Transportation System Plan

LAKE COUNTY TRANSPORTATION SYSTEM PLAN

DRAFT

May 2016

Prepared by:

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KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MOVING**FORWARD**THINKING™

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Project No. 18547.0

May 2016

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PREFACE

The progress of this plan was guided by the Project Management Team (PMT) and the Project Advisory Committee (PAC). The PMT and PAC members are identified below, along with members of the consultant team. The PAC members devoted a substantial amount of time and effort to the development of the Lake County & City of Paisley Transportation System Plan (TSP), and their participation was instrumental in the development of this document. The Consultant Team and PMT believe that the future transportation system will be better because of their commitment.

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Section 1
Introduction

INTRODUCTION

The Lake County Transportation System Plan (TSP) documents the County's, the City of Paisley's, and the Oregon Department of Transportation's (ODOT's) priority projects, policies, and programs to be carried forward for funding and implementation over the next 20 years. The TSP is based on input from local citizens, stakeholders, staff, and appointed and elected County and City officials. The Lake County TSP is intended to be flexible to respond to changing community needs and revenue sources over the next 20 years and is updated approximately every 10 years. Projects, policies, and programs for the City of Lakeview are documented in that city's separate TSP.

The 2002 Lake County TSP focused on goal compliance, mobility, safety, and economic development as outlined in the following goals:

- Goal 1 — Comply with the Transportation Planning Rule.
- Goal 2 — Preserve the function, capacity, level of service, and safety of the state highways by identifying and addressing transportation needs relevant to the planning area and scale of the transportation network.
- Goal 3 — Improve and enhance safety and traffic circulation and preserve the level of service on the local street system.
- Goal 4 — Identify the 20-year roadway system needs to accommodate developing or underdeveloped areas within Lake County.

The complete goals and objectives of the 2002 TSP are provided within Technical Memorandum #2, located in the Technical Appendix (Volume 2 of this 2016 TSP).

Most of the transportation projects outlined within the 2002 TSP have been completed as a result of capital improvements or development. In addition, enough time has passed such that there is a need to update the TSP to ensure compliance with statewide planning goals and objectives. The following information provides context and illustrates the challenges, opportunities, and needs tied to the County's evolving transportation system:

- The capital improvement projects identified in the 2002 TSP have all been completed.
- The 2016 TSP provides strategies that promote accessibility and connectivity to preserve the local character of Lake County and its communities, including:
    - Identifying networks that provide safe and more comfortable access for pedestrians and bicyclists to and from residential areas, schools, and local destinations.

- Balancing freight capacity and community accessibility, as movement of freight is important to the County, as is providing safe, livable, and vibrant transportation corridors. Oregon Highway 140 west of Lakeview, US 395, and US 20 are designated as Oregon Highway Plan (OHP) Freight Routes. Freight mobility along these corridors should be balanced with other County goals and objectives.
- Revisiting the County's roadway design standards specifically related to paved County roads and gravel County roads.

- Lake County and its communities rely on a large and dispersed transportation system for economic activities and interconnectedness. The 2016 TSP consistently reviews this system to identify improvement opportunities, such as roadway enhancements, roadway maintenance, bridge replacements, or other projects that would benefit mobility and support economic opportunities throughout the County.

TSP DEVELOPMENT PROCESS

The TSP was developed through a process that identified and forecasted Lake County's transportation needs; developed and analyzed potential alternative approaches for addressing those needs; refined these approaches into specific projects, programs, policies, and future studies on the basis of stakeholder feedback; and prepared a financing plan for implementing the TSP. The following steps were involved in the process:

- Reviewing state, regional, and local transportation plans and policies that the Lake County TSP must either comply with or be consistent with.
- Providing public open houses to provide project information to, and gather feedback from, the public at key points during the TSP development process, establishing project advisory committees, and developing transportation plan goals and objectives.
- Identifying a detailed inventory of existing transportation facilities and services.
- Evaluating current transportation operations and deficiencies.
- Evaluating transportation needs in the horizon year of 2035, assuming expected growth and without any additional transportation improvements beyond those already funded.
- Identifying and evaluating improvement alternatives intended to address Lake County's future transportation needs.
- Developing a prioritized set of projects, programs, policies, and future studies consistent with the TSP's goals and objectives.
- Estimating the revenue available for transportation projects through the year 2035 assuming reduced, but relatively consistent transportation funding.
- Compiling the results of this work into this TSP document.

- Reviewing and adopting the TSP by the Lake County Planning Commission and County Commission, and the City of Paisley City Council.

Based on the requirements of Oregon's Transportation Planning Rule, the study of County roadways and intersections is generally limited to those with the highest classifications—collectors and arterials—as well as state highways. These roadways connect locations within the County, as well as connect the County to the rest of Oregon and to neighboring states. However, where appropriate, the TSP also discusses local street issues such as street connectivity, design standards, and safety.

PUBLIC INVOLVEMENT

The planning process was guided by a Project Advisory Committee (PAC) comprised of key stakeholder agencies and other community representatives.

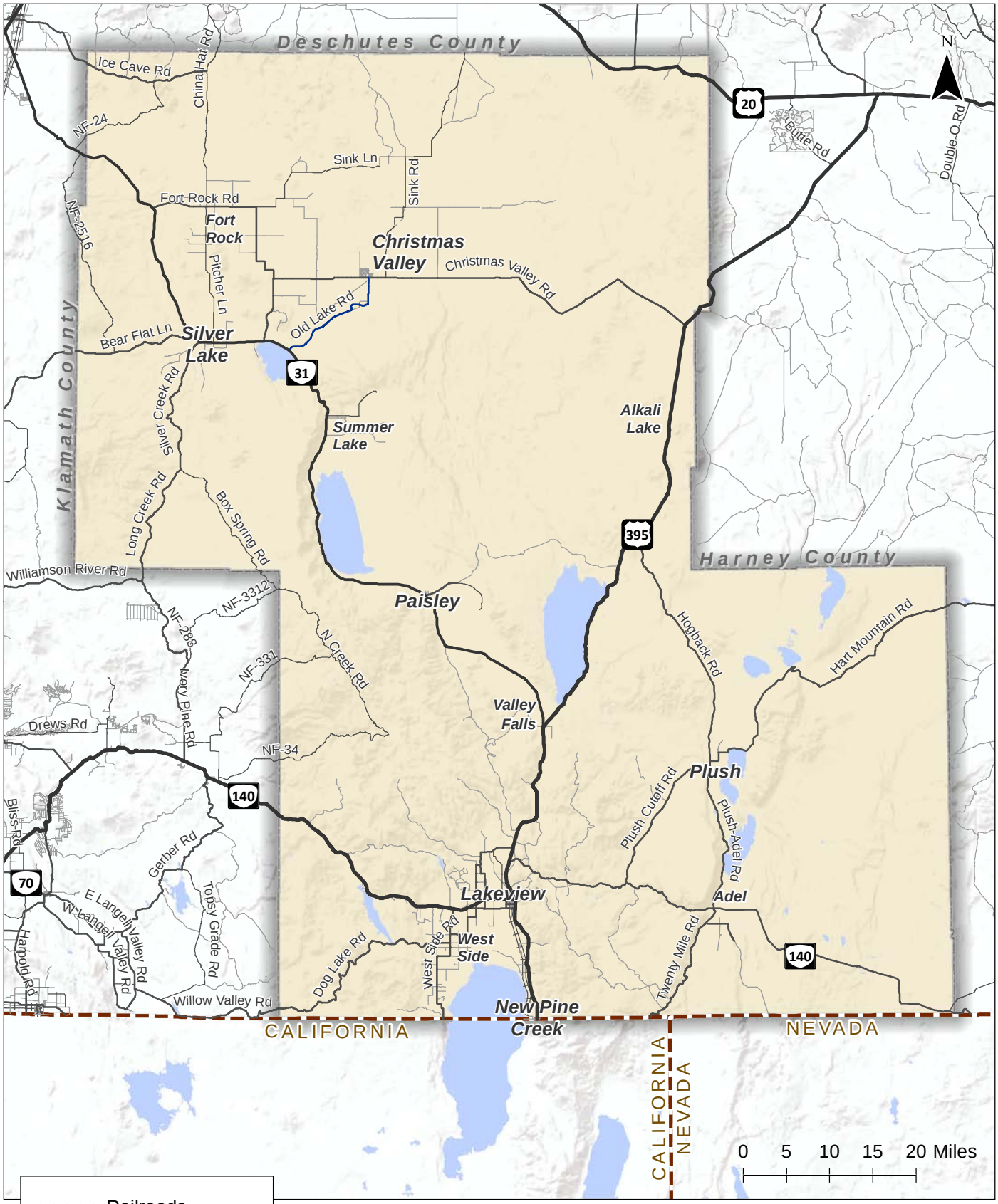
The PAC reviewed the technical work of the TSP and provided input on key findings and outcomes. The PAC reviewed several memoranda and convened at a total of three PAC meetings during the process of developing the TSP. The PAC meetings focused on all aspects of the TSP development including the review and presentation of existing deficiencies and forecast needs; alternative development; a preferred transportation and funding plan; and, recommended code amendments.

In addition to the established advisory committees, two public meetings were held at key junctures in the process to obtain public comment regarding transportation concerns, future transportation improvement projects, programs, pilot projects, policies, and future studies, and respective priorities of these plan elements. The first of these meetings was held jointly in the Town of Lakeview and Christmas Valley. The second meeting was held in Lakeview. Online open houses were also available in conjunction with both meetings for those not able to attend in person. All comments were addressed in the alternatives analysis and final plan development. Finally, the draft plans were presented and discussed with the Paisley City Council and the Lake County Planning Commission and Lake County Board of Commissioners at public hearings.

PLAN STUDY AREA

Description

Lake County is located in south-central Oregon. It covers an area of 8,358 square miles (slightly smaller than the state of New Jersey) and had an estimated population of 7,838 persons in 2014. Approximately 30% of the county's population lives in the county seat of Lakeview (estimated 2014 population of 2,298). The City of Lakeview has its own TSP; therefore the Lake County TSP excludes Lakeview from the County TSP's study area. The only other incorporated city in the county is Paisley, which had an estimated population of 237 in 2014. Figure 1-1 provides a map of the county.



Study Area
Lake County, Oregon

Figure
1-1

K:\H_Portland\proj\file18547 - Lake County TSP\gis\Draft TSP\1-1 Study Area.mxd - agriffin - 10:11 AM 4/12/2016

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Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: Oregon Department of Transportation,Sources: Esri, USGS, NOAA

Key Activity Centers and Destinations

Lake County

Key activity centers and destinations within Lake County include:

- Area schools (Silver Lake Elementary School, Fort Rock Elementary School, etc.)
- Abert Rim
- Christmas Valley Sand Dunes
- Crack-in-the-Ground
- Devil's Garden
- Fort Rock
- Fort Rock Valley Homestead Village Museum
- Fossil Lake
- Four Craters Lava Flow
- Fremont–Winema National Forest
- Governor's Ridge Monument
- Hart Mountain National Antelope Refuge
- Hole-in-the-Ground
- Lake County Museum
- Lost Forest
- Mitchell Monument
- Schminck Memorial Museum
- Silver Lake
- Summer Lake Wildlife Area
- Sunstone Collection Area

In addition to these key activity centers, US 395 south of Valley Falls and all of Oregon Highway 31 within Lake County is designated as an Oregon State scenic byway (Oregon Outback), attracting visitors from other regions of the state. The City of Lakeview, as the largest population center, is a common destination for both County residents and visitors.

City of Paisley

The City of Paisley is located along Oregon Highway 31 near the center of Lake County, approximately 45 miles northwest of Lakeview and 100 miles southeast of La Pine. The City serves as the local service center for the surrounding area. The City's land uses include a local school, retail services largely fronting Oregon Highway 31, and residential homes.

TSP ORGANIZATION AND METHODOLOGY

The Lake County TSP draws from local and statewide plans and policies that guide land use and transportation planning. The plan and policy review is presented in **Section 2.** Goals and objectives for the TSP, as developed in collaboration with the Project Advisory Committee (PAC), are presented in **Section 3.**

Early in the development of the TSP, all major transportation-related facilities and services within the County were inventoried. This inventory, summarized in **Section 4,** allowed for an objective assessment of the operational performance, safety, and general function of the County's transportation system in its present form.

Section 5 details the County's anticipated long-term (year 2035) transportation needs. These needs were based on an analysis of the transportation system and comments received from the PAC, Lake County and City of Paisley staff, residents, and ODOT representatives. A set of alternative projects, programs, policies, and plans were developed to address these needs. The analysis of these alternatives is summarized in **Section 6.**

Having identified a set of alternatives, the next phase of the planning process involved presenting and refining the individual elements of the TSP through a series of decisions and recommendations from the advisory committees leading to the preferred plan. The preferred plan identified in **Section 7** includes roadway plans and pedestrian and bicycle plans for both Lake County and Paisley, as well as plans for other transportation modes serving Lake County.

Section 8 analyzes and summarizes potential funding sources to finance the transportation system projects, programs, policies, and future studies identified in the TSP.

Sections 1 through 8 comprise Volume 1 of the TSP and provide the key elements of the plan. Volume 1 is supplemented by the Technical Appendices in Volume 2, which contain technical memoranda documenting the details of the existing conditions, future needs, and alternatives analyses.

Section 2
Plans, Policies, and Standards Review

PLANS, POLICIES, AND STANDARDS REVIEW

Oregon's Transportation Planning Rule requires that the County TSP be consistent with federal, state, and local transportation policies and standards. Therefore, existing plans, policies, standards, and laws relevant to the TSP were reviewed and evaluated. This section identifies the state and County plans, policies, standards, and laws that were reviewed and summarizes their relevance to the TSP update process. Detailed information about the plans, policies, and standards review is provided in Technical Memorandum #1, located in the Technical Appendix (Volume 2 of the TSP).

Table 2-1 summarizes the state documents included in the review, while Table 2-2 summarizes the County documents.

Table 2-1. Summary of State Document Review

Document/Rule	Relevance to the TSP
Oregon Transportation Plan (updated 2006)	Projects, policies, and regulations proposed as part of the updated TSP will reflect the policies of the Oregon Transportation Plan and will comply with or move in the direction of meeting the standards and targets established in the OHP related to safety, access, and mobility. State modal plans will inform recommended improvements in the updated TSP; TSP recommendations will be consistent with state policy and requirements.
Oregon Highway Plan (updated 2011)	
Oregon Bicycle and Pedestrian Plan (updated 2011)	
Oregon State Rail Plan (2014)	
Oregon Freight Plan (2011)	
Oregon Public Transportation Plan (1997)	
Oregon Aviation Plan (2007)	
Oregon Transportation Safety Action Plan (2011)	
Transportation Planning Rule (OAR 660-012) (Updated 2011)	
Access Management Rule (OAR 734-051) (Updated 2012)	
Statewide Transportation Improvement Program	The TSP update analysis will take into account projects that are programmed in the STIP. An expected outcome of this planning process is proposed recommendations to update the STIP to include projects from the updated TSP.
ODOT Highway Design Manual	The ODOT Highway Design Manual provides design standards on state roadways; analysis for the TSP update and final project recommendations will need to reflect state requirements for state facilities. Standards and guidelines adopted by Lake County should be considered for additional guidance, concepts, and strategies for design.

Table 2-2. Summary of County Document Review

Document/Rule	Relevance to the TSP
Lake County Comprehensive Plan (1980, last updated 1989)	The updated TSP will be adopted as the transportation element of the City's Comprehensive Plan, replacing the 2002 TSP. Policy changes considered as part of the TSP update process must either be consistent with existing policies or propose amendments to adopted policies.
Lake County Parks and Recreation District Master Plan	Currently being created/updated.
Coordinated Human Services Transportation Plan (2012) and Northern Lake County Supplemental Information (2014)	This plan will inform the description of unmet transit needs and needed transit-related policies in the updated TSP transit element.
Lake County Airport Master Plan Update (2013)	The TSP update process will consider the findings and recommendations of the Airport Master Plan Update in determining future roadway and access needs and will incorporate applicable policies and recommendations from this plan as appropriate.
Lake County Transportation System Plan (2002)	The TSP update process will review goals, policies, standards, and recommended projects from the current plan and will determine what to retain or change in the updated TSP. Updated data, stakeholder and community involvement, and evaluation criteria will be used in making these determinations.
Lake County Zoning Ordinance and Land Development Ordinance (1980, last updated 1989)	Development requirements related to transportation improvements such as pedestrian and bicycle access and connectivity, traffic impact analyses, and agency coordination may be recommended as part of this planning process in order to implement the updated TSP, provide consistency between the ZO/ LDO, TSP, and Country roads standards, and strengthen compliance with the TPR.
Transportation Financing	Past revenue and existing and potential funding sources will be explored in order to identifying funding for needed transportation improvements recommended though this TSP update.

Section 3
Goals and Objectives

GOALS AND OBJECTIVES

The TSP's goals are the desired project outcomes and transportation needs that support Lake County's land use and growth vision. The overall guiding principle for the TSP is to provide and encourage a safe, convenient, efficient, and economic transportation system.

The goals for this 2016 TSP were developed based on the 2002 TSP, the County's 1989 Comprehensive Plan, and County and ODOT input. Objectives outline the discrete elements that, taken as a whole, support and promote the goals. Technical Memorandum #2 in the Technical Appendix (Volume 2 of the TSP) provides background information about the development of the plan's goals and objectives.

GOAL 1: MOBILITY AND CONNECTIVITY

Promote a transportation system within the County that links area communities and meets existing/future mobility needs for all travel modes.

Objectives

- Identify the 20-year roadway system needs to accommodate developing or undeveloped areas without straining limited financial resources. Emphasis should be placed on maintenance, operations, management, and service improvements rather than large capital improvements.
- Promote transportation linkages between the dispersed communities of the County by promoting an integrated system of principal highways that move people and goods throughout the County.
- Promote a County road system that facilitates transportation between various areas of the County and between principal highways.
- Promote a local road system that serves as access to commercial and residential areas. The County recognizes that automobiles will continue to be the primary mode of transportation between communities, given the rural and dispersed population centers.
- Preserve the function, operation, capacity, level of service, and safety of state highways and local roads in a manner consistent with adopted State and local plans.

- Update roadway cross section standards that balance the needs of all users and the primary purpose of the roadway.
- Coordinate with the Oregon Department of Transportation and local cities to identify and incorporate priority roadway improvements and maintenance needs.
- Improve traffic circulation within County communities, while maintaining the local character of each community.
- Promote and plan for future industrial, commercial, and residential growth areas.
- Update roadway performance standards to ensure the efficient movement of people, goods, and commodities.
- Update policies and standards that address street connectivity, spacing, and access management.
- Work with the local jurisdictions in establishing right-of-way needed for new roads identified in the TSP.
- Update County access management and roadway cross-section standards for all county roads.

GOAL 2: ECONOMIC DEVELOPMENT

Provide a transportation system that supports existing industry and encourages economic development in the County.

Objectives

- Develop and promote a multi-modal transportation network that supports existing industries and supports economic diversification in the future.
- Identify the 20-year roadway system needs to accommodate developing or undeveloped areas without straining limited financial resources.
- Promote railroad freight service via the Lake County Railroad.
- Prioritize improving and maintaining the key freight routes of US 395 and OR 140 through the County.
- Support truck access to industrial sites, including turn and acceleration/deceleration lanes where appropriate.
- Incorporate applicable findings and recommendations of the Lake County Airport Master Plan.
- Encourage tourism by promoting and upgrading recreational routes and wayfinding through the County.

GOAL 3: SAFETY

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

National and state safety evaluations have evolved from qualitative assessments to quantitative analyses that utilize data to inform priorities. The TSP will apply the latest tools and methods from the *Highway Safety Manual* to provide an objective and repeatable analysis of all crashes in Lake County.

Objectives

- Promote a transportation system that facilitates the use of state highways for safe and efficient travel but also provides safe, livable, and vibrant multimodal corridors in the County communities.
- Review existing roadways and roadway standards to ensure that they are designed, constructed, and maintained to an appropriate standard for their expected use, vehicle speeds, and vehicle traffic.
- Reduce incidence and severity of motor vehicle crashes.
- Evaluate crash trends from available crash records.
- Provide a transportation system that allows for adequate emergency vehicle access to all land uses.

GOAL 4: MULTIMODAL USERS

Provide a multimodal transportation system that permits the safe and efficient transport of people and goods through active modes.

Objectives

- Promote alternative modes, transit/dial-a-ride service, and rideshare/carpool programs that reduce motorized vehicle trips through community awareness and education.
- Increase the use of alternative modes of transportation (walking, bicycling, rideshare/carpooling, and dial-a-ride transit) through improved access, safety, and service within communities and rural service centers within the County.
- Consider bicycle and pedestrian facility needs during construction of new roads and during upgrades of existing roads.
- Review facilities for compliance with the Americans with Disabilities Act.
- Promote an interconnected network of bicycle, pedestrian, and transit facilities throughout the County and within local communities.
- Examine the need for specific pedestrian crossing locations in community areas.

- Support maintenance of State highways as bicycle routes, with use of local parallel routes as alternative routes where feasible.
- Emphasize shoulder maintenance (surfacing, cleaning, vegetation removal), particularly in the peak summer cycling months.
- Support widening shoulders as for bicycle travel as part of roadway preservation and improvement projects or as separate projects.
- Support the development of regional public transit opportunities.
- Support or encourage paratransit, dial-a-ride service to all residents within the county matched to the availability of financial resources.

GOAL 5: ENVIRONMENT

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

Objectives

- Develop a multi-modal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumptions and air quality impacts.
- Promote design standards that support acquiring only the minimum roadway width necessary for the roadway, including facilities for all users for the roadway classification, and maintenance to reduce weed infestation and conserve agricultural land.
- Develop and upgrade transportation facilities in such a manner 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 not damaged or impaired.
- 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 multi-modal transportation network, consistent with Goal 6 of the OTP. Paisley's population is less than 2,500; therefore, a transportation financing program is not required for the City of Paisley portion of the TSP, as specified in Oregon's Transportation Planning Rule (OAR 660-12-0040).

Objectives

- Maintain long-term funding stability for transportation maintenance projects.
- Evaluate new innovative funding sources for transportation improvements.

- Ensure that the existing transportation network is conserved and enhanced through maintenance and preservation.
- Identify areas where refinement plans or interim measures would increase the life of a facility or delay the need for improvements.
- Continue and enhance relationships and improve coordination among Lake County, ODOT, the Federal Highway Administration (FHWA), and local jurisdictions.
    - Cooperate with ODOT in the implementation of the Statewide Transportation Improvement Program (STIP).
    - Encourage the improvement of state highways.
    - Encourage planning coordination between local jurisdictions, the County, and the State by establishing cooperative road improvement programs, funding alternatives, and schedules.
    - Work with the local jurisdictions in establishing the right-of-way needed for new roads identified in the TSP.
    - Leverage federal and state highway funding programs.
    - Encourage citizen involvement in identifying and solving local transportation issues.

Section 4
Existing 2015 Transportation Conditions

EXISTING 2015 TRANSPORTATION CONDITIONS

Lake County's transportation system provides facilities serving many different modes of transportation. This section provides an overview of the existing County system. A more complete overview is included in Technical Memorandum #3 in the Technical Appendix (Volume 2 of the TSP).

STREET AND HIGHWAY SYSTEM

Four state highways and a network of paved and gravel county roads serve Lake County. Primary roadway facilities, their characteristics, and existing operational performance are summarized below.

System Overview

All major roadways within unincorporated Lake County and the City of Paisley fall under the jurisdiction of the state (ODOT) or the County. The following sections describe the characteristics of these roadways.

State Highways

The state facilities within Lake County provide district, statewide, and regional connectivity. These facilities are:

- **US Highway 395** (Fremont Highway #19 south of Valley Falls and Lakeview–Burns Highway #49 north of Valley Falls) is one of two main north–south highways in the county, providing connections south to northeastern California and north to Burns, John Day, and Pendleton. It passes through the communities of New Pine Creek, Lakeview, Valley Falls, and Alkali Lake.
- **Oregon Highway 31** (Fremont Highway #19) is the county's other main north–south highway, connecting Lakeview to Central Oregon via US 97 at La Pine. It passes through Paisley, Summer Lake, and Silver Lake, and is also an access route to Christmas Valley.
- **Oregon Highway 140** (Klamath Falls–Lakeview Highway #20 west of Lakeview and Warner Highway #431 east of Lakeview) is the county's main east–west highway, providing connections west to Klamath Falls and east to Winnemucca, Nevada. It passes through the community of Adel.

