canyon using the Dial-A-Ride vehicle. Juniper Canyon has a higher population density than much of the rest of unincorporated Crook County. This twice-a-day service allows people living in Juniper Canyon to go to and from Prineville to access essential destinations, which may include the grocery store and hospital.

Rural locations, like unincorporated Crook County, often provide challenges for transit providers. Overall, Crook County has a low population density, but according to studies done by the Central Oregon Intergovernmental

Council, it has a much higher percentage of disabled and elderly persons than other Central Oregon rural counties. These populations are often more reliant on public transportation, but the low population density in Crook County creates challenges for providing public transit options.

Providing access to transit is equally as important as providing transit. The term "first and last mile connectivity" is sometimes used to describe the ability to access transit, as many of the issues that can prohibit people from using transit involve getting to and from a transit stop or transit hub. Those who are reliant on transit may not have access to a motor vehicle or may not be able to drive due to age or ability constraints. Providing infrastructure to allow people to walk and bicycle is therefore especially important near transit facilities.

TRANSIT PLAN

The Transit Plan, summarized in Table 7-1, identifies policies, projects, and programmatic recommendations to address the need for serving the rural Crook County community and provide infrastructure to connect to transit stops.

Transportation network companies (TNC), also known as ridesourcing or ride-hailing companies, that pair riders with drivers who operate a non-commercial vehicle, have become options for rural dial-a-ride service in some locations around the county. TNCs have not yet been used for transit service or supplements in Crook County but are recommended for consideration as a pilot project. TNCs are most commonly used in urban areas where there is a lot of demand, but they could be very helpful in providing mobility to those who need it in rural areas, too. Public entities have begun trials in which they

contract with a company to provide service that is representative of a TNC.

Several bicycle and pedestrian projects in the TSP were identified to help improve active transportation connectivity to transit. For example, project P-2 is a high priority project to provide a pedestrian crossing in the Powell Butte community that will help ensure safe pedestrian crossing of OR-126 at the existing CET transit stop.

Table 7-1 summarizes the Transit Plan elements for Crook County, including the estimated cost needed to operate each program. The total estimated cost for completing these elements is \$439,000 and is expected to be covered by Cascades East Transit.



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 7-1. Transit Plan Elements

Project ID	Project Name	Project Description	Cost Estimate/Description	Priority
T-1	Expanded Prineville-Redmond/Bend transit service	Increase frequency and length of service between Prineville and Redmond/Bend, while maintaining the stop in Powell Butte.	\$45,000 – addition of one round trip per weekday per year	High
T-2	Fixed route enhancements	Increase service in Prineville with eventual deviated fixed route or a purely fixed route to provide connections to more destinations.	\$200,000 – addition of a transit vehicle and 10 daily service hours for 255 weekdays per year	Vision
T-3	Dial-A-Ride enhancements and Transportation Networking Company (TNC) encouragement	Improve accessibility for residents in rural Crook County through a larger service area for dial-a-ride service. Additionally, incorporate TNC elements into the current Dial-A-Ride system.	\$190,000 – addition of a Dial-A-Ride vehicle to serve unincorporated Crook County weekdays between 7:00 am and 5:30 pm	High
T-4	Transit community outreach	Educate the community about connections available within Redmond and Prineville to reach key destinations such as Central Oregon Community College (COCC), the Redmond Airport, the hospital, and additional locations within Bend.	\$4,000 – one event per month at less than \$350 per event	High



**SECTION 8.
BRIDGE PLAN**



8. BRIDGE PLAN

The Bridge Plan identifies priority bridge improvements and replacements needed to support the Crook County transportation system.



BRIDGE NEEDS

Many of the 111 bridges in Crook County need replacement or repair. Bridges over 20 feet in length are part of the National Bridge Inventory (NBI) database, and are eligible for federal funding for repair or replacement purposes. There are also many non-NBI bridges that need replacement or repair. The County is entirely responsible for the cost of non-NBI bridge repairs. Historically, the County has replaced one non-NBI bridge per year at a cost of approximately \$150,000.