- **US Highway 20** (Central Oregon Highway #7) has a 15-mile segment between Bend and Burns that cuts across the northeastern corner of Lake County. It has no connection to the rest of the County's road system without first traveling through a neighboring county.

County Roadways

Lake County has jurisdiction over approximately 723 miles of roads. Approximately 364 miles are paved, 349 miles are gravel, and 10 miles are dirt roads. County roads are typically two lanes wide. Paved roads typically have two 24-feet travel lanes and gravel shoulders. Gravel roads are typically 26 feet wide with 2-foot shoulders. The existing right-of-way along County roads is a total of 60 feet with 30 feet on each side of centerline.[1]

Roadway System Characteristics

State and County roadways are categorized based on functional classification, which is based on a road's purpose and use characteristics. Technical Memorandum #3 in the Technical Appendix (Volume 2 of the TSP) summarizes the existing County functional classification, roadway design standards, and access management standards based on the County's 2002 TSP. The City of Paisley does not have a separate functional classification system. The majority of the roads within Paisley, other than Oregon Highway 31 and the east−west county highway, have the characteristics of local streets. **Section 7** summarizes the current functional classification, roadway design standards, and access management standards for the key roadways within Lake County.

[1] *Lake County TSP*, 2002

Section 5
Future 2035 Transportation Conditions

FUTURE CONDITIONS

This section summarizes future 2035 transportation conditions from a high level. More detailed information is provided in Technical Memorandum #4 in the Technical Appendix.

POPULATION PROJECTIONS

Population Inventory

Oregon Revised Statute 195.034 directs all counties to formulate and adopt coordinated population projections between the county and its incorporated cities. The Oregon Office of Economic Analysis published county population projections for the state in 2013, which counties are required to use. Table 5-1 summarizes the projected population for Lake County through 2035; it is projected that the County's population will remain largely the same through 2035. However, local economic initiatives (such as the priority development areas described below) could increase population beyond these projections. As such, future roadway improvements should account for some growth.

Table 5-1. Lake County Population Projections

Year	Lake County Total
2010	7,890
2015	7,919
2020	7,936
2025	7,948
2030	7,931
2035	7,893

Note: 2010 population totals are based on estimates. 2015–2035 populations are projections.
Source: Oregon Office of Economic Analysis (http://www.oregon.gov/DAS/OEA/Pages/demographic.aspx)

Priority Development Areas

Areas that have been prioritized to support existing and future economic development within Lake County and the City of Paisley include:

- Red Rocks Biofuel,
- Renewable resources (solar, geothermal, etc.),
- Natural gas,
- Mining,
- Ranch/farm operations throughout the County and specifically in Christmas Valley, and
- Medical facilities.

FUTURE TRAFFIC CONDITIONS

Year 2035 Forecast Traffic Volumes

Traffic volumes for the year 2035 were developed using ODOT's historical trends method, which relies on historic traffic volumes to develop an annual growth rate. ODOT maintains Future Volumes Tables that summarize current and projected future year traffic volumes for state roadways. Based on guidance from ODOT's *Analysis Procedure Manual,* the projected average annual growth is 0.25 percent for all Lake County and City of Paisley roadways. This growth rate was applied to both state and county roadways. The Methodology Memo, included as part of Technical Memorandum #4 in the Technical Appendix (Volume 2 of the TSP), provides the traffic volume projections for the locations that were used to develop this growth rate.

Year 2035 Forecast Intersection Operations

The 0.25 percent average annual growth rate was applied to the existing traffic volumes described in Section 3 of the TSP and the study roadway segment and intersection operations were re-analyzed using the higher volumes. No changes to existing lane configurations or traffic control devices were incorporated into the intersection analysis, as no projects are currently programmed that would change these conditions at the study intersections.

The two study intersections are expected to operate with volume-to-capacity ratios less than 0.10 in 2035 and all study roadway segments are expected to meet ODOT mobility standards.

Section 6
Future 2035 Transportation Needs and Alternatives

FUTURE 2035 TRANSPORTATION NEEDS AND ALTERNATIVES

This section identifies the future needs for Lake County's multimodal transportation system. As noted in Section 5, there are no forecast capacity deficiencies for any of the major roadways serving the County. As a result, the identification of future transportation needs primarily focused on improving roadway and intersection operations from a safety, maintenance, and modernization perspective. From these needs, a list of projects was developed and refined. The final project list is provided in **Section 7**.

ROADWAY NEEDS

Functional Classification

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

The only proposed modification to the existing functional classification system is to upgrade Old Lake Road from a Minor Collector to a Major Collector. A project in process at the time of writing will result this modification of classification. A Major Collector serves as an access routes between a population center and Principal/Minor Arterials (e.g., major state highways). Within Lake County, Major Collectors are generally minor state highways and major County roads, including the most significant County-owned facilities. **Section 7** presents the County's functional classification system.

TRANSPORTATION ALTERNATIVES

Transportation alternatives for unincorporated Lake County and the City of Paisley were developed and evaluated to address transportation needs based on the current and future forecast traffic conditions. The future transportation needs of the County and City were determined based on comments received from the public, Lake County, City of Paisley, ODOT, and members of the Project Advisory Committee; a field review conducted by Kittelson and Associates, Inc. in 2015; technical analysis of traffic operations; and a review and analysis of crash history reports. Alternatives include a combination of projects and studies.

The alternatives considered as part of this update are discussed in Technical Memorandum #5: Alternatives Analysis included in the Appendix.

Section 7
Transportation System Plan

TRANSPORTATION SYSTEM PLAN

This section outlines the preferred transportation system plan for Lake County, and incorporates the following modal plans:

- Roadway System Plan
- Access Management Plan
- Pedestrian and Bicycle System Plan
- Public Transportation System Plan
- Air/Marine/Rail/Pipeline Plan

The transportation components presented in this section were developed in accordance with the requirements of Oregon's Transportation Planning Rule. Each modal plan has been developed in accordance with the findings of the existing and future forecast conditions analyses discussed in **Section 4** and **Section 5,** respectively. In addition, the plan relies heavily on feedback from the Plan's Technical and Public Advisory Committees (TAC/PAC) and in-person and online public workshops.

The project alternatives presented in Technical Memorandum #5 were reviewed at the TAC/PAC meeting in October 2015. TAC/PAC feedback was incorporated into the preferred project list and prioritization.

ROADWAY SYSTEM PLAN

The Lake County roadway system plan reflects the anticipated operations and circulation needs through the year 2035 and provides guidance on facilitating vehicular, non-vehicular, and freight traffic over the next 20 years. The plan focuses on the County-owned and maintained roadway system. All state highways within the County are identified for coordination purposes.

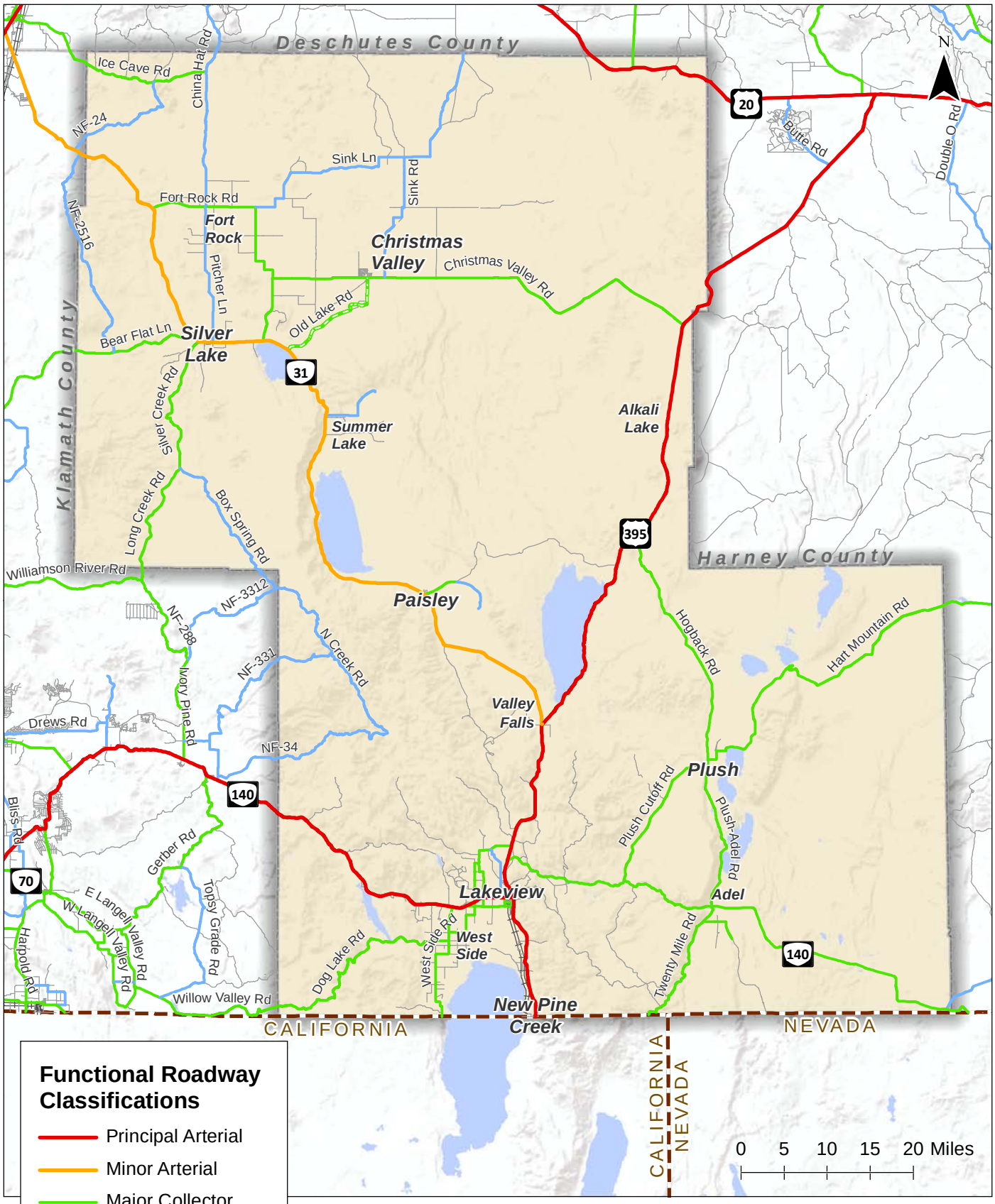
Paisley is bisected by OR 31, which runs generally from north to east through the city limits. Long sections of high-speed rural highway precede Paisley in both directions on OR 31. Therefore, roadway improvements identified in the City of Paisley portion of the TSP are focused on alerting drivers that an urbanized area is approaching and facilitating a change in driving behavior.

Functional Classifications

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

A map of the preferred functional classification system for Lake County is shown in Figure 7-1 and Paisley in Figure 7-2. A description of the preferred functional classification system within Lake County is summarized in Table 7-1.

The only modification to the existing functional classification is upgrading Old Lake Road from a Minor Collector to a Major Collector. A project in process at the time of writing will result in the update of this functional classification.



Functional Roadway Classifications
Lake County, Oregon

Figure **7-1**

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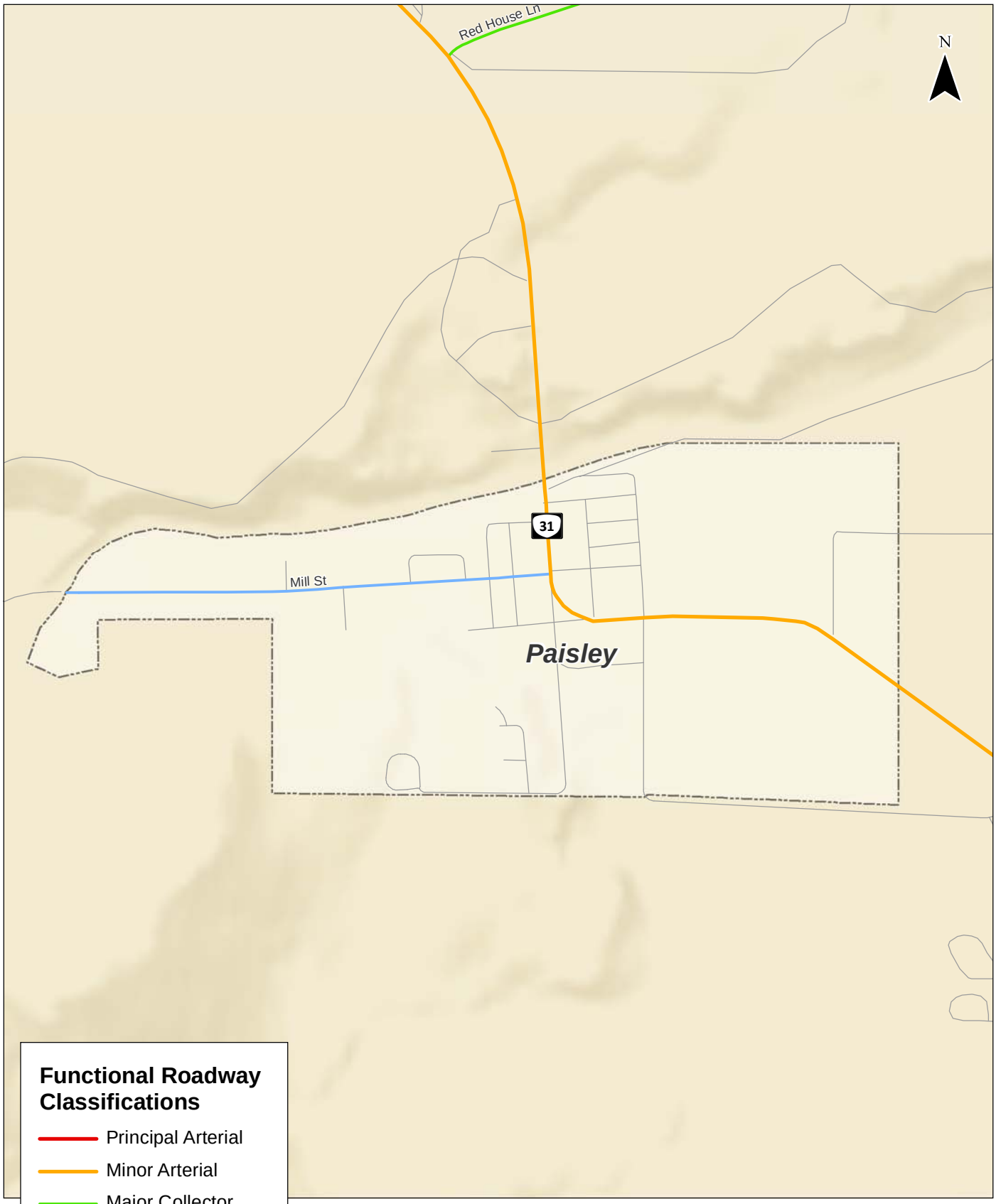

Functional Roadway Classifications
Paisley, Oregon

Figure **7-2**

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Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: Oregon Department of Transportation,Sources: Esri, USGS, NOAA

Table 7-1. Lake County and City of Paisley Functional Classification Descriptions

Functional Classification	Description
Principal Arterial	The primary function of a Principal Arterial is to carry high levels of regional vehicular traffic at high speeds. US 395 and OR 140 west of Lakeview are the only two highways classified as Principal Arterials within Lake County.
Minor Arterial	Minor Arterials are similar to Principal Arterials, but provide a higher degree of accessibility to lower-classified roadways and private driveways. OR 31 is the only highway classified as a Minor Arterial within Lake County and the City of Paisley.
Major Collector	These facilities serve as access routes between population centers and Principal/Minor Arterials. Within Lake County, these facilities are generally minor state highways and major County roads. They represent the most significant County-owned facilities.
Minor Collector	These facilities are similar to Major Collectors, but allow a higher degree of accessibility to Local Roads and private driveways.
Local Road	The primary function of Local Roads is to provide direct access to adjacent land uses. These roads are characterized by short roadway distances, slow speeds, and low volumes.

Note: Bold type indicates functional classes applicable to the City of Paisley.

Roadway Cross-sections

Lake County

The proposed roadway cross-sections for County roadways are based on existing County standards and a strong preference of County officials to focus resources on roadway maintenance efforts. The guidelines take into consideration general roadway purpose and available county resources. As the County road system develops, the guidelines will support safe and efficient movement of people and goods while also accommodating the orderly development of adjacent lands.

Basic County roadway cross-sections are shown in Exhibit 7-1 and Exhibit 7-2. In addition, a cross-section that includes bicycle lanes is also included. This cross-section is expected to be used for roadways identified as recreational routes to promote regional recreation or tourism. Exhibit 7-3 shows the preferred configuration of a roadway that includes bicycle facilities. Based on design details, available right-of-way, or maintenance considerations, other layouts, such as a multi-use path on one side of a roadway, may also be considered.

Roadways that are part of the state transportation system are subject to ODOT design standards.

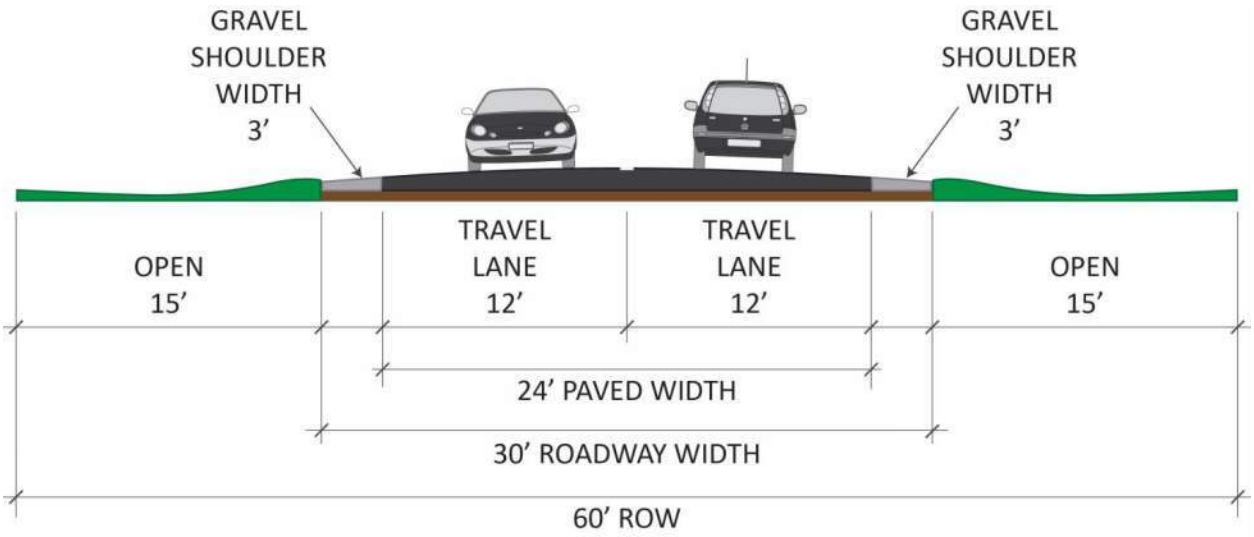


Exhibit 7-1. Paved County Roads (Collector or Local Roads)

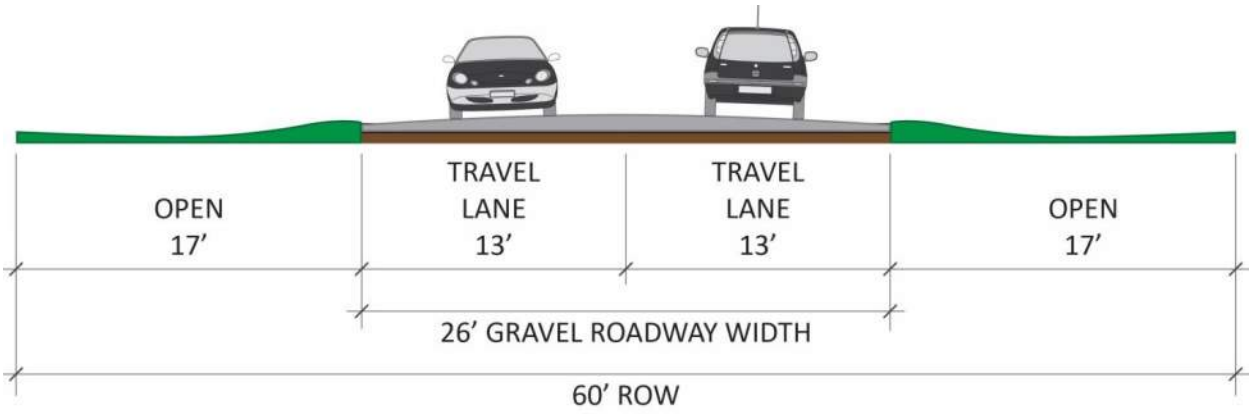


Exhibit 7-2. Gravel County Roads (Collector or Local Roads)

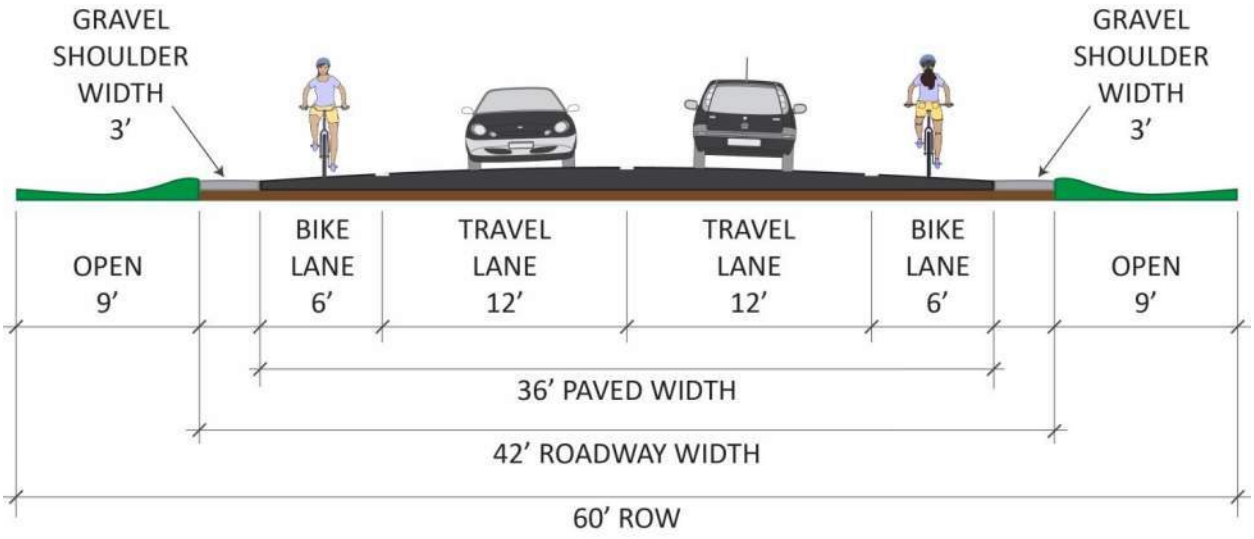


Exhibit 7-3. Paved County Roads with Bike Lanes (Collector or Local Roads)

City of Paisley

Oregon Highway 31 and Mill Street west of Highway 31 are owned and maintained by ODOT and Lake County, respectively. As such, applicable ODOT and County standards apply to these facilities for roadway construction or improvement projects. All remaining roads in Paisley are classified as local roads and are not built to a consistent standard.

Improvement of local roads within Paisley should consider the following at a minimum:

- Addition of sidewalks where feasible
- Addition of shoulders for bicycle travel where feasible

Where possible, a complete roadway section should be constructed. An example roadway cross-section for Paisley is shown in Exhibit 7-4.