BRIDGE PLAN

As shown in the Bridge Plan summary in Table 8-1, the high priority bridge projects are expected to cost an estimated \$3,000,000 over the next 20 years. This accounts for the replacement of one non-NBI bridge at a cost of \$150,000 each year.

Additionally, the project list, summarized in detail in Table 8-2, includes replacing several NBI bridges that either have low sufficiency ratings or are functionally obsolete, meaning they are not designed to today's standards. The high priority project is the Weigand Bridge replacement, which is currently funded through a grant. The remaining bridge replacement projects are medium priority, with one location identified for further study to understand the cost of repair or replacement.

Figure 8-1 illustrates the location of Bridge Plan Elements and non-NBI bridges.

Table 8-1. Bridge Plan Elements County Cost Summary

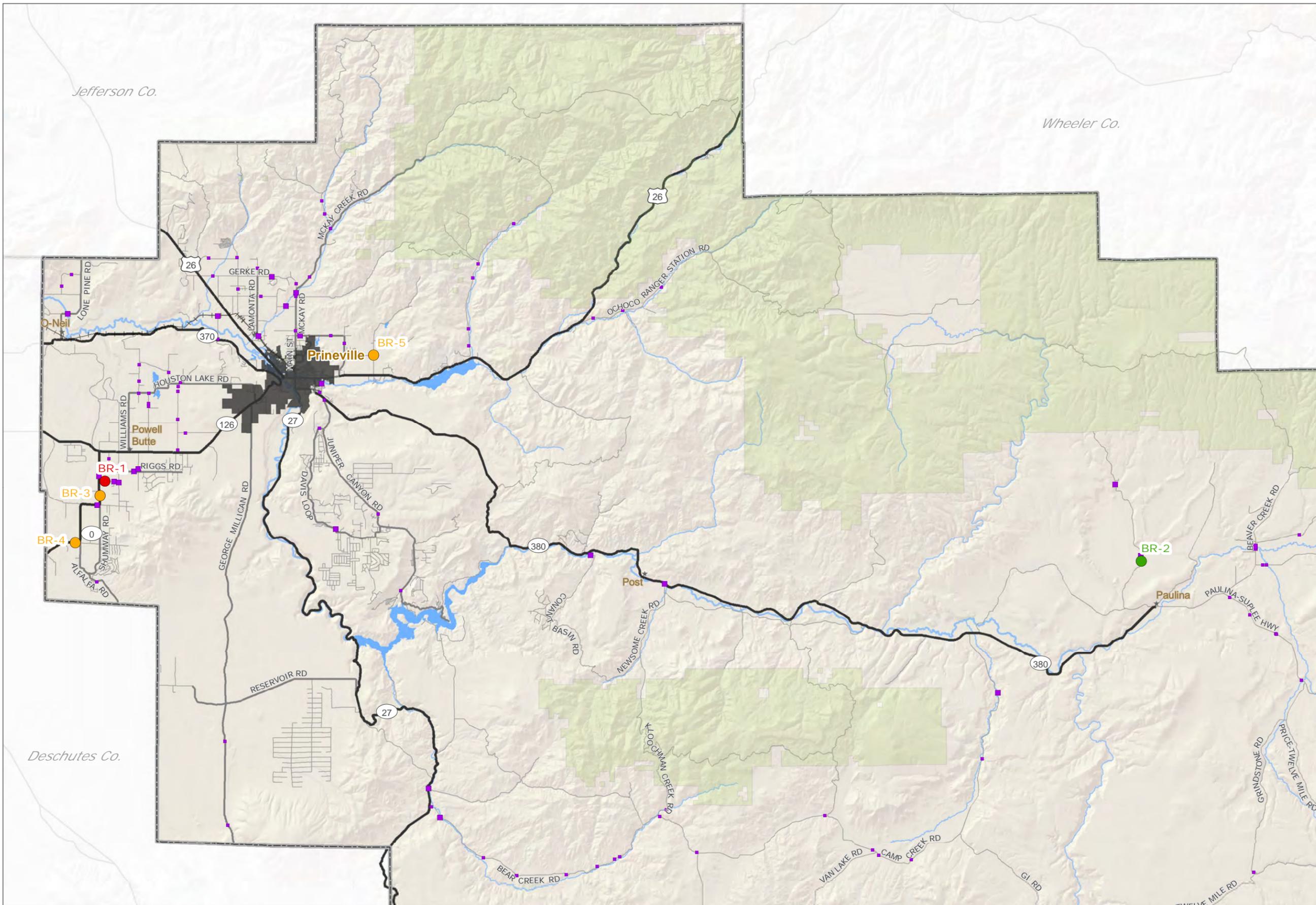
	High Priority	Medium Priority	Low Priority	Vision	Total
County Contribution	\$3,000,000	\$3,000,000	\$20,000	\$-	\$6,020,000
Total Cost	\$4,000,000	\$3,000,000	\$20,000	\$-	\$7,020,000



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 8-2. Bridge Plan Elements

Project ID	Project Name	Project Description	Cost Estimate	Expected County Contribution	Funding Partners	Priority
BR-1	Weigand Road bridge replacement (NBI Bridge 13C24)	Replace the bridge on Weigand Road at the irrigation ditch crossing due to a low sufficiency rating. (The County has received a grant for this project, which is expected to be constructed in 2018. Therefore, this project is excluded from the County contributions cost summary.)	\$1,000,000	\$---	County	High
BR-2	County Road 221 bridge over Paulina Creek (NBI Bridge 19083)	Conduct a study to evaluate the cost of replacing or repairing this bridge. The bridge is functionally obsolete.	\$20,000	\$20,000	County	Low
BR-3	Powell Butte Highway bridge over Powell Butte Canal (NBI Bridge 03291)	Replace the Powell Butte Highway bridge over the Powell Butte Canal.	\$1,000,000	\$1,000,000	County	Medium
BR-4	Powell Butte Highway bridge over Powell Butte Wasteway (NBI Bridge 03293)	Replace the Powell Butte Highway bridge over the Powell Butte Wasteway.	\$1,000,000	\$1,000,000	County	Medium
BR-5	Johnson Creek Road NE bridge over Ochoco Main Canal (NBI Bridge 13C06A)	Replace the Johnson Creek Road NE Bridge over the Ochoco Main Canal.	\$1,000,000	\$1,000,000	County	Medium
BR-6	Non-NBI bridge replacement program	Continue to replace one non-NBI bridge per year at approximately \$150,000 per bridge. When replaced, each bridge should be built at least 21 feet long when possible to be eligible for federal funding in the future.	\$3,000,000	\$3,000,000	County	High



Project Areas

- High Priority Bridge Project
- Medium Priority Bridge Project
- Low Priority Bridge Project
- NBI Bridges
- Non-NBI Bridges

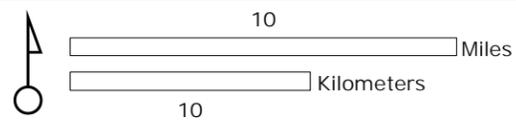
Transportation

- +++++ Railroad
- Major Roads
- Arterial Roads
- Minor Roads

Base Layers

- Main Rivers
- Lakes and Reservoirs
- County Boundary
- National Forest
- Prineville City Limits

Data created by Kittelson and Associates, Inc. and Crook County GIS
 Map created by CC GIS - Revised 4/13/2017



Crook County TSP
 Figure 8-1
 Bridge Plan Elements



**SECTION 9. INTELLIGENT
TRANSPORTATION
SYSTEMS (ITS) PLAN**



9. INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PLAN

Intelligent Transportation System (ITS) Plan elements are those that use technology to improve transportation system operations or safety. Several ITS projects were identified in the 2005 TSP that were not completed. These projects are summarized in Table 9-1 and were carried forward for incorporation into the updated TSP.

Table 9-1. ITS Plan Elements

Project ID	Project Description	Cost Estimate	Expected County Contribution	Funding Partners	Priority
ITS-1	OR 126 Parrish and Minson – VMS (Variable Message Signs in both directions)	\$750,000	\$0	ODOT	Low
ITS-2	Powell Butte Highway and OR 126 – ATR (Automatic Traffic Recorder) & RWIS (Road Weather Information System) & CCTV (Closed-Circuit Television Camera)	\$250,000	\$0	ODOT	Low

In addition to the ITS projects summarized in Table 9-1, the Safety Plan project S-1 includes a variable speed limit sign on Juniper Canyon Road to address safety issues associated with speed and weather. ODOT and Crook County will work out terms of ownership, implementation, and maintenance upon project commencement. Table 5-2 provides more information about this recommendation.