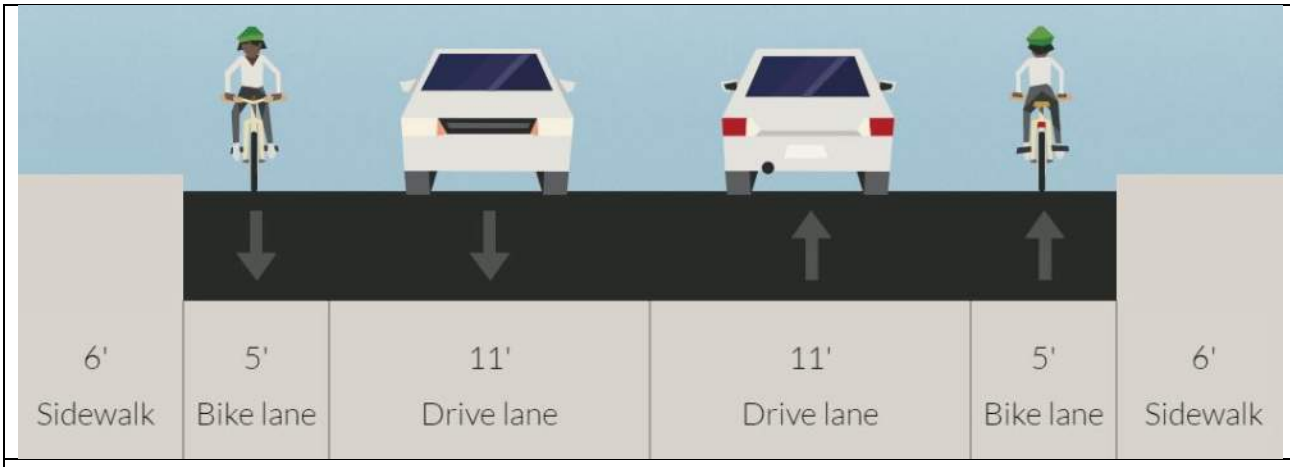


Exhibit 7-4. Local Street Cross-section Example for Paisley

Traffic Operations Standards

A maximum volume-to-capacity (v/c) ratio of 0.85 during a typical weekday peak hour should be maintained for all City- and County-owned or maintained intersections. At intersections with an ODOT facility, ODOT standards shall apply. For unsignalized intersections, the v/c ratio is based on the intersection's critical movement. For signalized intersections, the ratio is based on the overall intersection operation.

ACCESS MANAGEMENT PLAN

Managing access to the County's road system is necessary to preserve capacity and maintain the safety of the County's 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. Oregon's Transportation Planning Rule requires that new connections to arterials and state highways be consistent with designated access management categories. This TSP includes an access management

policy that maintains and enhances the integrity (i.e., capacity, safety, and level of service) of Lake County's roadways.

Access spacing standards for all driveways and private roads accessing County collector and arterial roadways are provided in Table 7-2.

Access to state facilities is governed by ODOT's access management standards provided in the most current version of the *Oregon Highway Plan* and in Oregon Administrative Rule 734-051.

Table 7-2. Access Management Spacing Standards for Lake County Roadways

Functional Classification	Public Road Spacing	Private Drive Spacing
Collector	500 ft	200 ft
Local Road	500 ft	50 ft

These standards apply to new development or redevelopment; existing accesses are allowed to remain as long as the land use does not change. As a result, access management is a long-term process in which the desired access spacing to a street slowly evolves over time as redevelopment occurs.

PEDESTRIAN AND BICYCLE SYSTEM PLAN

Lake County

Limited dedicated pedestrian facilities are located within Lake County or the City of Paisley. Most current facilities exist within Christmas Valley or near the Town of Lakeview. Given the rural area of most of the County, lack of pedestrian facilities on County roads is not uncommon. Even so, integrating pedestrian facilities into streets located within city centers, particularly within Paisley, would enhance the pedestrian environment. Several pedestrian enhancements are included in preferred alternative project list presented later in this section.

Like pedestrian facilities, there are limited dedicated bicycle facilities in Lake County. Shoulders and some bike lanes are present on some roads but a continuous bicycle system is not in place. County roads between cities are generally high speed (posted speed limits of 55-65 miles per hour) and can be uncomfortable riding for bicyclists. Streets with lower speeds and lower volume within communities such as residential streets are typically marked or expected to be used as a shared facility.

Mountain biking is a popular form of recreation in Lake County, with many trails for all levels of experience. The Lakeview, Paisley, and Silver Lake Ranger Districts of the Fremont–Winema National Forest all have multiple areas for mountain biking.

City of Paisley

No dedicated pedestrian or bicycle facilities are provided within Paisley; however, a need exists for improved access to Paisley School and improved access across Oregon Highway 31. The local street

cross-section portion of the TSP states that when local streets are improved, the addition of sidewalks and bicycle facilities should be considered. The implementation plan provided later in this section identifies five pedestrian and bicycle projects for Paisley to improve non-motorized access to Paisley School and to businesses located along Oregon Highway 31.

PUBLIC TRANSPORTATION PLAN

Lake County has no fixed route public transit service. Limited demand-responsive/dial-a- ride shuttle service exists for seniors, those with disabilities and the general public through local STF providers. Preliminary plans exist for expansion of services into additional areas including Adel, Plush, New Pine Creek, Westside and Valley Falls. These services are for non-emergency transit purposes including but not limited to medical appointments, education, employment, shopping and recreation. Future planning needs most likely will include placement of bus shelters in areas across the County as well as consideration for passenger pick-up/drop off designations.

There is no intercity bus service within Lake County. The closest intercity bus stops are located in Riley (Harney County), La Pine (Deschutes County), and Klamath Falls (Klamath County).

Transit services are coordinated in Lake County through the Lake County Coordinated Human Services Plan. This document was being updated at the time the TSP was being updated. It is the guiding plan for public transit service in Lake County.

RAIL SYSTEM PLAN

Lake County Railroad, owned by Lake County and operated by Frontier Rail, owns 55 miles of track between Lakeview and Alturas, California, comprising the outermost portion of the Lakeview Branch that starts near Klamath Falls. Frontier Rail leases an additional 60 miles of track between Alturas and Perez, California, where it interchanges with the Union Pacific Railroad. Lake County should continue to support the operation of this railroad as an economic engine benefitting the entire County.

No passenger rail service is provided in Lake County; the closest Amtrak stations are in Klamath Falls and Chemult, both in Klamath County.

ALL-TERRAIN VEHICLES

All-Terrain Vehicles (ATVs) are popular forms of transportation within Lake County. These vehicles are allowed to use County roadways as provided by County Ordinance No. 104. The vehicles are explicitly banned from the following highways: US 395, US 20, Oregon Highway 31, and Oregon Highway 140. ATVs are allowed to cross these state highways.

Maintaining access to ATV recreational opportunities is a priority for the County.

ACCESS TO PARKS & RECREATIONAL FACILITIES

Recreational opportunities within Lake County are a draw for residents and visitors. Maintaining transportation access to these facilities is a priority for the County.

AIR TRANSPORTATION PLAN

Five airports serve Lake County. Two are general aviation airports and the other three are remote access/emergency service airports. They are as follows:

- Lake County Airport – Category III (Regional General Aviation Airport)
- Christmas Valley Airport – Category IV (Local General Aviation Airport)
- Paisley Airport – Category V (Remote Access/Emergency Services Airport)
- Silver Lake Airport – Category V (Remote Access/Emergency Services Airport)
- Alkali Lake State Airport – Category V (Remote Access/Emergency Services Airport)

The *Oregon Aviation Plan* defines Category III airports as regional general service airports located in geographically significant locations that serve multiple communities within the service area. Category IV airports accommodate general aviation users and local business activities. Category V airports accommodate limited general aviation use in smaller communities and remote areas, as well as provide emergency and recreational use functions.

The Lake County Airport has a Master Plan that guides the future of that facility. That document and other relevant planning documents for each airport will guide the development of these facilities.

MARINE SYSTEM PLAN

Lake County is landlocked with no major navigable waterways. As such, no plans for the Marine System are included in the TSP.

PIPELINE AND TRANSMISSION SYSTEM PLAN

The Ruby Pipeline is a 42-inch natural gas pipeline running from Opal, Wyoming to Malin, Oregon. It travels through Lake County from Klamath County in the west and Nevada in the southeast. This pipeline is expected to continue to operate in the future; no modifications or additions are planned.

IMPLEMENTATION PLAN

This section describes specific transportation system improvement projects. The projects focus on the following key categories:

- Modernization: These projects include upgrades to address operational issues or upgrades to roadways to expand roadway purposes. These projects cannot be conducted as part of regular

maintenance activities and may include activities such as shoulder widening or full reconstruction of a roadway.

- Freight Routes: The County has identified several roads to be classified as County Freight Routes. Future efforts should consider any modification to roadway standards for these facilities and other policy needs of these routes.
- Safety: These projects consider opportunities to improve existing facilities to reduce the probability and severity of crashes.
- Active Transportation: These projects improve existing facilities or create new facilities that provide greater connectivity and increase access to pedestrian and bicycle routes within communities. They also provide recreational opportunities for the broader region.
- Other project categories include maintenance, bridge replacement, and railroad crossing upgrades.

Table 7-3 describes the preferred projects identified for Lake County, while Table 7-4 describes the preferred projects identified for the City of Paisley. Figure 7-3 and Figure 7-4 show the location of these projects within the County and Paisley, respectively. These projects collectively reflect the broad goal of developing an efficient and accessible transportation network for all users.

Appendix 1 provides detailed cost estimates, while **Appendix 2** provides prospectus sheets describing each project in greater detail. A memorandum documenting recommended policies and code changes to implement key aspects of this TSP is included in **Appendix 3**.

Table 7-3. Transportation System Improvements for Lake County

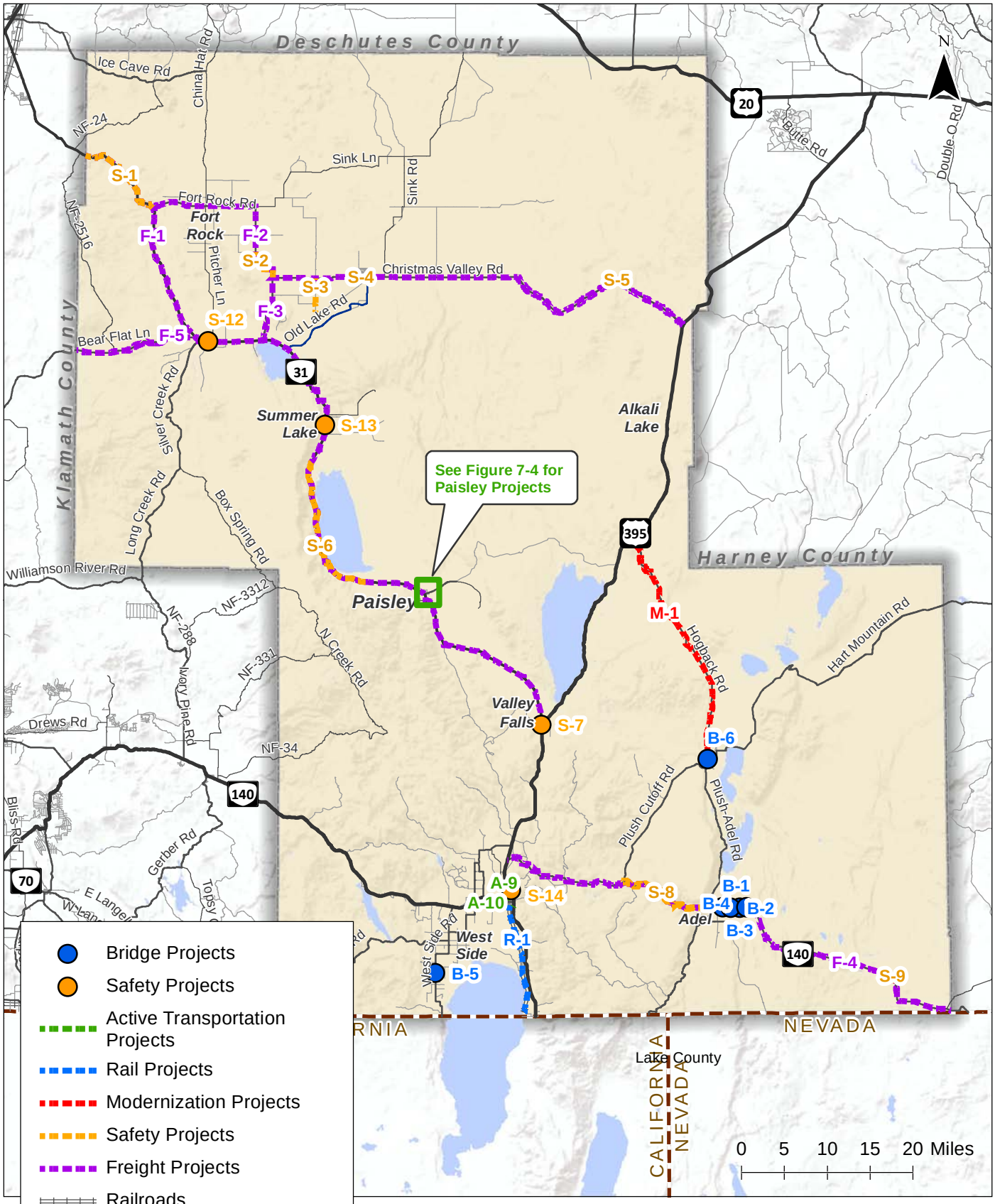
ID	Category	Location	Description of Need	Description of Improvement(s)	Priority	Cost Estimate
S-1	Safety	OR 31 (Fort Rock Rd. to Klamath County line)	High frequency of crashes, particularly animal and fixed-object crashes. More passing lanes may be needed.	Conduct focused study on this section of highway to determine cause of crashes and possible mitigation measures.	High	<$50,000
S-2	Safety	Fort Rock Rd. to Christmas Valley "S" turns.	County officials and residents believe these turns have a high potential for crashes.	Conduct focused study on this section of highway to determine cause of crashes and possible mitigation measures. Study could be in the form of a roadway safety audit.	Medium	<$50,000
S-3	Safety	Old Lake Road (5-14G)	Main route to Christmas Valley from the south. Blowing dust and sand can limit visibility.	Install screening barriers to help minimize visibility issues and signage to improve driver awareness.	Low	<$50,000
S-4	Safety	Christmas Valley	Residents have concerns about high traffic speeds through Christmas Valley. Speed was a factor in 6 of 13 reported crashes.	Construct transition treatments on Christmas Valley Rd. at the west and east edges of the community, including monuments announcing to motorists that they are entering Christmas Valley and permanent speed feedback signs.	High	$82,800
S-5	Safety	Christmas Valley Rd.	Steep grade (8%) east of Christmas Valley.	Improve roadway signage warning drivers of grade. Consider installation of weather-based warning system to alert drivers when traction devices should be used. Long term, this road may require realignment and reconstruction.	Low	$73,200
S-6	Safety	OR 31 along Summer Lake	High frequency of fixed-object crashes. Wind and speed are common contributing factor to crashes.	Conduct focused study on this section of highway to determine cause of crashes and possible mitigation measures.	High	<$50,000
S-7	Safety	Valley Falls (Jct. US 395/OR 31)	County officials and area residents believe a warning device may be needed to alert drivers to this intersection.	Conduct study to identify possible mitigation measures for the intersection. Options could include warning devices, roadway reconfiguration, or modified intersection control.	Medium	<$50,000
S-8	Safety	OR 140 (Plush Cutoff Road to Plush–Adel Road)	High frequency of crashes. Two fatalities over 5 years of observed data. Road winds through canyon.	Conduct focused study on this section of highway to determine cause of crashes and possible mitigation measures.	High	<$50,000
S-9	Safety	OR 140 about 10 miles west of the Nevada border (Doherty Rim)	Steep grade (8%) on the highway.	Consider installation of weather-based warning system to alert drivers when traction devices should be used.	Low	$75,000
S-10	Safety	Fixed-object and non-collision crashes	High frequency of fixed-object and non-collision crashes, including collisions with animals.	Conduct a study to determine where wildlife crossings are needed on the major state highways. Estimate the cost of installing the crossings. County-wide systemic safety projects for rural roads (e.g., rumble strips, shoulder widening).	High	$50,000
S-12	Safety	Silver Lake	Speeds on OR 31 transition from 65 mph to 40 mph within Silver Lake.	Construct transition treatments at the west and east ends of the community on OR 31, including monuments announcing to motorists that they are entering Silver Lake and permanent speed feedback signs.	High	$85,000
S13	Safety	Summer Lake	Speeds on OR 31 transition from 65 mph to 35 mph within Summer Lake	Construct transition treatments at the west and east ends of the community on OR 31, including monuments announcing to motorists that they are entering Summer Lake and permanent speed feedback signs.	High	$85,000
S14	Safety	North Lakeview	Speeds on US 395 transition from 65 mph to 25 mph within Lakeview	Evaluate and construction speed transition treatments as vehicles enter Lakeview from the north. This could include monuments announcing to motorists that they are entering Summer Lake and permanent speed feedback signs.	High	$100,000
M-1	Modernization	Hogback Road	Hogback Road is currently a gravel road.	Pave Hogback Road. This improvement should be planned in conjunction with an appropriate amount of increased maintenance funding.	Low	$17,500,000
A-7	Active	County-wide	Prioritize signage to recreational areas to	Install and/or enhance wayfinding to key recreational areas. Specifically evaluate	Low	$12,000

ID	Category	Location	Description of Need	Description of Improvement(s)	Priority	Cost Estimate
	Transportation		boost economic opportunities that could result from tourism, etc.	Picture Rock Pass turnout on OR 31.		
A-8	Active Transportation	County-wide	Limited recreational biking routes exist. Potential locations may include County roads around Lakeview and the City of Paisley.	Evaluate possible bike routes on: • OR 140 east of US 395 to Plush–Adel Road • Plush Cutoff Road (Project in process) • Plush–Adel Road • West of Paisley	Medium	<$50,000
A-9	Active Transportation	OR 140 west of Lakeview	No sidewalks on OR 140 west of the railroad tracks	Construct sidewalks on OR 140 from the railroad tracks in the east to Roberta Avenue in the west	Medium	TBD
A-10	Active Transportation	US 395 south of Lakeview	No sidewalks on US 395 south of 9th Street	Construct sidewalks on US 395 from 9th Street in the north to BLM building in the south	Medium	TBD
B-1	Bridge	OR 140, Bridge 08848A	Bridge has low sufficiency rating	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.	High	$30,000
B-2	Bridge	OR 140, Bridge 08850	Bridge has low sufficiency rating	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.	High	$30,000
B-3	Bridge	OR 140, Bridge 08849	Bridge has low sufficiency rating	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.	High	$30,000
B-4	Bridge	OR 140, Bridge 09538	Bridge has low sufficiency rating	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.	High	$30,000
B-5	Bridge	Drews Creek County Road (37C030)	Bridge is a high priority for County maintenance	Repair bridge	High	$720,000
B-6	Bridge	Honey Creek County Rod (37C008)	Bridge is a high priority for County maintenance	Repair bridge	High	$600,000
MA-1	Maintenance	County-wide	County struggles to maintain roadways to acceptable standard. Ongoing maintenance funding is challenging.	Identify long-term maintenance funding strategies.	High	Ongoing
F-1	Roadway/ Freight Route	OR 31	OR 31 is not currently designated as a freight route. Designating this road as such may increase economic opportunities for the County.	Coordinate with ODOT, Klamath County, and Deschutes County on study to evaluate need/feasibility of upgrading OR 31 to a designated freight route.	Medium	<$50,000
F-2	Roadway/ Freight Route	Fort Rock Rd. and Christmas Valley Rd.	Fort Rock Rd. and Christmas Valley Rd. between OR 31 and US 395 are not currently designated as freight routes, but are often used by freight vehicles.	Upgrade facility to better accommodate freight vehicles.	Medium	$1,900,000 (For some asphalt widening)
F-3	Roadway/ Freight Route	Arrow Gap Rd.	Arrow Gap Rd. between OR 31 and Christmas Valley Road is not currently designated as a freight route, but often used by freight vehicles.	Upgrade facility to better accommodate freight vehicles.	Medium	$1,365,000 (For some asphalt widening)
F-4	Roadway/ Freight Route	OR 140 east of Lakeview	Length restrictions that limit freight movement on this route. Removing this length restriction is a priority for the County.	Coordinate with ODOT on study to evaluate need/feasibility of upgrading 140 in this section to a designated freight route.	Medium	<$50,000
F-5	Roadway/ Freight Route	Bear Flat Ln.	Freight vehicles to/from the west often use Bear Flat Ln.	Designate Bear Flat Lane from Klamath County to OR 31 as a freight route. This should be done in coordination with Klamath County.	Medium	$30,000

ID	Category	Location	Description of Need	Description of Improvement(s)	Priority	Cost Estimate
R-1	Railroad	Lake County Railroad	The Lake County Railroad is a key economic engine for Lake County.	Upgrade rail, ballast, ties, and surface	High	Estimated at $1 million per mile. $53,000,000 total
				Upgrade switches	High	Estimated $75,000 per switch $1,500,000 total
				Upgrade rail bridges	High	$6,000,000

Table 7-4. Transportation System Improvements for Paisley

ID	Category	Location	Description of Need	Description of Improvement(s)	Priority	Cost Estimate
S-11	Safety	OR 31 at the north and south city limits	Speeds on OR 31 transition from 65 mph to 35 mph within Paisley.	Construct transition treatments, including monuments announcing to motorists that they are entering Paisley and permanent speed feedback signs.	High	$85,000
A-1	Active Transportation	OR 31 between Main St. and Green St.	Limited sidewalk infrastructure. Provide access to businesses on OR 31.	Construct sidewalks.	High	$345,000
A-2	Active Transportation	Mill St. between Willow St. and Paisley School	Limited sidewalk infrastructure. Provide sidewalks to/from Paisley School.	Construct sidewalks.	High	$345,000
A-3	Active Transportation	Green St. between Cottonwood St. and Mill St.	Limited sidewalk infrastructure. Provide sidewalks to/from Paisley School.	Construct sidewalks.	High	$270,000
A-4	Active Transportation	OR 31 at Mill St.	School crossing.	Construct an improved crosswalk.	High	$6,000
A-5	Active Transportation	OR 31 at Green St.	School crossing.	Construct an improved crosswalk.	High	$6,000
MA-2	Maintenance	City-wide	The City struggles to maintain roadways to acceptable standard. Ongoing maintenance funding is challenging.	Identify long-term maintenance funding strategies.	High	Ongoing



Transportation Projects
Lake County, Oregon

Figure
7-3

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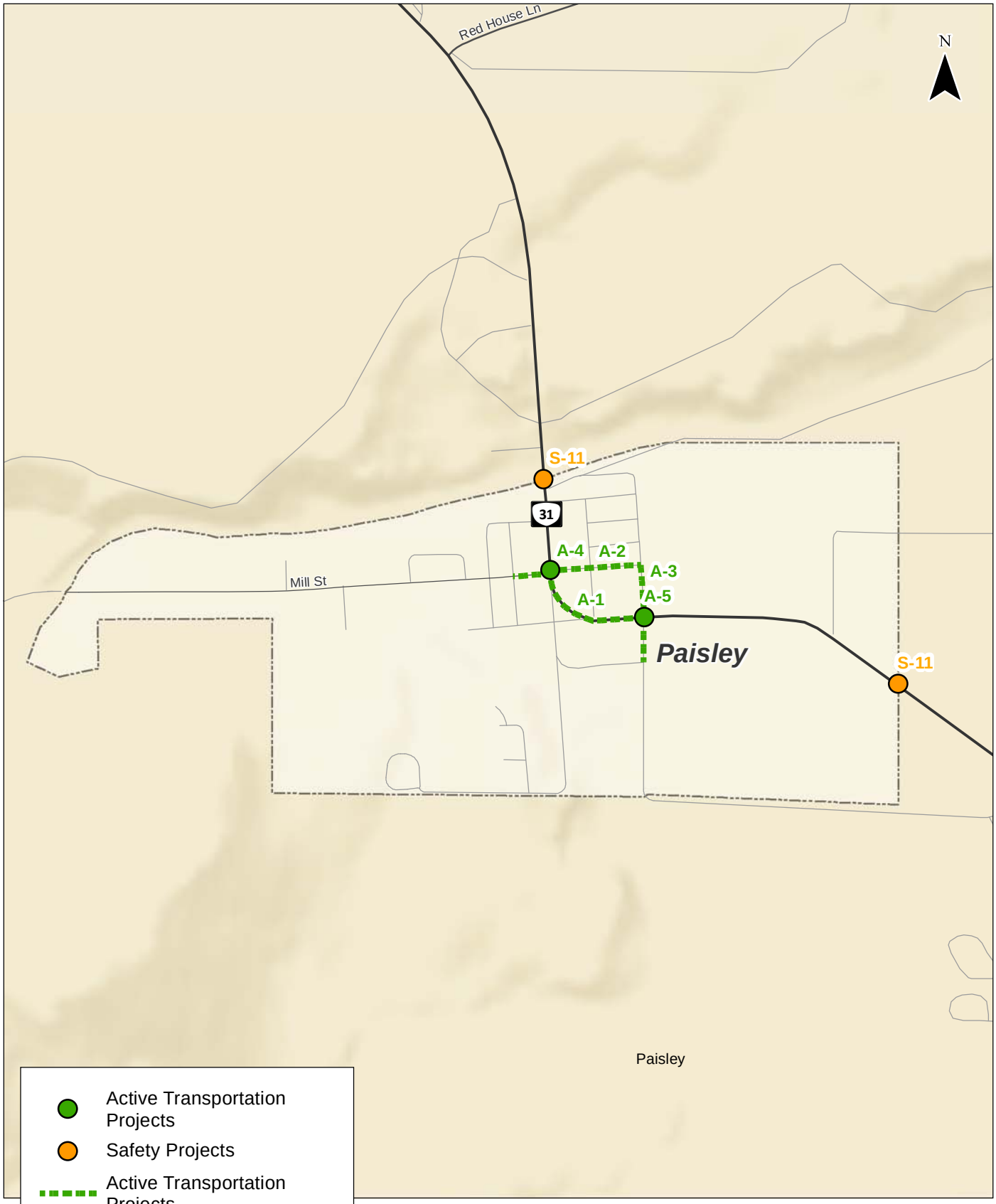

Transportation Projects
Paisley, Oregon

Figure
7-4

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Coordinate System: NAD 1983 Oregon Statewide Lambert Feet Intl
Data Source: Oregon Department of Transportation,Sources: Esri, USGS, NOAA

MAINTENANCE PLAN

The County maintains a list of road conditions that helps prioritize roadway maintenance prioritization. Table 7-5 shows the status of county road conditions as of May 2016. This list is regularly updated by the County.