**SECTION 10. AIR,
RAIL, WATER, AND
PIPELINE PLAN**



10. AIR, RAIL, WATER, AND PIPELINE PLAN

AIR PLAN

The Prineville/Crook County airport occupies 940 acres and is located approximately three miles southwest of the City of Prineville. It is located within the City of Prineville Urban Growth Boundary and included in their Transportation System Plan. The airport is primarily used by corporate light jet and turbine traffic for general aviation/business purposes. It also facilitates fire support helicopters and fixed wing operations. The Airport is classified as a Class IV, Community General Aviation Airport, by the Oregon Department of Aviation. It accommodates general aviation users and local business activities.

Crook County is also served by several private airstrips:

- ▶ Blue Mountain Ranch Airport – 4 miles northwest of Paulina
- ▶ Dry Creek Airpark – 7.5 miles south/southeast of Prineville
- ▶ Goering Ranches Airport – 3 miles northeast of Alfalfa
- ▶ Pioneer Memorial Hospital HP – Prineville
- ▶ River Run Ranch AP – 8 miles east of Redmond
- ▶ Robeck Landing HP – 8.1 miles east/northeast of Powell Butte
- ▶ Shotgun Ranch Airport/Keeney – 8 miles east of Post
- ▶ Tailwheel AP – 3 miles southeast of Prineville

Commercial passenger air service is provided at the Redmond Airport, approximately 20 miles west of Prineville.

RAIL PLAN

The City of Prineville Railway (COPR) operates a Class III shortline freight railroad. This is the only railroad in Crook County. The railroad carries a variety of products including consumer and forest products, chemicals, and building materials. Service operates on an as-needed basis Monday through Friday. The COPR shortline connects with Class I railroads in Redmond on the Oregon Trunk Line that runs from the Columbia River to Klamath Falls. The TSP Freight Plan identifies a project (F-2) to evaluate the feasibility of modifying the railroad crossing of US 26 to allow oversized freight vehicles to pass.

The Prineville Freight Depot (PFD) provides intermodal connection and is intended to compliment the services offered by the COPR. It is located on the COPR mainline, three miles west of Prineville. The PFD provides a regional multi-modal transportation hub that provides Central Oregon with transload, reload, storage and managed distribution.

There is no passenger service for residents of Crook County. The nearest passenger service is available on Amtrak, with a passenger station in Chemult.



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

WATER PLAN

Central Oregon Irrigation District (COID) manages the canal system that runs through the western portion of Crook County. The Central Oregon Canal diverts water from the Deschutes River and runs east through Powell Butte. The canal system provides water to properties in the Powell Butte area.

The Ochoco Irrigation District provides water to just over 20,000 acres of land near Prineville. Water is provided from the Ochoco and Prineville Reservoirs through the Ochoco Canal, Ochoco Creek, and the Crooked River.

Two smaller irrigation districts, Peoples' Irrigation District and Lone Pine Irrigation District, also provide water in Crook County.

PIPELINE PLAN

Central Electric Co-op and Pacific Power Company provide electric services to residents of Crook County. Transmission lines for these are shown in Exhibit 10-1 below. Cascade Natural Gas Corporation provides natural gas services throughout the County. Crestview Cable Communications and Quantum Communication provide telephone, internet, and cable services in the County. There are no planned changes to the pipeline or utilities system within the TSP study area for Crook County.

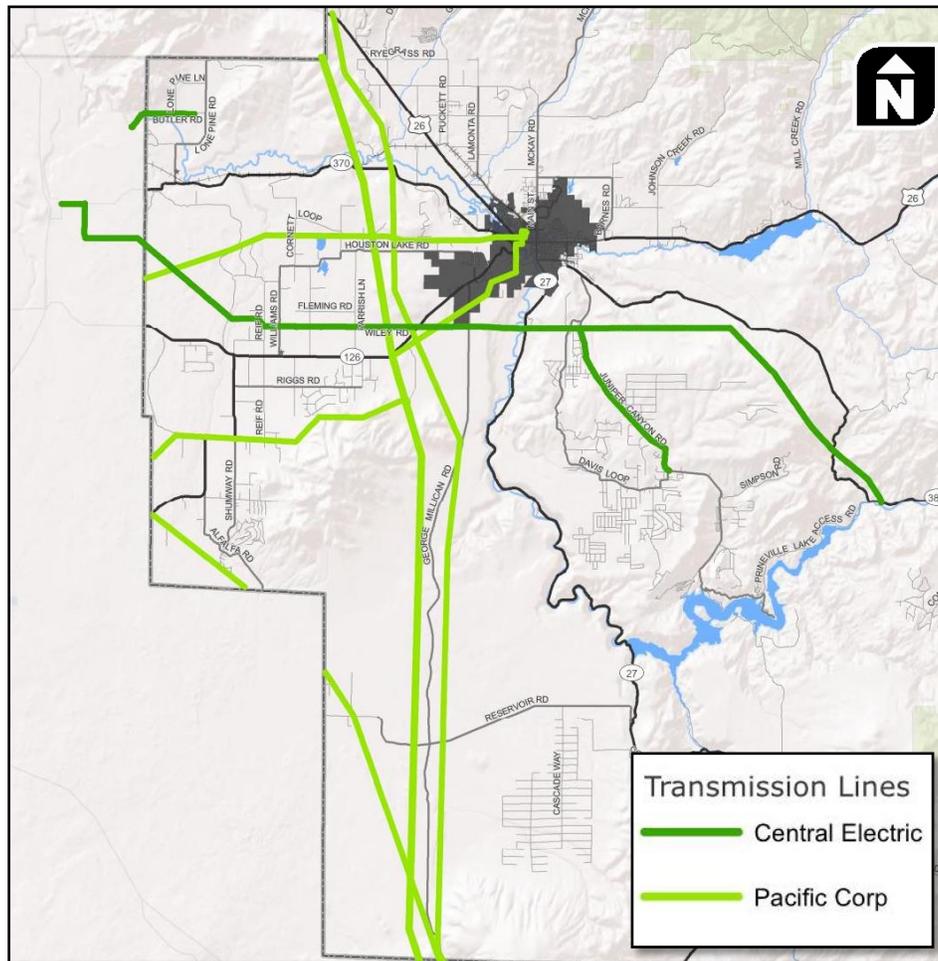


Exhibit 10-1. Crook County Transmission Lines



SECTION 11. FUNDING AND IMPLEMENTATION



11. FUNDING AND IMPLEMENTATION

This section presents an overview of existing and future transportation funding estimates and identifies opportunities for the County to expand its transportation funding options.

CURRENT CROOK COUNTY TRANSPORTATION FUNDING

Capital projects as well as operations and maintenance of roadways are funded through the Crook County Transportation Budget, which relies on a variety of sources. Table 11-1 presents the total road funds budget for the 2015/2016 and 2016/2017 years and provides information on revenue sources and funding for capital improvements.

Table 11-1. Crook County Road Funds Budget from 2015-2017

	2015/2016	2016/2017
Beginning balance/interest	\$18,075,000	\$19,976,134
Licenses, permits, fee	17,000	15,000
Intergovernmental payments	50,000	-
Misc. revenue	-	7,000
Reimbursed revenue	16,000	16,000
State revenue	2,000,000	2,207,908
Federal shared revenue	1,001,200	1,200
Interfund loan	285,500	106,000
TOTAL REVENUE	\$21,444,700	\$22,329,242
Personnel services	\$1,618,485	\$1,751,307
Materials and services	4,951,820	4,223,100
Transfers out	-	247,120
Contingency	300,000	300,000
Interfund loan	-	-
Capital outlay/future expenses	14,574,395	13,574,950
TOTAL EXPENSE	\$21,444,700	\$20,096,477

The total transportation revenue budget for the fiscal year (FY) 2015/2016 was approximately \$21 million, however only approximately \$3.4 million of this was received in revenue during FY 2015/2016, as shown in Exhibit 11-1, while the remainder of the \$21 million was from an existing balance or interest funds. During the 2016/2017 fiscal year, the County received only approximately \$2.3 million in revenue. The majority of the \$21 million in total revenue was spent on capital outlay projects or reserved for future expenses.