Table 7-5. County Road Conditions

Road Name	Road #	Miles	Road Condition			
			Good	Fair	Poor	Bad
DISTRICT 1						
Stockdrive Lane	1-10	5.05	X			
Airport Road	1-10A	3.73			X	
Westside Road	1-11	18.18	X			
Tunnel Hill Road	1-13	3.06	X			
Dog Lake Road	1-11D	5.00	X			
Dog Lake Road	1-11D	5.00				X
Padget Road	1-11B	1.11		X		
Garrett/Christensen Lane	1-11E	2.66			X	
Horseshoe Meadow Lane	1-11G	1.25				X
DuMilieu Lane	1-11H	1.21	X			
Andy Hill Road	1-12	6.41		X		
Water Users Lane	1-12B	1.00				X
Kadrmas Road	1-14	1.67	X			
State Line Road	1-19	2.10		X		
DISTRICT 2						
Red House Road	2-07	3.93		X		
Mill Lane	2-08	0.70		X		
Clover Flat Road	2-10	5.19			X	
Thomas Creek Road	2-16	10.90		X		
Dairy Creek Road	2-16A	3.31		X		
Old Smokey Road	2-17	2.59	X			
Rabbit Hill Road	2-18	6.12	X			
Geyser View Lane	2-18A	1.83	X			
Industrial Lane	2-18C	0.49			X	
Thomas Creek Loop	2-19A	0.50	X			
Osborne Lane	2-19C	1.01		X		

Road Name	Road #	Miles	Road Condition			
			Good	Fair	Poor	Bad
Jaska Lane	2-19D	1.77		X		
Leehmann Lane	2-19E	2.77			X	
Pike Lane	2-19F	2.02		X		
DISTRICT 3						
Hogback	3-10	5.65			X	
Plush-Adel Road	3-10	18.97			X	
Plush Cut-off	3-13	18.4	X			
Twentymile Road	3-14	7.98		X		
Coleman Valley Road	3-15	2.56			X	
Hart Mt. Road	3-12	13.31			X	
DISTRICT 4						
Silver Creek	4-11	5.17	X			
Bear Flat	4-10	14.8	X			
East Bay Road	4-12	5.74				X
Carlon Lane	4-16	4.27				X
DISTRICT 5						
Rock View Road/Antelope Road	5-01	0.50	X			
Fort Rock Road	5-10	22.43	X			
Connley Lane	5-10C	3.54				X
Derrick Caves Road	5-12	9.22				X
Frederick Butte Road (Sink Lane)	5-12B	9.80			X	
Fossil Lake Road	5-14D	11.87			X	
Old Lake Road	5-14F	14.82	X			
South Oil Dri Road	5-14G	5.00			X	
North Oil Dri Road	5-14G	8.00	X			
Arrow Gap/Christmas Valley Hwy	5-14	20.0		X		
Arrow Gap/Christmas Valley Hwy	5-14	40.0		X		

Section 8 Transportation Finance Plan

TRANSPORTATION FINANCE PLAN

Transportation funding is considered at the County-wide level, although specific funding options may apply to Paisley.

Funding for transportation projects is increasingly in short supply as existing infrastructure ages and transportation demands increase. This section provides a means for evaluating the likelihood that projects can be funded within the timelines identified in the TSP and defines priorities based on available funding opportunities.

Oregon's Transportation Planning Rule requires that the Lake County TSP address transportation funding, including the following elements:

- A list of planned transportation facilities and major improvements,
- A general estimate of priority for planned transportation facilities and major improvements,
- Determination of rough cost estimates for the transportation facilities and major investments identified in the TSP, and
- A discussion of existing and potential financing sources for each transportation facility and major improvement (which can be described in terms of guidelines or local policies).

Current Lake County Transportation Funding Revenues

Historically, sources of road revenue for Lake County have included federal forest fees, state highway fund revenue, federal grants, and interest earnings from the investment fund balance. Transportation revenue and expenditures for Lake County are shown in Tables 6-4 to 6-6.

Table 8-1. Special Transportation Funds Revenue and Expenses[2]

	2010	2011	2012	2013	2014 Adopted
Revenue	$77,075	$38,245	$95,429	$179,319	$121,900
Expenses	$39,921	$32,905	$38,004	$119,323	

Table 8-2. Bicycle Trails Revenue and Expenses[3]

	2010	2011	2012	2013	2014 Adopted
Revenue	$53,632	$60,576	$67,456	$15,861	$21,146
Expenses	$132	$133	$58,903	$601	

[2] Current Funding Sources: ODOT Entitlement & 5310 Grant Funds. Past Funding Sources: ODOT Entitlement.

[3] Current/Past Funding: State of Oregon monies specifically earmarked for construction of bicycle trails.

Table 8-3. Road Department Revenue and Expenses

Revenue	2012	2013	2014	2015
Local	$46,784	$21,033	$20,000	$20,000
State (Surface Transportation Program, vehicle registration fees, gas tax)	$882,780	$957,006	$850,000	$870,000
Federal (federal forest highway, Bureau of Land Management, forest receipts)	$1,993,236	$1,770,751	$1,550,000	$1,677,591
Total Revenue	$2,922,800	$2,748,790	$2,420,000	$2,567,591
Total Expenses	$2,922,800	$2,748,790	$2,420,000	$2,567,591

Expenses have matched revenue over the period evaluated, with the vast majority of expenses going to operations and maintenance. Little to no funding is available for capital improvement projects.

The following sections identify and summarize existing and potential future funding sources available for implementing the TSP. The funding information provides context for evaluating projects and defining priorities that will allow the County to utilize all available funding opportunities and maximize current resources to preserve and improve current infrastructure.

Existing Funding Sources

Key funding sources that have contributed to transportation improvement projects within Lake County over the last several years include the Surface Transportation Program, the County's Road Fund, state funds, and federal grants.

Surface Transportation Program

The Surface Transportation Program (STP) provides flexible funding that may be used by states and localities, such as Lake County, to preserve and improve the conditions and performance on any Federal-aid highway, for bridge and tunnel projects on any public road, for pedestrian and bicycle infrastructure, and for transit capital projects, including intercity bus terminals.

General Road Fund

The County's General Road Fund revenues are primarily funded through the State gas tax and vehicle registration fees, which are projected to flatten (less than inflation). The expenditures of the General Road Fund are restricted for construction, reconstruction, improvement, repair, maintenance, operation, use and policing of public highways, roads and streets within the County.

Federal Grants

In addition to STP funds, Lake County receives additional funding each year through federal grants, including the Congestion Mitigation and Air Quality (CMAQ) program and the Federal Transit Administration (FTA) Enhanced Mobility of Seniors and Individuals with Disabilities program.

Secure Rural Schools Fund

Lake County has historically received significant funding as part of the Secure Rural Schools (SRS) program. However, funding from this program is ending and will no longer be a reliable funding source for the County, leaving a significant funding gap.

Transportation Funding Options

Lake County faces two inter-related financing issues: how to finance operations and maintenance and how to finance capital projects. Effectively, all public works funding is devoted to operations and maintenance at present; there is no substantial funding for capital projects.

Potential strategies for addressing transportation needs in Lake County can generally be grouped into three categories: identifying additional grant opportunities (i.e., securing more external funding), identifying public/private sponsorship opportunities, and raising 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 8-4 that are applicable to County projects. Some of these programs require a local match. The County and the City of Paisley should begin identifying these programs early, so that the funding necessary to satisfy a local match can be planned. Using local dollars as a match for a grant opportunity is a strategy to stretch the local funding even farther.

Table 8-4. 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	Address safety issues on highways and High Risk Rural Roads	All	ODOT	Varies	10%	www.oregon.gov/ODOT/HWY/TRAFFIC-ROADWAY/highway _safety_program.shtml
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/local.shtml
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/trails.shtml
5	Land and Water Conservation Fund	Annual	Acquire 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/lwcf.shtml
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/HWY/STIP/
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	Support primary economic development through the construction and improvement of street and roads.	All	ODOT	On-going	50%	http://www.oregon.gov/ODOT/TD/EA/reports/IOF_PolicyGuidelines2015%20doc.pdf
9	Enhance (STIP)	Biennial	Activities that enhance, expand, or improve the transportation system. Projects that improve or enhance the state's multimodal transportation system.	All	ODOT	August	10%	http://www.oregon.gov/ODOT/TD/STIP/Pages/WhatsChanged.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/TD/TP/pages/connector.aspx
11	All Roads Transportation Safety (ARTS)	Biennial	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/HWY/TRAFFIC-ROADWAY/Pages/ARTS.aspx

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, business owners often receive recognition for their role, providing a marketing venue for the business. In Lake County, one potential opportunity for this type of partnership is the bicycle wayfinding signage project. Private organizations that sponsor a sign may have the opportunity to provide their logo on a sign to help direct cyclists to their community or 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 (assuming that changes in the state of federal financing, coupled with efficiency measures, are not enough to close the funding gap). Table 8-5 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 budget. Some of these fees could also be used to provide a local match to obtain greater federal or state funding, further stretching local dollars.

Table 8-5. Local Tax and User Fee Options

Source	Description	Comments
Supplemental 5-year Serial Levy	Voter-approved property tax levied in addition to the County's permanent tax rate.	A road fund serial levy would have to be approved by voters every five years. A one-time approval would buy time for the County to develop other options. This method could fund operations and capital programs, some of which might reduce future maintenance requirements.
Road Utility Fee	Monthly user fee with revenue dedicated to road operations. May be enacted legislatively but could be challenged and brought to a vote.	This type of fee is becoming more common in cities but would require substantial investment in rate studies, administrative staffing, software, and computer systems to enable the County to collect the revenue. This source is generally better suited to funding operations than for capital improvements, but it may free up existing resources for capital projects.
Vehicle Registration Fee	An extra fee on all registered motor vehicles in the County. May be authorized legislatively but could be challenged and brought to a vote.	State must be willing to act as a collection agent for the County; would be easy to implement otherwise. 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 County 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.

APPENDICES

Appendix 1 Cost Estimates

Appendix 2 Project Prospectus Sheets

Appendix 3 Recommended Policies

Appendix 1 Cost Estimates

OR 31 From Klamath County to Fort Rock Road

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Conduct focused study on OR 31 from Klamath County to Fort Rock Road to determine cause of crashes and possible mitigation measures. Research crash data, roadside inventory, prepare letter/report of findings and recommendations for mitigation.

Fort Rock Road to Christmas Valley "S" Turns

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Conduct focused study on Fort Rock Road to Christmas Valley "S" turns to determine cause of crashes and possible mitigation measures. Research crash data, roadside inventory, prepare letter/report of findings and recommendations for mitigation.

Oil Dri Road (5-14G)

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Main route to Christmas Valley from the South. Blowing dust and sand limits visibility. Conduct study to evaluate possible mitigation measures. Research crash data, roadside inventory, prepare letter/report of findings and recommendations for mitigation.

Traffic Speed Through Christmas Valley

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization	LS	1	$ 5,000	$ 5,000
2	Traffic Control	LS	1	$ 5,000	$ 5,000
3	Permanent Speed Feedback Signs	LS	1	$ 24,000	$ 24,000
4	Signage (Announcing entering Christmas Valley)	LS	1	$ 10,000	$ 10,000
		2016 CONSTRUCTION COSTS			**$ 44,000**
	Construction Contingency (20%)				**$ 8,800**
	Design Engineering/Surveying				**$ 10,000**
	Construction Administration /Engineering/Inspection				**$ 10,000**
	Permitting				**$ 10,000**
				TOTAL	**$ 82,800**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Construct transition treatments at the west and east City limits of Christmas Valley on Christmas Valley Road. This includes monuments announcing to vehicles that they are entering Christmas Valley and permanent speed feedback signs.

Includes:
Permanent Speed Feedback Signs (one at each end of town), Signage announcing entering Christmas Valley.

Christmas Valley Road

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization	LS	1	$ 5,000	$ 5,000
2	Traffic Control	LS	1	$ 5,000	$ 5,000
3	Signage (Warning Driver's of Grade)	LS	1	$ 2,000	$ 2,000
4	Weather-Based Warning Signs	LS	1	$ 24,000	$ 24,000
		2016 CONSTRUCTION COSTS			**$ 36,000**
	Construction Contingency (20%)				**$ 7,200**
	Design Engineering/Surveying				**$ 10,000**
	Construction Administration /Engineering/Inspection				**$ 10,000**
	Permitting				**$ 10,000**
				TOTAL	**$ 73,200**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Improve roadway signage warning drivers of grade. Installation of a weather based warning sign to alert drivers when traction devices should be used.

Includes:
Weather based warning sign, Warning signs (Steep Grade)

OR 31 Along Summer Lake

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Conduct focused study on OR 31 along Summer Lake to determine the cause of crashes and possible mitigation measures. Research crash data, roadside inventory, prepare letter/report of findings and recommendations for mitigation.

US 395/OR 31

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Conduct focused study on the US 395 and OR 31 intersection to determine the cause of crashes and possible mitigation measures. Research crash data, roadside inventory, prepare letter/report of findings and recommendations for mitigation.

OR 140 from Plush Cutoff Road to Plush-Adel Road

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Conduct focused study on OR 140 from Plush Cutoff Road to Plush Adel Road to identity the cause of crashes and possible mitigation measures. Research crash data, roadside inventory, prepare letter/report of findings and recommendations for mitigation.

OR 140 (10 miles west of Nevada Border)

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization	LS	1	$ 5,000	$ 5,000
2	Traffic Control	LS	1	$ 5,000	$ 5,000
3	Weather-Based Warning Signs	LS	1	$ 24,000	$ 24,000
4	Signage (Warning Drivers of Grade)	LS	1	$ 2,000	$ 2,000
		2016 CONSTRUCTION COSTS			**$ 36,000**
	Construction Contingency (20%)				**$ 7,200**
	Design Engineering/Surveying				**$ 10,000**
	Construction Administration /Engineering/Inspection				**$ 10,000**
	Permitting				**$ 10,000**
				TOTAL	**$ 73,200**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Improve roadway signage by warning driver's of grade. Installation of a weather-based system to alert drivers when traction devices should be used.

Includes:
Weather-Based Warning System Signs (2 signs total), Grade Signage

Fixed-Object & Non-collision Crashes

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study	LS	1	$ 50,000	$ 50,000
				2016 COSTS	**$ 50,000**
				TOTAL	**$ 50,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Conduct focused study to determine where wildlife crossings, rumble strips, widened shoulders, are needed on major state highways. Estimate the cost of installing the crossings.

Includes:
Cost county wide to perform study.

Speed Transition Treatment - Paisley

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization	LS	1	$ 5,000	$ 5,000
2	Traffic Control	LS	1	$ 5,000	$ 5,000
3	Permanent Speed Feedback Signs	LS	1	$ 24,000	$ 24,000
4	Signage (Transition Treatments)	LS	1	$ 10,000	$ 10,000
		2016 CONSTRUCTION COSTS			**$ 44,000**
	Construction Contingency (20%)				**$ 8,800**
	Design Engineering/Surveying				**$ 10,000**
	Construction Administration /Engineering/Inspection				**$ 10,000**
	Permitting				**$ 10,000**
				TOTAL	**$ 82,800**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Construct transition treatments at the north and south City limits of Paisley on OR 31. This includes monuments announcing to vehicles that they are entering Paisley and permanent speed feedback signs.

Includes:
Signage (Transition Treatment signs @ both ends of town), Permanenet Speed Feedback Signs (2 total)

Speed Transition Treatment - Silver Lake

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization	LS	1	$ 5,000	$ 5,000
2	Traffic Control	LS	1	$ 5,000	$ 5,000
3	Permanent Speed Feedback Signs	LS	1	$ 24,000	$ 24,000
4	Signage (Transition Treatments)	LS	1	$ 10,000	$ 10,000
			2016 CONSTRUCTION COSTS		**$ 44,000**
	Construction Contingency (20%)				**$ 8,800**
	Design Engineering/Surveying				**$ 10,000**
	Construction Administration /Engineering/Inspection				**$ 10,000**
	Permitting				**$ 10,000**
				TOTAL	**$ 82,800**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Construct transition treatments west and east of the community on OR 31, this includes monuments announcing to vehicles that they are entering Silver Lake and permanent speed feedback signs.

Includes:
Signage (Transition Treatment signs @ both ends of town), Permanenet Speed Feedback Signs (2 total)

Modernization - Upgrade Old Lake Road

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 45,000	$ 45,000
2	Traffic Control (2%)	LS	1	$ 9,000	$ 9,000
3	Earthwork/Relocate Ditches	LS	1	$ 500,000	$ 500,000
4	Gravel Shoulders	LS	1	$ 400,000	$ 400,000
			2016 CONSTRUCTION COSTS		**$ 954,000**
	Construction Contingency (20%)				**$ 190,800**
	Design Engineering/Surveying				**$ 95,400**
	Construction Administration /Engineering/Inspection				**$ 95,400**
	Permitting				**$ 95,400**
				TOTAL	**$1,431,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Upgrade Old Lake Road from a Minor Collector to a Major Collector by widening shoulders. ±15 miles total length.

Includes:
Providing 3' aggregate base shoulder each side including earthwork & relocating ditches.

Modernization - Pave Hogback Road

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 1,132,500	$ 1,132,500
2	Traffic Control (2%)	LS	1	$ 225,000	$ 225,000
3	Modernization	LS	1	$ 10,000,000	$ 10,000,000
			2016 CONSTRUCTION COSTS		**$ 11,357,500**
	Construction Contingency (20%)				**$ 2,271,500**
	Design Engineering/Surveying				**$ 1,135,800**
	Construction Administration /Engineering/Inspection				**$ 1,135,800**
	Permitting				**$ 1,135,800**
				TOTAL	**$ 17,036,400**

Long Term Maintenance: Assume replacement every 20 years and $20,000,000 project = $1,000,000 set aside per year.

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Paving Hogback Road along with increased maintenance funding. Assume 3" Asphalt on 6" new aggregate base on top of existing gravel road (graded to receive aggregate base). ±15 Miles of road.

Includes:
Asphalt, Aggregate Base, Signage, Striping, etc.

Paisley Sidewalks (Along OR 31 between Main Street & Green Street)

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 20,000	$ 20,000
2	Traffic Control	LS	1	$ 10,000	$ 10,000
3	New Sidewalk	LS	1	$ 200,000	$ 200,000
		2016 CONSTRUCTION COSTS			**$ 230,000**
	Construction Contingency (20%)				**$ 46,000**
	Design Engineering/Surveying				**$ 23,000**
	Construction Administration /Engineering/Inspection				**$ 23,000**
	Permitting				**$ 23,000**
				TOTAL	**$ 345,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Construct sidewalks in Paisley along OR 31 between Main Street and Green Street.
(± 850 feet project length).

Includes:
5' Sidewalks, Curbs, Drainage, Etc. (Both Sides of Street)

Paisley Sidewalks (Along Mill Street between Willow Street & Paisley School)

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 20,000	$ 20,000
2	Traffic Control	LS	1	$ 10,000	$ 10,000
3	New Sidewalk	LS	1	$ 200,000	$ 200,000
			2016 CONSTRUCTION COSTS		**$ 230,000**
	Construction Contingency (20%)				**$ 46,000**
	Design Engineering/Surveying				**$ 23,000**
	Construction Administration /Engineering/Inspection				**$ 23,000**
	Permitting				**$ 23,000**
				TOTAL	**$ 345,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Construct sidewalks in Paisley along Mill Street between Willow Street & Paisley School. (±950' project length).

Includes:
5' Sidewalks, Curbs, Drainage, Etc. (Both Sides of Street)

Paisley Sidewalks (Along Green Street between Cottonwood Street & Mill Street)

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 16,000	$ 16,000
2	Traffic Control	LS	1	$ 10,000	$ 10,000
3	New Sidewalk	LS	1	$ 155,000	$ 155,000
			2016 CONSTRUCTION COSTS		**$ 181,000**
	Construction Contingency (20%)				**$ 36,200**
	Design Engineering/Surveying				**$ 18,100**
	Construction Administration /Engineering/Inspection				**$ 18,100**
	Permitting				**$ 18,100**
				TOTAL	**$ 271,500**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Construct sidewalks in Paisley along Green Street between Cottonwood Street & Mill Street. (±750' project length).

Includes:
5' Sidewalks, Curbs, Drainage, Etc. (Both Sides of Street)

Improve Crossing at OR 31 & Main Street in Paisley

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization	LS	1	$ 1,000	$ 1,000
2	Traffic Control	LS	1	$ 1,000	$ 1,000
3	New Crosswalk & Signs	LS	1	$ 3,000	$ 3,000
		2016 CONSTRUCTION COSTS			**$ 5,000**
	Construction Contingency (20%)				**$ 1,000**
	Design Engineering/Surveying				**
	Construction Administration /Engineering/Inspection				**
	Permitting				**
				TOTAL	**$ 6,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.
**By ODOT or City

Project Description:
Construct an improved crosswalk in Paisley at OR 31 and Main Street.

Includes:
New Crosswalk and Warning Signs.

Improve Crossing at OR 31 & Green Street in Paisley

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization	LS	1	$ 1,000	$ 1,000
2	Traffic Control	LS	1	$ 1,000	$ 1,000
3	New Crosswalk & Signs	LS	1	$ 3,000	$ 3,000
			2016 CONSTRUCTION COSTS		**$ 5,000**
	Construction Contingency (20%)				**$ 1,000**
	Design Engineering/Surveying				**
	Construction Administration /Engineering/Inspection				**
	Permitting				**
				TOTAL	**$ 6,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.
**By ODOT or City

Project Description:
Construct an improved crosswalk in Paisley at OR 31 and Green Street.

Includes:
New Crosswalk and Signs.

Evaluate Possible Recreational Bike Routes

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study & Preform Cost Estimates	LS	1	$ 30,000	$ 30,000
				2016 Costs	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Evaluate possible bike routes on Or 140 E of US 395 to Plush-Adel Road, Plush Cutoff Road, Plush-Adel Road & West of Paisley.

Includes:
Cost to Perform Study and Estimate Costs.

Wayfinding Sign

Item	Description	Unit	Quantity	Unit Price	Total
1	Wayfinding Sign	LS	1	$ 10,000	$ 10,000
	2016 CONSTRUCTION COSTS				**$ 10,000**
	Construction Contingency (20%)				**$ 2,000**
	Design Engineering/Surveying				**
	Construction Administration /Engineering/Inspection				**
	Permitting				**
				TOTAL	**$ 12,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.
**By County

Project Description:
Install and/or enhance wayfinding to key recreational areas. Assume five $2000 improvements or ten $1000 improvements.

Includes:
Wayfinding Sign

Highway 431 (OR 140) Bridge 08848A

Item	Description	Unit	Quantity	Unit Price	Total
1	Evaluate Existing Bridge & Prepare Cost Estimates	LS	1	$ 30,000	$ 30,000
				2016 Costs	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Evaluate structural integrity of Hwy 431 (OR 140) Bridge 08848A. Prepare cost estimates for required improvements.

Includes:
Cost to evaluate the bridge and prepare cost estimates for repair and/or replacement.