Approximately \$6.5 million is spent each year on personnel services, materials and services, and contingency. The 2016/2017 transportation budget has approximately \$13.5 million reserved for future expenses, which, assuming consistent revenue of \$2.3 million (the incoming revenue for the 2016/2017 fiscal year) and \$6.5 million in expenses each year would last less than three and a half years. Based on the 2016/2017 fiscal year budget, the County is facing a gap of approximately \$4.2 million per year. This estimate also assumes that no money is put toward substantial capital improvement projects.

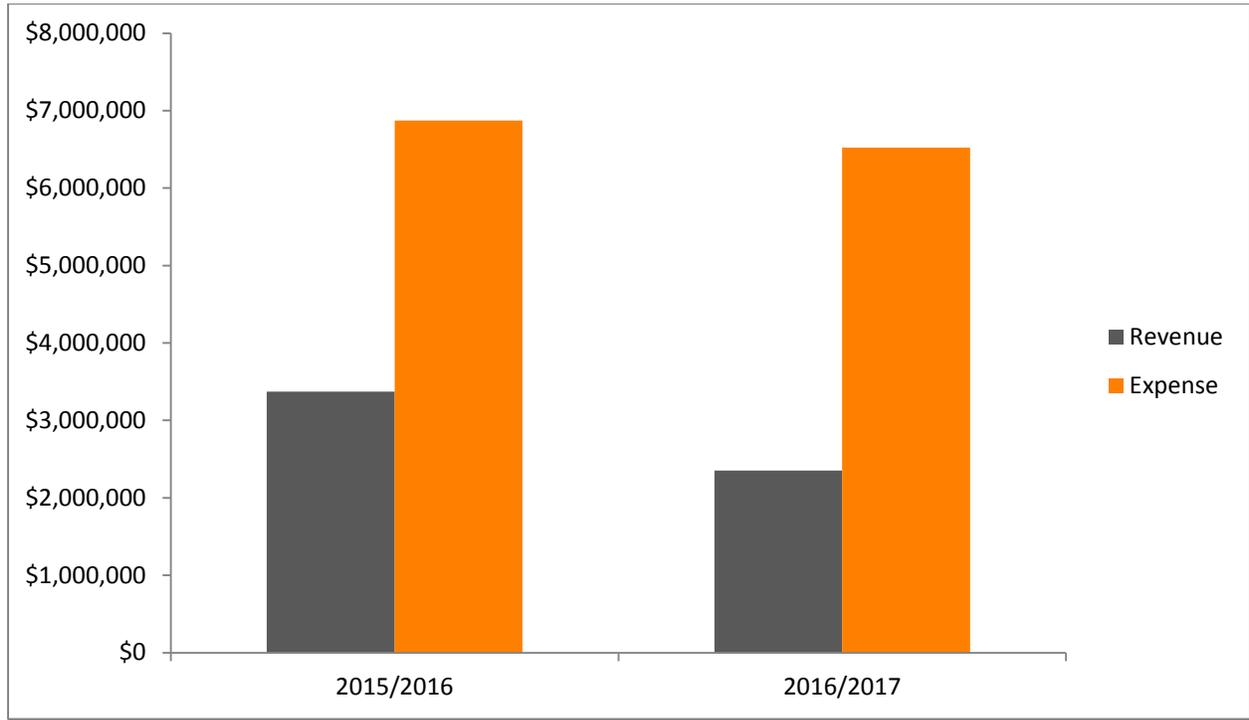


Exhibit 11-1. Road Department Revenue and Expenses*

* Does not include expenses that are categorized as capital outlay/funds reserved for future expense or revenue that is categorized as beginning balance/interest.