Highway 431 (OR 140) at Milepoint 30.67, Bridge 08850

Item	Description	Unit	Quantity	Unit Price	Total
1	Evaluate Existing Bridge & Prepare Cost Estimates	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Evaluate structural integrity Bridge 08850 on Hwy 431 (OR 140) at Milepoint 30.67.
Prepare cost estimates for required improvements.

Includes:
Cost to evaluate the bridge and prepare cost estimates for repair and/or replacement.

Highway 431 (OR 140) at Milepoint 31.40, Bridge 08849

Item	Description	Unit	Quantity	Unit Price	Total
1	Evaluate Existing Bridge & Prepare Cost Estimates	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Evaluate structural integrity Bridge 08849 on Hwy 431 (OR 140) at Milepoint 31.40.
Prepare cost estimates for required improvements.

Includes:
Cost to evaluate the bridge and prepare cost estimates for repair an/or replacement.

Highway 431 (OR 140), Bridge 09538

Item	Description	Unit	Quantity	Unit Price	Total
1	Evaluate Existing Bridge & Prepare Cost Estimates	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Evaluate structural integrity Bridge 09538 on Hwy (140). Prepare cost estimates for required improvements.

Includes:
Cost to evaluate the bridge and prepare cost estimates for repair and/or replacement.

Maintenance - County System

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study & Financial Analysis	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Lake County struggles to maintain roadways to an acceptable standard.
Identify long-term maintenance funding strategies.

Includes:
Cost to perform study and financial analysis for alternatives.

Maintenance - City System

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study & Financial Analysis	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
City of Paisley struggles to maintain roadways to an acceptable standard.
Identify long-term maintenance funding strategies.

Includes:
Cost to perform study and financial analysis for alternatives.

OR 31 (Roadway/Freight Route)

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study & Prepare Cost Estimates	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Coordinate with ODOT Klamath County, and Deschutes County on a study to evaluate the need/feasbility of upgrading OR 31 to a designated freight route.

Includes:
Cost to perform study and prepare cost estimates for alternatives.

Freight Route - Fort Rock Road to Christmas Valley Road

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 125,000	$ 125,000
2	Traffic Control (2%)	LS	1	$ 25,000	$ 25,000
3	Upgrade to Freight Route	LS	1	$ 535,000	$ 535,000
4	Earthwork	LS	1	$ 500,000	$ 500,000
5	Striping	LS	1	$ 50,000	$ 50,000
6	Signage	LS	1	$ 30,000	$ 30,000
			2016 CONSTRUCTION COSTS		**$ 1,265,000**
	Construction Contingency (20%)				**$ 253,000**
	Design Engineering/Surveying				**$ 126,500**
	Construction Administration /Engineering/Inspection				**$ 126,500**
	Permitting				**$ 126,500**
				TOTAL	**$ 1,897,500**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Upgrade Fort Rock Road to Christmas Valley Road to better accommodate freight vehicles. (±10 miles project length).

Includes:
2' Asphalt Widening and 3' Aggregate Base Shoulders (Both Sides)

Freight Route - Arrow Gap Road

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 90,000	$ 90,000
2	Traffic Control (2%)	LS	1	$ 20,000	$ 20,000
3	Upgrade to Freight Route	LS	1	$ 400,000	$ 400,000
4	Earthwork	LS	1	$ 320,000	$ 320,000
5	Striping	LS	1	$ 50,000	$ 50,000
6	Signage	LS	1	$ 30,000	$ 30,000
			2016 CONSTRUCTION COSTS		**$ 910,000**
	Construction Contingency (20%)				**$ 182,000**
	Design Engineering/Surveying				**$ 91,000**
	Construction Administration /Engineering/Inspection				**$ 91,000**
	Permitting				**$ 91,000**
				TOTAL	**$ 1,365,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Upgrade Arrow Gap Road to better accommodate freight vehicles.
(±7.6 miles project length).

Includes:
2' Asphalt, 3' Aggregate Base, Earthwork, Signage & Striping

OR 140 East of Lakeview

Item	Description	Unit	Quantity	Unit Price	Total
1	Conduct Study & Prepare Cost Estimate	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Coordinate with ODOT on a study to evaluate the need/feasibility of upgrading OR 140 east of Lakeview to a designated freight route.

Includes:
Cost to perform study and prepare cost estimates.

Freight Route - Bear Flat Lane

Item	Description	Unit	Quantity	Unit Price	Total
1	Designate Bear Flat Lane as a Freight Route	LS	1	$ 30,000	$ 30,000
				2016 COSTS	**$ 30,000**
				TOTAL	**$ 30,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Designate Bear Flat Lane from Klamath County to OR 31 as a freight route.

Includes:
Cost to Designate Bear Flat Lane as a Freight Route

Lake County Railroad Crossings

Item	Description	Unit	Quantity	Unit Price	Total
1	Mobilization (10%)	LS	1	$ 150,000	$ 150,000
2	Traffic Control (2%)	LS	1	$ 35,000	$ 35,000
3	Improve Rail Crossings	LS	1	$ 1,275,000	$ 1,275,000
	2016 CONSTRUCTION COSTS				**$ 1,460,000**
	Construction Contingency (20%)				**$ 292,000**
	Design Engineering/Surveying				**$ 146,000**
	Construction Administration /Engineering/Inspection				**$ 146,000**
	RR Coordination/Preliminary Engineering				**$ 50,000**
	RR Flagging During Construction				**$ 50,000**
	Permitting				**$ 146,000**
				TOTAL	**$ 2,290,000**

*Does not include inflation. Typical Inflation rates vary and are between 3 and 5 percent per year.

Project Description:
Improve the Lake County Railroad Crossings. Assume $135,000 without signal replacement and ±$380,000 for full crossing with signals.

Includes:
Upgrade four Railroad Crossings in Lakeview (OR 140, S 3rd St, S 9th St and Missouri Ave).

Appendix 2 Project Prospectus Sheets

ID: S-1	**OR 31 (Fort Rock Road To Klamath County Line)**
Description:	Conduct focused study on this section of highway to determine cause of crashes and possible mitigation measures.
Purpose:	High frequency of crashes, particularly animal and fixed-object crashes.
Category: Safety	**Priority:** High 
Cost: <$50,000	
Project Partners: N/A	

Project Location/Images:

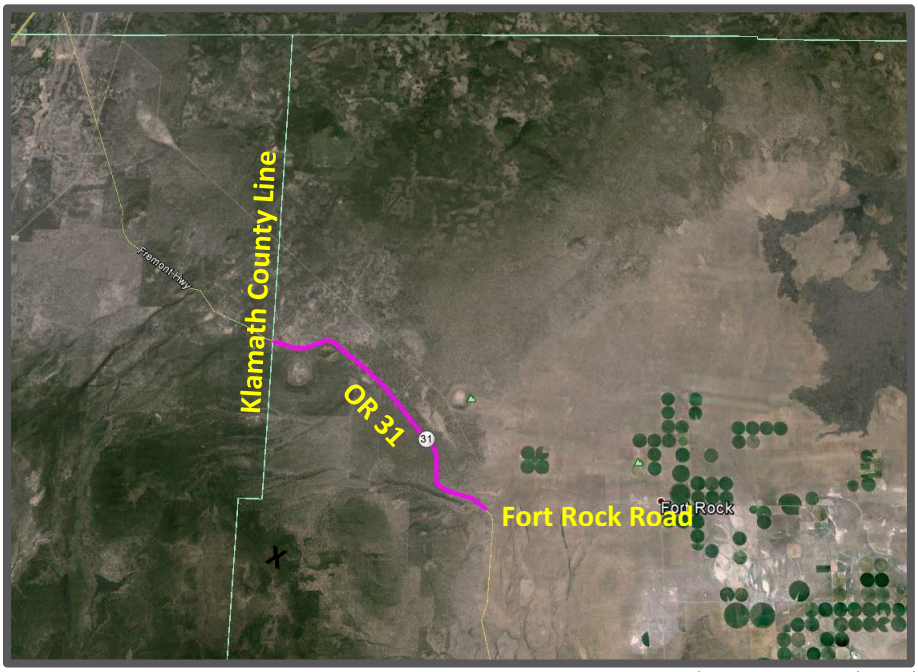


Photo Source: Google Earth

ID: S-2	**Fort Rock Rd. to Christmas Valley "S" Turns**
Description:	Conducted focused study on this section of highway to determine cause of crashes and possible mitigation measures. Study could be in the form of a roadway safety audit
Purpose:	County officials and residents believe these turns have a high potential for crashes
Category: Safety	**Priority:** Medium 
Cost: <$50,000	
Project Partners: N/A	

Project Location/Images:

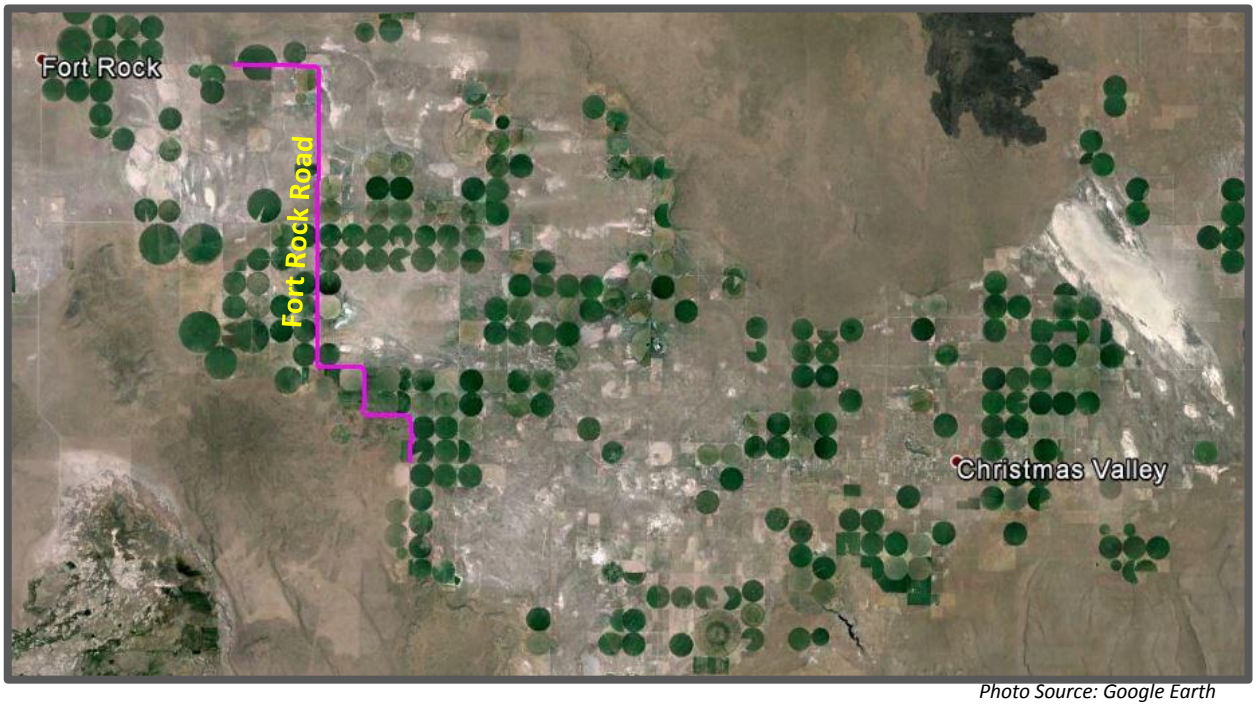


Photo Source: Google Earth

ID: S-3	**Old Lake Road (5-14G)**
Description:	Install screening barriers to help minimize visibility issues and signage to improve driver awareness
Purpose:	This is a main route to Christmas Valley from the south and blowing dust and sand can limit visibility
Category: Safety	**Priority:** Low 
Cost: <$50,000	
Project Partners: N/A	

Project Location/Images:

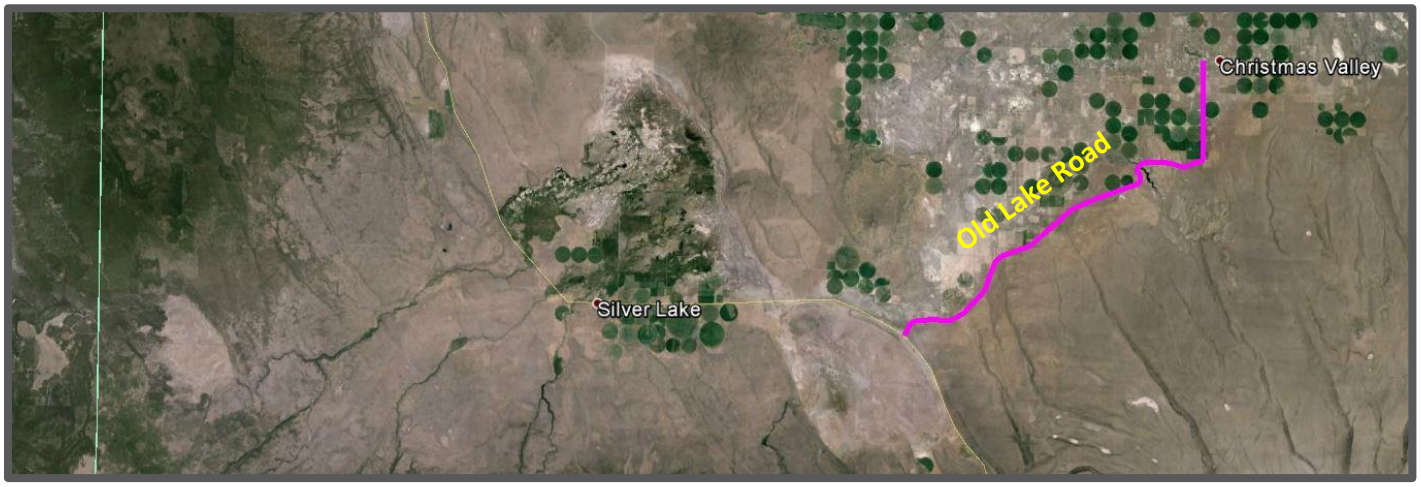


Photo Source: Google Earth

ID: S-4	**Christmas Valley**
Description:	Construct transition treatments on Christmas Valley Road at the west and east edges of the community, including monuments announcing to motorists that they are entering Christmas Valley and permanent speed feedback signs.
Purpose:	Residents have concerns about high traffic speeds through Christmas Valley
Category: Safety	**Priority:** High 
Cost: $82,800	
Project Partners: N/A	

Project Location/Images:

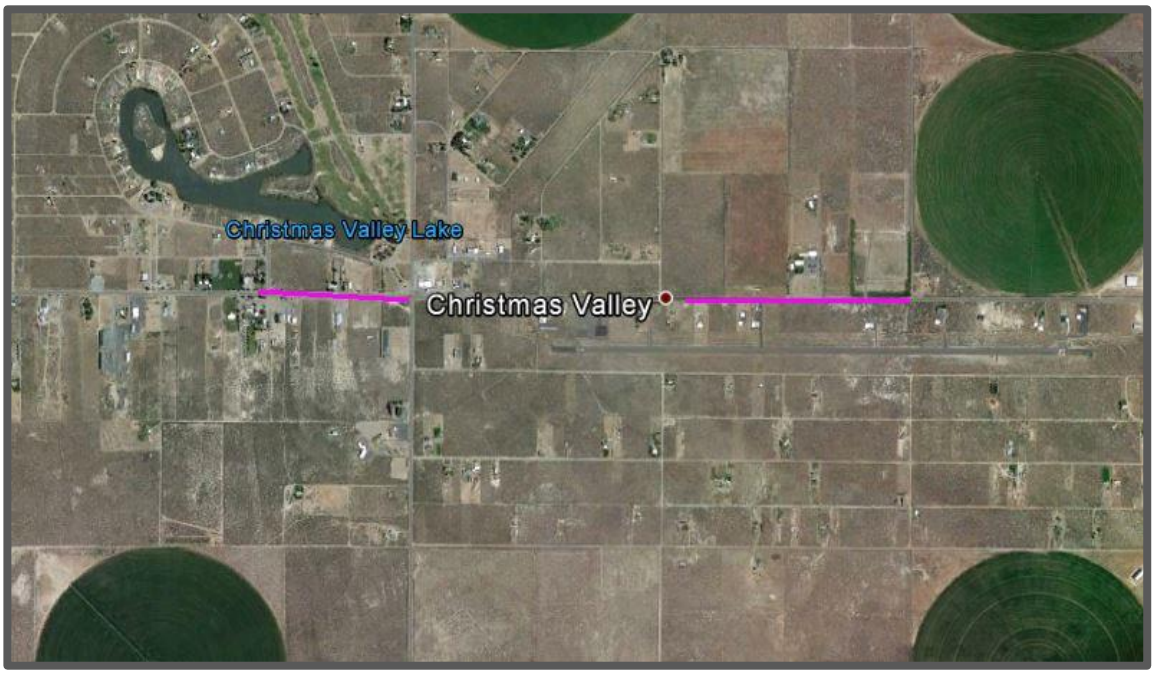


Photo Source: Google Earth

ID: S-5

Christmas Valley Road

Description: Improve roadway signage warning drivers of grade.

Purpose: Steep grade (8%) east of Christmas Valley

Category: Safety

Priority: Low

Cost: $73,200

Project Partners: N/A

Considerations: Consider installation of weather-based warning system to alert drivers when traction devices should be used. Long term, this road may require realignment and reconstruction.

Project Location/Images:

Photo Source: Google Earth

ID: S-6	**OR 31 Along Summer Lake**	
Description:	Conduct focused study on this section of highway to determine cause of crashes and possible mitigation measures	
Purpose:	High frequency of fixed-object crashes. Wind and speed are common contributing factors	
Category: Safety		**Priority:** High 
Cost: <$50,000		
Project Partners: N/A		

Project Location/Images:

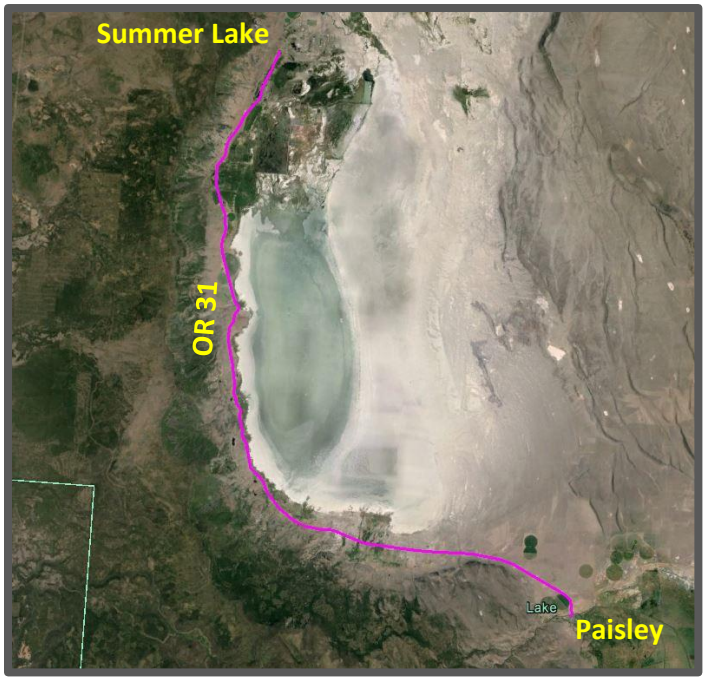


Photo Source: Google Earth

ID: S-7	**Valley Falls (Jct. US 395/OR 31)**
Description:	Conduct study to identify possible mitigation measures for the intersection.
Purpose:	County officials and area residents believe a warning device may be needed to alert drivers to this intersection
Category: Safety	**Priority:** Medium 
Cost: <$50,000	
Project Partners: ODOT	
Considerations:	Options could include warning devices, roadway reconfiguration, or modified intersection control

Project Location/Images:

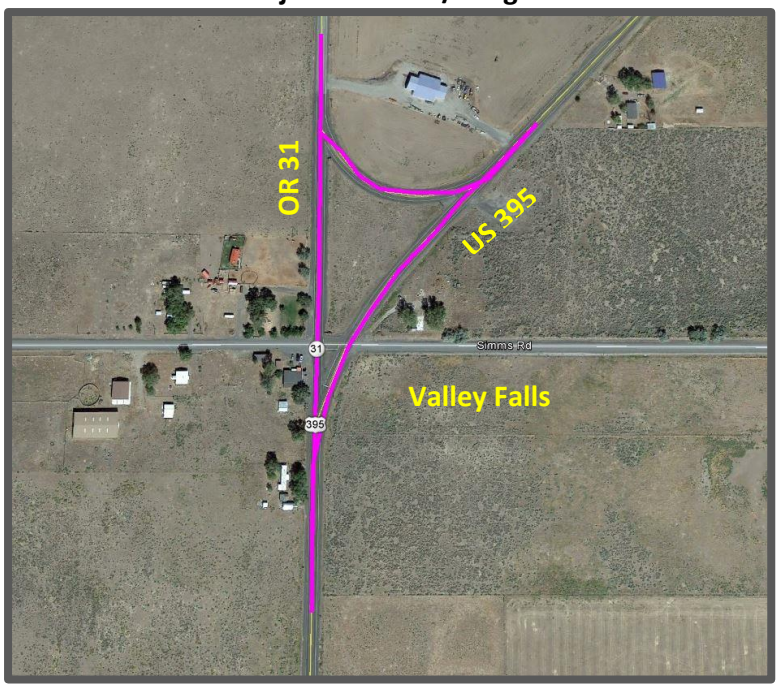


Photo Source: Google Earth

ID: S-8	**OR 140 (Plush Cutoff Road to Plush-Adel Road)**
Description:	Conduct focused study on this section of highway to determine cause of crashes and possible mitigation measures
Purpose:	High frequency of crashes along this section
Category: Safety	**Priority:** High 
Cost: <$50,000	
Project Partners: ODOT	
Considerations:	Road winds through canyon can cause dangerous conditions. Two fatalities have been observed over 5 years

Project Location/Images:

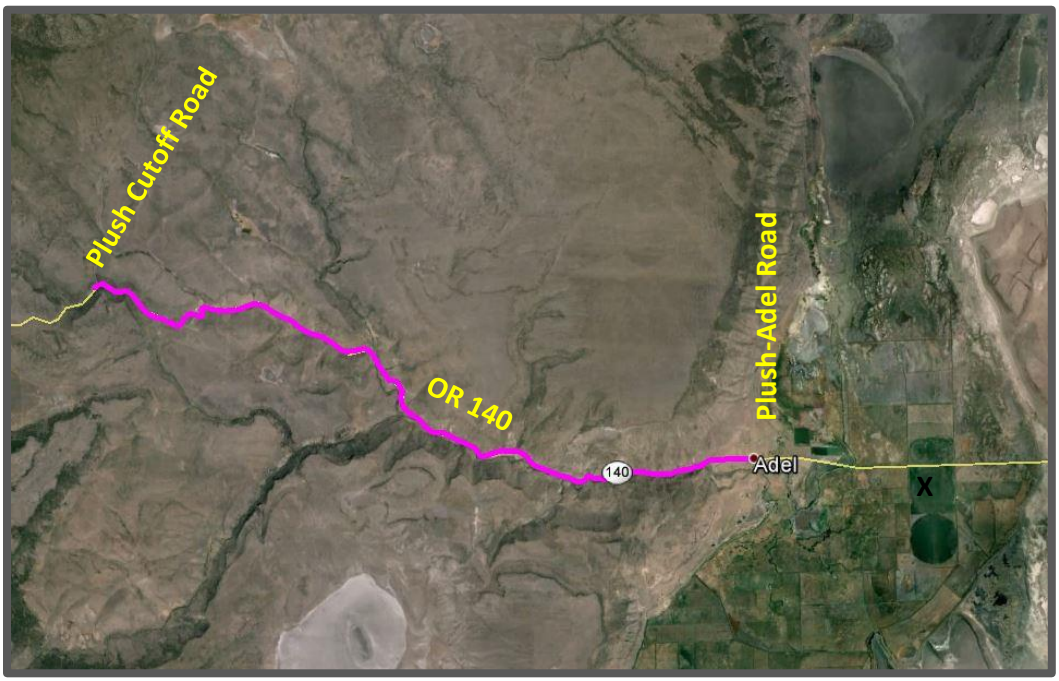


Photo Source: Google Earth

ID: S-9

OR 140 About 10 miles West of the Nevada Border (Doherty Rim)

Description: Consider installation of weather-based warning system to alert drivers when traction devices should be used.