PROJECT FUNDING

The total County funding needed to accomplish all of the elements summarized in this plan would be approximately \$51 million. These projects include both capital projects and large operation and maintenance projects. Table 11-2 shows the funding breakdown by priority and project type. Total funding needed to accomplish all of the high-priority plan elements would be approximately \$21 million over the next 20 years.



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 11-2. Plan Element County Cost Summary by Priority

Project Category	High Priority	Medium Priority	Low Priority	Total
Roadway	\$13,000,000	\$2,101,000	\$8,815,000	\$23,916,000
Freight	\$5,000,000	\$0	\$0	\$5,000,000
Safety	\$117,000	\$36,500	\$303,000	\$456,500
Bicycle	\$2,500	\$7,350,000	\$8,580,000	\$15,932,500
Pedestrian	\$0	\$0	\$0	\$0
Transit	\$0	\$0	\$0	\$0
Bridge	\$3,000,000	\$3,000,000	\$20,000	\$6,020,000
ITS	\$0	\$0	\$0	\$0
Total	\$21,119,500	\$12,487,500	\$17,718,000	\$51,325,000

FUNDING NEEDS

The summary of existing transportation revenue and expenditures indicated that the County is facing an existing gap of approximately \$4.2 million per year. This funding gap reflects the revenue the County needs to continue operating and maintaining its transportation facilities. Crook County has relied upon its reserve funds to continue operating but needs to identify additional long-term reliable funding to remain sustainable.

In addition to identifying funding sources for operations and maintenance, the County also lacks available funding to complete improvement projects identified in this TSP. As summarized in this section, the County would need approximately \$51 million to complete all of the projects in the Plan. However, the County may choose to focus only on the higher priority projects. In order to complete the high priority projects, the County would need to identify approximately \$1.1 million per year in additional funding.



TRANSPORTATION FUNDING OPTIONS

Potential strategies for addressing the funding gap for regular roadway expenses and the capital projects outlined in this plan may generally be grouped into three categories: secure more external funding, identify public/private sponsorship opportunities, and raise local revenue through user fees and taxes. Observations on the use of these strategies are discussed below. They are not all mutually exclusive.

Identify Additional Grant Opportunities

ODOT offers multiple grant opportunities to support transportation projects. The County should identify grants from those summarized in Table 11-3 that are applicable to their projects. Some of these programs require a local match. The County should begin identifying these programs early in order to plan for the funding necessary to satisfy a local match. Using local dollars as a match for a grant opportunity is a strategy to stretch the local funding even farther.

Public/Private Sponsorship Opportunities

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 Crook County, one potential opportunity for this type of partnership is the project for bicycle support hub(s). Private organizations that sponsor a rest area should have the opportunity to provide an advertisement and map at these locations directing cyclists to their community and business.

Local Taxes and User Fees

Many types of user fees and taxes may be collected to finance road construction and operations. On that premise, it is assumed that the County will need to develop local revenue sources to supplement or replace federal resources if it hopes to maintain current levels of service. It is also assumed that changes in state or federal financing, coupled with efficiency measures are not enough to close the funding gap. Table 11-4 lists options that the County 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 County budgets. Some of these fees could also be used to provide a local match to obtain greater federal or state funding, further stretching local dollars.

Crook County may select a variety of local revenue options to achieve all of its funding needs. For example, System Development Charges (SDCs) are an effective way of obtaining contributions for new developments, but these funds may only be used on capacity enhancing projects. Therefore, the County needs other sources to bridge its current funding gap for operations and maintenance as well as funding for safety projects.

The TSP advisory committee recommended the following three local funding mechanisms for Crook County:

- County gas tax;
- System development charges (SDCs); and
- Supplemental property tax levy.