Purpose: Steep grade (8%) on the highway

Category: Safety

Priority: Low

Cost: $75,000

Project Partners: ODOT

Project Location/Images:

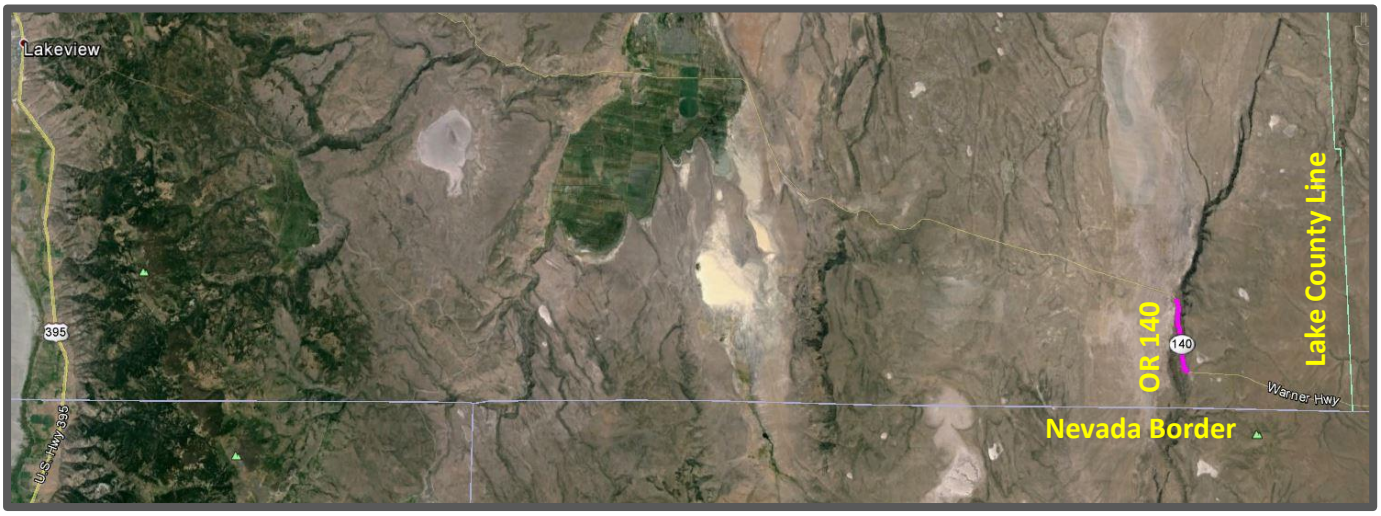


Photo Source: Google Earth

ID: S-10

Fixed-Object and Non-Collision Crashes

Description:	County-wide systemic safety projects for rural roads. Conduct a study to determine where wildlife crossings are needed on the major state highways. Estimate the cost of installing the crossings
Purpose:	High frequency of fixed-object and non-collision crashes, including collisions with animals

Category: Safety

Priority: High 

Cost: $50,000

Project Partners: ODOT

ID: S-12

Silver Lake

Description: Construct transition treatments at the west and east ends of the community on OR 31, including monuments announcing to motorist that they are entering Silver Lake and permanent speed feedback signs.

Purpose: Speeds on OR 31 transition from 65 mph to 40 mph within Silver Lake

Category: Safety

Priority: High

Cost: $85,000

Project Partners: ODOT

Project Location/Images:

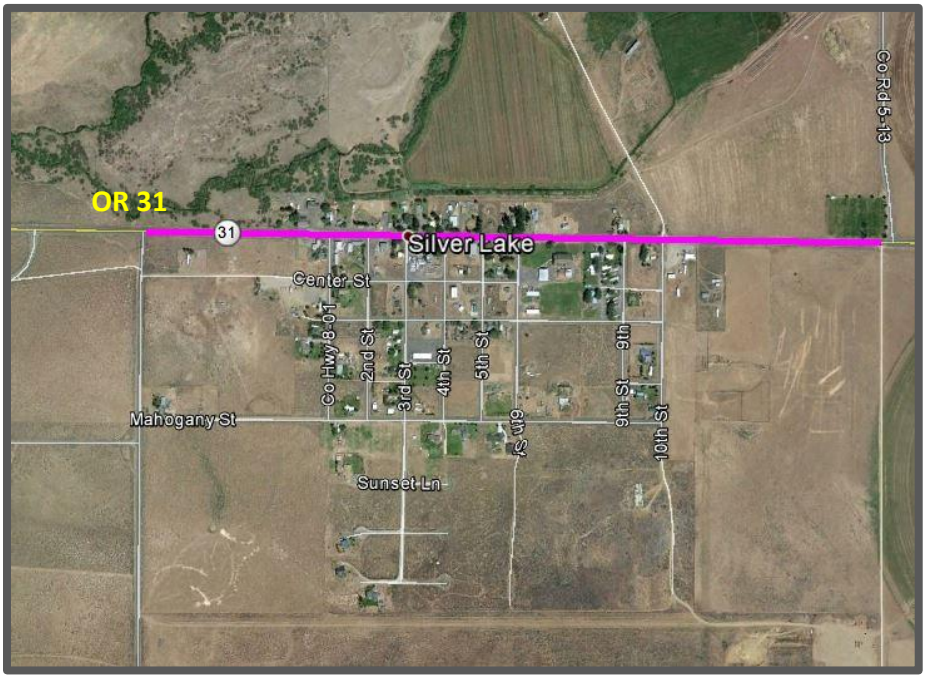


Photo Source: Google Earth

ID: S-13	**Summer Lake**
Description:	Construct transition treatments at the est and east ends of the community on OR 31, including monuments announcing to motorists that they are entering Summer Lake and permanent speed feedback signs
Purpose:	Speeds on OR 31 transition from 65 mph to 35 mph within Summer Lake
Category: Safety	**Priority:** High 
Cost: $85,000	
Project Partners: ODOT	

Project Location/Images:

Photo Source: Google Earth

ID: S-14

North Lakeview

Description: Evaluate and construct speed transition treatments as vehicles enter Lakeview from the north.

Purpose: Speeds on US 395 transition from 65 mph to 25 mph within Lakeview

Category: Safety

Priority: High

Cost: $100,000

Project Partners: ODOT

Considerations: Improvements could include monuments announcing to motorists that they are entering Lakeview and permanent speed feedback signs

Project Location/Images:

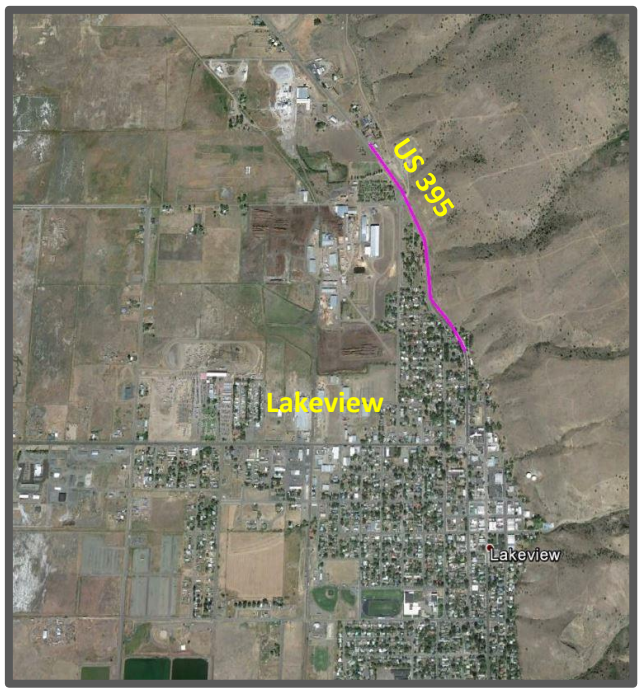


Photo Source: Google Earth

ID: M-1

Hogback Road

Description: Pave Hogback Road

Purpose: Road is currently a gravel road

Category: Modernization

Priority: Low

Cost: $17,500,000

Project Partners: N/A

Considerations: This improvement should be planned in conjunction with an appropriate amount of increased maintenance funding

Project Location/Images:

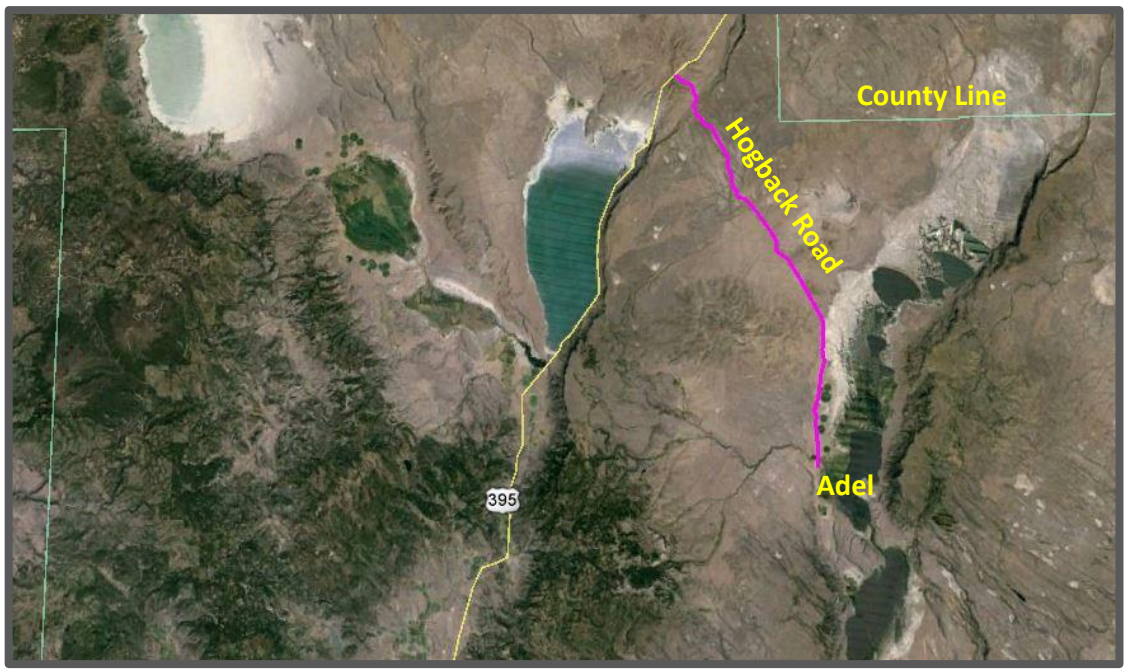


Photo Source: Google Earth

ID: A-7

County Wide (Wayfinding)

Description: Install and/or enhance wayfinding to key recreational areas.

Purpose: Prioritize signage to recreational areas to boost economic opportunities that could result from tourism, etc.

Category: Active Transportation

Priority: Low

Cost: $12,000

Project Partners: ODOT

Considerations: Specifically evaluate Picture Rock Pass turnout on OR 31.

ID: A-8	**County Wide (Bike Routes)**
Description:	Evaluate possible bike routes on -OR 140 east of US 395 to Plush-Adel Road -Plush Cutoff Road (project in progress) -Plush-Adel Road -West of Paisley
Purpose:	Limited recreational biking routes exist
Category: Active Transportation 	**Priority:** Medium 
Cost: <$50,000	
Project Partners: ODOT	
Considerations:	Potential locations may include County roads around Lakeview and the City of Paisley

ID: A-9

OR 140 West of Lakeview

Description: Construct sidewalks on OR 140 from the railroad tracks in the east to Roberta Avenue in the west

Purpose: No sidewalks on OR 140 west of the railroad tracks

Category: Active Transportation

Priority: Medium

Cost: TBD

Project Partners: ODOT

Project Location/Images:

Photo Source: Google Earth

ID: A-10

US 395 South of Lakeview

Description: Construct sidewalks on US 395 from 9th Street in the north to BLM building in the south

Purpose: No sidewalks on US 295 south of 9th Street

Category: Active Transportation

Priority: Medium

Cost: TBD

Project Partners: ODOT

Project Location/Images:

Photo Source: Google Earth

ID: B-1	**OR 140, Bridge 08848A**
Description:	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.
Purpose:	Bridge has low sufficiency rating
Category: Bridge	**Priority:** High 
Cost: $30,000	
Project Partners: ODOT	

Project Location/Images:

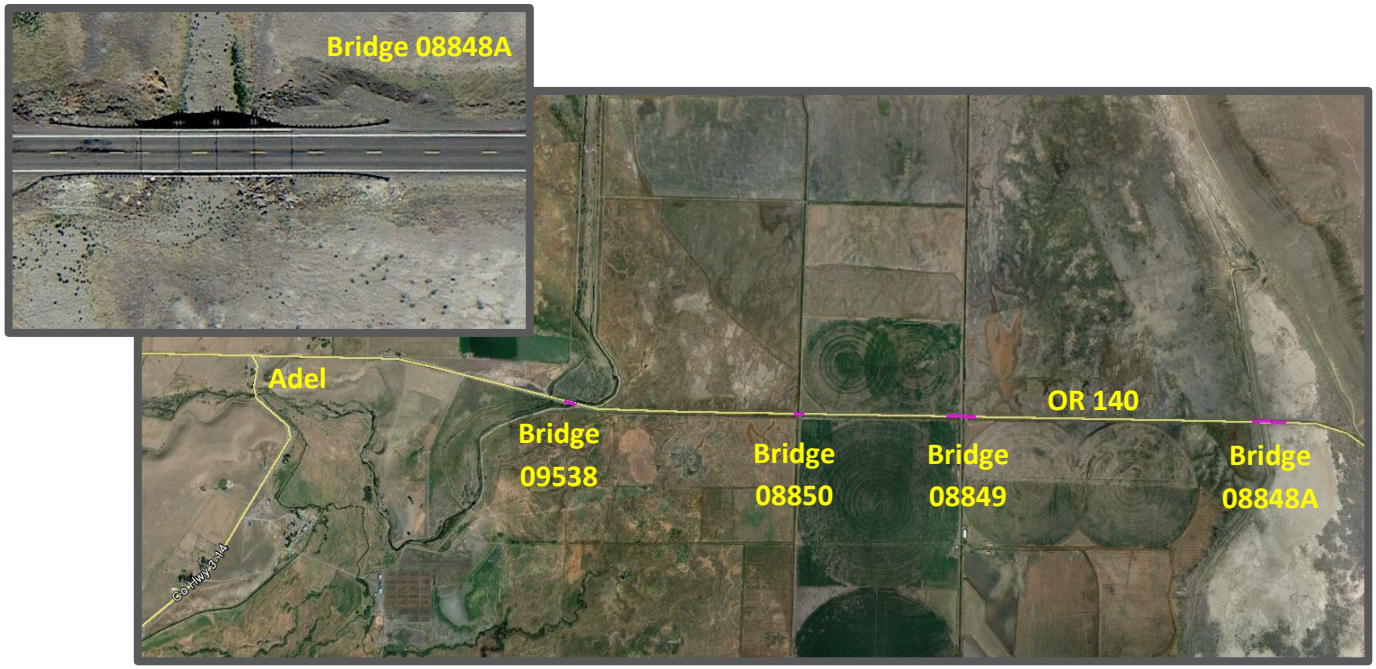


Photo Source: Google Earth

ID: B-2	**OR 140, Bridge 08850**
Description:	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.
Purpose:	Bridge has low sufficiency rating
Category: Bridge	**Priority:** High 
Cost: $30,000	
Project Partners: ODOT	

Project Location/Images:

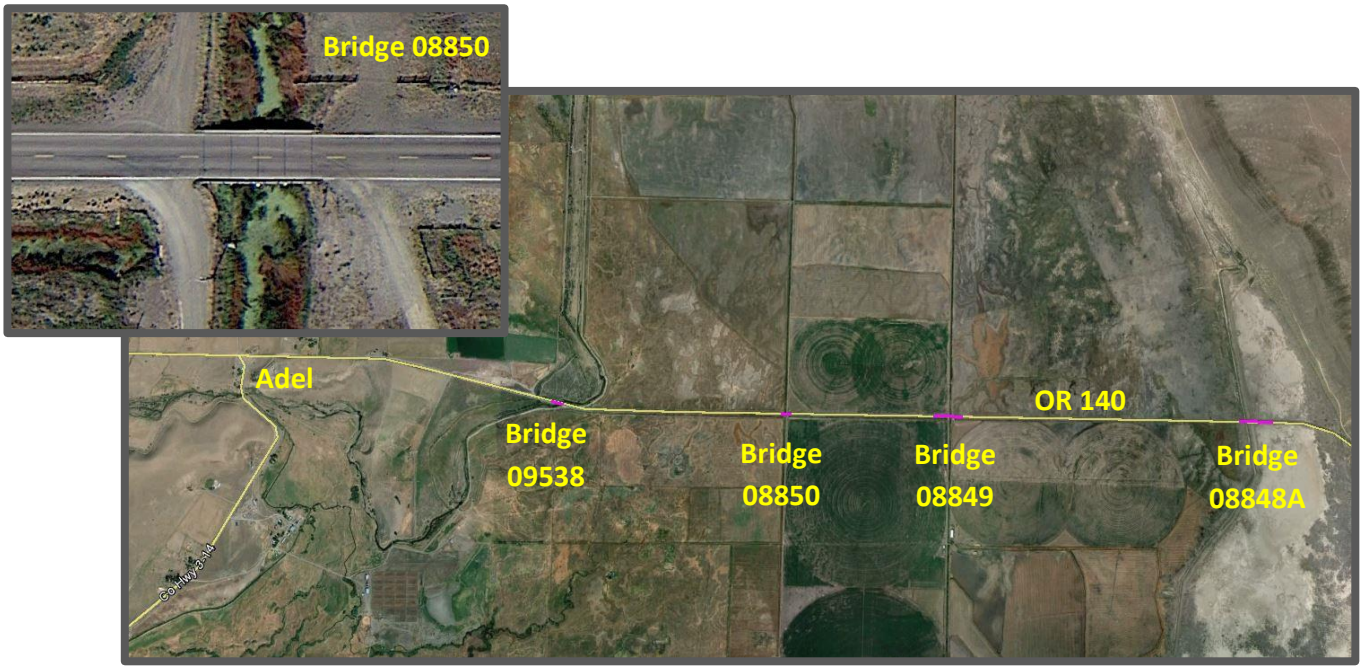


Photo Source: Google Earth

ID: B-3	**OR 140, Bridge 08849**
Description:	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.
Purpose:	Bridge has low sufficiency rating
Category: Bridge	**Priority:** High 
Cost: $30,000	
Project Partners: ODOT	

Project Location/Images:

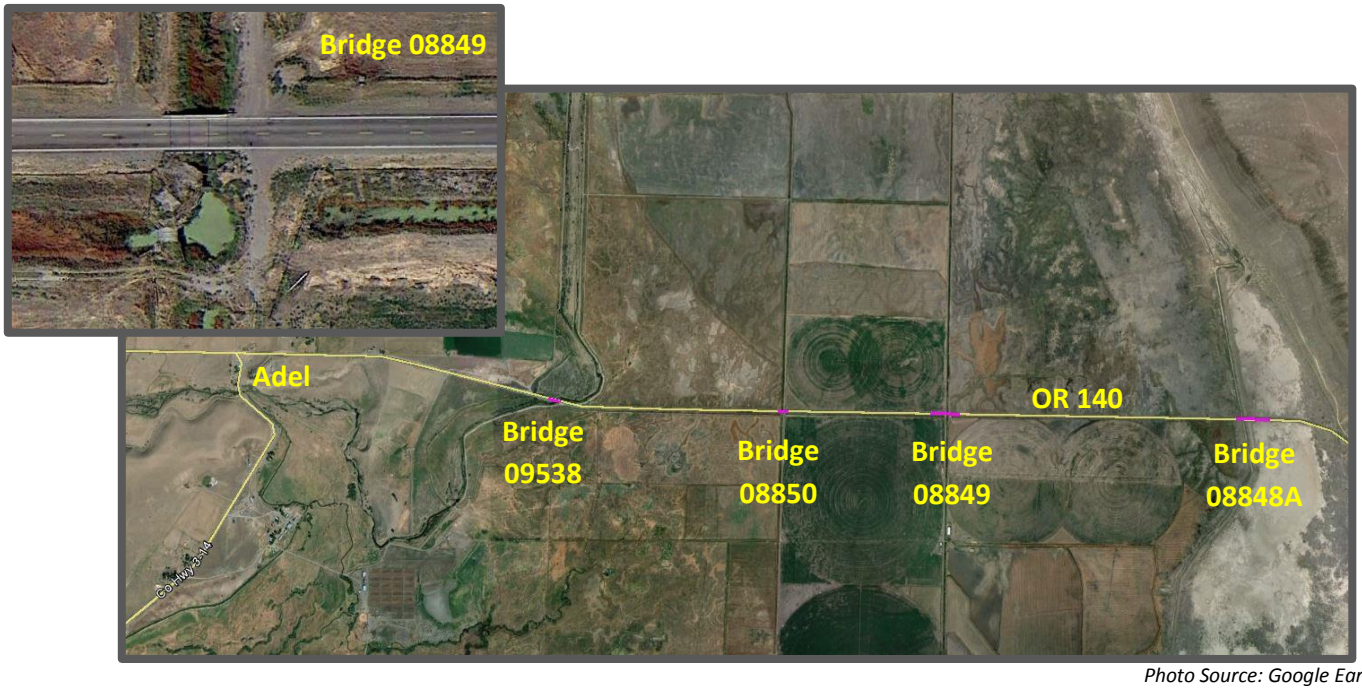


Photo Source: Google Earth

ID: B-4	**OR 140, Bridge 09538**
Description:	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.
Purpose:	Bridge has low sufficiency rating
Category: Bridge	**Priority:** High 
Cost: $30,000	
Project Partners: ODOT	

Project Location/Images:

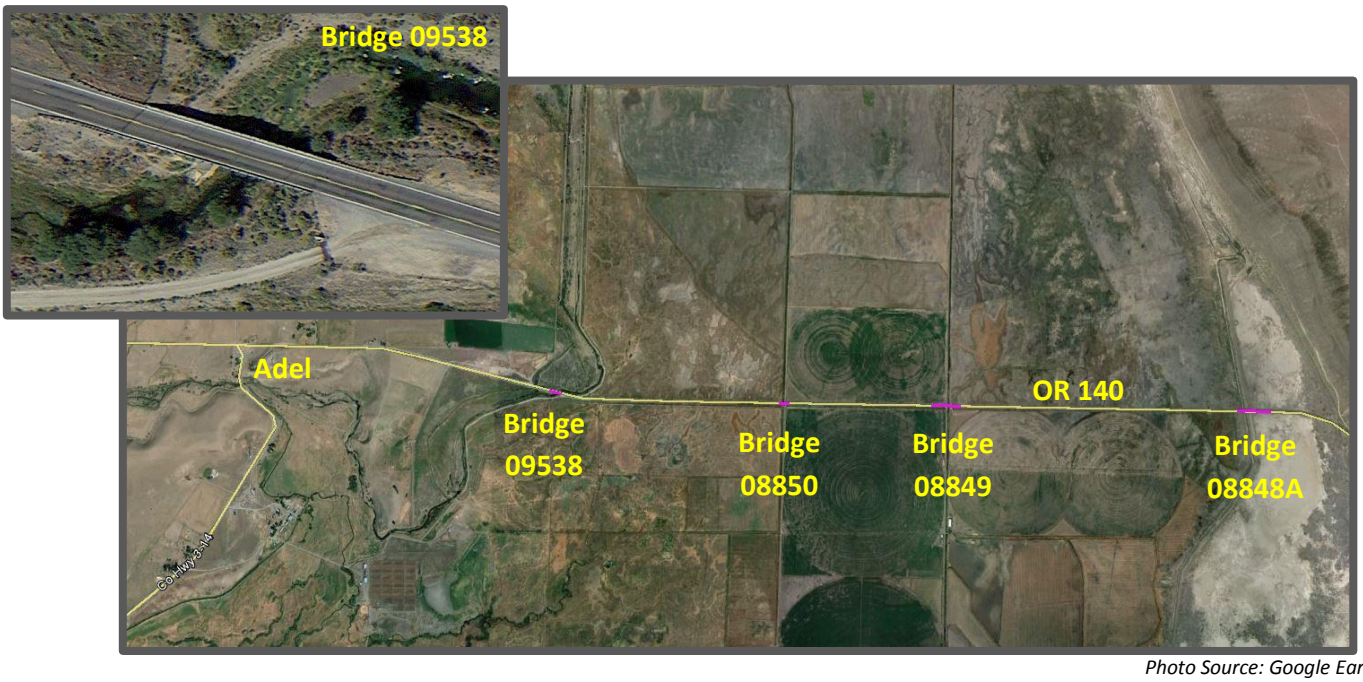


Photo Source: Google Earth

ID: B-5	**Drews Creek County Road (37C030)**
Description:	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.
Purpose:	Bridge is a high priority for county maintenance
Category: Bridge	**Priority:** High 
Cost: $720,000	
Project Partners: N/A	

Project Location/Images:

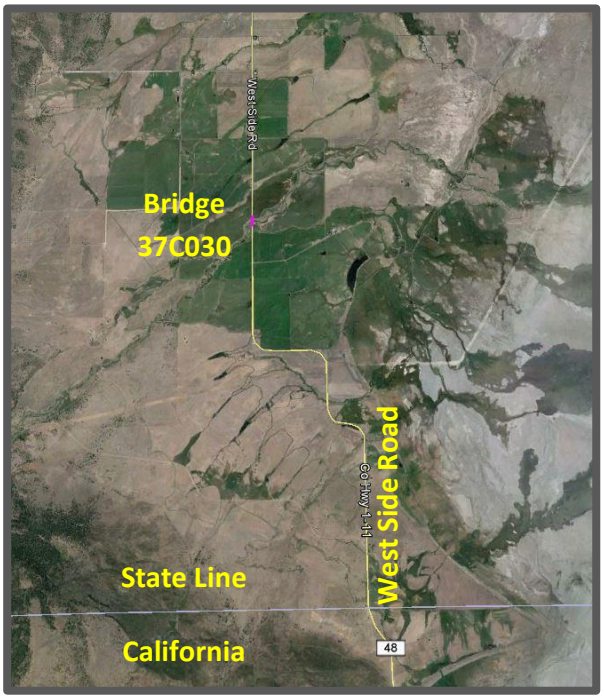


Photo Source: Google Earth

ID: B-6	**Honey Creek County Road (37C008)**
Description:	Evaluate structure integrity of the existing bridge and establish cost estimates for required improvements.
Purpose:	Bridge is a high priority for county maintenance
Category: Bridge	**Priority:** High 
Cost: $600,000	
Project Partners: N/A	

Project Location/Images:

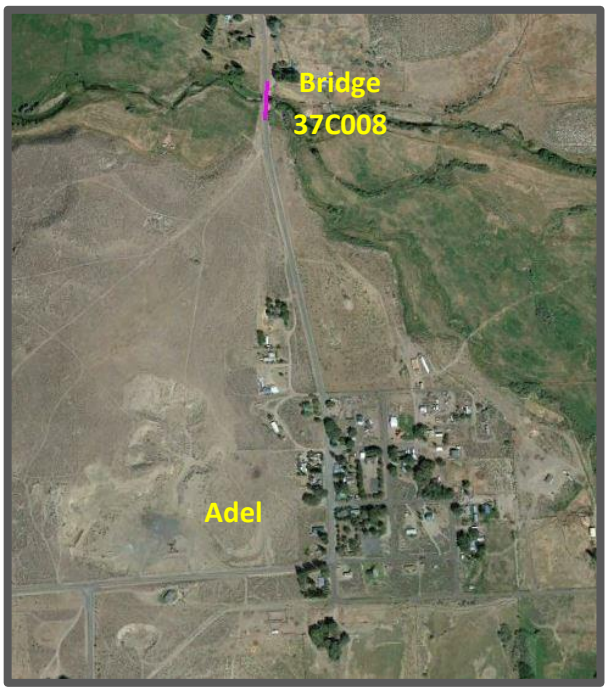


Photo Source: Google Earth

ID: MA-1	**County-Wide (Maintenance)**	
Description:	Identify ling-term maintenance funding strategies	
Purpose:	County struggles to maintain roadways to acceptable standards	
Category: Maintenance		**Priority:** High 
Cost: Ongoing		
Project Partners: N/A		
Considerations:	Ongoing maintenance funding is challenging	

ID: F-1	**OR 31**	
Description:	Coordinate with ODOT, Klamath County, and Deschutes County on study to evaluate need/feasibility of upgrading OR 31 to a designated freight route	
Purpose:	OR 31 is not currently designated as a freight route. Designating this road as such may increase economic opportunities for the County.	
Category: Roadway/Freight Route		**Priority:** Medium 
Cost: <$50,000		
Project Partners: ODOT, Klamath County, and Deschutes County		

Project Location/Images:

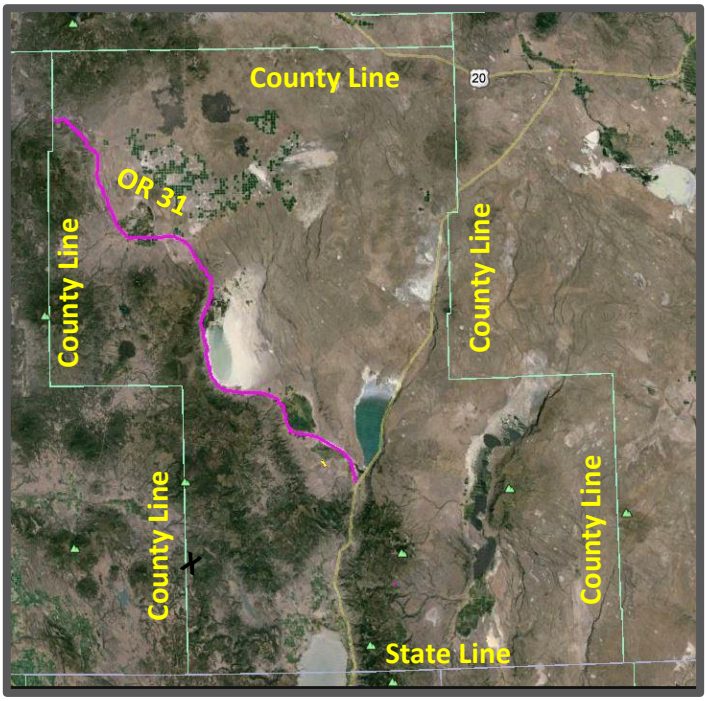


Photo Source: Google Earth

ID: F-2

Fort Rock Road and Christmas Valley Road

Description: Upgrade facility to better accommodate freight vehicles

Purpose: For Rock Road and Christmas Valley Road between OR 31 and US 395 are not currently designated as freight routes, but are often used by freight vehicles.

Category: Roadway/Freight Route

Priority: Medium 

Cost: $1,900,000

Project Partners: N/A

Considerations: Asphalt widening may be required

Project Location/Images:

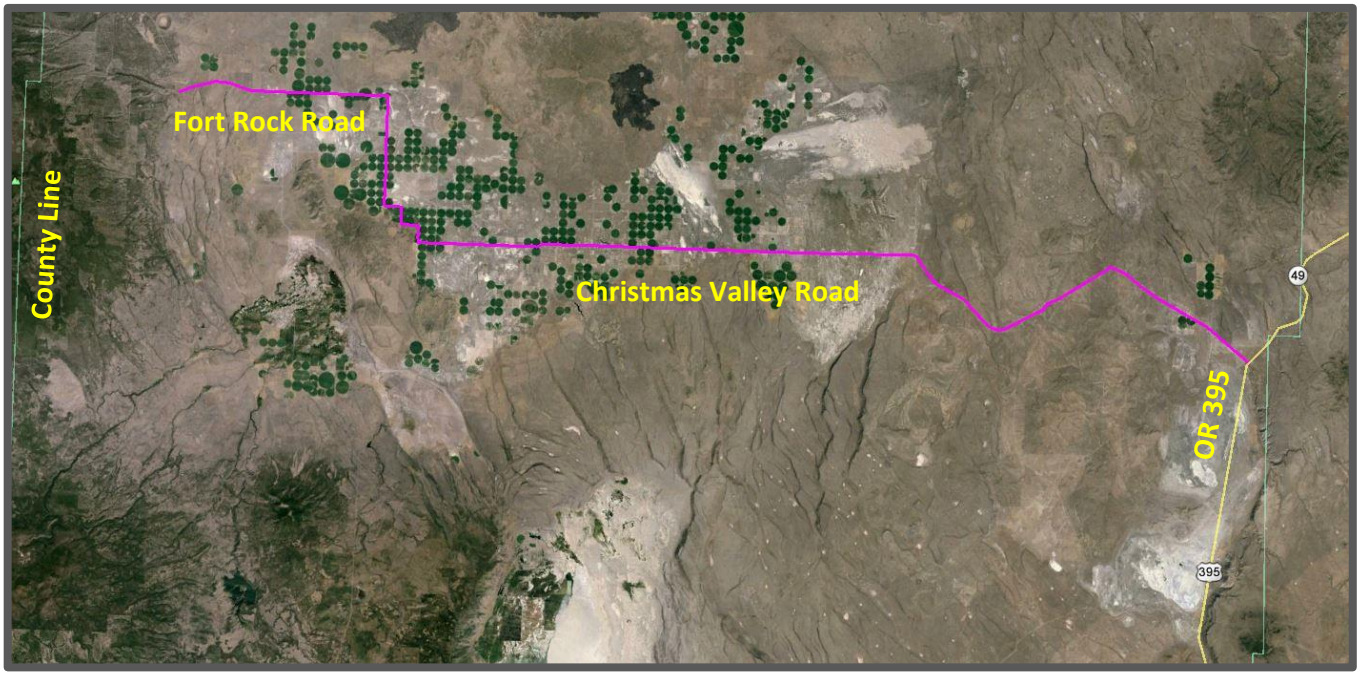


Photo Source: Google Earth

ID: F-3	**Arrow Gap Road**	
Description:	Upgrade facility to better accommodate freight vehicles.	
Purpose:	Arrow Gap Road between OR 31 and Christmas Valley Road is not currently designated as a freight route, but often used by freight vehicles.	
Category: Roadway/Freight Route		**Priority:** Medium 
Cost: $1,365,000		
Project Partners: N/A		
Considerations:	Asphalt widening may be required	

Project Location/Images:

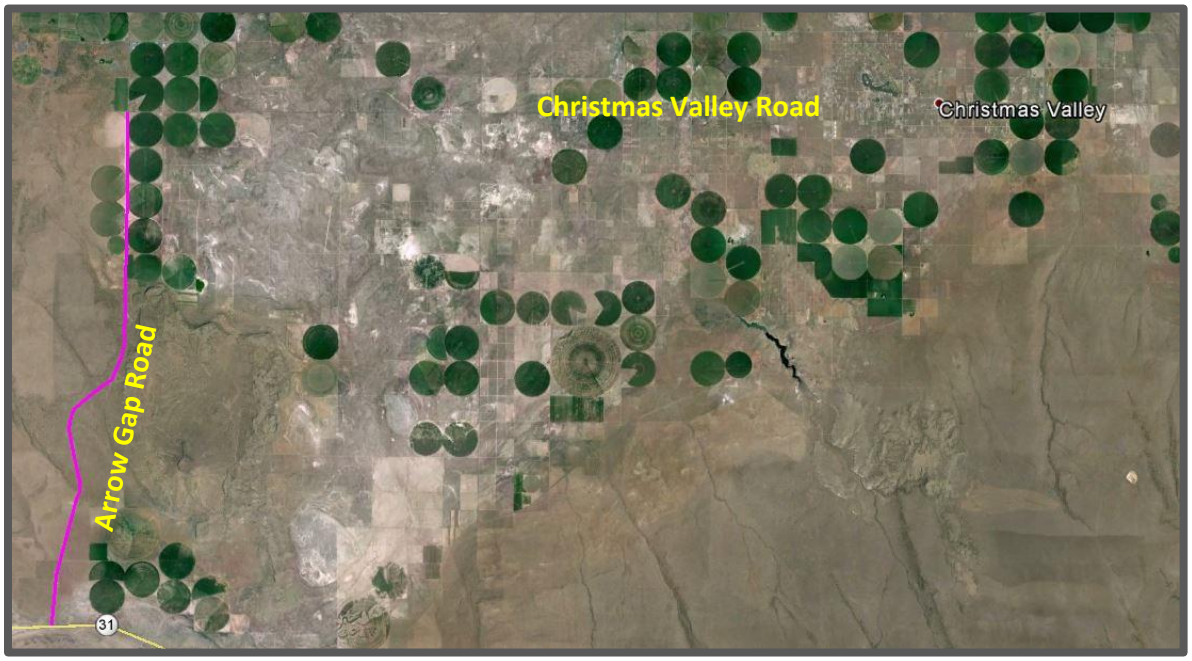


Photo Source: Google Earth

ID: F-4	**OR 140 East of Lakeview**
Description:	Coordinate with ODOT on study to evaluate need/feasibility of upgrading 140 in this section to a designated freight route.
Purpose:	Length restrictions that limit freight movement on this route, Removing this length restriction is a priority for the County.
Category: Roadway/Freight Route	**Priority:** Medium 
Cost: <$50,000	
Project Partners: ODOT	
Considerations: N/A	

Project Location/Images:

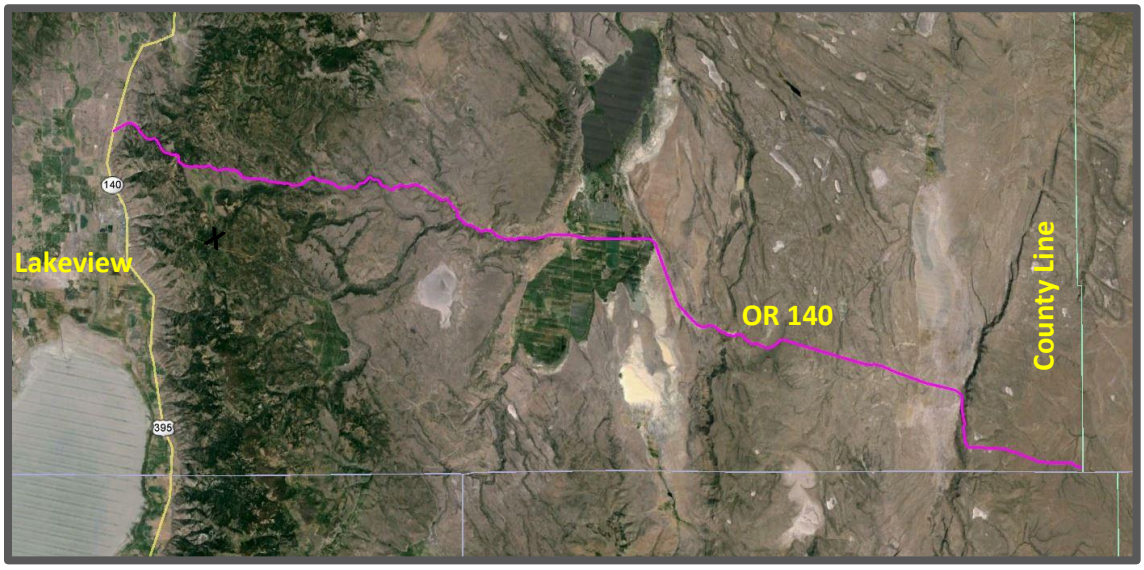


Photo Source: Google Earth

ID: F-5

Bear Flat Lane

Description: Designate Bear Flat Lane from Klamath County to OR 31 as a freight route.

Purpose: Freight vehicles to/from the west often use Bear Flat Lane.

Category: Roadway/Freight Route

Priority: Medium

Cost: $30,000

Project Partners: Klamath County

Considerations: This designation should be done in coordination with Klamath County

Project Location/Images:

Photo Source: Google Earth

ID: R-1 (Part 1)

Lake County Railroad

Description: Upgrade rail, ballast, ties, and surface

Purpose: The Lake County Railroad is a key economic engine for Lake County

Category: Railroad

Priority: High

Cost: $53,000,000

Project Partners: N/A

Considerations: Estimated at $1 million per mile. $53,000,000 total

Project Location/Images:

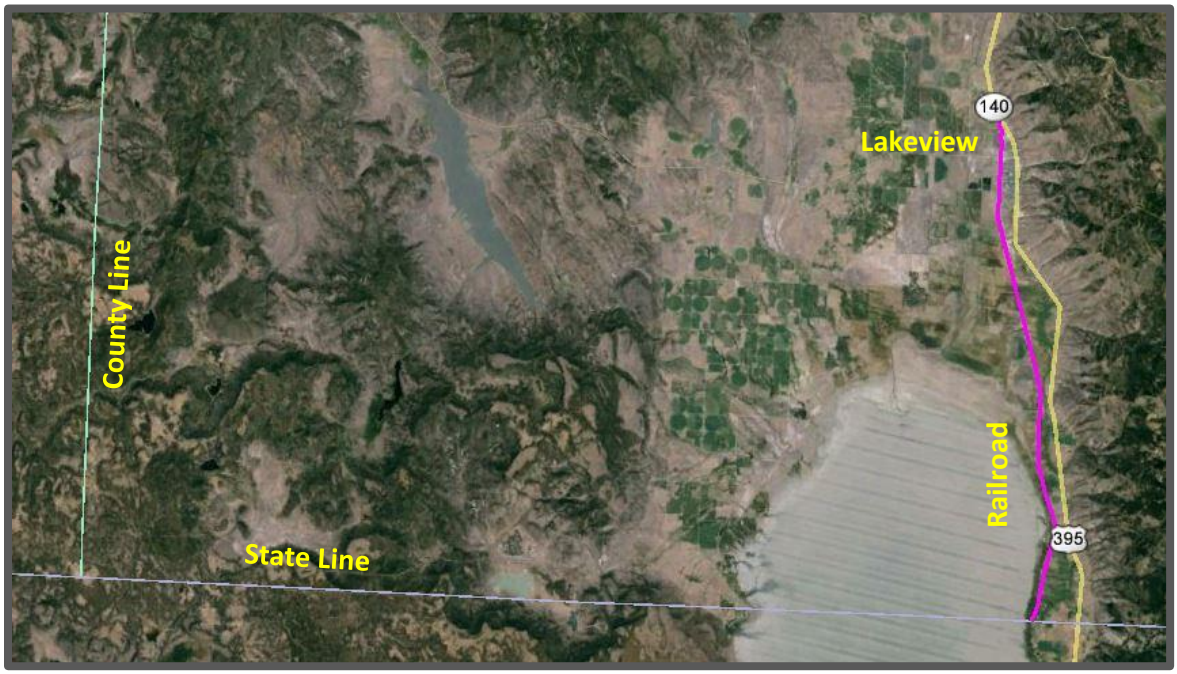


Photo Source: Google Earth

ID: R-1 (Part 2)

Lake County Railroad

Description: Upgrade switches

Purpose: The Lake County Railroad is a key economic engine for Lake County

Category: Railroad

Priority: High

Cost: $1,500,000

Project Partners: N/A

Considerations: Estimated $75,000 per switch $1,500,000 total

Project Location/Images:

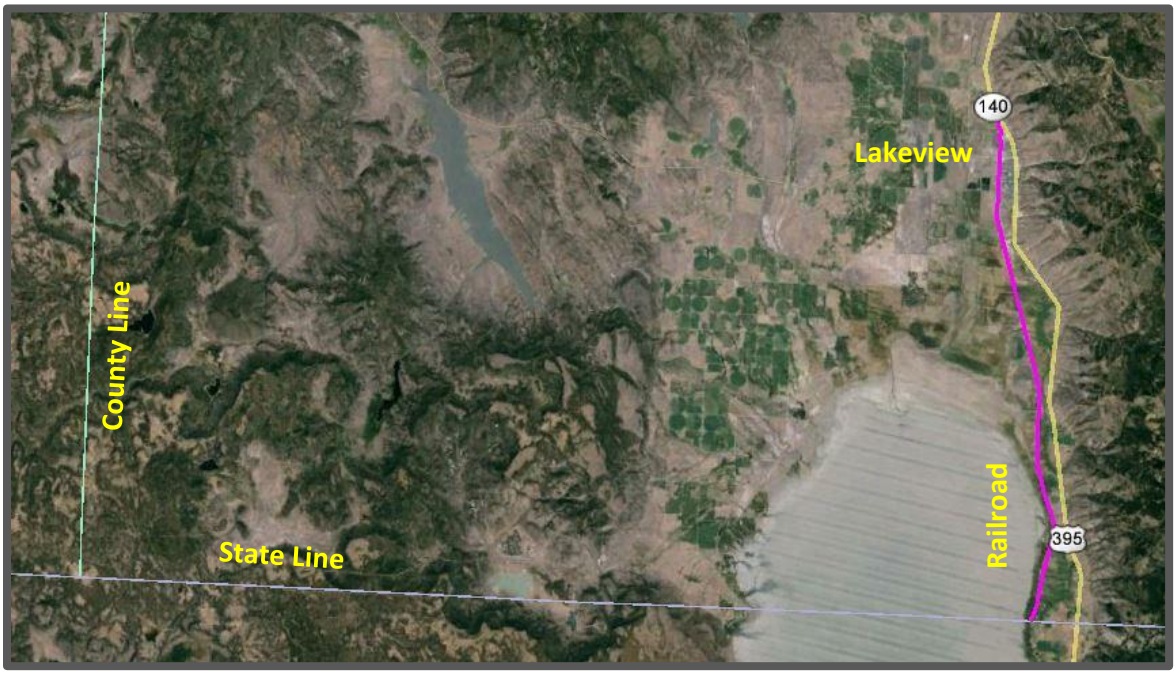


Photo Source: Google Earth

ID: R-1 (Part 3)

Lake County Railroad

Description: Upgrade rail bridges

Purpose: The Lake County Railroad is a key economic engine for Lake County

Category: Railroad

Priority: High

Cost: $6,000,000

Project Partners: N/A

Project Location/Images:

Photo Source: Google Earth

ID: S-11	**OR 31 At the North and South Limits**
Description:	Construct transition treatments, including monuments announcing to motorists that they are entering Paisley and permanent speed feedback signs.
Purpose:	Speeds on OR 31 transition from 65 mph to 35 mph within Paisley
Category: Safety	**Priority:** High 
Cost: $85,000	
Project Partners: ODOT	

Project Location/Images:

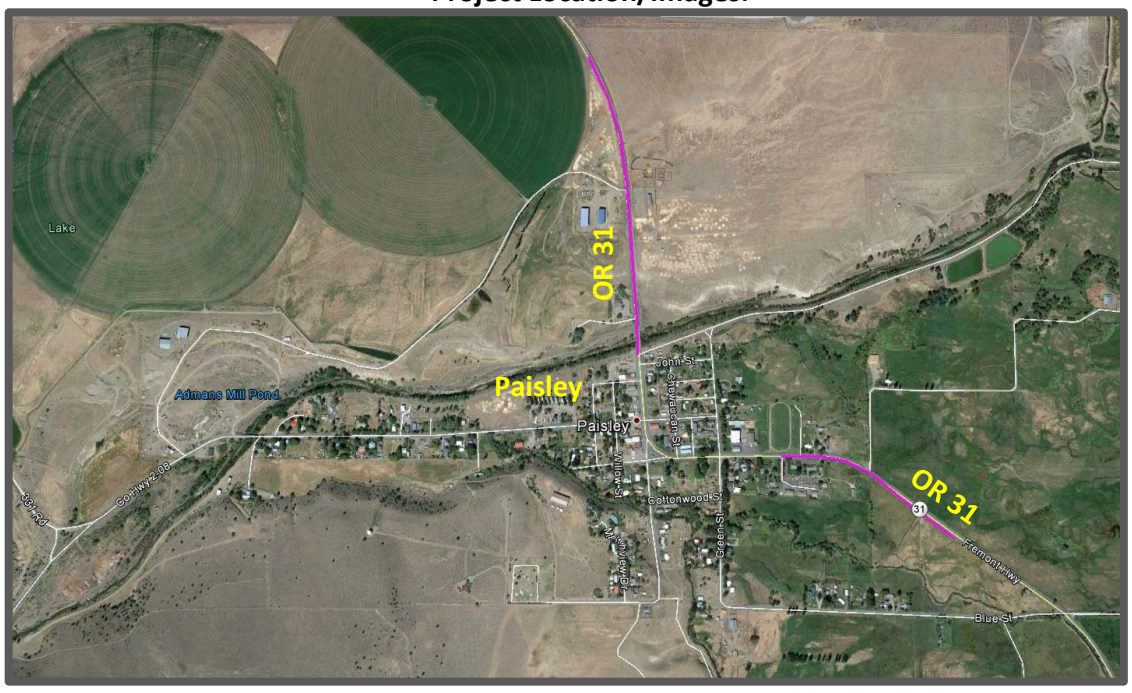


Photo Source: Google Earth

ID: A-1

OR 31 Between Main Street and Green Street

Description: Construct Sidewalks

Purpose: Limited sidewalk infrastructure

Category: Active Transportation

Priority: High

Cost: $345,000

Project Partners: ODOT

Considerations: Access to business on OR 31 must be provided

Project Location/Images:

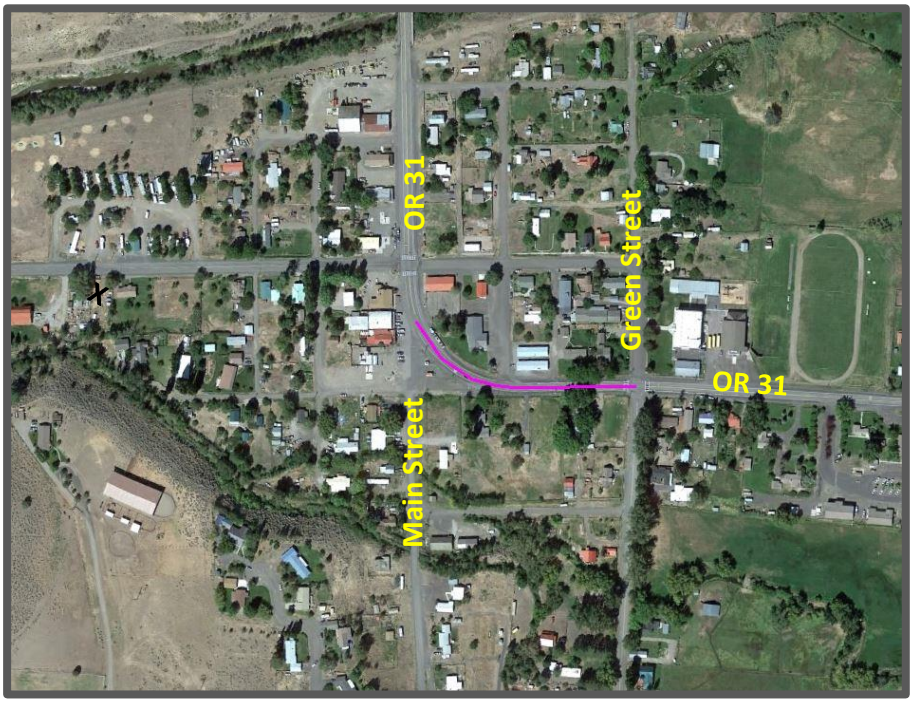


Photo Source: Google Earth

ID: A-2

Mill Street Between Willow Street and Paisley School

Description: Construct Sidewalks

Purpose: Limited sidewalk infrastructure.