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 11-3. Grant Opportunities

Source ID	Source Title	Award Cycle	Intended Use	Applicable Project Types	Administration Agency	Deadline	Local Match	Website
1	Rivers, Trails, and Conservation Assistance Program	Annual	Technical assistance for recreation and conservation projects.	Shared-use paths	National Park Service	August	None	http://www.nps.gov/ncrc/programs/rtca/contactus/cu_apply.html
2	Highway Safety Improvement Program	Annual	Projects that address safety issues on highways and High Risk Rural Roads.	All	ODOT	Varies	10%	http://www.oregon.gov/ODOT/Engineering/Docs_TrafficEng/Safety_HSIP-Guide.pdf
3	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	Varies	20%	http://www.oregon.gov/oprd/GRANTS/pages/local.aspx#Local_Government_Grant_Program
4	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	Varies	20%	http://www.oregon.gov/oprd/GRANTS/pages/trails.aspx#Recreational_Trails_Grants_(RTP)
5	Land and Water Conservation Fund	Annual	Acquiring land for public outdoor recreation or develop basic outdoor recreation facilities.	Shared-use paths, bikeways, sidewalks	OPRD	Varies	50%	http://www.oregon.gov/oprd/GRANTS/pages/lwcf.aspx#Land_&_Water_Conservation_Fund_Program
6	Statewide Transportation Improvement Program	Biennial	Multi-year, statewide, intermodal program of transportation projects.	Sidewalk, bikeways, crossing improvements	ODOT	Varies	Varies	http://www.oregon.gov/ODOT/STIP/Pages/index.aspx
7	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	February / April	20%	http://www.oregon.gov/oprd/ATV/pages/grants.aspx
8	Immediate Opportunity Funds	Biennial	Supports primary economic development through the construction and improvement of streets and roads.	All	ODOT	Ongoing	50%	http://www.oregon.gov/gov/admin/regional-solutions/Documents/Mid-Valley/4.3.15.MidValley.IOF.Guidelines.pdf
9	Enhance (STIP)	Biennial	Supports activities that enhance, expand, or improve the transportation system. Projects that improve or enhance the state's multimodal transportation system.	All	ODOT	August	10%	http://www.oregon.gov/ODOT/STIP/Pages/index.aspx
10	ConnectOregon	Biennial	Non-highway transportation projects that promote economic development in Oregon.	Non-highway modes	ODOT	November	20%	http://www.oregon.gov/ODOT/Programs/Pages/ConnectOregon.aspx



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Source ID	Source Title	Award Cycle	Intended Use	Applicable Project Types	Administration Agency	Deadline	Local Match	Website
11	All Roads Transportation Safety (ARTS)	Biennial	Project that address safety needs on all public roads in Oregon; reduce fatal and serious injury crashes.	All hot spot and systemic safety projects	ODOT	Varies	8%	http://www.oregon.gov/ODOT/Engineering/Pages/ARTS.aspx
12	Transportation and Growth Management Program (TGM)	Annual	Projects that help local communities plan for streets and land use to create more livable communities. Category 1 TGM grants focus on meeting the requirements for the Transportation Planning Rule, while category 2 TGM grants focus on integrated land use and transportation planning , especially active transportation, transit, and multimodal facilities.	Planning, integrated land use and transportation, active transportation, transit, and multimodal street facilities.	ODOT	June	12%	https://www.oregon.gov/LCD/TGM/pages/grants.aspx
13	Federal Lands Access Program	Varying for Oregon	Projects that improve transportation facilities that provide access to, are adjacent to, or are located within federal lands.	All	FHWA	Varies	10.27%	https://flh.fhwa.dot.gov/programs/flap/or/



CROOK COUNTY TRANSPORTATION SYSTEM PLAN

Table 11-4. Local Taxes and User Fee Options

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, and 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.
System Development Charges (SDCs)	One-time fees obtained from new development and redevelopment.	Fees cover part of the cost of transportation facilities to support the new development. Fees will increase the cost of development for developers. The County will determine the appropriate fee to cover transportation costs while also ensuring that development remains affordable for developers.
Road/Local Improvement District	Fee for property owners or users to help fund road or other capital improvement projects	This may be especially useful for non-state facilities that are ineligible for federal or state funding. This type of fee must be approved by the majority of property owners.
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 County.	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.
County 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.
Fees from Timber Sales	A percentage of timber sales fees in Crook County are provided to the County, with the remainder allocated to the Oregon Department of Forestry State Forests Division.	Historically, Crook County received a large amount of revenue from timber sales and used this funding to help maintain its roads. In recent years, this funding has largely disappeared.



**APPENDIX A
PROJECT
PROSPECTUS SHEETS**