Category: Active Transportation

Priority: High

Cost: $345,000

Project Partners: N/A

Considerations: Access to/from Paisley school must be provided

Project Location/Images:

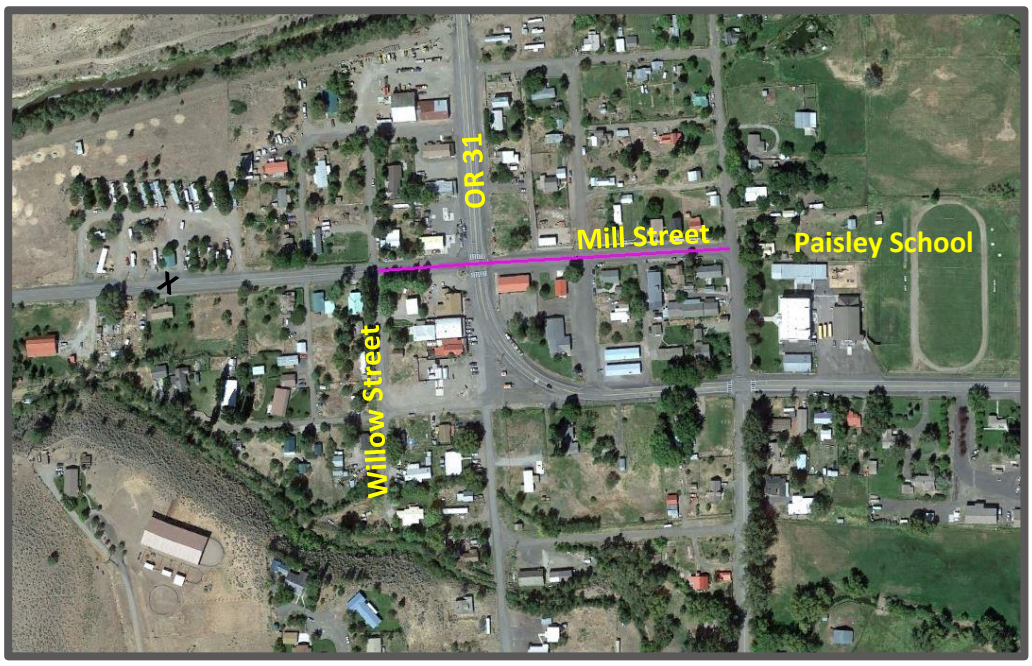


Photo Source: Google Earth

ID: A-3

Green Street Between Cottonwood Street and Mill Street

Description: Construct Sidewalks

Purpose: Limited sidewalk infrastructure.

Category: Active Transportation

Priority: High

Cost: $270,000

Project Partners: N/A

Considerations: Access to/from Paisley school must be provided

Project Location/Images:

Photo Source: Google Earth

ID: A-4

OR 31 At Mill Street

Description: Construct an improved crosswalk

Purpose: School Crossing

Category: Active Transportation

Priority: High

Cost: $6,000

Project Partners: ODOT

Project Location/Images:

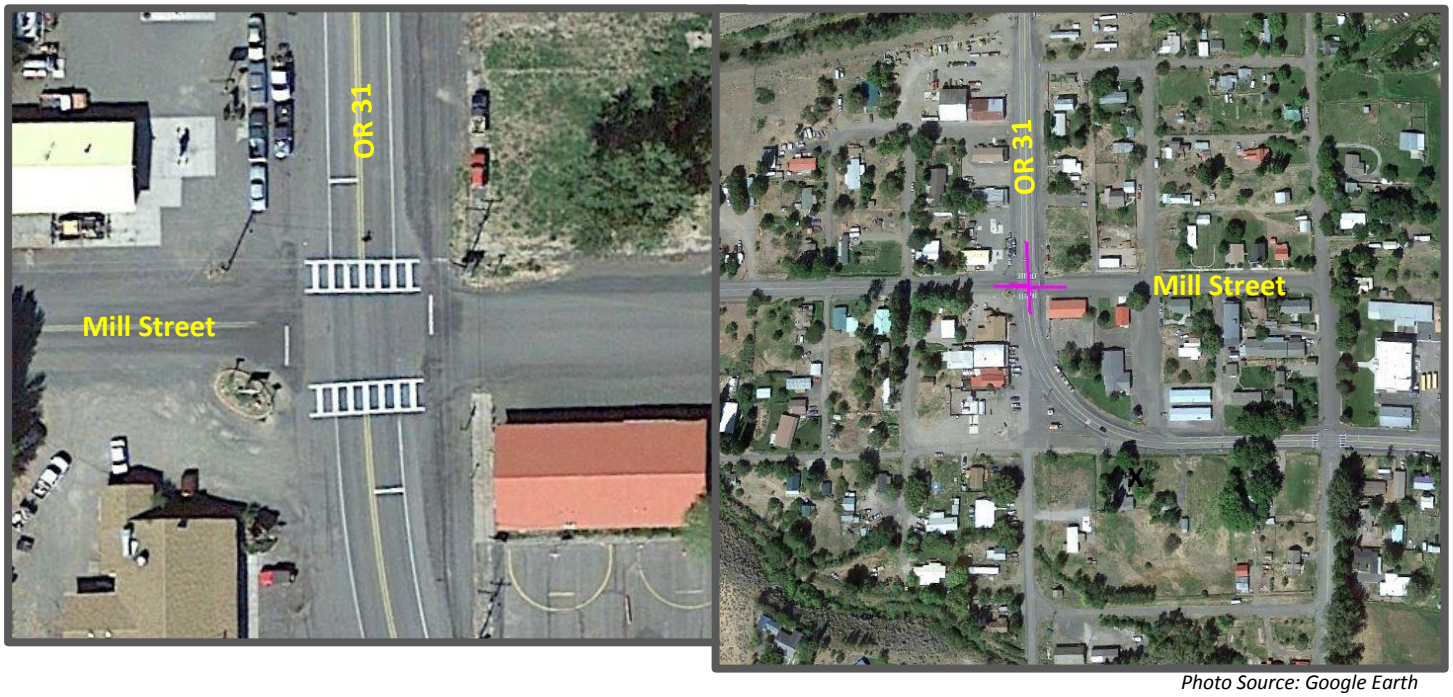


Photo Source: Google Earth

ID: A-5

OR 31 At Green Street

Description: Construct an improved crosswalk

Purpose: School Crossing

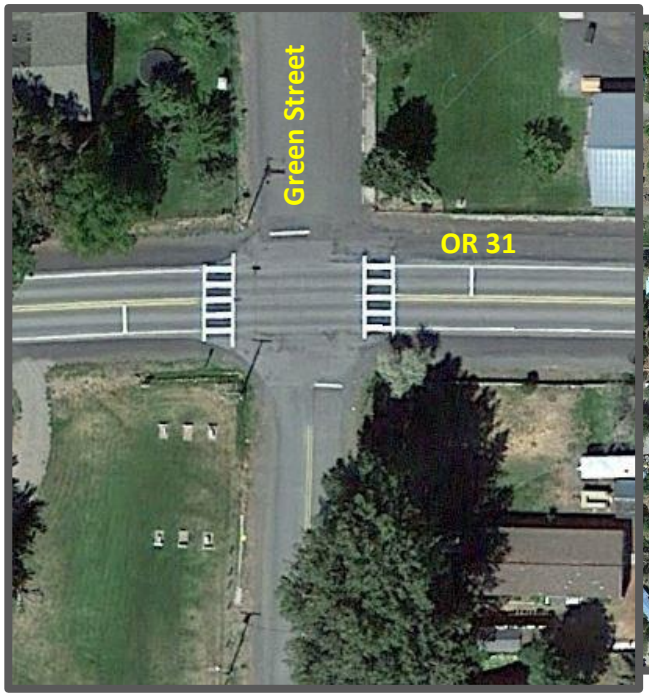
Category: Active Transportation

Priority: High

Cost: $6,000

Project Partners: ODOT

Project Location/Images:



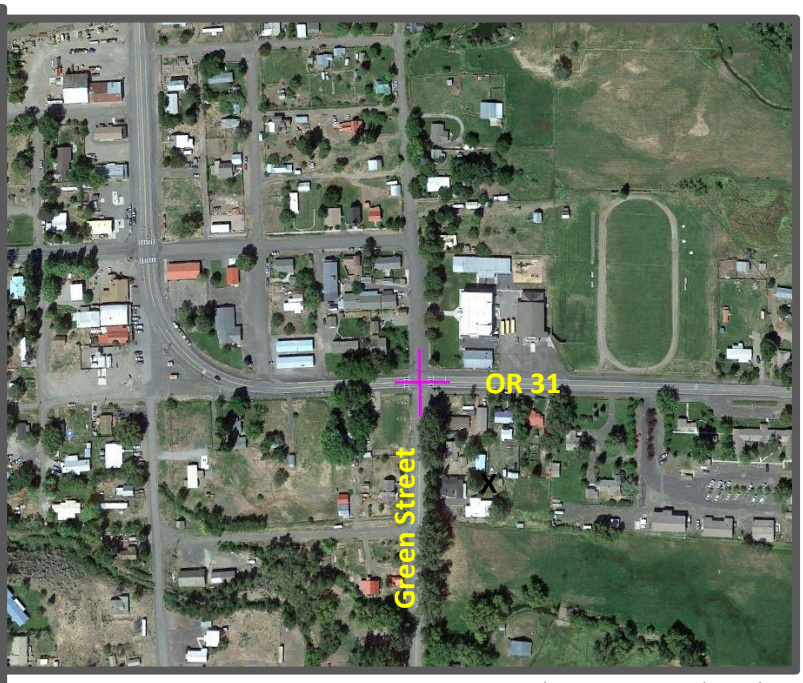


Photo Source: Google Earth

ID: MA-2	**City – Wide (Maintenance)**	
Description:	Identify long-term maintenance funding strategies	
Purpose:	The City struggles to maintain roadways to acceptable standards. Ongoing maintenance funding is challenging	
Category: Maintenance		**Priority:** High 
Cost: Ongoing		
Project Partners: N/A		

Appendix 3 Recommended Policy and Code Updates

The following goals and policies (Lake County's, followed by the City of Paisley's) are intended to replace existing County and City Comprehensive Plan policies and to be included in the appendix to the 2016 Draft Lake County Transportation System Plan (TSP). The following language was last revised May 2, 2016 and may be further revised prior to planned adoption of the Draft TSP.

LAKE COUNTY TRANSPORTATION GOALS AND POLICIES

The Lake County Transportation System Plan (TSP) was updated in 2016 to assist the County in providing and encouraging a safe, convenient, efficient, and economic transportation system. With the adoption of the 2016 TSP, the Transportation Element of the Lake County Comprehensive Plan has been replaced by the updated TSP document. The following Goals and Policies replace the policies in Comprehensive Plan Section XII: TRANSPORTATION:

GOAL 1: MOBILITY AND CONNECTIVITY

Promote a transportation system within the County that links area communities and meets existing/future mobility needs for all travel modes.

Policies

1. The County will strive to preserve and maintain the existing transportation system assets in a state of good repair in order to preserve their intended function and maintain their useful life.
2. The County will promote transportation linkages between the dispersed communities of the County by promoting an integrated system of principal highways that move people and goods throughout the County.
3. The County will promote a road system that facilitates transportation between various areas of the County and between principal highways.
4. Recognizing the importance of motorized travel to access the rural and dispersed population centers, the County will continue to promote a local road system that serves as access to commercial and residential areas.
5. The County will seek to preserve the function, operation, capacity, level of service, and safety of state highways and local roads in a manner consistent with adopted State and local plans.
6. The County shall adopt, maintain, and implement transportation design guidelines and development regulations that address all elements of the County transportation system and that promote access to and use of a multi-modal transportation system.
7. The County will coordinate with the Oregon Department of Transportation and local cities to implement and construct roadway improvements and maintenance needs guided by the prioritization of projects established in the TSP.
8. The County will promote improved traffic circulation within County communities, while maintaining the local character of each community.
9. The County will program transportation improvements to facilitate planned land uses, including future industrial, commercial, and residential growth in unincorporated areas.
10. The County will design and manage the road system consistent with adopted TSP roadway performance standards to ensure the efficient movement of people, goods, and commodities. State and County mobility standards will be supported on facilities under the respective jurisdiction.
11. The County will require roads created by partitioning and subdividing to be designed to tie into existing or anticipated road systems consistent with the adopted TPS and State and County access management requirements.
12. The County will ensure that transportation improvements will avoid dividing existing economic farm units, unless no feasible alternative exists.
13. The County shall minimize the number of access points to arterials and encourage cluster

development of commercial and industrial activities. All accesses must be in conformance with State and county access management standards. The County shall approve development requiring access to arterials only if consistent with State and County access management standards and after consideration is given to proposed area-wide land use(s) and traffic patterns in the area.

14. Lake County shall provide safe and convenient pedestrian and bicycle circulation through the unincorporated portions of the County through the following actions:
    - Bikeways and walkways shall be designed and constructed following the guidelines of most recent edition of the Oregon Bicycle and Pedestrian Plan.
    - Bicycle and pedestrian facilities should be provided to support recreational tourism in the County.
    - Bicycle parking facilities should be provided at all new residential multifamily developments of four units or more, commercial, industrial, recreational, and institutional facilities.
15. Lake County shall provide safe and convenient pedestrian and bicycle circulation through the rural service centers of the County (Fort Rock, Christmas Valley, Silver Lake, Summer Lake, and Adel) through the following action:
    - Bicycle facilities (most commonly provided via shoulders on rural facilities, but may also include bike lanes or separated pathways) shall be included on all new collectors and local roads.

GOAL 2: ECONOMIC DEVELOPMENT

Provide a transportation system that supports existing industry and encourages economic development in the County.

Policies

1. The County will develop and promote a multi-modal transportation network that supports existing industries and supports economic diversification in the future.
2. The County will promote railroad freight service via the Lake County Railroad.
3. The County will protect the function of rail facilities through the application of appropriate land use designations to assure that future land uses are compatible with the continued rail facility operation.
4. The County will prioritize improvements to and maintenance of the key freight routes of US 395, OR 140, and OR 31 through the County.
5. The County will support truck access to industrial sites, including turn and acceleration/deceleration lanes where appropriate.
6. The County will protect the function of the Lake County Airport through the application of appropriate land use designations to assure that future land uses are compatible with continued airport operation.
7. The County will support multi-modal transportation improvement and service enhancements to improve access to the air system facilities, including the Lake County Airport.
8. The County will promote and upgrade recreational routes and wayfinding through the County to encourage tourism.

GOAL 3: SAFETY

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

Policies

1. The County will seek to improve and maintain a transportation system that facilitates the use of state highways for safe and efficient travel but also provides safe, livable, and vibrant multimodal corridors in the County communities.
2. The County will apply roadway standards to ensure that roadways are designed, constructed, and maintained to an appropriate standard for their expected use, vehicle speeds, and vehicle traffic.
3. The County will provide a transportation system that allows for adequate emergency vehicle access

to all land uses.

GOAL 4: MULTIMODAL USERS

Provide a multimodal transportation system that permits the safe and efficient transport of people and goods through active modes.

Policies

1. The County will promote alternative modes, transit/dial-a-ride service, and rideshare/carpool programs that reduce motorized vehicle trips through community awareness and education.
2. The County will seek to improve access, safety, and service within communities and rural service centers to promote the use of alternative modes of transportation (walking, bicycling, rideshare/carpooling, and dial-a-ride transit).
3. The County will consider bicycle and pedestrian facility needs during construction of new roads and during upgrades of existing roads.
4. The County will ensure facilities are compliant with the Americans with Disabilities Act.
5. The County will seek to improve and maintain an interconnected network of bicycle, pedestrian, and transit facilities throughout the County and within local communities.
6. The County will support maintenance of State highways as bicycle routes, with use of local parallel routes as alternative routes where feasible.
7. The County will prioritize shoulder maintenance (surfacing, cleaning, vegetation removal), particularly in the peak summer cycling months.
8. The County will support widening shoulders for bicycle travel as part of roadway preservation and improvement projects or as separate projects.
9. The County will support the development of regional public transit opportunities.
10. The County will support or encourage paratransit, dial-a-ride service to all residents within the county matched to the availability of financial resources.
11. The County will consider the needs of all-terrain vehicles (ATVs) where recreational trails cross County roads.

GOAL 5: ENVIRONMENT

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

Policies

1. The County will seek to develop and maintain a multi-modal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumptions and air quality impacts.
2. The County will implement design standards that support acquiring only the minimum roadway width necessary for the roadway, including facilities for all users for the roadway classification, and maintenance to reduce weed infestation and conserve agricultural land.
3. The County will develop and upgrade transportation facilities in such a manner 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 not damaged or impaired.
4. The County will 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 multi-modal transportation network, consistent with Goal 6 of the OTP.

Policies

1. The County will seek to maintain long-term funding stability for transportation maintenance projects by pursuing new and innovative funding sources.
2. The County will work to ensure that the existing transportation network is conserved and enhanced through maintenance and preservation.
3. The County will coordinate with Lake County, ODOT, the Federal Highway Administration (FHWA), and local jurisdictions to improve and maintain the transportation system and implement the Statewide Transportation Improvement Program (STIP).
4. The County will encourage planning coordination between local jurisdictions, the County, and the State by establishing cooperative road improvement programs, funding alternatives, and schedules.
5. The County will consider repurposing street right-of-way to parks, open space, utilities, and all other public uses, should vacations be contemplated.
6. The County will encourage citizen involvement in identifying and solving local transportation issues.
7. The County will establish and maintain land development ordinance regulations to protect and improve the transportation system.
8. The County shall require that proposed land developments mitigate their adverse transportation impacts and ensure that all expanding or new development contributes a fair and proportionate share toward on-site and off-site transportation system improvements.

CITY OF PAISLEY TRANSPORTATION GOALS AND POLICIES

The Lake County Transportation System Plan was updated in 2016. This planning document includes standards, policies, and recommended projects to assist the City in providing and encouraging a safe, convenient, efficient, and economic transportation system. The 2016 TSP is the Transportation Element of the City's Comprehensive Plan. The following are the City of Paisley's Transportation Goals and Policies:

GOAL 1: MOBILITY AND CONNECTIVITY

Promote a transportation system within the City that links area communities and meets existing/future mobility needs for all travel modes.

Policies

1. The City will promote a road system that facilitates transportation between various areas of the City and between principal highways.
2. The City will promote a local road system that serves as access to commercial and residential areas.
3. The City will seek to preserve the function, operation, capacity, level of service, and safety of state highways and local roads in a manner consistent with adopted State and local plans.
4. The City will coordinate with the Oregon Department of Transportation and Lake County to implement and construct roadway improvements and maintenance needs.
5. The City will improve traffic circulation within the community, while maintaining the local character of the community.
6. The City will apply roadway performance standards to ensure the efficient movement of people, goods, and commodities.
7. Roads created by partitioning and subdividing will be designed to tie into existing or anticipated road systems consistent with adopted access management requirements.
8. The City will apply adopted access management standards when approving development access to arterials after consideration is given to proposed area-wide land use(s) and traffic patterns.

GOAL 2: ECONOMIC DEVELOPMENT

Provide a transportation system that supports existing industry and encourages economic development in the City.

Policies

1. The City will develop and promote a multi-modal transportation network that supports existing industries and supports economic diversification in the future.
2. The City will prioritize improvements to and maintenance of OR 31, a key freight route and important arterial for the City.
3. The City will support truck access to industrial sites, including turn and acceleration/deceleration lanes where appropriate.
4. The City will promote and upgrade recreational routes and wayfinding through the City to encourage tourism.

GOAL 3: SAFETY

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

Policies

1. The City will seek to improve and maintain a transportation system that facilitates the use of OR 31 for safe and efficient travel but also provides safe, livable, and vibrant multimodal corridors in the City communities.
2. The City will apply roadway standards to ensure that roadways are designed, constructed, and maintained to an appropriate standard for their expected use, vehicle speeds, and vehicle traffic.
3. The City will improve safety for walking, biking and driving trips by prioritizing improvements to high collision locations.
4. The City will provide a transportation system that allows for adequate emergency vehicle access to all land uses.

GOAL 4: MULTIMODAL USERS

Provide a multimodal transportation system that permits the safe and efficient transport of people and goods through active modes.

Policies

1. The City will improve access, safety, and service within the community to promote the use of alternative modes of transportation (walking, bicycling, rideshare/carpooling, and dial-a-ride transit).
2. The City will consider bicycle and pedestrian facility needs during construction of new roads and during upgrades of existing roads.
3. The City will insure facilities are compliant with the Americans with Disabilities Act.
4. The City will promote an interconnected network of bicycle, pedestrian, and transit facilities throughout the City.
5. The City will support widening shoulders for bicycle travel as part of roadway preservation and improvement projects or as separate projects.
6. The City will consider the needs of all-terrain vehicles (ATVs) where recreational trails cross County roads.

GOAL 5: ENVIRONMENT

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

Policies

1. The City will develop a multi-modal transportation system that avoids reliance upon one form of transportation as well as minimizes energy consumptions and air quality impacts.
2. The City will promote design standards that support acquiring only the minimum roadway width necessary for the roadway, including facilities for all users for the roadway classification, and maintenance to reduce weed infestation and conserve agricultural land.

3. The City will develop and upgrade transportation facilities in such a manner 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 not damaged or impaired.
4. The City will 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 City's multi-modal transportation network, consistent with Goal 6 of the OTP. None of the cities in Lake County part of this TSP update contain a population of 2,500 or more; therefore, a transportation financing program is not required as provided in OAR 660-12-0040.

Policies

1. The City will seek to maintain long-term funding stability for transportation maintenance projects by pursuing new and innovative funding sources.
2. The City will work to ensure that the existing transportation network is conserved and enhanced through maintenance and preservation.
3. The City will coordinate with Lake County, ODOT, and the Federal Highway Administration (FHWA) to improve and maintain the transportation system and implement the Statewide Transportation Improvement Program (STIP).
4. The City will consider repurposing street right-of-way to parks, open space, utilities, and all other public uses, should vacations be contemplated.
5. The City will encourage citizen involvement in identifying and solving local transportation issues.
6. The City will establish and maintain land development ordinance regulations to protect and improve the transportation system.
7. The City shall require that proposed land developments mitigate their adverse transportation impacts and ensure that all expanding or new development contributes a fair and proportionate share toward on-site and off-site transportation system improvements.